



HAMILTON'S CLIMATE CHANGE IMPACT ADAPTATION PLAN - UPDATE

General Issues Committee

June 1st, 2022

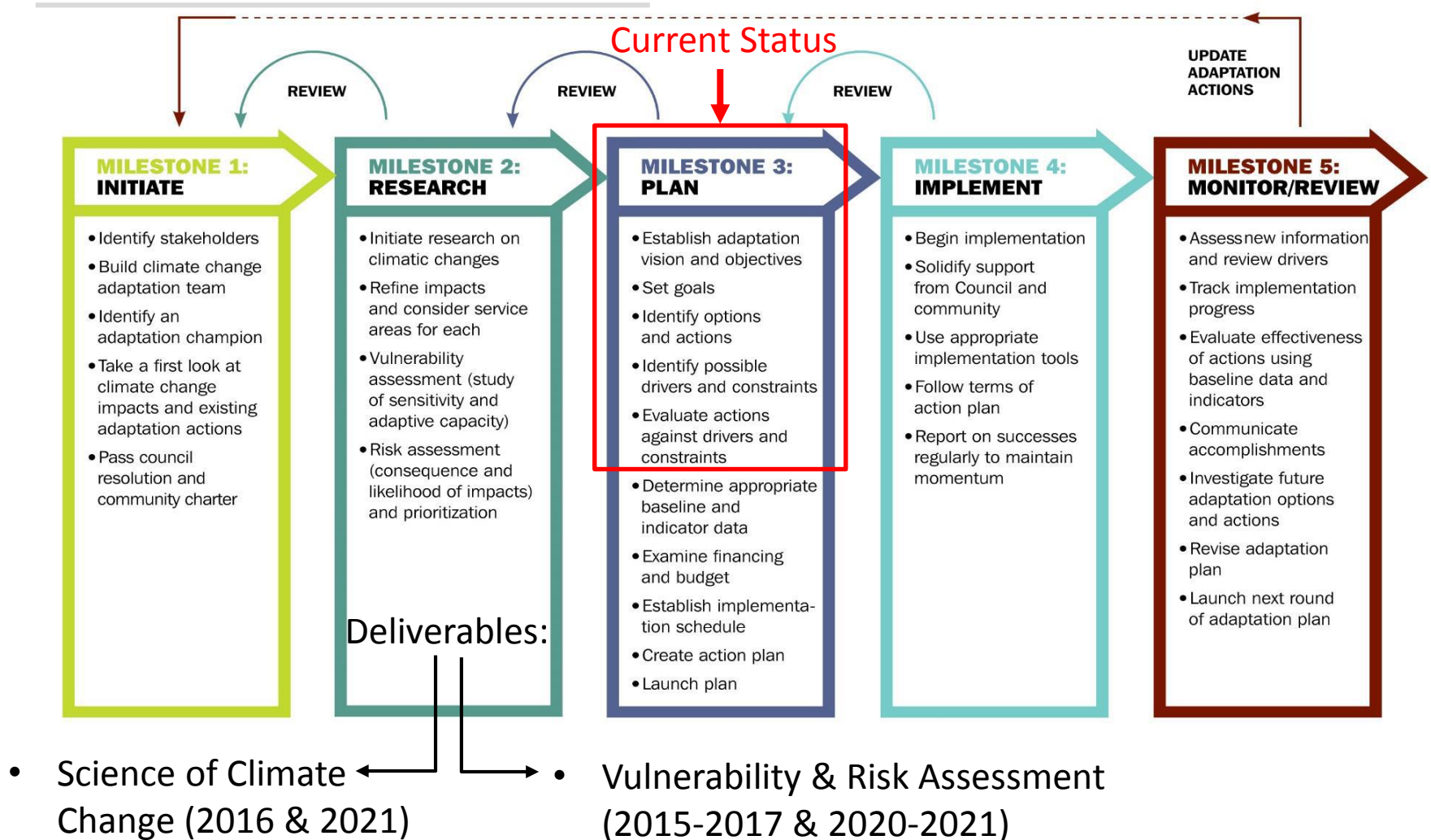


Hamilton

Hamilton's Climate Change Impact Adaptation Plan (CCIAP)

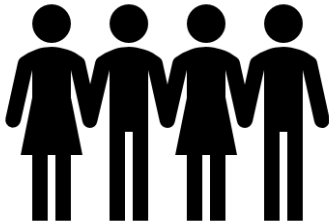
- National leader on Climate Adaptation
- Healthy, equitable, vibrant and sustainable community that responds to the needs of all

Overview: How are we developing the Adaptation Plan



Engagement to Date

- Inter-Departmental City core team meeting monthly
- Six external mini-workshops for VRA
- Internal and external surveys
- Internal and external Actions workshops
- One-on-one meetings where requested
- Engage Site



**WE WANT TO
HEAR FROM YOU!**



HAMILTON

**Climate Change
Impact Adaptation**



engage.hamilton.ca



Results to Date:

- 26 Social Organizations
- 13 Industry, Commercial, Institutional Organizations
- 8 Environmental Organizations

Equity Considerations

- Literature Review
- Stakeholder Assessments
- Flexibility and Accommodations



TROPICAL NIGHTS

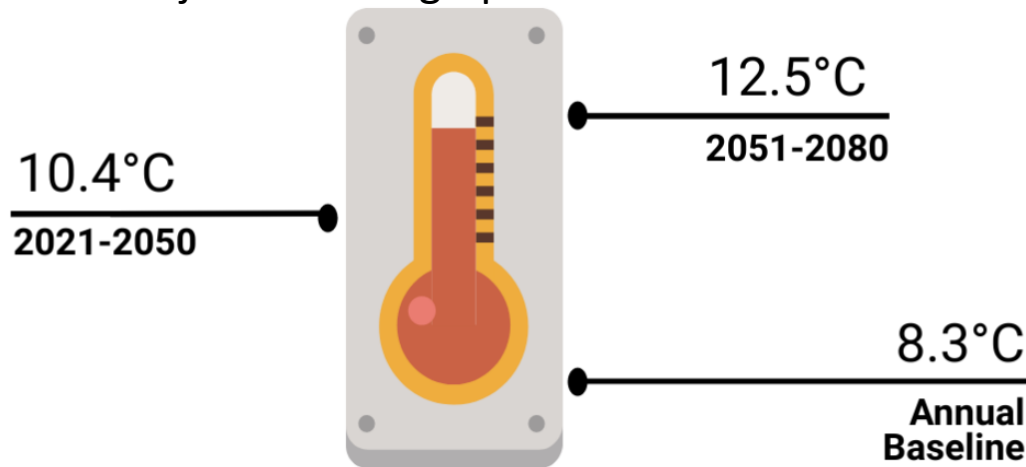
Typically cooler nights can mitigate exposure to extreme heat, however, an increased number of tropical nights eliminates the possibility for relief and magnifies health risks, especially to vulnerable populations such as infants, older adults, and those who work outdoors.

Night-time temperatures above 20°C are expected to see a **fivefold increase** by 2080.



Climate Change Impact Statements

- Downscaled climate models, based on multiple emissions scenarios, to Hamilton region, covering:
 - Temperature
 - Precipitation
 - Extreme Weather
 - Agricultural Indices
 - Lake Temperature and Level
- Climate Projections Infographic



ANNUAL MEAN TEMPERATURES

Mean temperatures are projected to increase annually and in every season.

13 Priority Climate Change Impacts

- Hamilton's Science of Climate Change → 70+ Corporate & Community Climate Impacts
- Climate Impacts underwent Vulnerability and Risk Assessment
- **Vulnerability:** combination of *sensitivity* and *adaptive capacity*
- **Risk:** combination of *likelihood* and *consequences* of future climate impacts



Flooding

- Flood protection concerns
- Wilder, wetter and more frequent



Priority Climate Change Impacts

- 1.** Reduce capacity of flood protection measures and water storage caused by an increase in rainfall intensity leading to flooding.
- 2.** Changes in the frequency of extreme rainfall events will result in increased instances of flooding on private and public properties

Extreme Heat

- 60+ days of extreme heat by 2080s
- Rising health impacts and financial costs



Priority Climate Change Impacts

- 3.** Increased instance of heat related issues due to extreme heat.
- 4.** Drier, hotter and longer summers may affect the health and safety of local vulnerable populations
- 5.** More frequent and intense heatwaves will increase instances of heat related health and safety issues, particularly for households without access to reliable air conditioning and the homeless
- 6.** Rising summer temperatures and extreme heat will increase energy demand for air conditioning, causing a financial burden for low income households.

Health and Safety

- Greater intensity and frequent storms
- Transmission of vector borne diseases



Priority Climate Change Impacts

9. Increased intensity and frequency of ice storms leading to increased hazardous roads, pathways and sidewalk conditions

10. Increased temperatures and changes in precipitation increasing incidences of infectious diseases and vector borne diseases as result of longer transmission periods of changes in geographic distribution of disease vectors

Water Quality

- Increased run-off
- Water supply and demand issues



Priority Climate Change Impacts

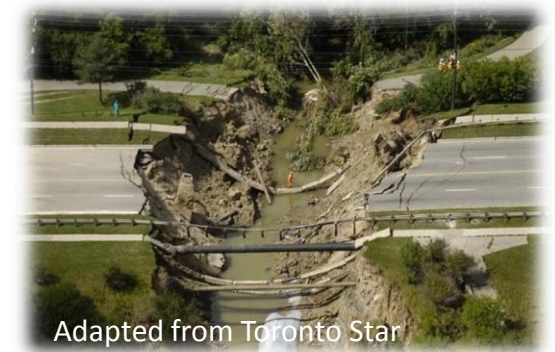
7. Increased intensity of rainfall leading to increasing runoff into rivers and lakes, and washing of sediment, nutrients, pollutants and other materials.

8. More intense summer precipitation combined with increasing temperatures lowering water supply as well as increasing water demand for drinking, landscaping, and irrigation. (rural)

Erosion & Infrastructure Damage

Priority Climate Change Impacts

11. Changes in precipitation resulting in erosion of natural systems (i.e waterbanks, escarpment erosion) leading to washouts of bridges and roadways



Power Outages

Priority Climate Change Impacts

12. Prolonged power outages during winter months due to an increase in ice storms resulting in public safety concerns

Food Insecurity

- Increase temperatures
- Decrease crop yields

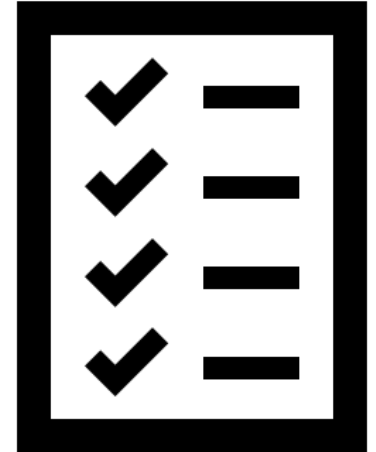


Priority Climate Change Impacts

13. Increase in average annual temperatures (especially in the summer) leading to increased food insecurity in the region (i.e. decrease in local crop yield, food cost fluctuations, etc.)

CCIAP Objectives and Actions

- Completed Community and Corporate Objectives/Actions Workshops (2022)
 - Identification of desired future state to address priority climate change impacts
 - Activity to brainstorm how to achieve future resiliency
 - Reviewed over 135 actions to meet 11 overall objectives



Action Prioritization

- Conducted community and corporate scoring prioritization for short-list of actions
 - Priority #1 = Short-Term Actions
 - Priority #2 = Mid-Term Actions
 - Priority #3 = Long-Term Actions

Prioritized Climate Adaptation Actions (Priority #1 Short-Term)

Priority	Climate Adaptation Actions
1	Establish buddy systems/help-your-neighbour programs to implement during extreme weather events
1	Develop requirements homeowners and landlords to improve the resilience of residential buildings to climate-related risks through upgrades and/or retrofits
1	Improve winter travel conditions through further expanding sidewalk clearing, beginning with evaluating the clearing expansion planned for 2022/2023.
1	Create an educational campaign on communicating the risks associated with climate change (i.e. health impacts, property damage, etc.) and what residents can do to prepare (GDS, LID, etc.)
1	Explore opportunities to expand current cooling & warming centre programming and interventions
1	Educate and encourage community to participate in growing food locally (e.g. lot level or urban farms/gardens).

Prioritized Climate Adaptation Actions (Priority #2 Medium-Term)

Priority	Climate Adaptation Actions
2	Expand rain water capture (i.e. rain barrels, cisterns, etc.) as an irrigation source for more localized food production (i.e. backyard farming, urban gardens, soft landscapes, etc.)
2	Encourage and promote safer travel practices, choices, and alternatives through considering all users of Hamilton's transportation network (e.g. motorists, pedestrians, cyclists, transit, etc.) and working with local groups to create a communications campaign around the benefits of work from home.
2	Develop and implement a response program for vulnerable populations to protect residents from climate-related risks (i.e. extreme cold, extreme heat, etc.)
2	Establish vulnerable persons' contact lists to guide emergency response and/or other assistance programs
2	Continue/Expand work to provide affordable housing to reduce climate-related impacts from extreme weather and temperatures

Prioritized Climate Adaptation Actions (Priority #2 Cont'd)

Priority	Climate Adaptation Actions
2	Evaluate and select programs for making emergency preparedness kits accessible to anyone, regardless of income (e.g. subsidies or free distribution campaigns)
2	Continue to update existing municipal plans and policies to decrease health and safety risks associated with extreme weather and temperatures
2	Continue to enhance the management and restoration of existing natural areas and seek opportunities to dedicate land and natural areas for conservation, potentially as part of the Open Space Master Plan
2	Work with local partners to continue tree planting and preservation, explore community partnerships and naturalization programs to reduce urban heat island and enhance ecosystem function

Prioritized Climate Adaptation Actions (Priority #2 Cont'd)

Priority	Climate Adaptation Actions
2	Implement the Urban Forest Strategy, and consider additional measures to support it or expand its impact
2	Engage with local agricultural leaders to understand existing resources for farmers in addressing climate adaptation, and how the City can support or expand on those efforts.
2	Develop an educational campaign directed at restaurant and grocery industries, local farms and other possible food sources to better reduce and divert food waste and explore opportunities to reduce food waste
2	Work with local partners to conduct vulnerability and risk assessments on local energy systems and identify opportunities to reduce energy transmission loss and increase reliability (potentially as part of planned CEEP priority actions around identifying renewable energy generation sites within the City)

Prioritized Climate Adaptation Actions (Priority #3 Long-Term)

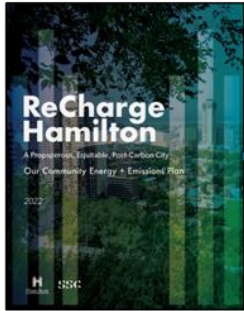
Priority	Climate Adaptation Actions
3	Conduct more studies or reviews to determine flooding and other risks throughout the City and develop plans (e.g. relocating sites where appropriate) to improve the resilience of infrastructure (i.e. building, roads, water/wastewater infrastructure, etc.) to climate-related risks from extreme weather and temperatures.
3	Work with local partners to ensure vulnerable groups are informed about and have the means to be adequately protected from vector-borne diseases
3	Coordinate local efforts to address excessive indoor temperatures in rental housing
3	In conjunction with the Biodiversity Action Plan, develop an Open Space Management Plan to guide City of Hamilton Natural Open Space Stewardship, including maintenance schedules to minimize ideal conditions for vectors (e.g. plants and animals that can bring diseases to human communities, such as ticks)

Prioritized Climate Adaptation Actions (Priority #3 Cont'd)

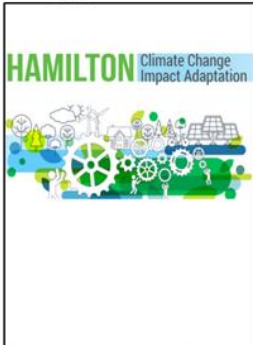
Priority	Climate Adaptation Actions
3	Improve monitoring, data collection, and notification surrounding flooding & extreme weather/temperatures
3	Establish low-carbon back-up power systems in all City-owned facilities to serve as community hubs during emergencies, and create a policy to support and promote the use of low- or no-carbon emergency energy supplies such as batteries or energy storage for residents and businesses.
3	Develop requirements for the incorporation of Low Impact Development (LID) features and green infrastructure into new development and redevelopment projects, and consider watershed and landscape scales in the development of plans and objectives.
3	Provide guidance to local businesses on how to maintain business continuity (e.g. supply chain) during extreme weather

Timelines

ReCharge Hamilton: Community Energy & Emissions Plan (2022)



Hamilton's Climate Change Action Strategy (2022)



Hamilton's Climate Change Impact Adaptation Plan (2022)

