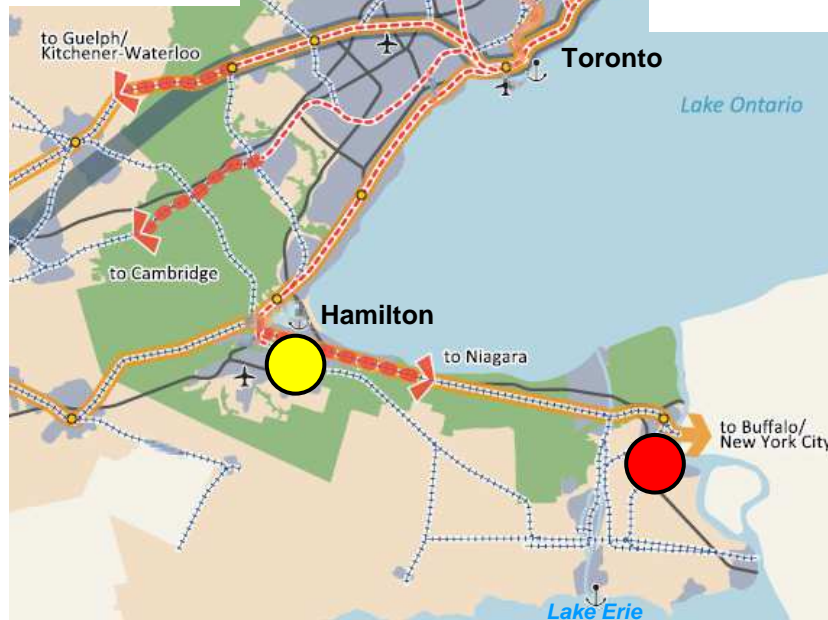
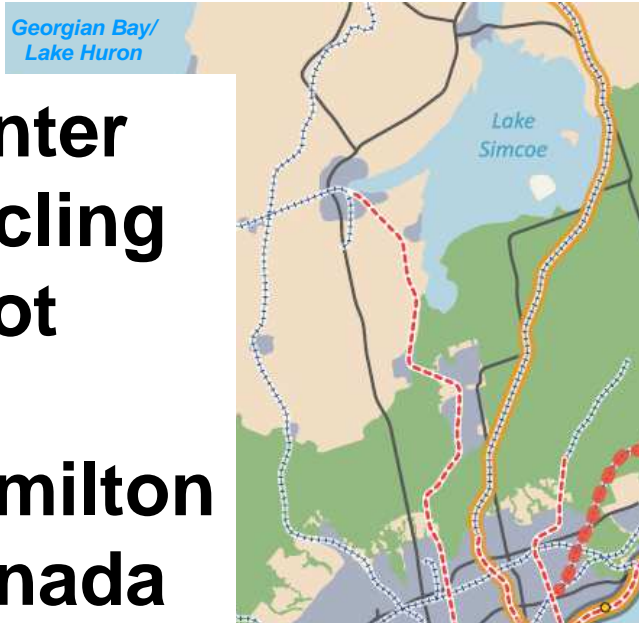


Winter Cycling Pilot in Hamilton Canada



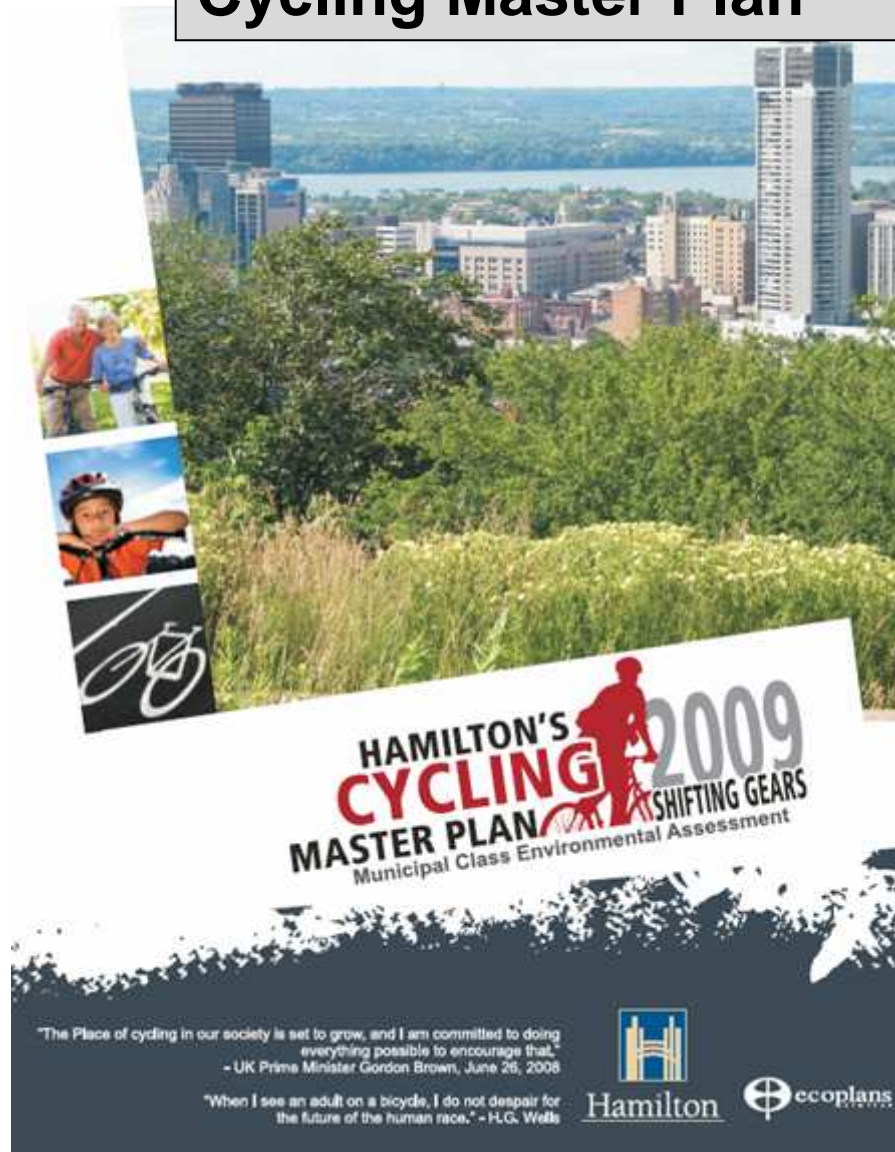
Talvi Pyoraily Velo en Hiver Winter Cycling

Climate Data for Hamilton (@RBG)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	14.5 (58.1)	16.7 (62.1)	25.0 (77.0)	31.0 (87.8)	35.0 (95.0)	36.5 (97.7)	38.8 (101)	37.8 (100.0)	37.8 (100)	32.2 (90.0)	26.2 (79.2)	21.2 (70.2)	38.8 (101.8)
Average high °C (°F)	-1.1 (30.0)	-0.4 (31.3)	4.6 (40.3)	11.5 (52.7)	18.5 (65.3)	24.1 (75.4)	27.3 (81)	25.9 (78.6)	21.3 (70.3)	14.4 (57.9)	7.7 (45.9)	1.8 (35.2)	13.0 (55.4)
Daily mean °C (°F)	-5 (23.0)	-4.4 (24.1)	0.5 (32.9)	6.9 (44.4)	13.3 (55.9)	18.8 (65.8)	22.0 (71)	20.9 (69.6)	16.4 (61.5)	10.0 (50.0)	4.2 (39.6)	-1.6 (29.1)	8.5 (47.3)
Average low °C (°F)	-8.8 (16.2)	-8.3 (17.1)	-3.6 (25.5)	3.2 (37.8)	8.0 (46.4)	13.4 (56.1)	16.6 (61)	15.9 (60.6)	11.6 (52.9)	5.6 (42.1)	0.6 (33.1)	-5 (23.0)	4.0 (39.2)
Record low °C (°F)	-28.3 (-18)	-26.2 (-15)	-21.7 (-7.1)	-12.2 (10.0)	-2 (28.4)	2.2 (36.0)	7.2 (45)	3.6 (38.5)	-0.7 (30.7)	-6.1 (21.0)	-14.4 (6.1)	-25.7 (-14)	-28.3 (-18.9)
Precipitation mm (inches)	59.5 (2.34)	55.0 (2.16)	75.7 (2.98)	73.5 (2.89)	81.8 (3.22)	71.6 (2.81)	74.9 (2.9)	84.6 (3.331)	84.9 (3.34)	72.5 (2.85)	81.5 (3.20)	77.1 (3.03)	892.6 (35.14)
Rainfall mm (inches)	27.9 (1.09)	26.6 (1.04)	53.4 (2.10)	68.6 (2.70)	81.8 (3.22)	71.6 (2.81)	74.9 (2.9)	84.6 (3.331)	84.9 (3.34)	72.4 (2.85)	73.8 (2.90)	48.0 (1.89)	768.5 (30.25)
Snowfall cm (inches)	35.0 (13.7)	29.1 (11.4)	20.0 (7.87)	4.7 (1.85)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7.2 (2.83)	30.1 (11.8)	126.1 (49.65)
Avg. precipitation days (≥ 0.2 mm)	15.1	12.4	12.5	12.8	11.8	10.6	10.7	10.7	11.7	11.7	13.6	14.5	148.0
Avg. rainy days (≥ 0.2 mm)	5.5	4.7	8.9	11.7	11.8	10.6	10.7	10.7	11.7	11.7	12.1	7.8	117.8
Avg. snowy days (≥ 0.2 cm)	11.1	9.0	5.1	1.5	0	0	0	0	0	0	2.5	8.9	38.1
Mean monthly sunshine hours	90.0	111.4	146.3	186.7	243.1	271.6	299	259.8	176.6	144.2	86.5	71.7	2,087.5

Source: Environment Canada ^[33]

Cycling Master Plan



- Update of Shifting Gears (1999)

2009 Vision:

- Cyclists a common sight
- 15% of all daily trips made by foot or bicycle (TMP)
- Synergy with Transit & TDM strategies



The impact that bike lanes can have on snow removal is a matter of priority rather than a matter of cost. The established practice in the City of Hamilton is to clear streets according to the priority ranking with “priority one” streets ploughed first, etc. **Bike facilities are cleared as per the priority ranking of the street they are on, thus the service level for cyclists is equal to the roadway service level.**

Snow clearing of bike lanes does not typically have any major financial implications since the clearing of bike lanes typically will not require a special pass with a snow plough. An exception to the above noted service level and cost impacts may occur when, during heavy snowfalls, there may be insufficient space for off-road snow storage, thus the bike lane or wider curb lane may be temporarily used for snow storage. Operations will return to these locations to remove the snow in the cycling facility when resources are available. Where on-street bike routes exist as signed, shared on-street facilities (not bike lanes), the bike routes share the same asphalt as motor traffic, thus the service level for cyclists will be equal to the roadway service level. Cyclists will be expected to ride with traffic, as has been established, with the understanding that the roadway lanes may be slightly narrower due to snow accumulation and snow storage.

All **hard surface multi-use trails immediately adjacent to roadways, such as Cootes Drive, will be serviced like a sidewalk. Therefore, in accordance with the City sidewalk policy, snow removal will begin no more than 24 hours after the end of the storm.** This level of service will also apply to the bi-directional bike lanes on King Street crossing Highway 403 as the barrier separating it from the motor vehicle lanes inhibit street snow plough access.

Hard surface multi-use trails that do not run parallel to a roadway, such as the Harbour Waterfront Trail, the Lake Ontario Beach Strip Waterfront Trail and the Escarpment Rail Trail, will receive snow clearing beginning no more than 48 hours after the end of a storm. Granular surface trails will not be cleared of snow.

As a result of public comments received through this EA process, Public Works Committee passed a motion in early 2010 regarding winter maintenance of cycling infrastructure. This motion directs staff to review best practices and service level data from municipal comparators, identify priority routes based on set criteria and recommend service levels and resource requirements.

Cycling Master Plan community feedback

...a review of winter maintenance is a “High” priority

www.Hamilton.ca/cycling



Oulu, Finland

Maintenance of Cycling Infrastructure

Cycling infrastructure includes both bike lanes and multi-use trails. Bike lanes are maintained as part of the street network by [Road Operations](#). Multi-use trails are part of the park network so those trails that are owned by the City are maintained by [Parks Maintenance](#). Multi-use trails that are owned by the [Hamilton Conservation Authority](#) (HCA) are maintained by the HCA.

The City conducted a winter maintenance pilot project to assess the winter maintenance of bike lanes in 2012; but due to the extremely mild winter, the pilot continues through the 2012-2013 winter season.

Multi-use Trails



Hamilton Cycling – a winter maintenance pilot 6 of 15

Bike Lanes Pilot Project

The city has in the past maintained cycling lanes during the winter season, **to a standard in keeping with the classification of the road.** During the 2011 - 2012 winter season a pilot project will test enhanced maintenance activities for a specific section of the "on-road painted" cycling lanes to measure the benefit and cost of extending availability of cycling lanes further into the winter season. **The enhanced activities include additional inspection, ploughing, anti-icing, and street sweeping when warranted and feasible (excluding snow removal for the specific benefit of the affected cycling lanes).** This pilot project includes cycling lanes on Sterling Street, Longwood Road, Dundurn Street, and Sanders Boulevard. The pilot will be assessed and recommendations developed for future consideration.

To provide feedback on this project, please access the [web survey](#).



Grit... (in the city of “Grit Lit”)



The Survey

- Respondent info
 - age, gender
- Have you used the bike lanes in the pilot area?
- Are the bike lanes in the pilot area better than others in the city?
 - If better – how much better?
 - Any other comments?
- Are you riding more because of the pilot?
- Do you want to see winter maintenance of bike lanes?
 - everywhere?
 - only those with higher ridership?
 - only near the colleges & universities?



Clear Bike Lanes



Assessment

- Monitor ridership, appreciation, cost, and support.
- 181 responses (multiples were permitted/encouraged)



- Riding more? – a very mild winter...
- Is winter maintenance a good idea? 5% said “No”

Summary

- Cycling as a viable commuting option year-round. (obvious)
- Currently conducting the pilot again this winter.
- **Additional inspection, ploughing, anti-icing, and street sweeping**
- **Ridership** – likely a longer term realization, but climate change is certainly encouraging ridership...

- **Cost** – stated annually (Feb 2012 to Feb 2013):

additional ploughing:	\$1900
additional salting:	\$2400
additional sweeping:	\$1800
<hr/>	
TOTAL	\$6100 for 8km of bike lanes

Thus \$115,000 for the current 150km of Hamilton bike lanes.

Epilogue

Developing the winter pilot...

Other ideas that were mused:

- An inventory of where bike lanes are adjacent to curb-face sidewalks
- Maintaining real-time info on the City website of the current condition of cycling infrastructure
- Committing to snow removal with a response rate as per general streets OR Faster

Other cities:

Montreal, Ottawa,
Kitchener/Waterloo...



Mercury Rising

This past summer capped the hottest 12-month period on the books in the mainland United States. According to the National Climatic Data Center, it was also part of an unprecedented 15-month stretch (as of August) of above-average temperatures that began in June 2011, surpassing even the scorching Dust Bowl days of the 1930s.

Last year's abnormally mild winter was one reason for the spate of records. Another was a brutal July 2012, which set a new mark as the hottest month (77.6°F average) since record-keeping began in 1895. Don't bet on the trend ending anytime soon: NOAA scientists predict the northern U.S. will remain warmer than usual into 2013. —Erin Friar McDermott

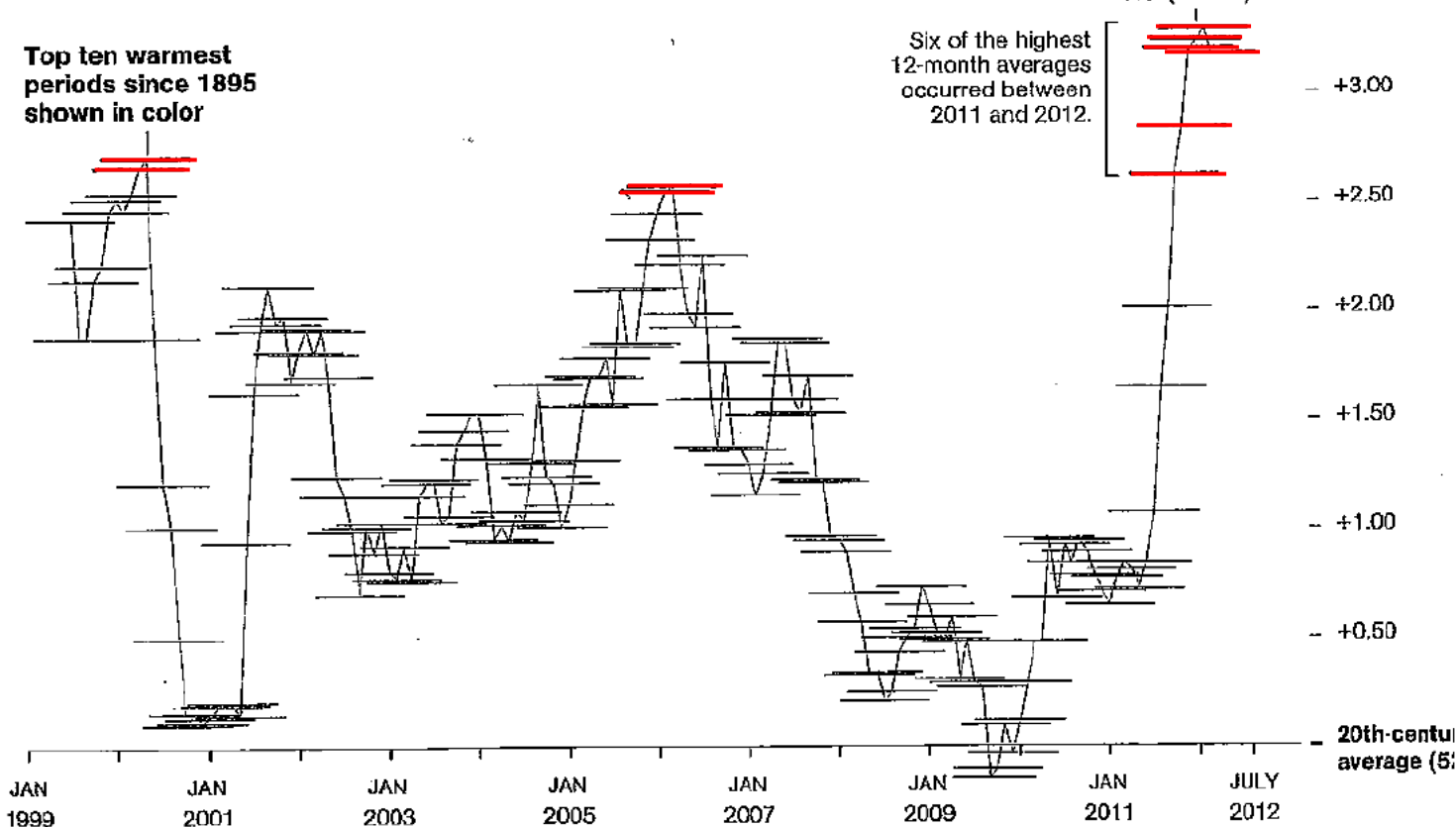
U.S. TEMPERATURES

Variation from 20th-century average of each 12-month period (bars below)

Top ten warmest periods since 1895 shown in color

WARMEST:
August 2011-July 2012
+3.3 (56.1°F)

Six of the highest 12-month averages occurred between 2011 and 2012.



Questions?

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