



# Weather Monitoring in Peel

Ontario Good Road Association  
Managing Winter Operations Workshop

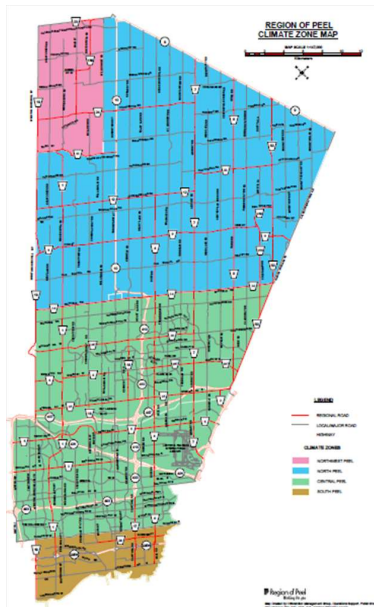
October 19, 2017

## Climate zones in Peel



➤ 4 Climate zones within Peel Region

➤ Average Snowfall 110 cm  
*Toronto International Airport 1970-2016*



## Weather Monitoring Tools

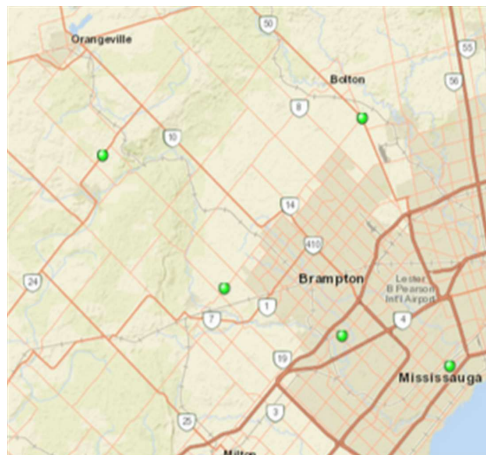
- RWIS –Real time data (road sensors & temperatures) and Cameras
- Daily forecasts
- Phone meteorologist 24/7/365 access
- Long range forecasts
- MTO RWIS data (Web portal)
- Road Patrol Observations
- Radio / TV reports



## RWIS Monitoring

### 5 RWIS stations

- North (2014)
- Central (2014)
- South (2014)
- East (2015)
- Queensway South (2017)



## Forecasts

- 4 times in winter months
- 2 times in summer

Weather is not only monitored in the winter; with more summer rain and wind storms, the forecast help staff prepare for anything that is coming



## Contract

- Share RWIS data with other RWIS owners and obtain data in return
- Sharing of data with other agencies at our discretion
- Pricing in contract for Area Municipalities to utilize, if they were to add infrastructure to their own roadways



## Partnerships



- MTO – RWIS Sharing Agreement
- Area Municipalities  
(Brampton/Mississauga/Caledon)
- Peel’s Road Operation and Maintenance yards
- Credit Valley Conservation Authority
- York Region



## Benefits of sharing RWIS Data

- MTO
  - Quick reference on Web portal of MTO RWIS data in and around Peel
  - Visually see weather moving towards and within the Region
- Area municipalities
  - Towers already in place
  - Same weather forecast
- Beyond the boundaries
  - Broader picture of the weather systems
  - Expand on information for operational decisions
- Forecaster of having access to more RWIS systems are:
  - More data points on the ground both for forecast input and forecast validation
  - Better coverage of the different microclimates in the region
  - Increase in the density of the overall RWIS network



## Possible Risk of Sharing

Risk is lower between municipalities but always best to have something that clearly delineates risk, in case something should arise ...even in the rarest of circumstances



 **Region  
of Peel**  
working with you

## Public Web Portal

The Region of Peel has a Public weather page, developed by AMEC Foster Wheeler

Users include:

- All modes of transportation
- Farming Community
- Local Airport
- Contractors

➤ <https://weather.amec.com/awx2/peel>



 **Region  
of Peel**  
working with you

# Public Weather Website

**Region of Peel**  
Working with you

Public Forecast for the Region of Peel  
Forecast for Peel Centre

Issued At: Thursday 14 September 2017 04:00 EDT  
Valid Until: Saturday 16 September 2017 00:00 EDT

**Winds and Gusts**

Date	Thu September 14, 2017	Fri September 15, 2017	Sat September 16, 2017
Time (EDT)	2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23
Temperature (C)	14, 14, 18, 18, 22, 25, 25, 22, 19, 17, 16, 18, 13, 20, 25, 22, 19, 18	18, 18, 18, 18, 22, 25, 25, 22, 19, 17, 16, 18, 13, 20, 25, 22, 19, 18	18, 18, 18, 18, 22, 25, 25, 22, 19, 17, 16, 18, 13, 20, 25, 22, 19, 18
Cloud Cover (%)	90, 100, 80, 70, 50, 30, 20, 10, 10, 30, 30, 40, 50, 50, 50, 50, 50	90, 100, 80, 70, 50, 30, 20, 10, 10, 30, 30, 40, 50, 50, 50, 50, 50	90, 100, 80, 70, 50, 30, 20, 10, 10, 30, 30, 40, 50, 50, 50, 50, 50
Wind Dir (true/from)	W, W, W, W, W, W, W, W, W, W, W, W, W, W, W, W	W, W, W, W, W, W, W, W, W, W, W, W, W, W, W, W	W, W, W, W, W, W, W, W, W, W, W, W, W, W, W, W
Wind Speed (km/h)	4, 4, 4, 4, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12	4, 4, 4, 4, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12	4, 4, 4, 4, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12
Gust Speed (km/h)	7, 7, 7, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12	7, 7, 7, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12	7, 7, 7, 7, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12
Rain	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Snow Accumulation (cm)	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Rain Accumulation (mm)	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Humidity (%)	95, 95, 83, 74, 67, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57	95, 95, 83, 74, 67, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57	95, 95, 83, 74, 67, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57, 57

**Outlook**

Date	Sat Sep 16	Sun September 17 2017	Mon September 18 2017	Tue September 19 2017	Wed 20
Time (EDT)	8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23	7, 10, 13, 16, 19, 22, 25, 2, 5, 8, 11, 14, 17, 20, 23, 2, 5, 8, 11, 14, 17, 20, 23
Temperature (C)	16, 20, 21, 17, 17, 19, 20, 21, 17, 15, 20, 20, 18, 18, 24, 21, 17, 15	16, 20, 21, 17, 17, 19, 20, 21, 17, 15, 20, 20, 18, 18, 24, 21, 17, 15	16, 20, 21, 17, 17, 19, 20, 21, 17, 15, 20, 20, 18, 18, 24, 21, 17, 15	16, 20, 21, 17, 17, 19, 20, 21, 17, 15, 20, 20, 18, 18, 24, 21, 17, 15	16, 20, 21, 17, 17, 19, 20, 21, 17, 15, 20, 20, 18, 18, 24, 21, 17, 15
Cloud Cover (%)	20, 40, 2, 20, 25, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	20, 40, 2, 20, 25, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	20, 40, 2, 20, 25, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	20, 40, 2, 20, 25, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	20, 40, 2, 20, 25, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20
Wind Dir (true/from)	W, S, S, S, N, S, S, S, S, S, S, S, S, S, S, S	W, S, S, S, N, S, S, S, S, S, S, S, S, S, S, S	W, S, S, S, N, S, S, S, S, S, S, S, S, S, S, S	W, S, S, S, N, S, S, S, S, S, S, S, S, S, S, S	W, S, S, S, N, S, S, S, S, S, S, S, S, S, S, S
Wind Speed (km/h)	4, 7, 7, 4, 2, 7, 7, 9, 8, 7, 4, 9, 13, 8, 9, 9	4, 7, 7, 4, 2, 7, 7, 9, 8, 7, 4, 9, 13, 8, 9, 9	4, 7, 7, 4, 2, 7, 7, 9, 8, 7, 4, 9, 13, 8, 9, 9	4, 7, 7, 4, 2, 7, 7, 9, 8, 7, 4, 9, 13, 8, 9, 9	4, 7, 7, 4, 2, 7, 7, 9, 8, 7, 4, 9, 13, 8, 9, 9
Gust Speed (km/h)	7, 12, 12, 7, 3, 12, 12, 5, 9, 14, 12, 7, 18, 21, 8, 9, 9	7, 12, 12, 7, 3, 12, 12, 5, 9, 14, 12, 7, 18, 21, 8, 9, 9	7, 12, 12, 7, 3, 12, 12, 5, 9, 14, 12, 7, 18, 21, 8, 9, 9	7, 12, 12, 7, 3, 12, 12, 5, 9, 14, 12, 7, 18, 21, 8, 9, 9	7, 12, 12, 7, 3, 12, 12, 5, 9, 14, 12, 7, 18, 21, 8, 9, 9
Rain	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Shower	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0

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## Future Vision

- RWIS equipment installed without the tower
- Non invasive RWIS equipment
- RWIS equipment on bridges with digital messaging
- MARWIS on vehicles
- Winter Maintenance Decision Support System (MDSS)



**Thank you**

**Eleanor Gillon**  
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