



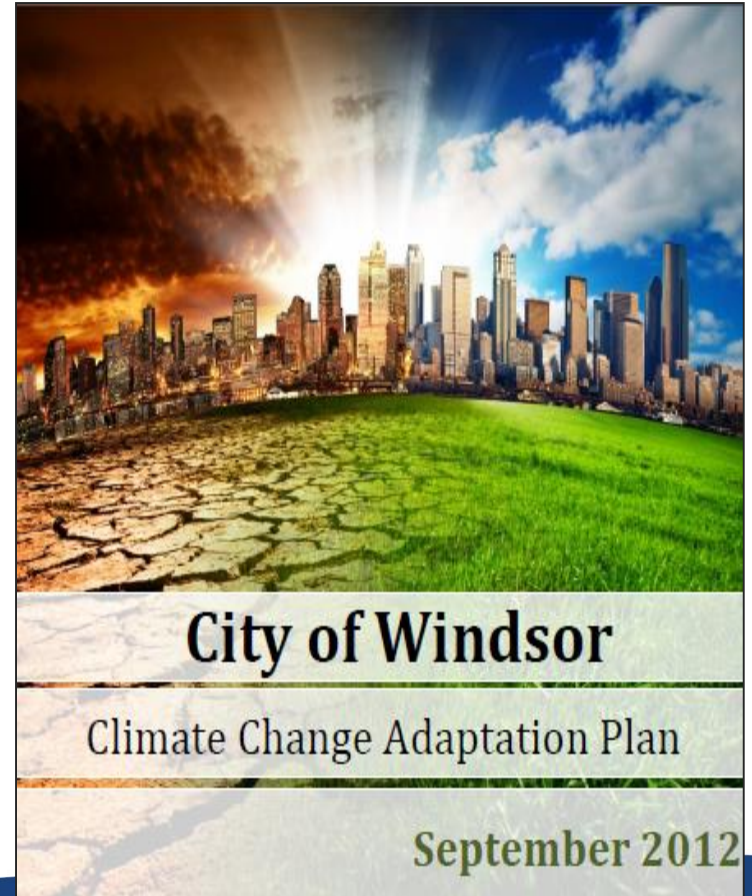
Monitoring and Report on Adaptation in Windsor

Together for Climate Virtual Workshops

June 4, 2020

City of Windsor's 1st Adaptation Plan

- Council approved Plan in Nov 2012
- Included 22 Adaptation Actions to address increasing temperature and precipitation
- There were no indicators identified.
- Biennial reporting to City Council on the status of the plan.

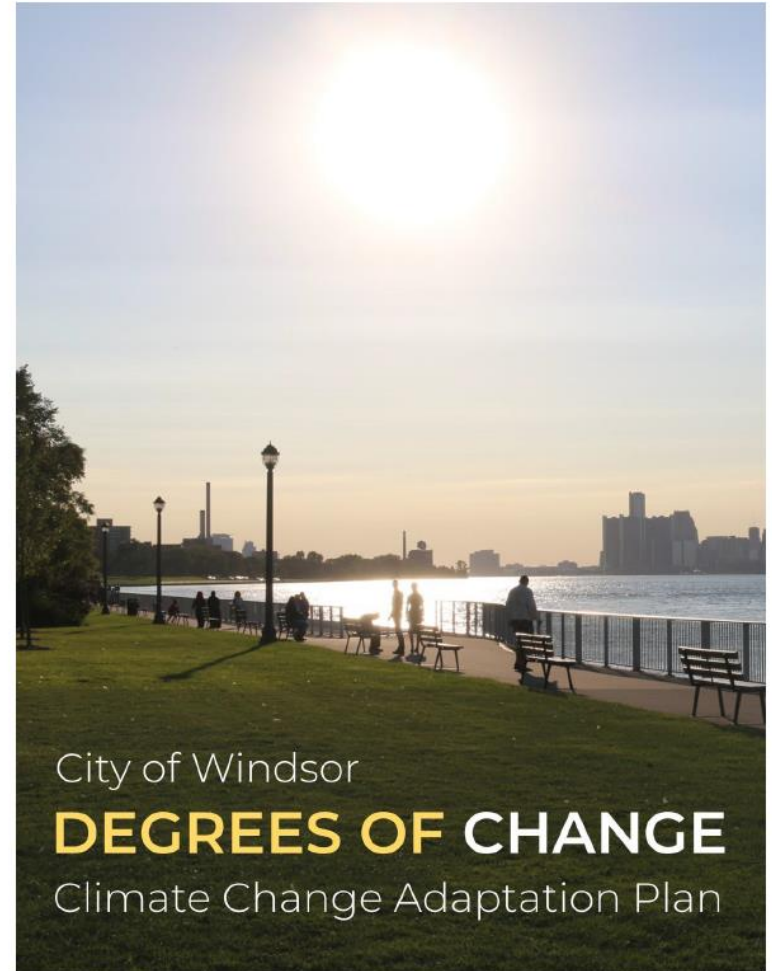


Monitoring & Report on the 2012 Plan

Adaptation Action	Cost	Status	Comments	Next Steps
Reducing Risks Associated with Increased Precipitation				
1. Mandatory Downspout Disconnection	2013 - \$2,000,000	Progressing	There are currently two mandatory downspout disconnection areas (roughly bound by Tecumseh Rd. E (north), CPR tracks/Grand Marais Road (south), Howard (west) and Norman Rd. (east)). The engineering department has sent out letters to home owners systemically by postal code. Residents can take advantage of the free disconnection program by calling 311 to register. To date, we're able to disconnect an average of 5 – 8 % of homes that register for the disconnection program.	Discussions regarding making downspout disconnection mandatory are continuing and recommendations will be forthcoming in the Sewer Master Plan
	2014 - \$400,000			
	2015 - \$0			
	2016 - \$330,000			
	2017 - \$200,000			
	2018 - \$1,000,000			
	2019 - \$0			
	2020 - \$0			
	Capital Budget and Flooding Report (CR128/2012) and Capital Budget B22-2015			
2. Mandatory Backwater valves	2011 - \$500,000	Progressing	Effective January 1, 2012, the Building Department's City-wide enforcement of the Ontario Building Code by mandating backwater valves on all newly constructed single family dwellings, semi-detached dwellings and townhouse dwellings. (M357/2011)	Continue to work with homeowners to encourage them to undertake improvements to mitigate risk of basement flooding. Additional educational resources are to be developed.
	2012 - \$250,000			
	2012 - \$500,000*			
	2013 - \$250,000			
	2014 - \$900,000			
	2014 - \$150,000*			
	2015 - \$250,000			
	2016 - \$1,200,000			
	2017 - \$1,200,000			
	2017 - \$3,500,000*			
	2018 - \$420,000			
2019 - \$540,000				
2020+ - \$1,000,000	The Basement Flooding Protection Subsidy Program was introduced in July of 2011 to encourage retrofits of existing homes. The Program also includes retrofits of sump pits and pumps to existing homes with no pre-existing sump pit or pump. In the fall of			

Plans for Monitoring and Reporting on the 2020 Plan

- Prioritized 19 impacts
- Continue with Biennial reporting to City Council
- “Story telling” through the impact summary sheets
- Quantitative and Qualitative indicators to measure success on the 7 overall Objectives



“Story telling”

Total Risk Score:
95

Impact #16: An increase in winter temperatures will reduce the length of time outdoor rinks can operate

Likelihood	5	Almost Certain
Social	35	Medium-Low
Economic	40	Medium-Low
Environmental	20	Low
Total	95	Medium-Low

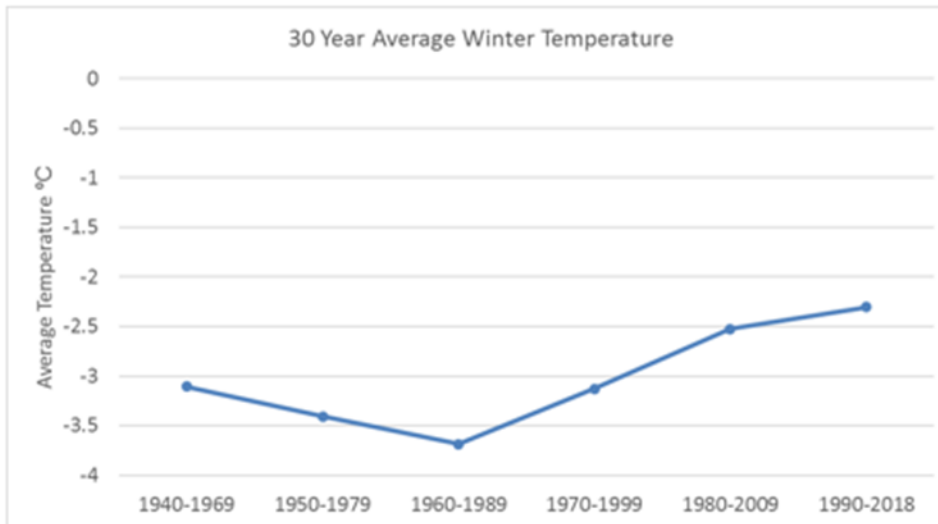
Vulnerability	Department	Impact Statement
V4	Recreation	Reduce the length that outdoor rinks can operate
V3	Parks Operations	Reduce the length that outdoor rinks can operate

“Story telling” (Cont’d)

Supporting Information

Historical Climate Data

Since 1940, the Government of Canada has maintained a weather station at Windsor Airport. This data is fully available through a historical weather data base. Analysis of this data shows an increasing trend in recent winter mean and maximum temperatures over 30-year timeframes (Figures 1 and 2).



	30-Year Winter Mean Temperatures °C
1940 - 1969	-3.1
1950 - 1979	-3.4
1960 - 1989	-3.7
1970 - 1999	-3.1
1980 - 2009	-2.5
1990 - 2018	-2.3
2000 - 2018*	-2.4
2010 - 2018*	-2.5

Note: * Indicates not a complete 30-year timeframe

Figure 1: Historical Winter Mean Temperatures as Reported at Windsor Airport (Government of Canada)

“Story telling” (Cont’d)

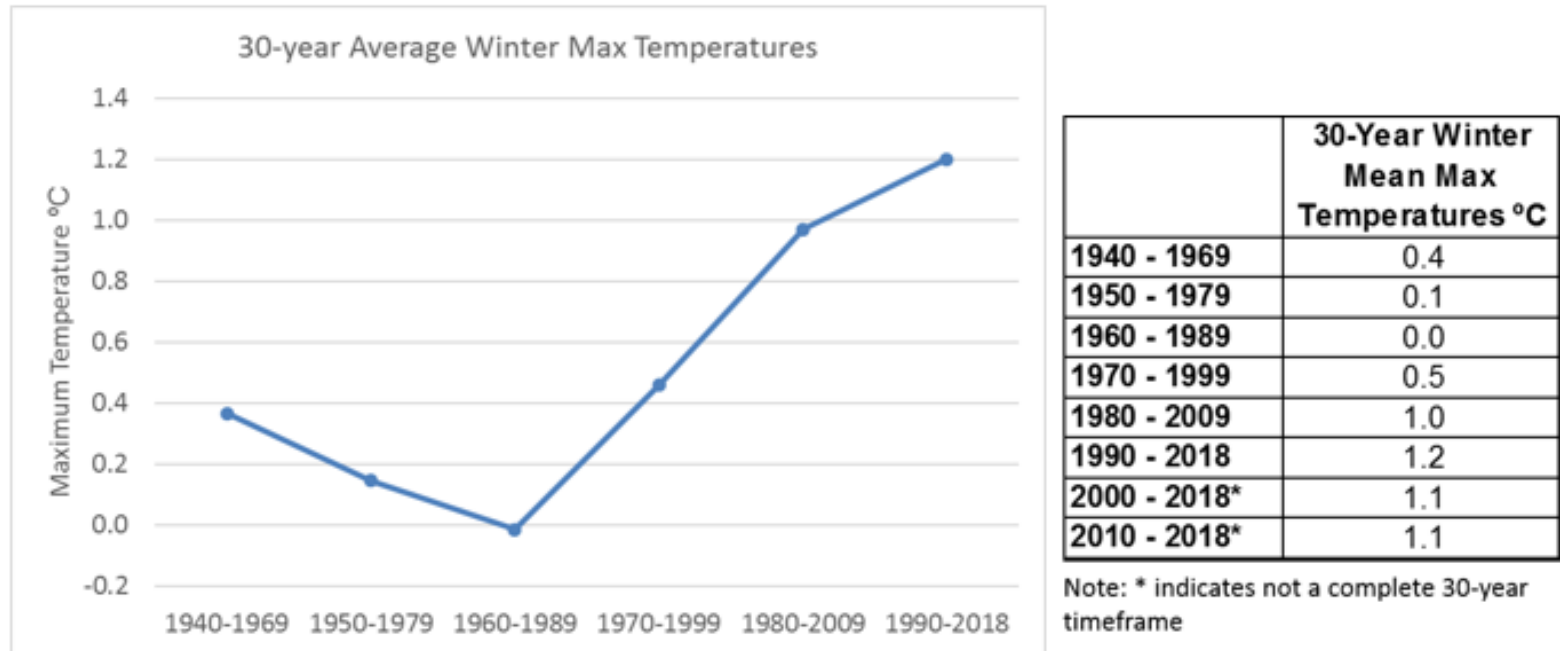
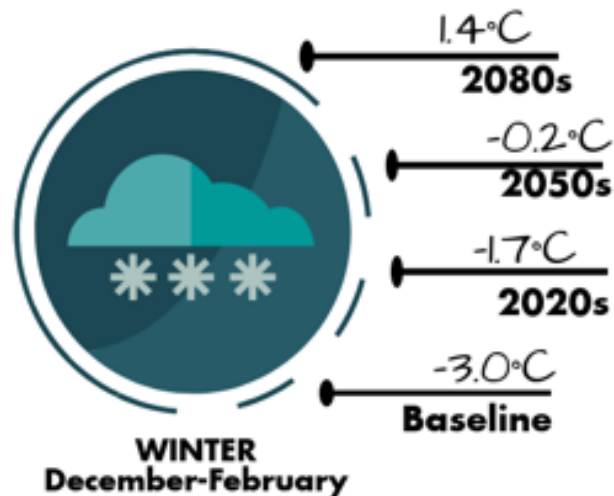


Figure 2: Historical Winter Mean Maximum Temperatures as Reported at Windsor Airport (Government of Canada)

“Story telling” (Cont’d)

Climate Projections

Climate change modelling completed by Canadian Climate Data and Scenarios Network predicts increases to the mean winter temperatures over time (Figure 3).



“Story telling” (Cont’d)

Departmental Impacts

Recreation

The City of Windsor currently operates two outdoor skating surfaces: Lanspeary Lions Rink and Charles Clark Square. Lanspeary is a covered ice surface, which is rented out to the public at a cost between \$103 and \$118 per hour. Charles Clark Square is an uncovered ice surface available for free public skating. Generally, Lanspeary is open longer due to the ice surface being covered reducing impacts from rain, heat and sun (Table 1). However, Lanspeary has also seen a decrease in the average number of weeks open over time (Table 2).

Table 1: Length of Outdoor Skating Season for Lanspeary and Charles Clark Square

Winter	<u>Lanspeary</u> Lions Rink		Charles Clark Square	
	Number of Weeks Open	Days Closed due to Weather	Number of Weeks Open	Days Closed to Weather
2004/2005	15			
2005/2006	13			
2006/2007	18			
2007/2008	17			
2008/2009	18			
2009/2010	17			
2010/2011	14		14	
2011/2012	11.5		14.5	
2012/2013	15		12	12
2013/2014	13		3*	
2014/2015	16		14	
2015/2016	14		7	2
2016/2017	12	4	10	8
2017/2018	12	4	10	19
2018/2019	13	5	12	8

Note: * Charles Clark Square was only open for 3 weeks due to the artificial ice surface

Table 2: Average Number of Weeks Lanspeary Lions Rink is Open

5 Winters	Average Number of Weeks Open during 5 year timeframes
2004/2005 – 2008/2009	16.2
2009/2010 – 2013/2014	14.1
2014/2015 – 2018/2019	13.4

Table 3: Loss Revenue due to Cancelled Ice Time

Winter	Revenue Returned
2015/2016	\$12,208
2016/2017	\$10,093
2017/2018	\$13,859

“Story telling” (Cont’d)

The Cost of Doing Nothing

Operation of both outdoor ice surfaces is greatly dependent on winter conditions. As, mentioned above the average mean winter temperature in Windsor is expected to increase from a baseline of -3°C to 1.4°C in the 2080s (Figure 3). Higher temperatures, along with more winter precipitation will lead to further closures of the ice rinks. Without interventions, further revenue loss is expected as well as the loss of a traditional Canadian past-time.

Possible Adaptation Actions:

Action 6.3 Improve design standards for new recreational facilities to ensure they are more climate resilient

- Ensure any future outdoor rinks developed consider warmer winter temperature protection measures which may include a full cover and extra cooling capacity;
- Ensure all new sports fields developed have sufficient shade amenities and additional drainage designed to reflect Windsor’s climate projections;
- Ensure any new indoor recreational facilities are designed to withstand Windsor’s climate projections

Plan Indicators to Monitor Objectives

Objective 6: Reduce Community Service Disruptions

- Days outdoor Rinks operate (Recreation)
- Number of closures of sports fields due to precipitation (Recreation)
- Number of shade amenities at sports fields (Parks)
- Number of facilities/paths closed due to extreme weather (Facilities, Forestry, Parks)
- Number of beach closures (Windsor Essex County Health Unit)

Actions to Improve Data Resources

Action 1.4 Enhance the ability to collect and share climate change related data

- Leverage climate change data to be included in municipal decision making;
- Automate notifications and triggers to assist with adaptation actions;
- Use data to monitor the implementation of *Degrees of Change*;
- Share data to empower the community to support climate change planning;
- Use data to inform education campaigns.

Questions



Karina Richters
Supervisor, Environmental
Sustainability and Climate
Change
krichters@citywindsor.ca
(519) 253-7111 x. 3226