

Public Health Information Management System (PHIMS)

16-October-2014

P. Belanger

Presenter Disclosure

- Presenter: Paul Belanger
- No relationship with commercial interests
- An employee of KFL&A Public Health
- Potential conflict of interest for P. Belanger:
None

Agenda

- Rationale/Value Proposition
- Modules
 - Overview
 - Focus on Environmental Health
- Challenges
- Vision for PHIMS v2

Rationale

- Initially designed for KFL&A's senior management team for enhanced SA/DS
- Relatively rich programme databases whose value could be unlocked through georeferencing
- Disparate data, no synoptic view → integrated dashboard with data fusion/overlay opportunities
- Weak analytics → real-time data w/ tabulations, reporting, statistical graphics, and geovisualization
- Doesn't lend itself to reporting obligations, surveillance, situational awareness, and M&E

Modules (1)

- TIS – Tobacco Information System
- Inspections and Public Disclosures
- Standard Services (Tap into Kingston, Cool Down Centres, Warm Up Centres, Mass Immunization Sites, *etc.*)
- Operational Planning and Territory/Routing Optimization
- Emergency Management
- Public Health Alerting w/ an interface to MASAS
- Identification of Vulnerable Populations
- ...and others...

Modules (2)

- Air Quality (both AQI and AQHI sensors)
- Env. Canada Weather Stations
- US National Weather Service
- Env. Canada Hydrometric Stations
- MNR Forest Fires
- Eastern Ontario Environmental Heat Monitoring Sensor (EHMS) Network

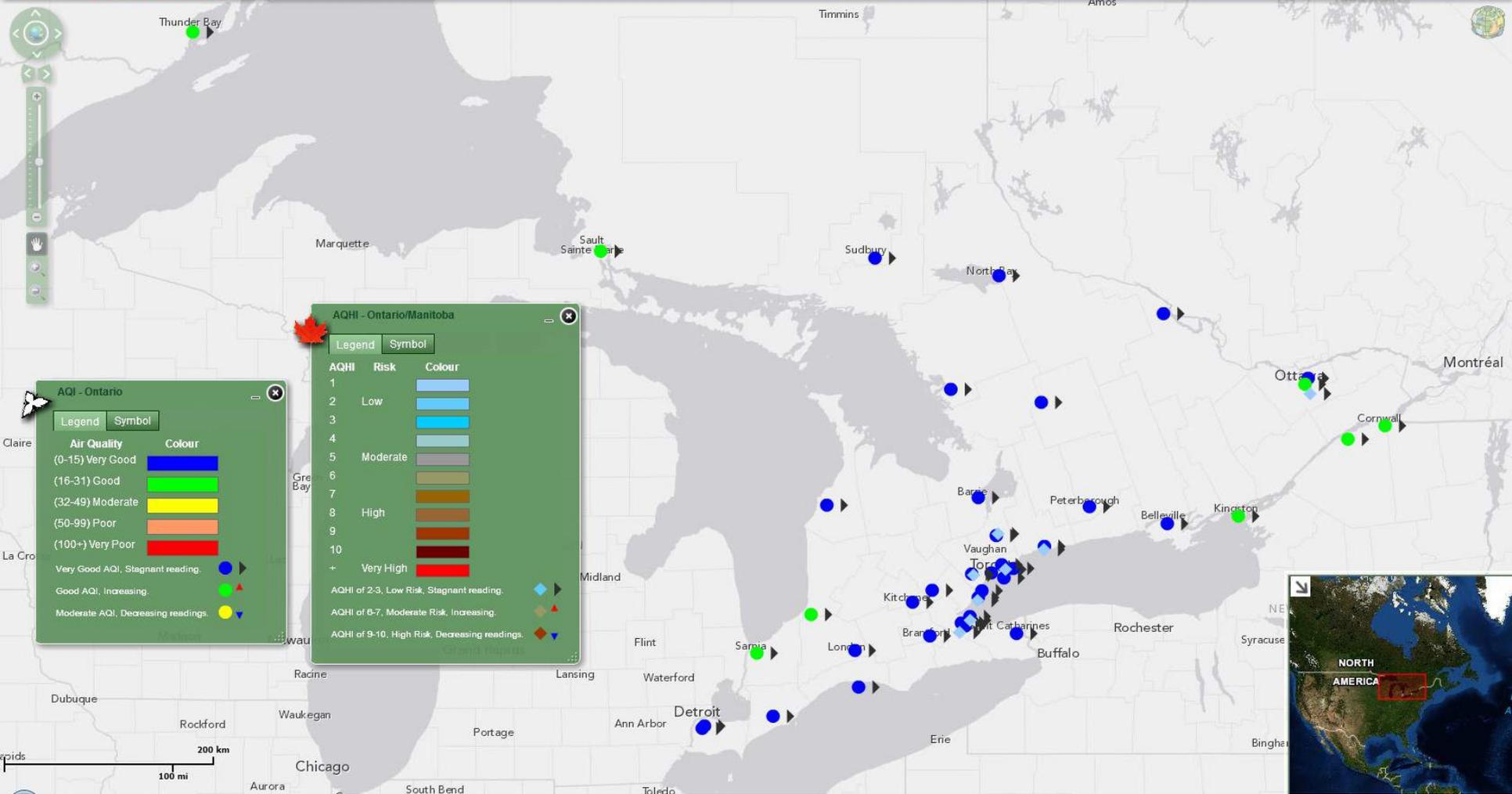
Demo

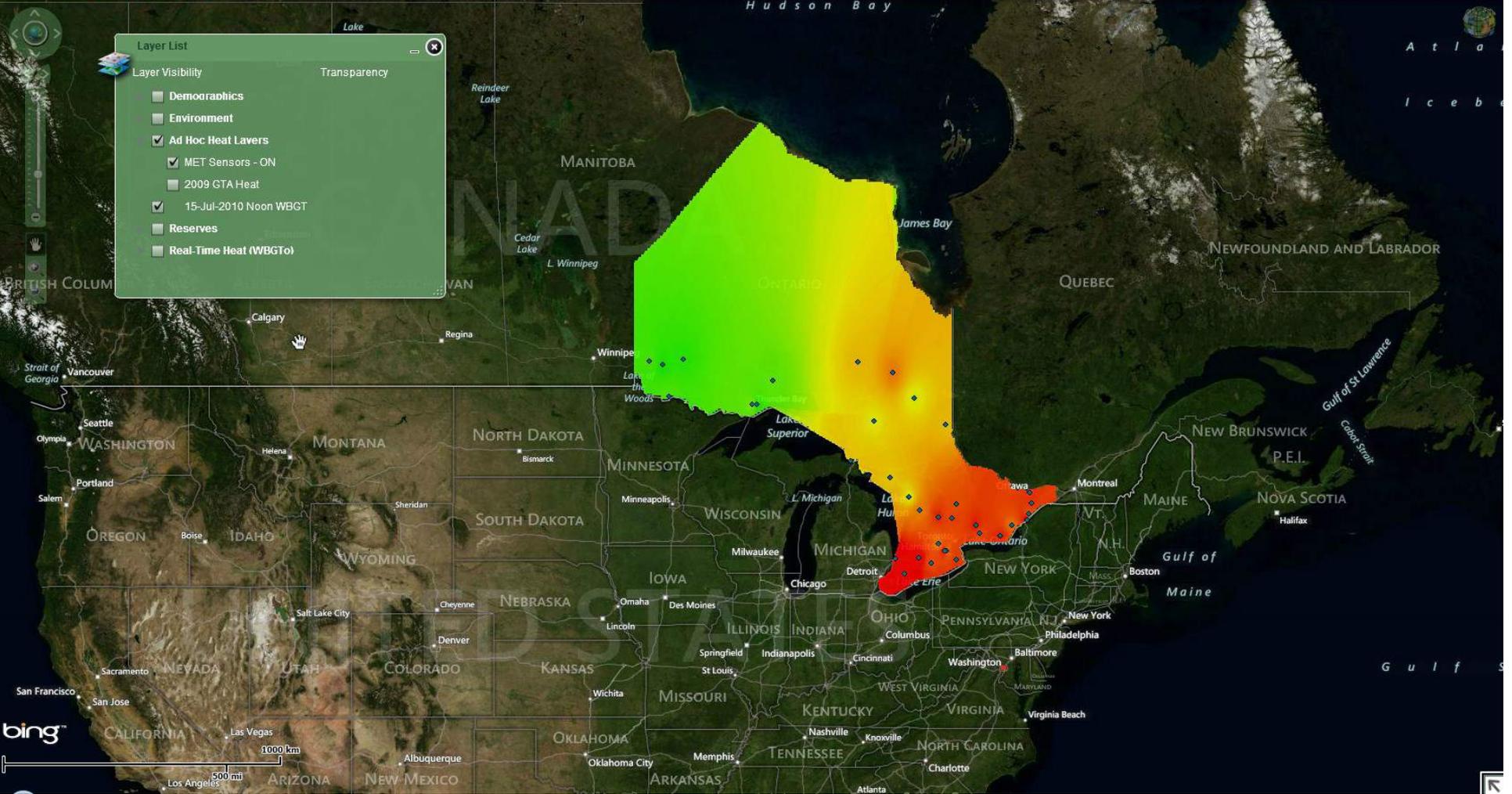
PHIMS Authentication

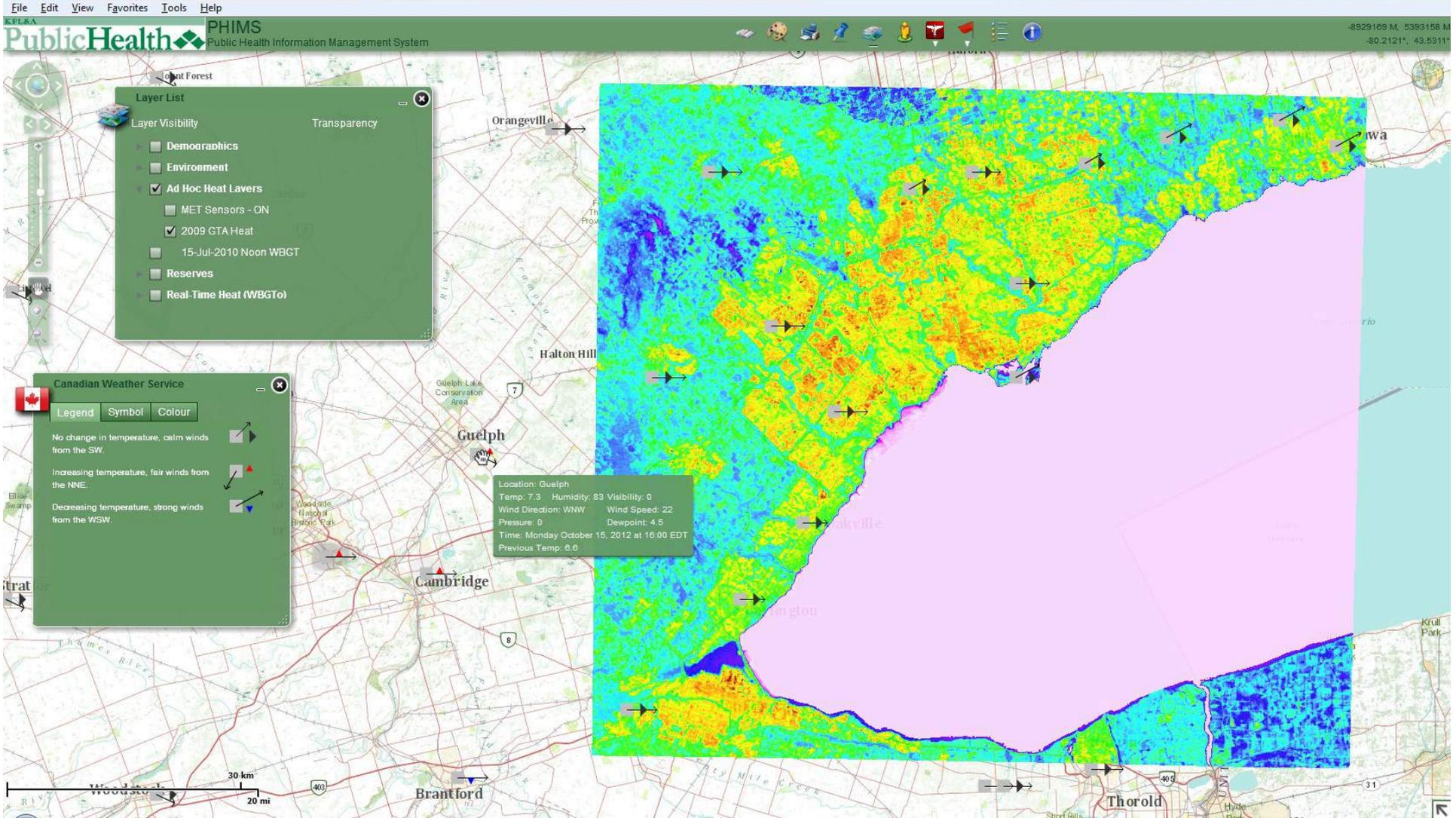
KFL&A
PublicHealth ♦♦

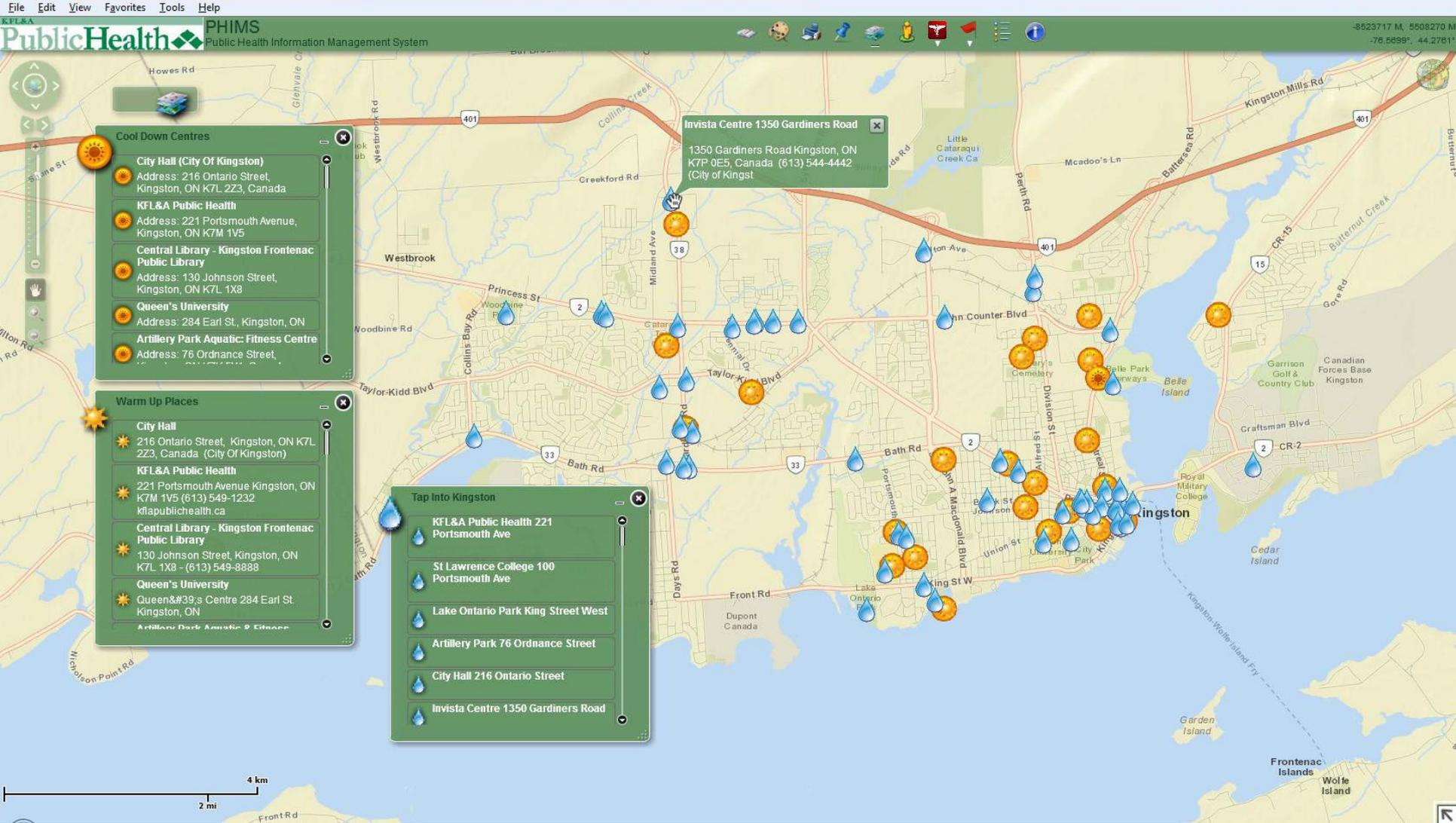
UserID

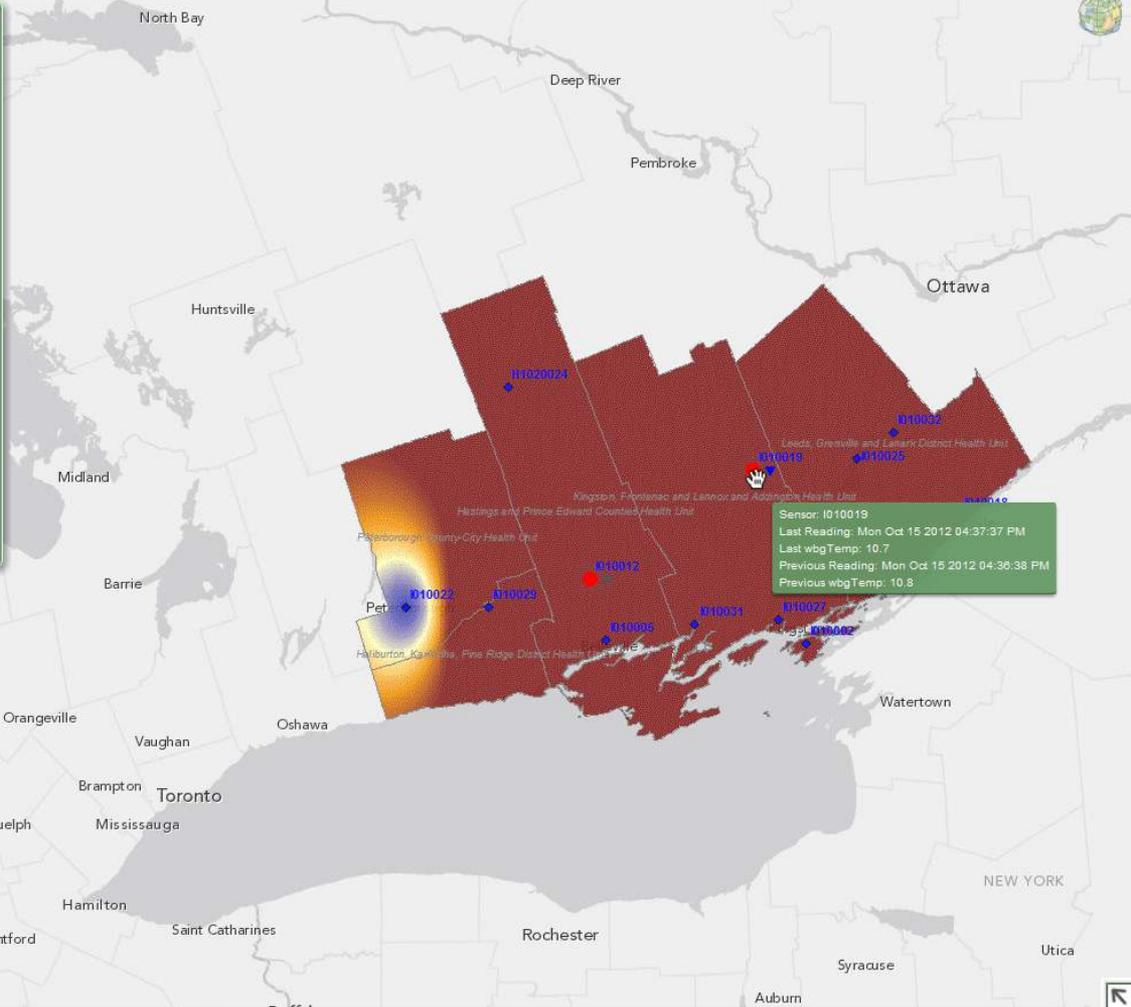
Password











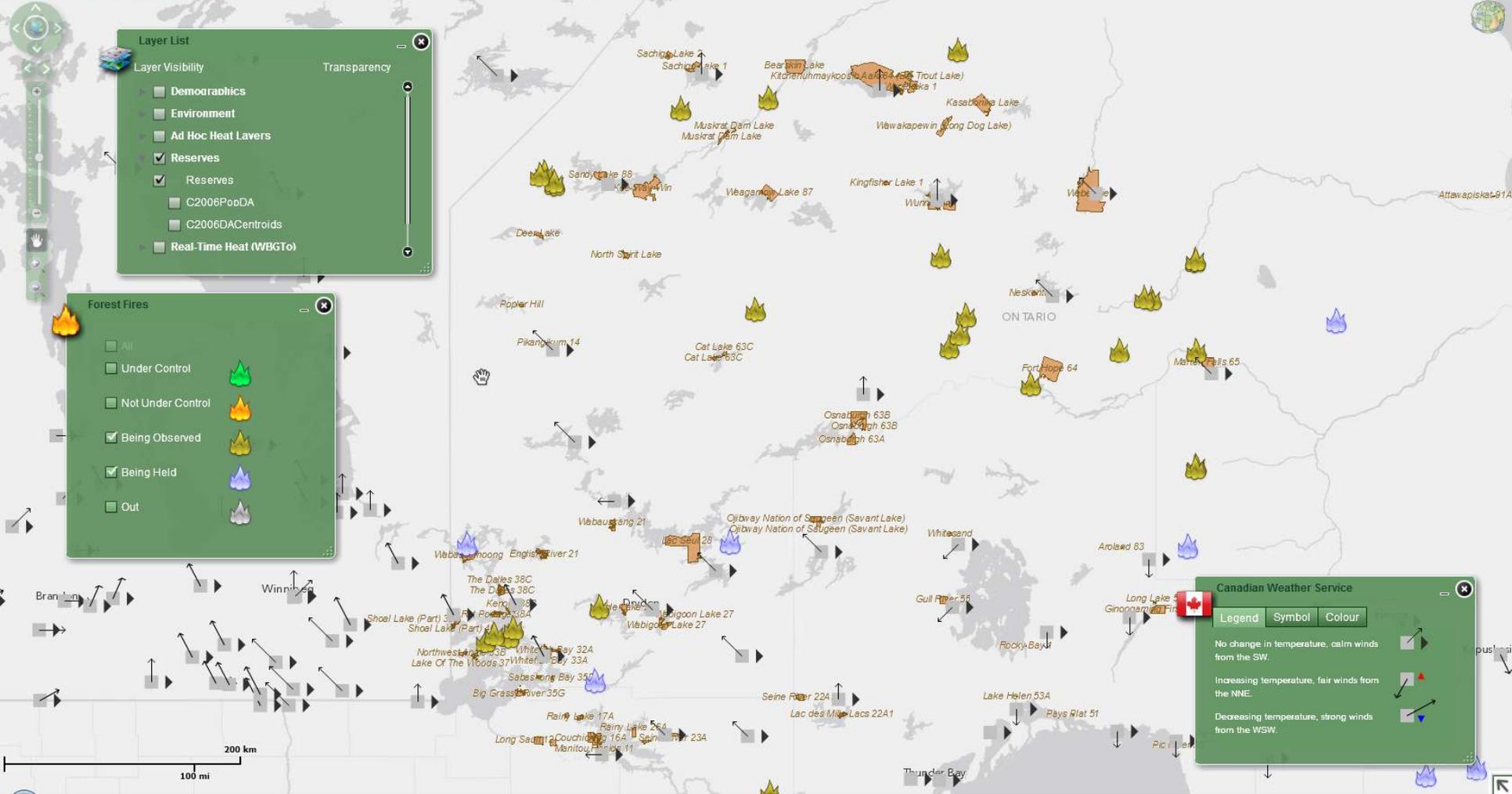
Sensor: I010019
Last Reading: Mon Oct 15 2012 04:37:37 PM
Last wbgT Temp: 10.7
Previous Reading: Mon Oct 15 2012 04:36:38 PM
Previous wbgT Temp: 10.8

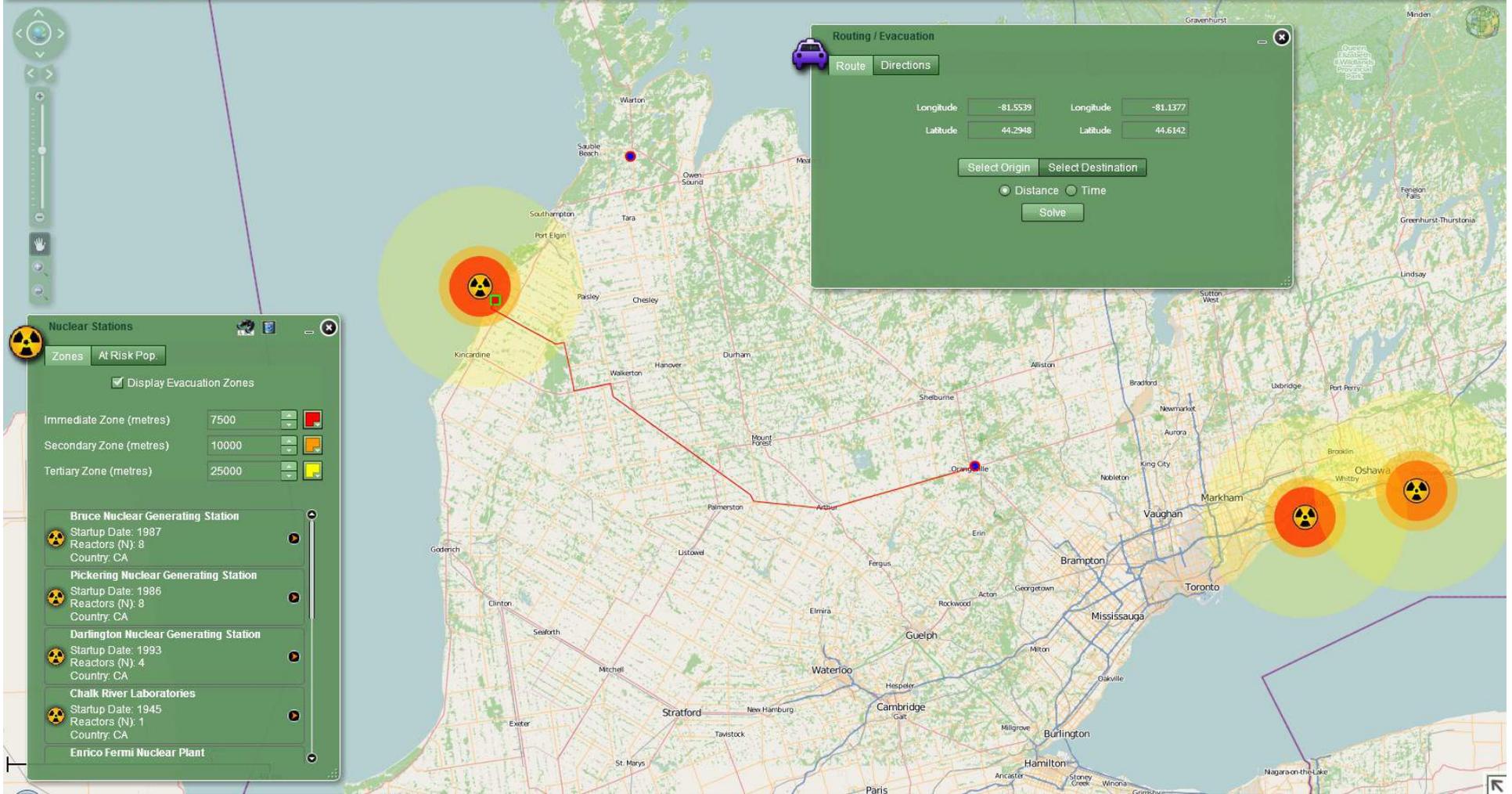
Layer List

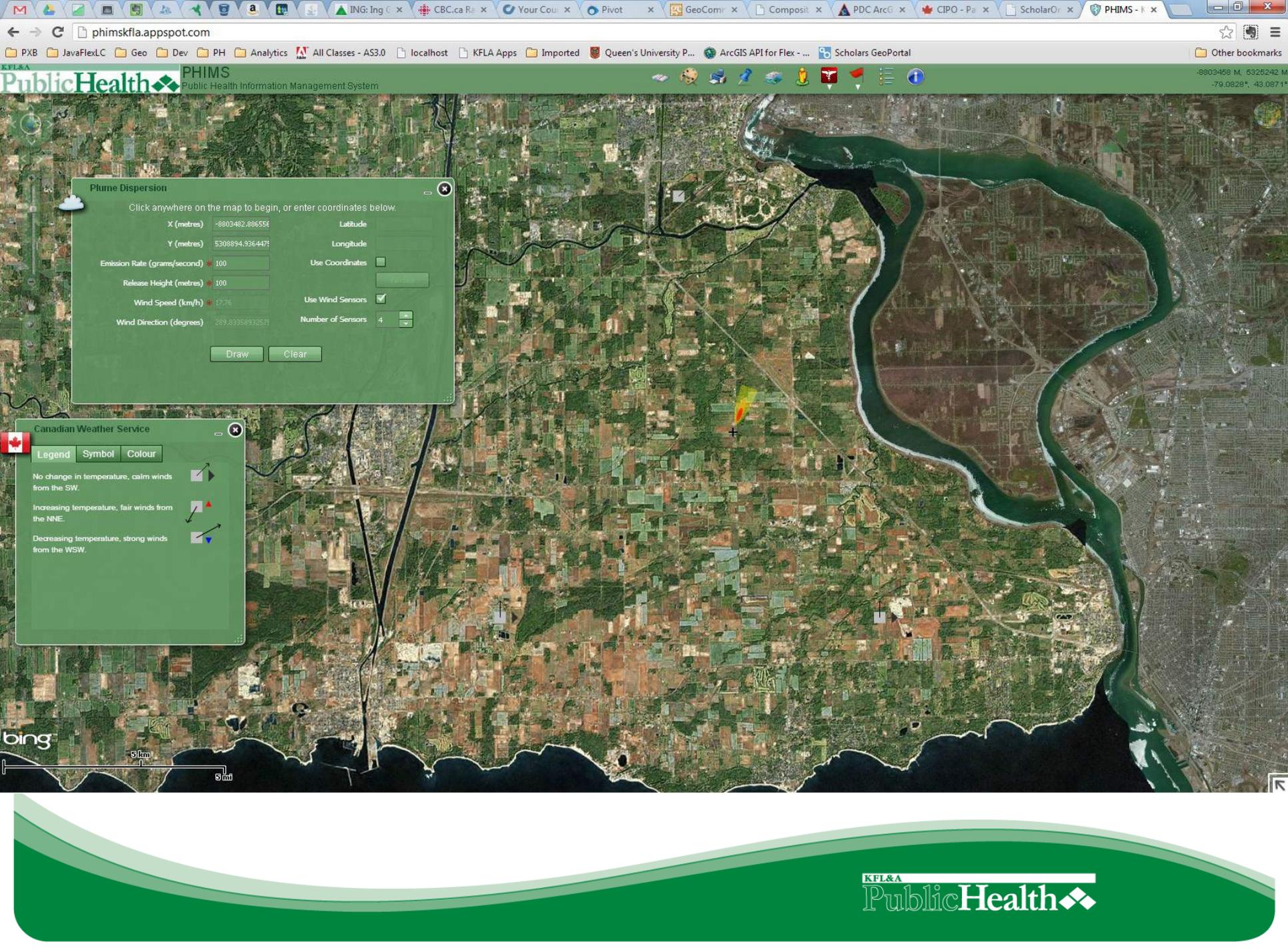
Layer Visibility Transparency

- Demographics
- Environment
- Ad Hoc Heat Layers
- Reserves
- Real-Time Heat (WBGTo)









Plume Dispersion

Click anywhere on the map to begin, or enter coordinates below.

X (metres) -8803482.886558

Latitude

Y (metres) 5308894.336447

Longitude

Emission Rate (grams/second) 100

Use Coordinates

Release Height (metres) 100

Wind Speed (km/h) 17.74

Use Wind Sensors

Wind Direction (degrees) 289.83358932571

Number of Sensors 4

Draw

Clear

Canadian Weather Service

Legend Symbol Colour

No change in temperature, calm winds from the SW.

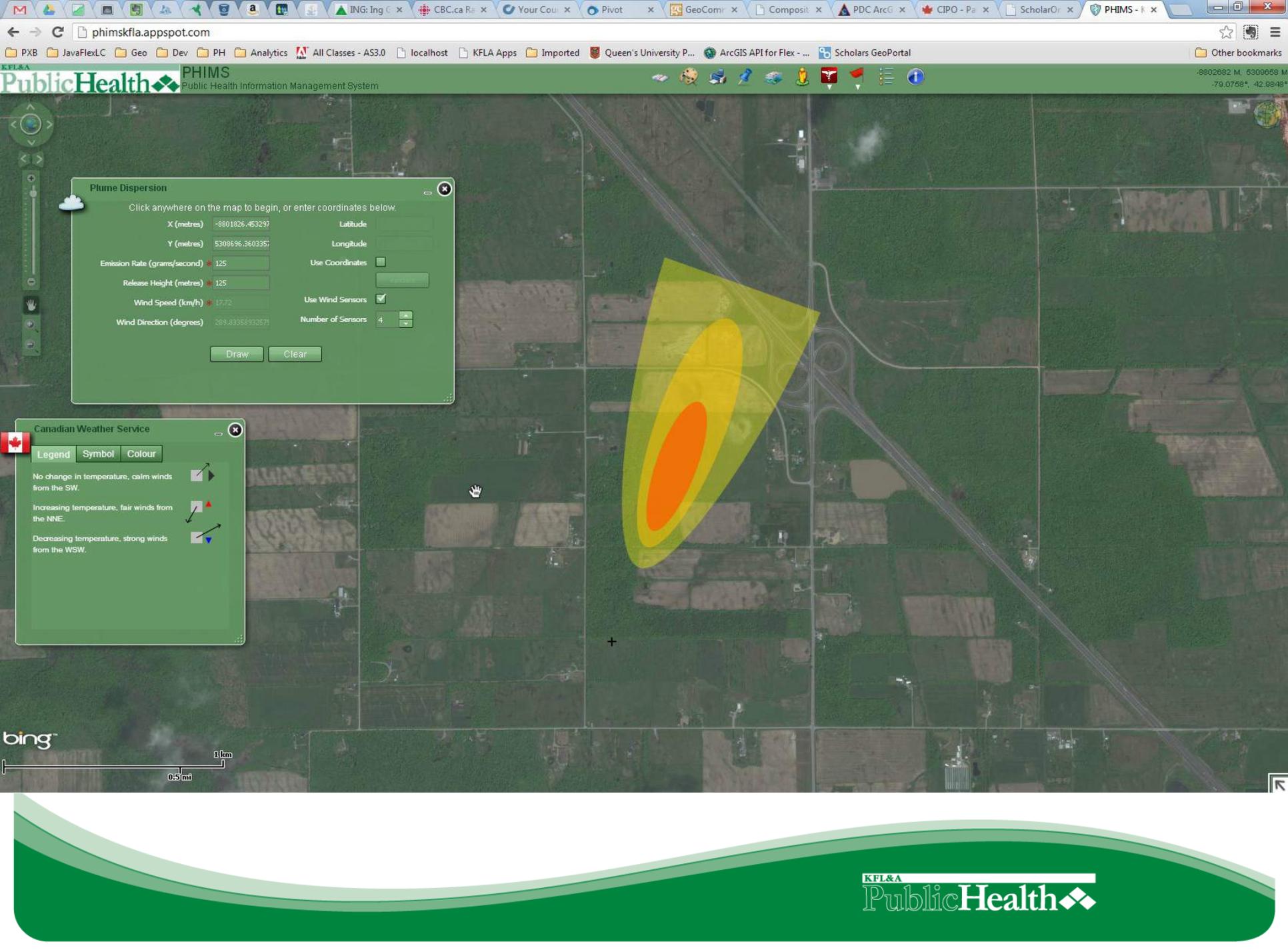


Increasing temperature, fair winds from the NNE.



Decreasing temperature, strong winds from the WSW.





Plume Dispersion

Click anywhere on the map to begin, or enter coordinates below.

X (metres)	-8801826.453297	Latitude	
Y (metres)	5308696.3603357	Longitude	
Emission Rate (grams/second)	125	Use Coordinates	<input type="checkbox"/>
Release Height (metres)	125	Use Wind Sensors	<input checked="" type="checkbox"/>
Wind Speed (km/h)	17.72	Number of Sensors	4
Wind Direction (degrees)	289.833589933571		

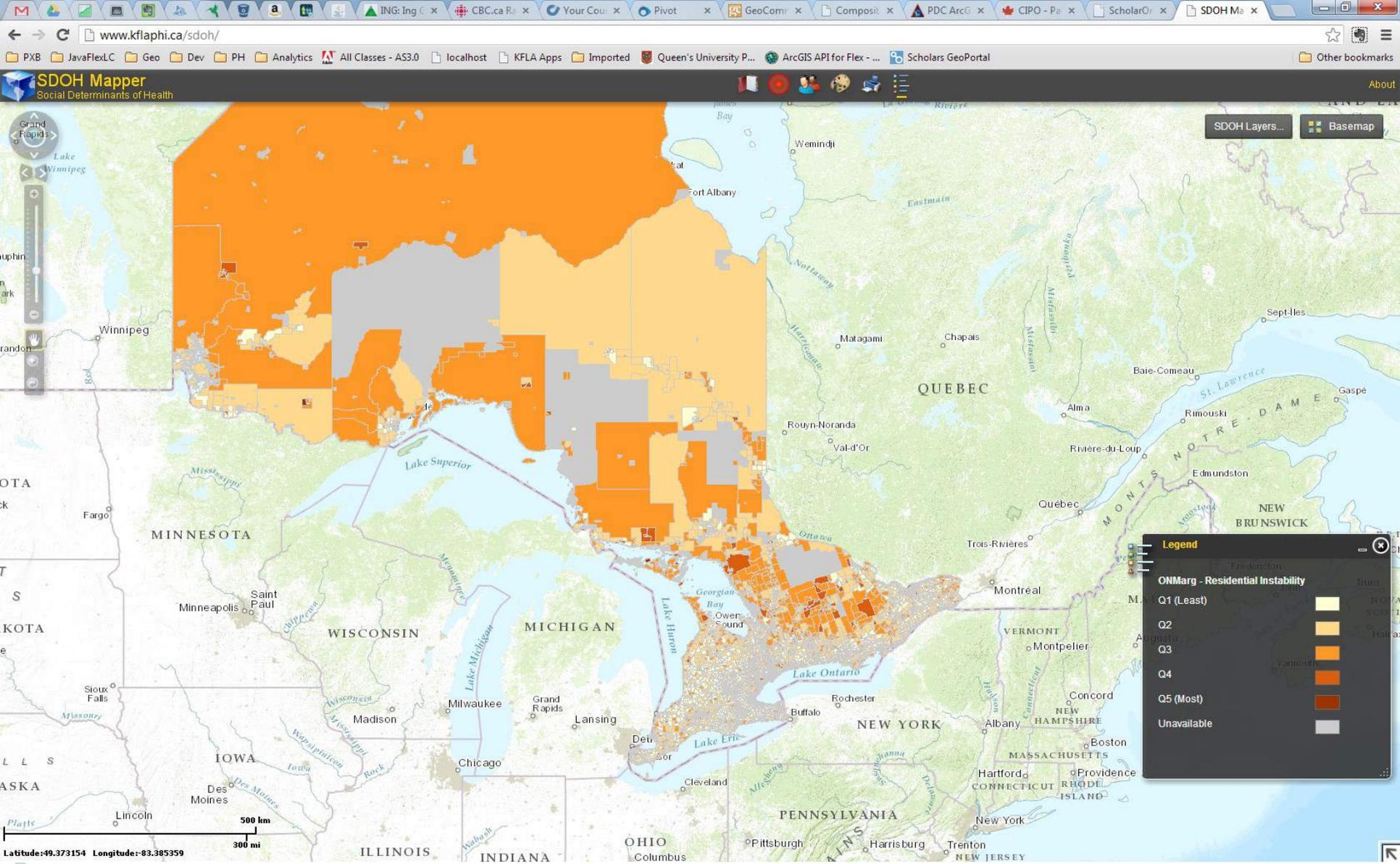
Canadian Weather Service

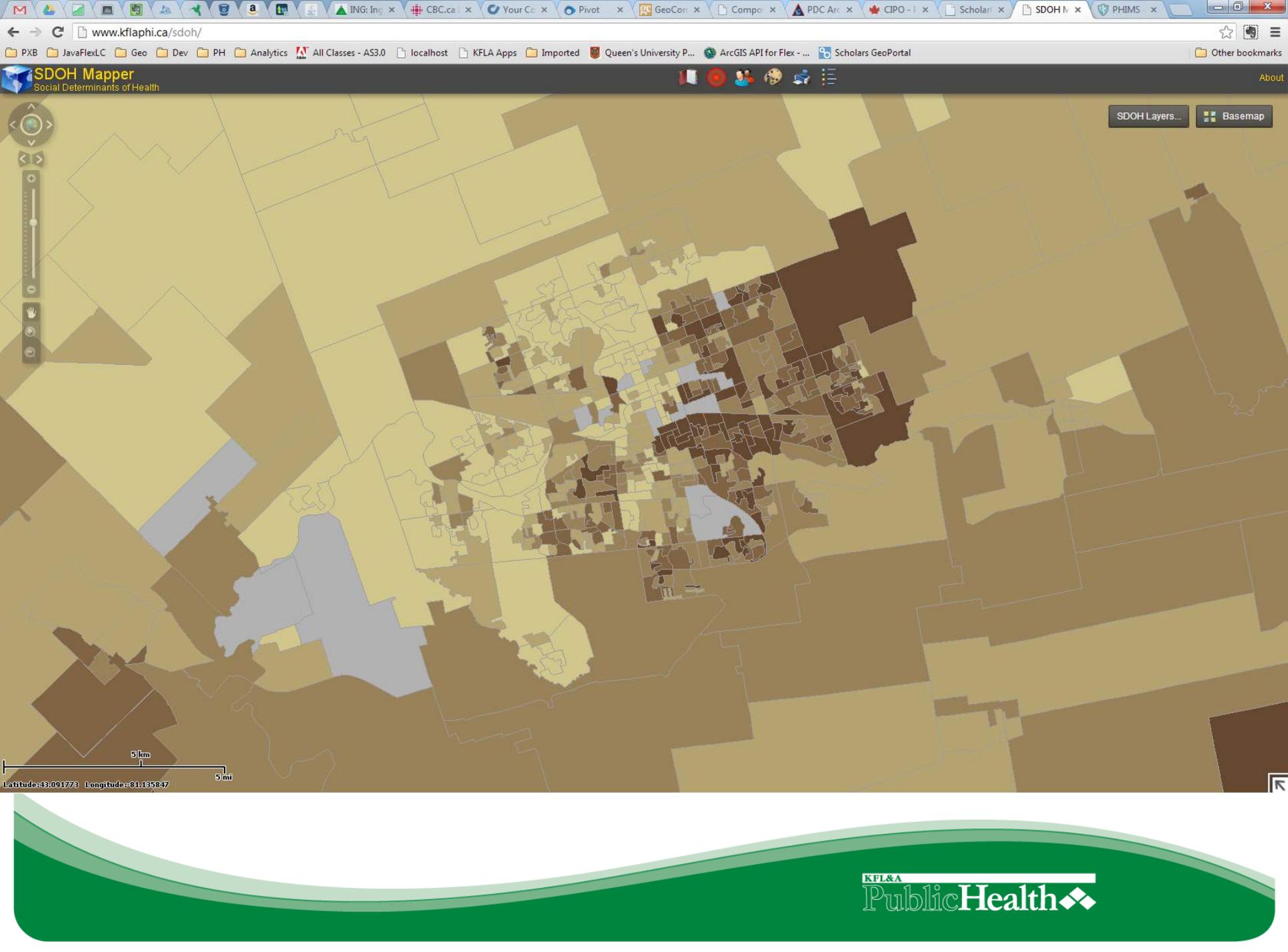
Legend | Symbol | Colour

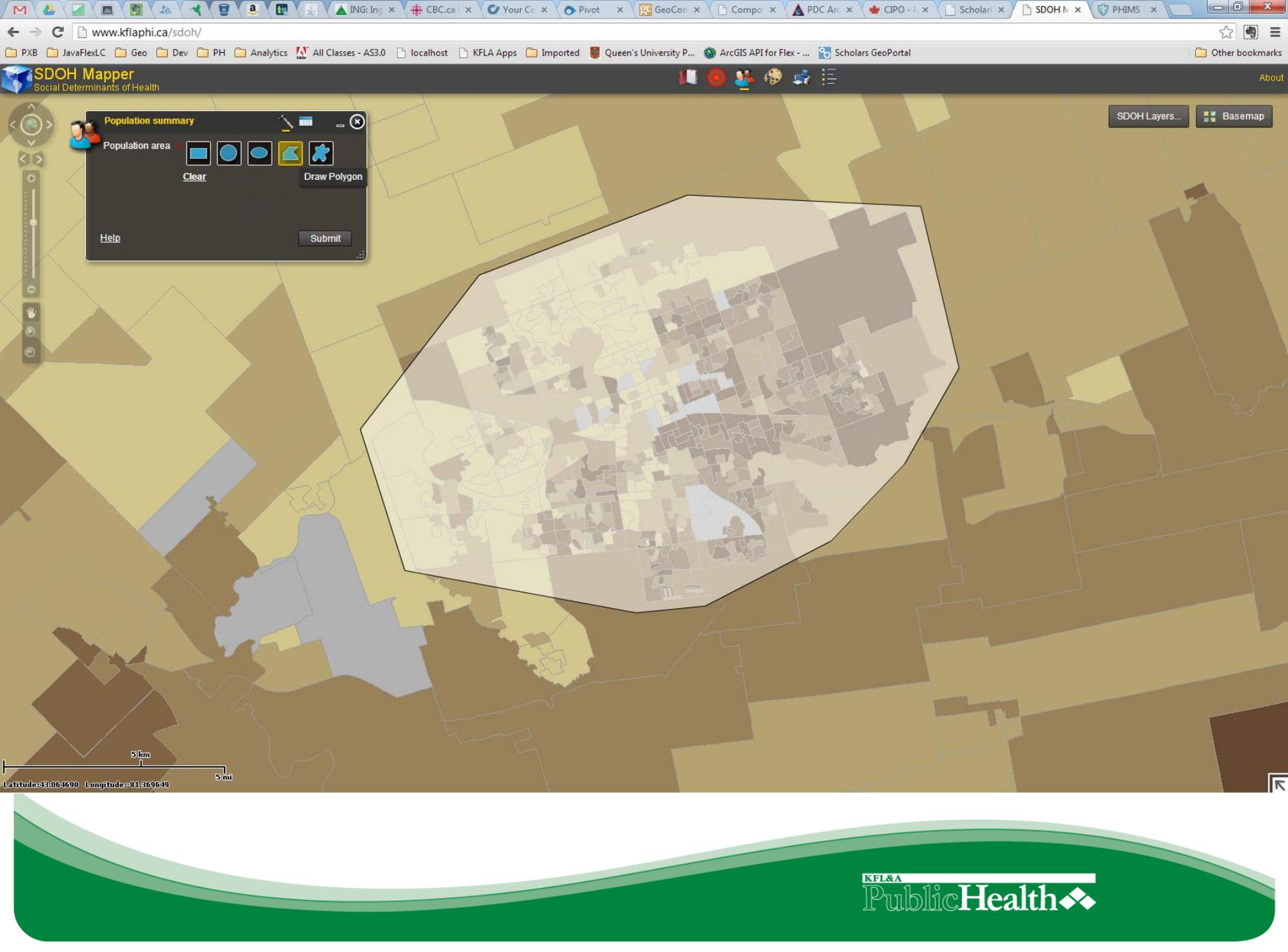
- No change in temperature, calm winds from the SW.
- Increasing temperature, fair winds from the NNE.
- Decreasing temperature, strong winds from the WSW.



Social Determinants of Health (SDOH) Mapper

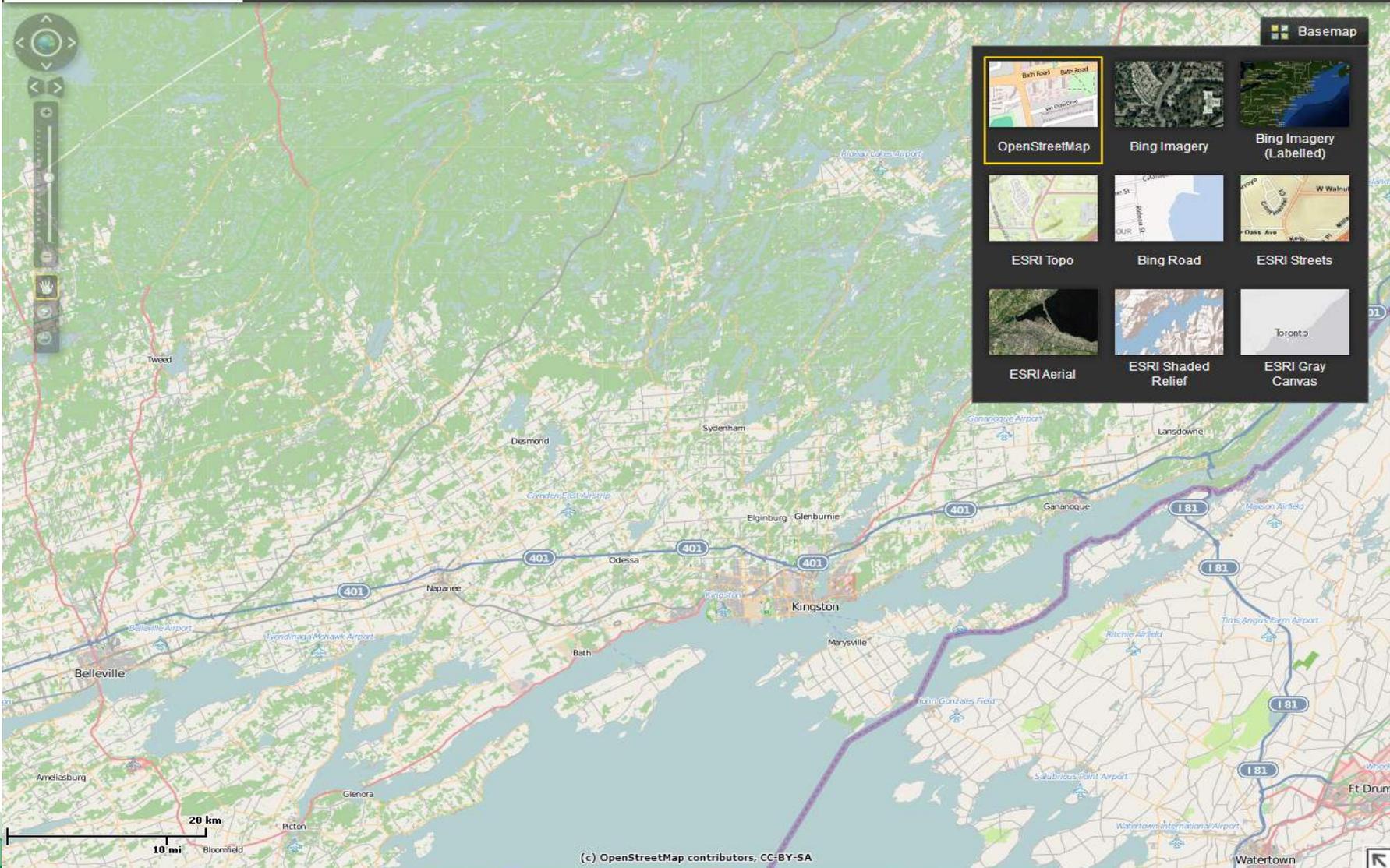


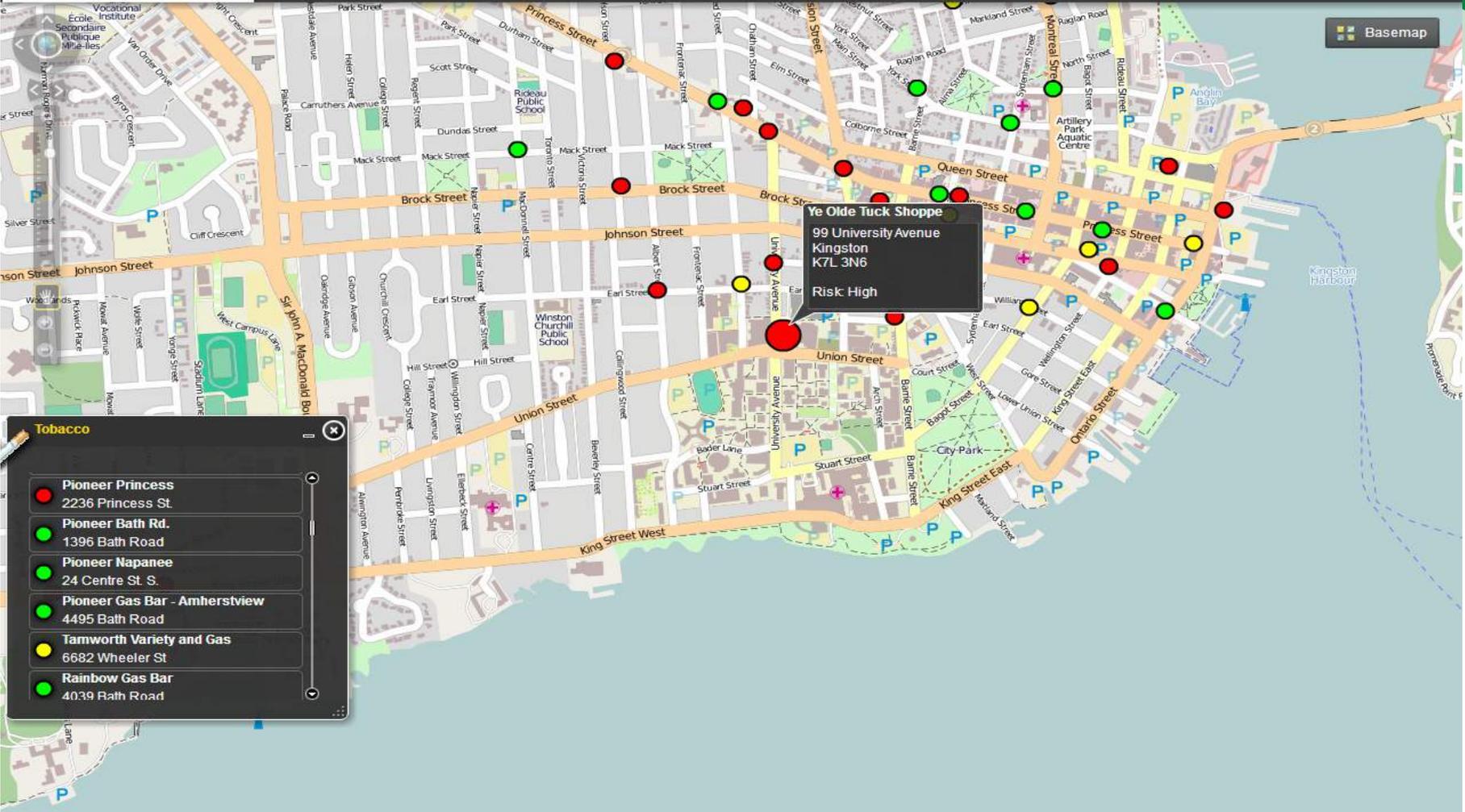






5 km
5 mi
Latitude: 43.015759 Longitude: -81.499082

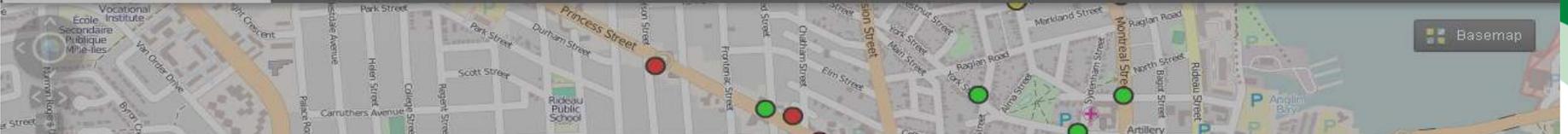




- Tobacco**
- **Pioneer Princess**
2236 Princess St
 - **Pioneer Bath Rd.**
1396 Bath Road
 - **Pioneer Napanee**
24 Centre St. S.
 - **Pioneer Gas Bar - Amherstview**
4495 Bath Road
 - **Tamworth Variety and Gas**
6682 Wheeler St
 - **Rainbow Gas Bar**
4039 Bath Road

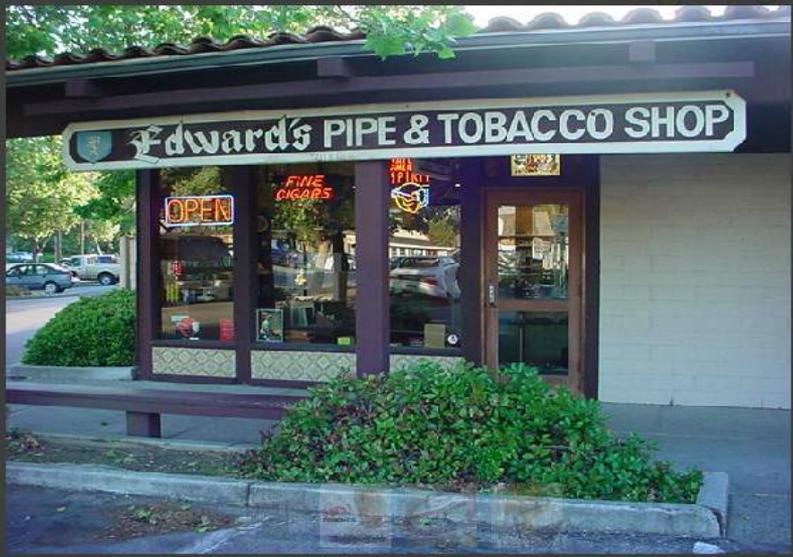
0.5 km
0.5 mi

(c) OpenStreetMap contributors, CC-BY-SA



Ye Olde Tuck Shoppe

- Overview
- Premises Maintenance
- Summary Statistics
- Inspection History
- Tab #5



Ye Olde Tuck Shoppe
 99 University Avenue
 Kingston K7L 3N6
 Phone: 613-384-7434

- Tobacco**
- **Pioneer Princess**
2236 Princess St.
 - **Pioneer Bath Rd.**
1396 Bath Road
 - **Pioneer Napanee**
24 Centre St. S.
 - **Pioneer Gas Bar - Amherstview**
4495 Bath Road
 - **Tarnworth Variety and Gas**
6682 Wheeler St
 - **Rainbow Gas Bar**
4039 Bath Road

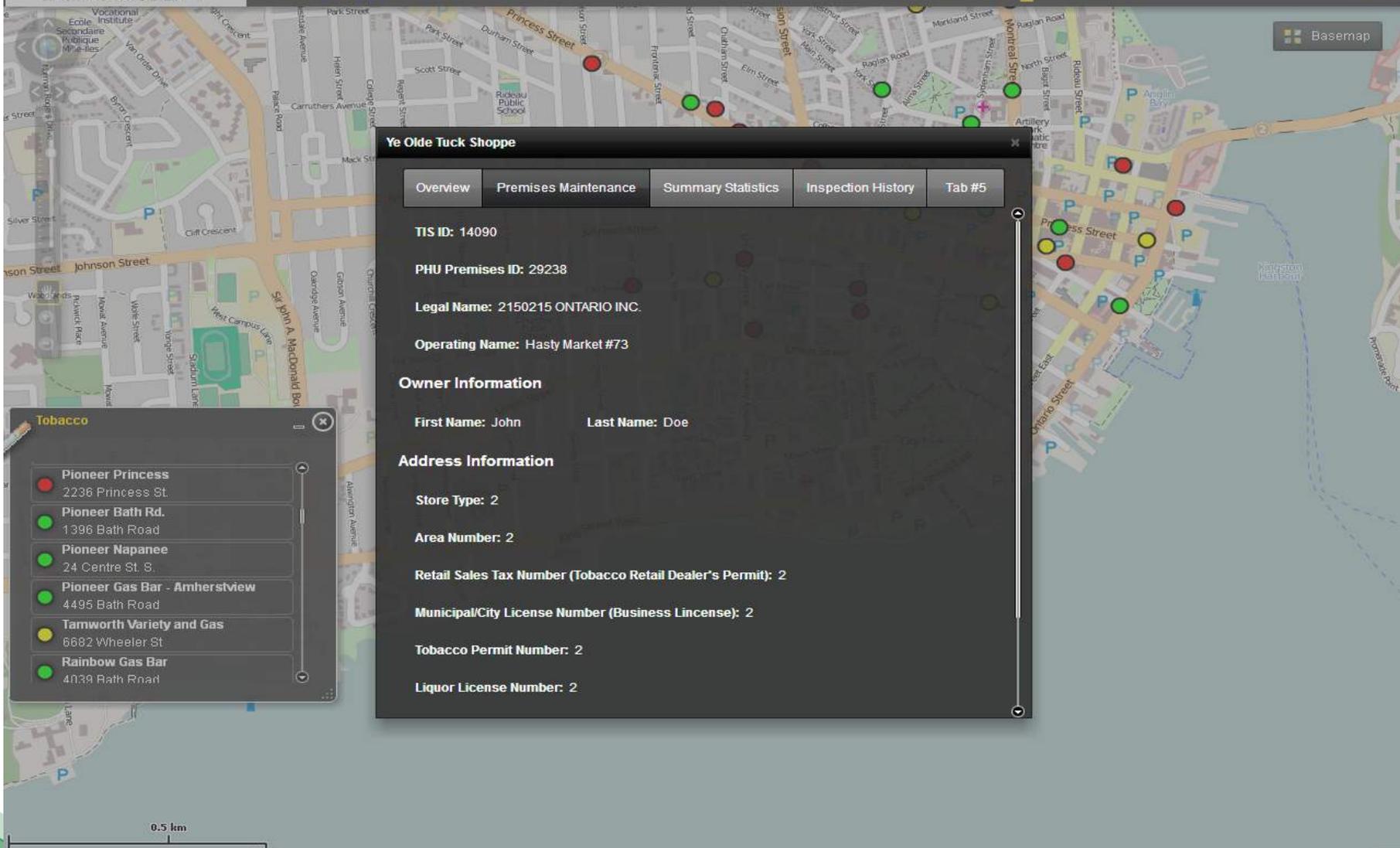
0.5 km

0.5 mi

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12:48 PM
05/04/2013



Ye Olde Tuck Shoppe

Overview Premises Maintenance Summary Statistics Inspection History Tab #5

TIS ID: 14090

PHU Premises ID: 29238

Legal Name: 2150215 ONTARIO INC.

Operating Name: Hasty Market #73

Owner Information

First Name: John Last Name: Doe

Address Information

Store Type: 2

Area Number: 2

Retail Sales Tax Number (Tobacco Retail Dealer's Permit): 2

Municipal/City License Number (Business License): 2

Tobacco Permit Number: 2

Liquor License Number: 2

Tobacco

- **Pioneer Princess**
2236 Princess St.
- **Pioneer Bath Rd.**
1396 Bath Road
- **Pioneer Napanee**
24 Centre St. S.
- **Pioneer Gas Bar - Amherstview**
4495 Bath Road
- **Tamworth Variety and Gas**
6682 Wheeler St
- **Rainbow Gas Bar**
4039 Bath Road

0.5 km
0.5 mi

(c) OpenStreetMap contributors, CC-BY-SA



Expansion of PHIMS

- New data feeds:
 - PM2.5 smoke forecasting (Bluesky and Firework)
 - EC real-time hydrometric data (stream gauges)
 - Satellite imagery
 - Expansion of WBGTo monitoring network
 - Explore conveying new EC-issued warnings (WARP)
 - Met stations in the Games area, including RT/NRT UV sensors
 - For visualizing custom EC predictive products
- New analytics:
 - Population-level impact potentials
 - RT ED monitoring of respiratory and heat-related visits
 - Development of a new 'trauma' (accident/injury) syndrome
 - Tablet and smartphone friendly
- Offer an API for third-party apps/developers
- Ability to overlay your own GIS layers

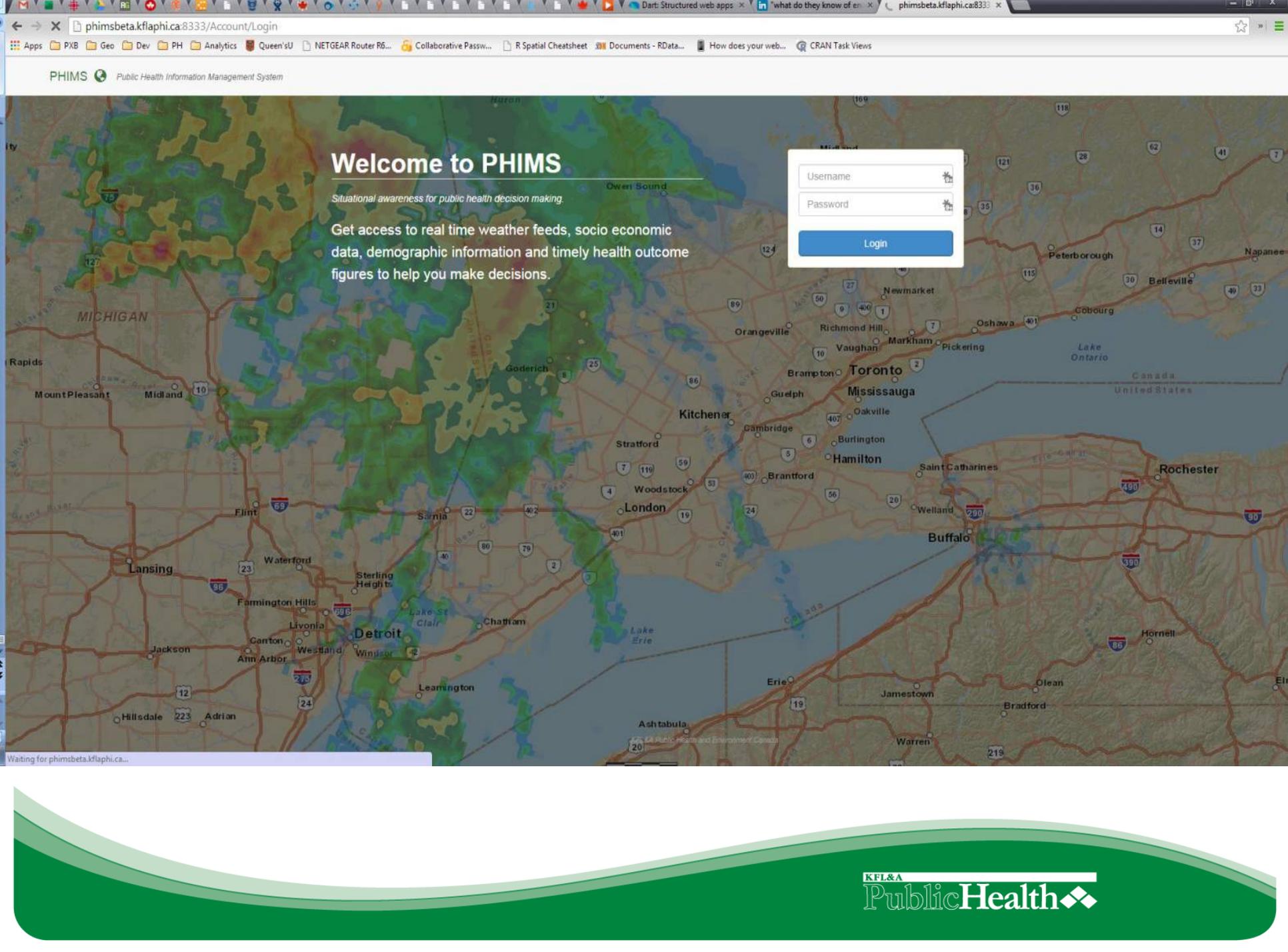
Challenges

- Application proliferation requiring consolidation and standardization
 - TIS
 - PHIMS
 - SDOH Mapper
 - ILI Mapper
 - ACES
 - Inspections Disclosure
 - Walking School Bus
 - Shade Analyzer
 - etc.
- Not mobile friendly
- Too dependent on KFL&A infrastructure
- Migrate from Flex/ActionScript APIs to JavaScript APIs
- Poor metadata and not integrated with our metadata server
- Data (esp. public domain) not exposed as web services for third-party consumption

PHIMS v2

- Re-engineered as a portal with SSO:

Public	Public Health Partners	KFL&A Operational
Environmental Monitoring	ACES	TIS
Inspection Disclosures	Opiates	Shade Analyzer
Infection Watch Live	Occupational Health	WSB
Social Determinants of Health	Acute Care Heavy User Detection	Media Buys (radio, billboards, postal walks, etc.)
Geoservices	-	Performance/Indicator Monitoring
-	-	Territory Optimizer



Welcome to PHIMS

Situational awareness for public health decision making.

Get access to real time weather feeds, socio economic data, demographic information and timely health outcome figures to help you make decisions.

Waiting for phimsbeta.kflaphi.ca...

phimsbeta.kflaphi.ca:8333/index

PHIMS Public Health Information Management System

Search Address

Show Menu

Alerts

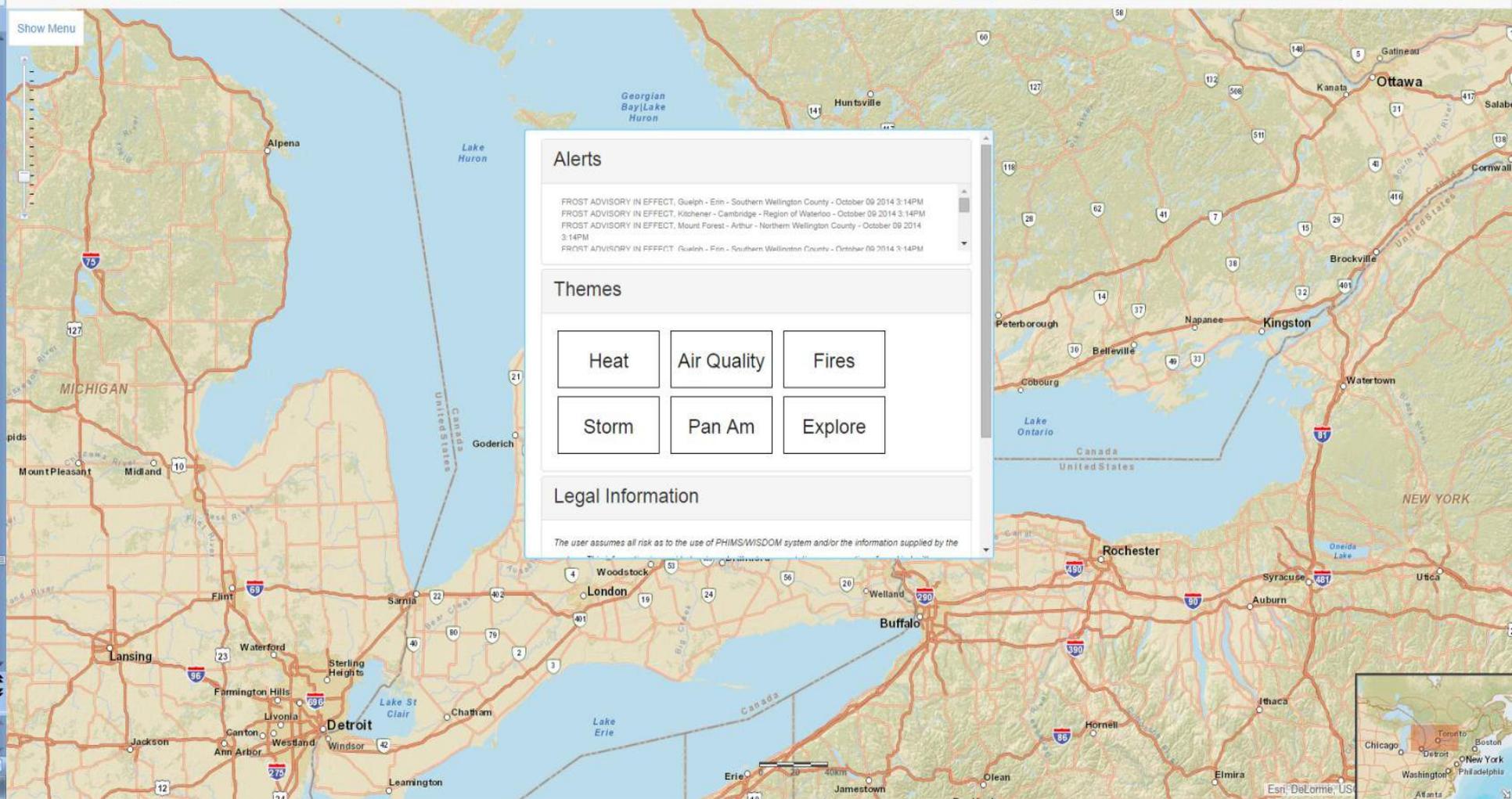
- FROST ADVISORY IN EFFECT, Guelph - Erin - Southern Wellington County - October 09 2014 3:14PM
- FROST ADVISORY IN EFFECT, Kitchener - Cambridge - Region of Waterloo - October 09 2014 3:14PM
- FROST ADVISORY IN EFFECT, Mount Forest - Arthur - Northern Wellington County - October 09 2014 3:14PM
- FROST ADVISORY IN EFFECT, Guelph - Erin - Southern Wellington County - October 09 2014 3:14PM

Themes

Heat	Air Quality	Fires
Storm	Pan Am	Explore

Legal Information

The user assumes all risk as to the use of PHIMS/WISDOM system and/or the information supplied by the



PHIMS Public Health Information Management System

Search Address: []

Data Tools Legend

Available Add File

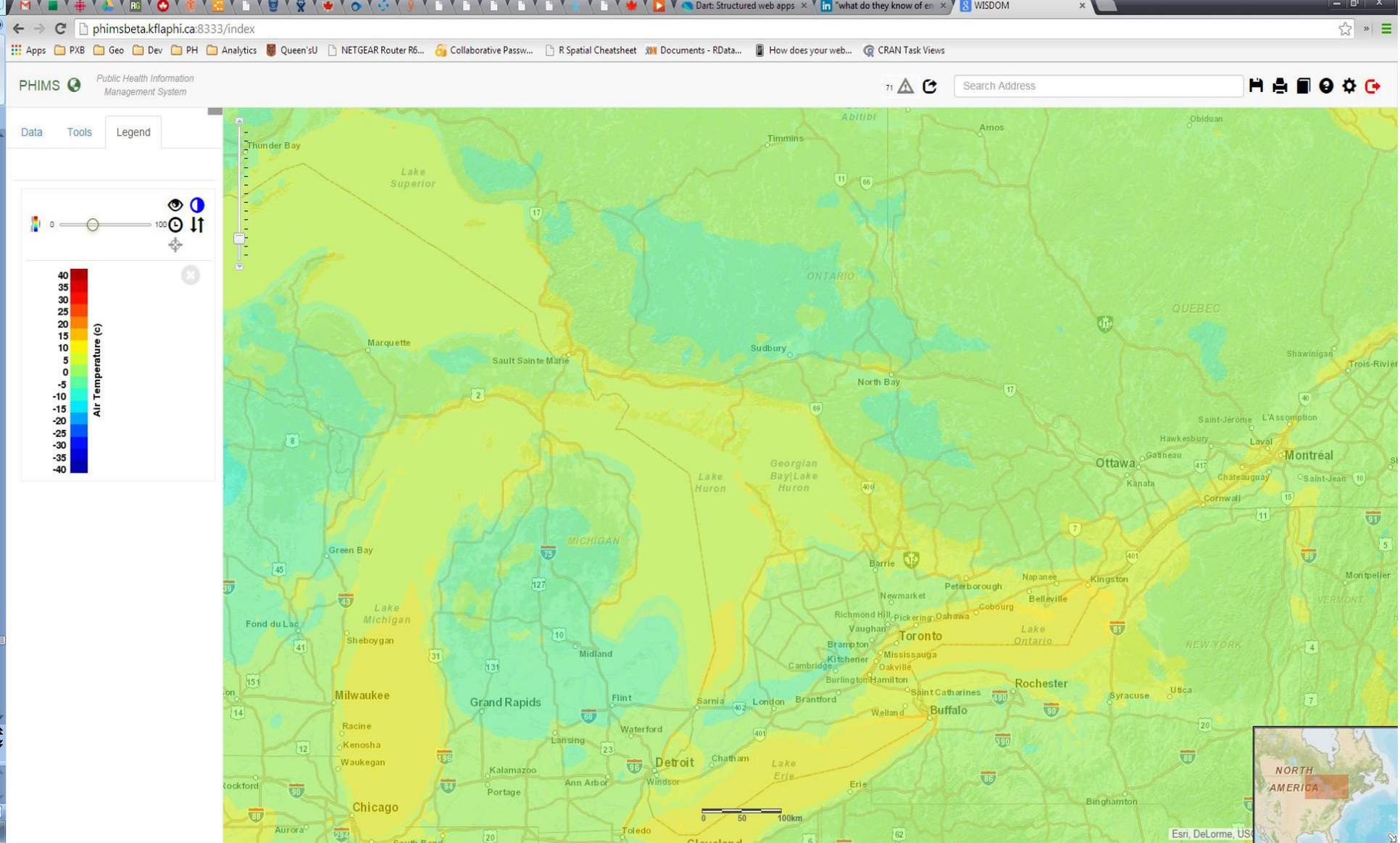
*Denotes Experimental Layers

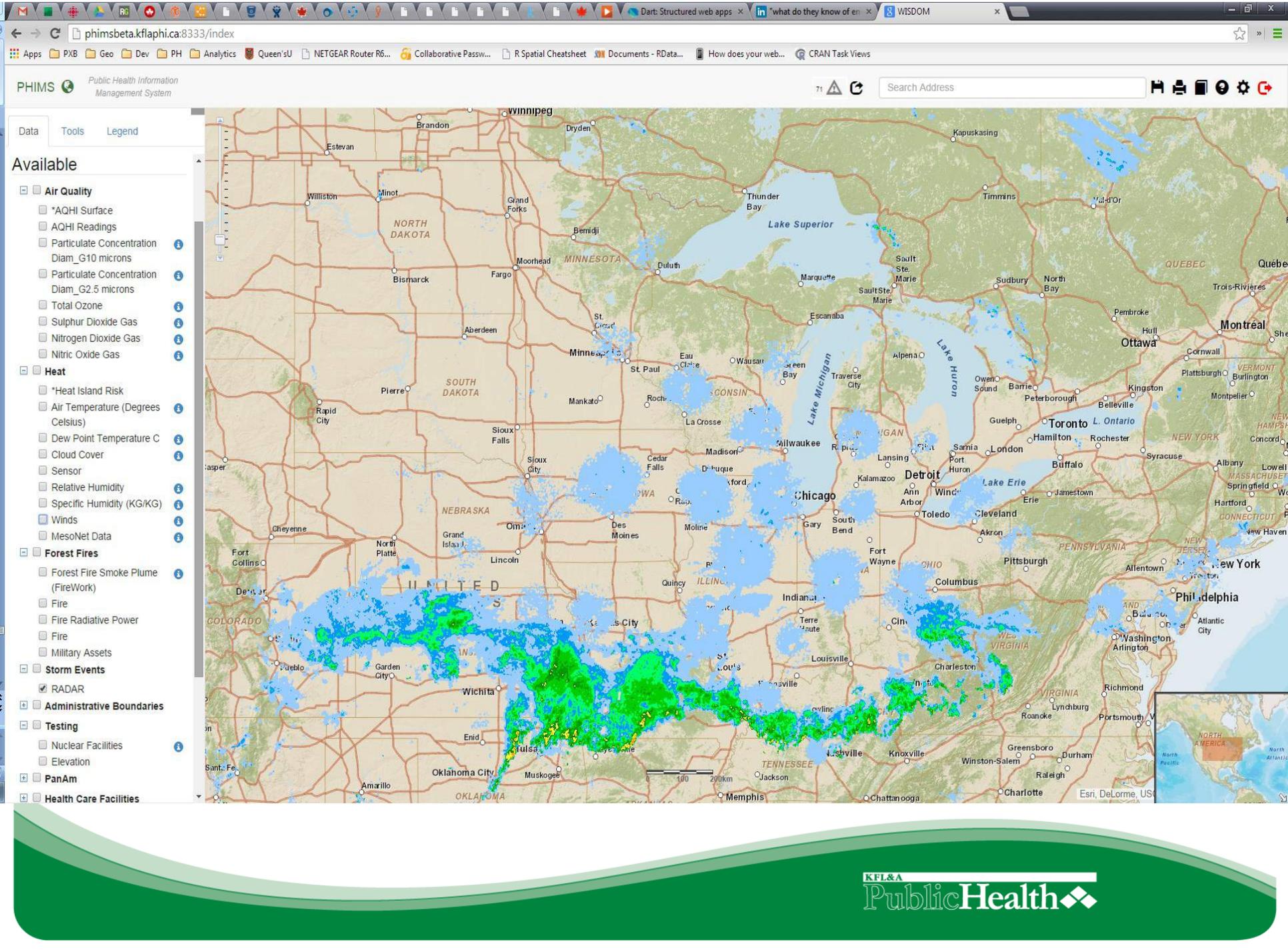
Available

- Air Quality
- Heat
- Forest Fires
- Storm Events
- Administrative Boundaries
 - Ontario Public Health Authorities
 - Census Divisions (CD)/Counties
 - Census Subdivisions (CSD)
 - Forward Sortation Area (FSA)
 - Local Integrated Health Networks (LHIN)
 - Postal Codes (FSALDU)
 - Builtup or Urban Areas
- Testing
- PanAm
- Health Care Facilities
- Road and Traffic Conditions
- Vulnerable Populations
- Panam Model Weather
- Alerts

Public Health Units

- The District of Algoma Health Unit
- Brant County Health Unit
- Durham Regional Health Unit
- Elgin-St. Thomas Health Unit
- Grey Bruce Health Unit
- Haldimand-Norfolk Health Unit
- Haliburton, Kawartha, Pine Ridge District Health Unit
- Halton Regional Health Unit
- City of Hamilton Health Unit
- Hastings and Prince Edward Counties Health Unit
- Huron County Health Unit
- Chatham-Kent Health Unit
- Kingston, Frontenac and Lennox and Addington Health Unit
- Lambton Health Unit
- Leeds, Grenville and Lanark District Health Unit
- Middlesex-London Health Unit
- Niagara Regional Area Health Unit
- North Bay Parry Sound District Health Unit
- Northwestern Health Unit
- City of Ottawa Health Unit
- Oxford County Health Unit
- Peel Public Health





Data Tools Legend

Available

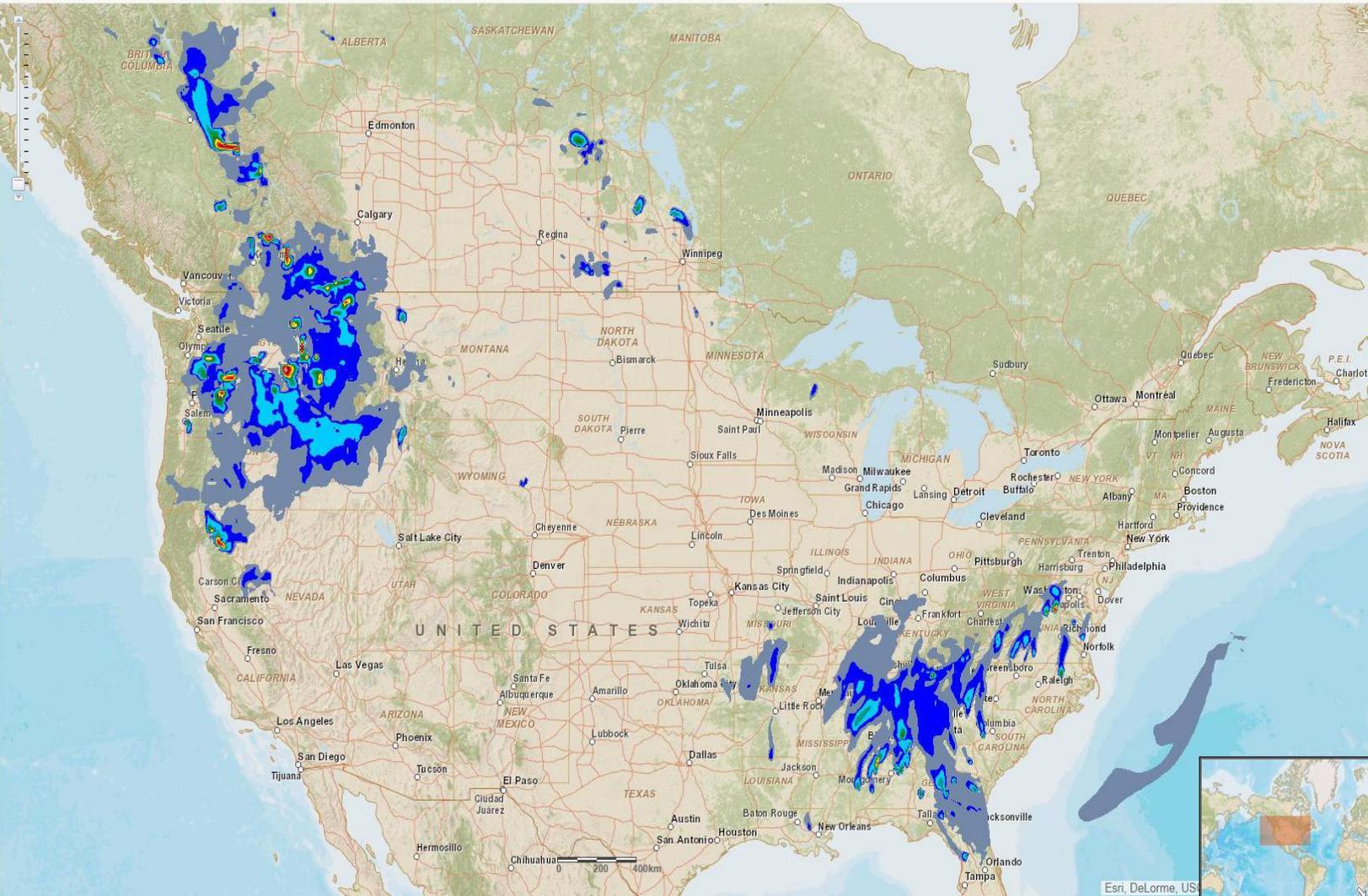
- Air Quality
 - *AQHI Surface
 - AQHI Readings
 - Particulate Concentration Diam_G10 microns
 - Particulate Concentration Diam_G2.5 microns
 - Total Ozone
 - Sulphur Dioxide Gas
 - Nitrogen Dioxide Gas
 - Nitric Oxide Gas
- Heat
 - *Heat Island Risk
 - Air Temperature (Degrees Celsius)
 - Dew Point Temperature C
 - Cloud Cover
 - Sensor
 - Relative Humidity
 - Specific Humidity (KG/KG)
 - Winds
 - MesoNet Data
- Forest Fires
 - Forest Fire Smoke Plume (FireWork)
 - Fire
 - Fire Radiative Power
 - Fire
 - Military Assets
- Storm Events
 - RADAR
- Administrative Boundaries
- Testing
 - Nuclear Facilities
 - Elevation
- PanAm
- Health Care Facilities

Data Tools Legend

Forest Fire Smoke Plume (FireWork)

300
200
150
120
100
80
60
50
40
30
20
10
5
2

PM2.5 (ug/m3)



Data Tools Legend

Directions Service Area

Traffic Draw

Get Directions

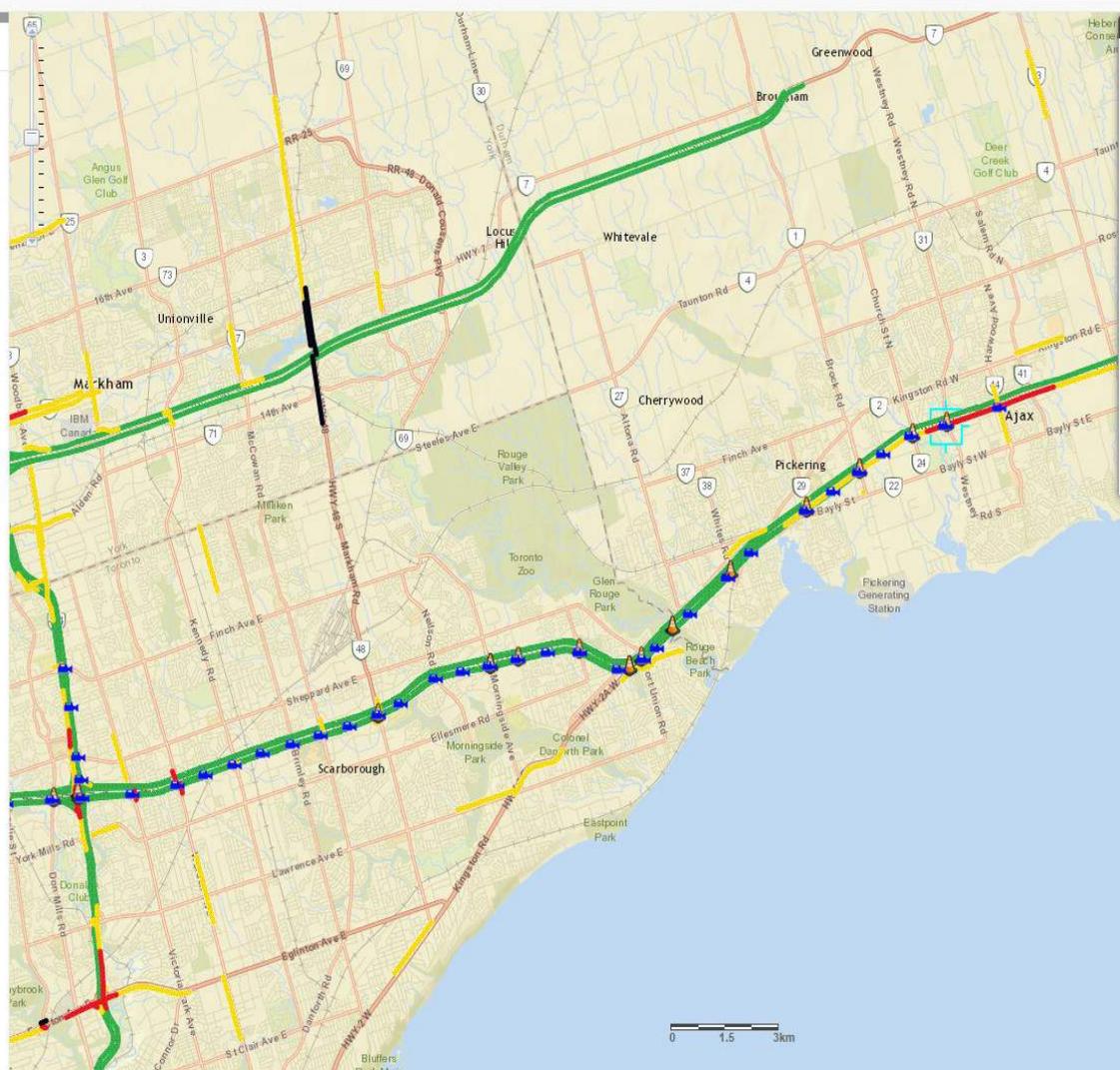
A Enter Address

B Enter Address

Driving Transit Walking

Optimize for... Avoid...

Get Directions **Clear Map**



name =

401 near Westney Rd

LOOKING EAST

LOOKING WEST

Images provided by: **GO.PASS**

Camera images are updated every three to five minutes. Press F5 function key on your keyboard to view the latest image. Reference images provide directional perspective. They are not being refreshed.

Zoom to



Esri, HERE, DeL

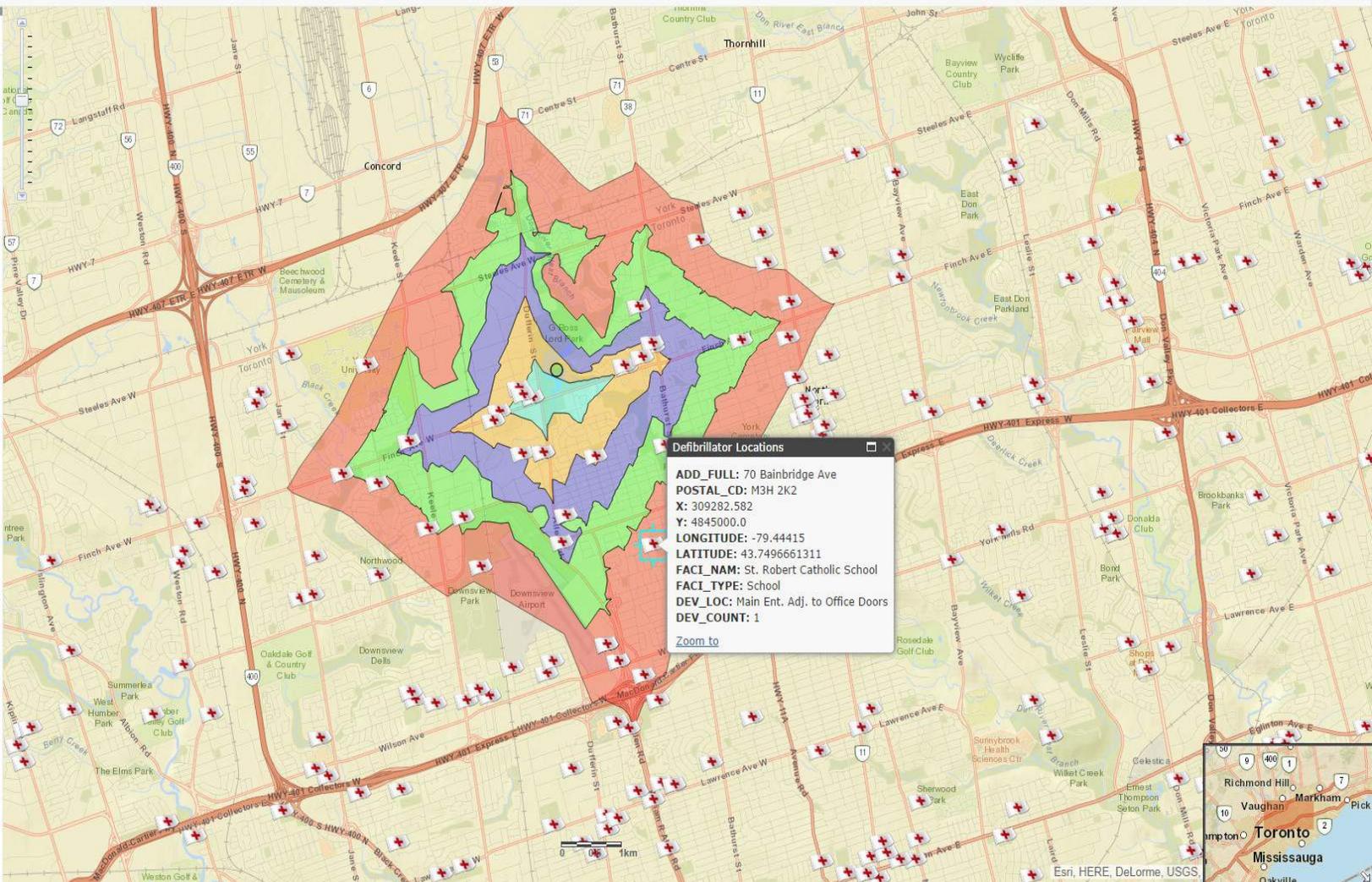
Data Tools Legend

Available Add File

* Denotes Experimental Layers

Available

- Air Quality
- Heat
- Forest Fires
- Storm Events
- Administrative Boundaries
- Testing
- PanAm
- Toronto
 - Emergency
 - Ambulance Station
 - Fire Hall
 - Defibrillator Locations
 - Police Facilities
 - Toronto Traffic
 - PanAm Infrastructure
- Health Care Facilities
- Road and Traffic Conditions
- Vulnerable Populations
- Panam Model Weather
- Alerts

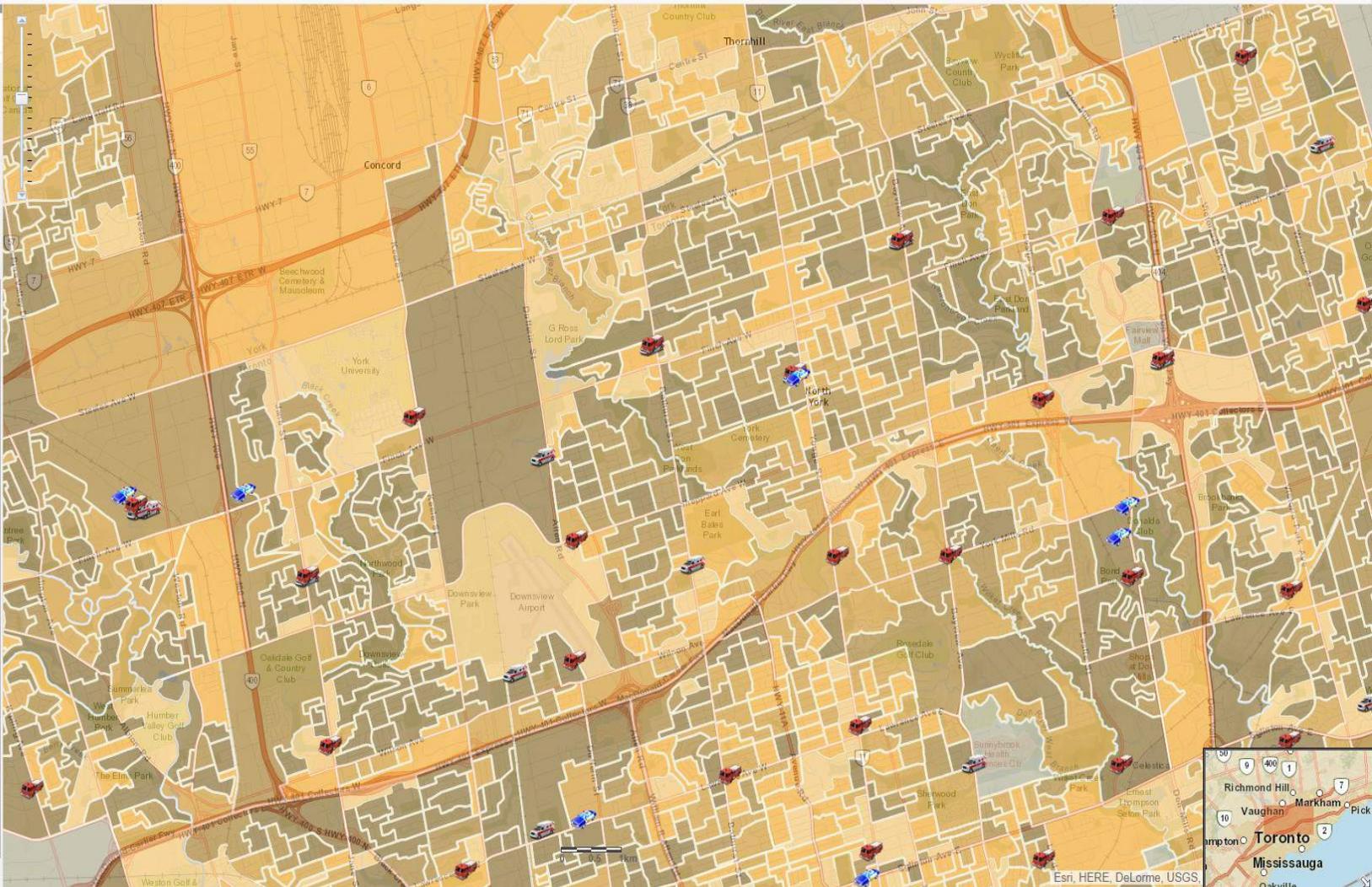


PHIMS Public Health Information Management System

71 Search Address

Data Tools Legend

- PanAm
 - Toronto
 - Emergency
 - Ambulance Station
 - Fire Hall
 - Defibrillator Locations
 - Police Facilities
 - Toronto Traffic
 - PanAm Infrastructure
 - Health Care Facilities
 - Road and Traffic Conditions
 - Vulnerable Populations
 - Combined Deprivation (Deprivation Index)
 - Material Deprivation (Deprivation Index)
 - Social Deprivation (Deprivation Index)
 - Dependency (Ontario Marginalization Index)
 - Ethnic Concentration (Ontario Marginalization Index)
 - Residential Instability (Ontario Marginalization Index)
 - Percent of the Population Age 65+
 - Age 9 and Under
 - Percent of the Population Age 4 and Under
 - Daycare Centers
 - Panam Model Weather
 - Alerts
 - South Ontario Alerts



Data Tools Legend

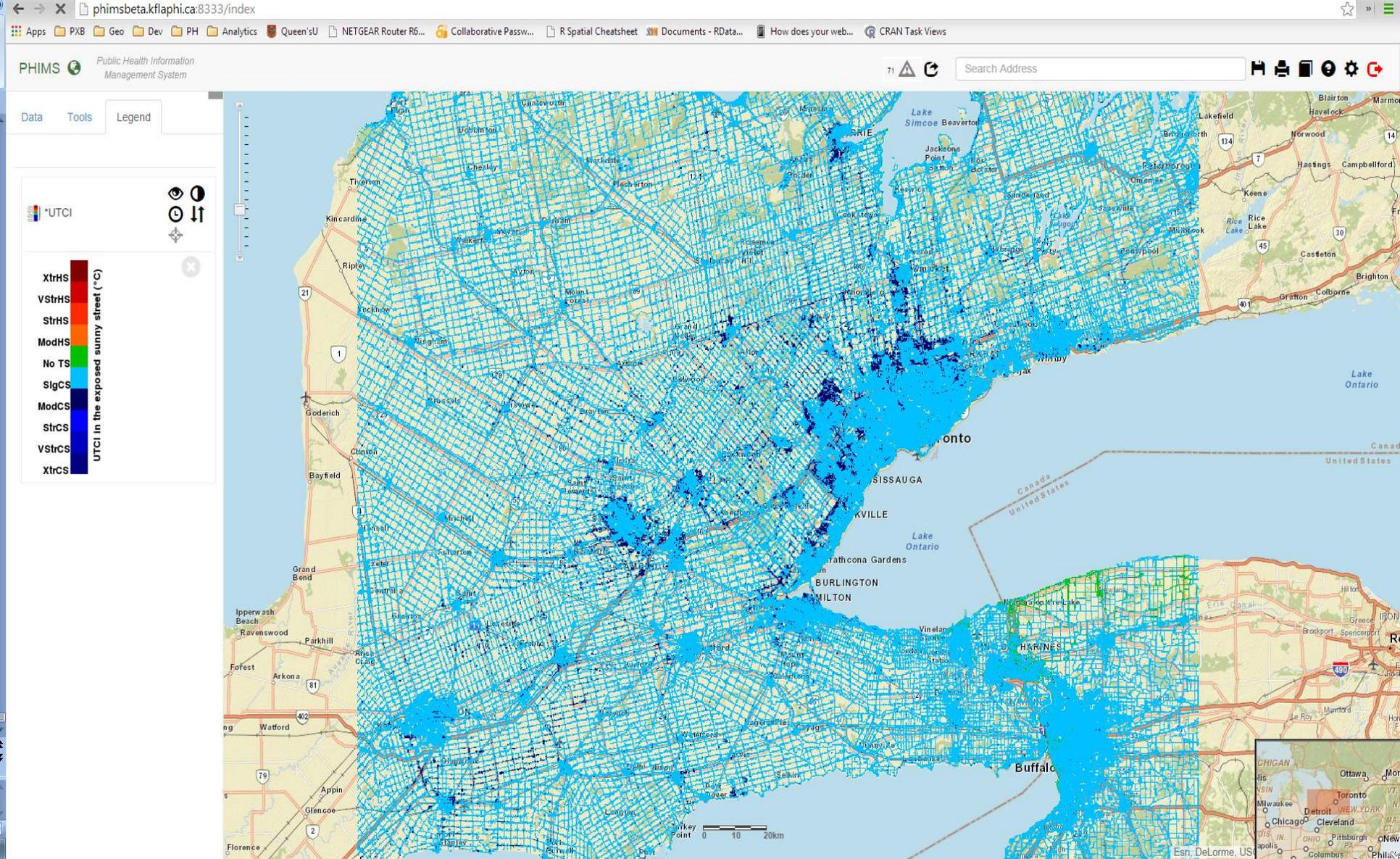
Available Add File

* Denotes Experimental Layers

Available

- Air Quality
- Heat
- Forest Fires
- Storm Events
- Administrative Boundaries
- Testing
- PanAm
- Health Care Facilities
- Road and Traffic Conditions
- Vulnerable Populations
- Panam Model Weather
- Alerts
 - South Ontario Alerts





Data Currently on Offer

Available

Air Quality

- Particulate Concentration Diam_G10 microns
- Particulate Concentration Diam_G2.5 microns
- Total Ozone
- Sulphur Dioxide Gas
- Nitrogen Dioxide Gas
- Nitric Oxide Gas

Heat

- Air Temperature (Degrees Celcius)
- Dew Point Temperature C
- Cloud Cover
- Environment Canada Weather Stations
- Relative Humidity
- Specific Humidity (KG/KG)
- Winds
- Material Deprivation

Forest Fires

- Fire
- Fire Radiative Power
- Fire Aviation and Emergency Facility Point
- Military Assets

Storm Events

- Rain mm/hr
- Lightning

PanAm

Toronto

Emergency

- Ambulance Station
- Fire Hall
- Defibrillator Locations
- Police Facilities

Toronto Traffic

- PanAm Infrastructure

Health Care Facilities

- Hospitals
- Public Health Satellite Offices
- Pharmacies
- Doctors
- Tap Into Kingston

Public Infrastructure

- Airports
- Billboard
- Conservation Authorities
- Schools
- Alcohol Retailer
- Alcohol Establishment
- Public Restroom
- Tobacco Retailer

Road and Traffic Conditions

- Road Closure
- Construction
- Traffic Cameras
- Ferry Services
- Carpool Lots
- Conditions-South
- Conditions
- Service Centres

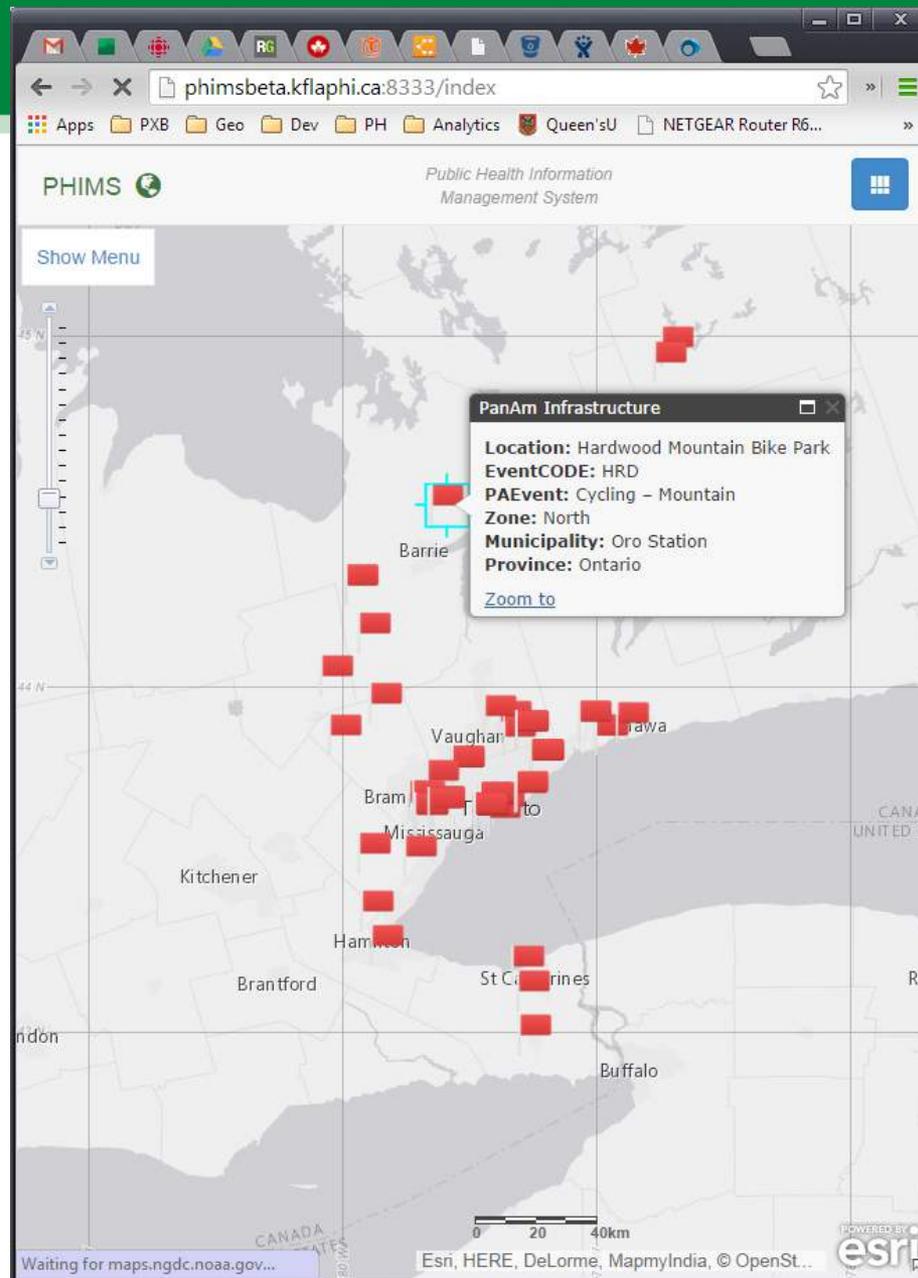
Alerts

South Ontario Alerts

Targeted Datasets

ID	Name	Format	Type/Notes
AQ1	AQHI	XML	RealTime
AQ2	AQHI	XML	Forecast
AQ3	AQHI	CSV	Historical by month
AQ4	AQI		Real Time, need source
AQ5	Ozone (AQ)	WMS, KML	Forecast
AQ6	Fine particulate (AQ)	WMS, KML	Forecast
AQ7	Particulate (AQ)	WMS, KML	Forecast
AQ8	Sulphur dioxide (AQ)	WMS, KML	Forecast
AQ9	Nitric Oxide (AQ)	WMS, KML	Forecast
AQ10	Nitrogen Dioxide (AQ)	WMS, KML	Forecast
SF1	Bluesky Wildfire Smoke	KML	Forecast East and West
SF2	Wildfire and Smoke - Firework	To be determined	
SF3	Forest Fires	Table, KML	
PC1	Precipitation DM CP	XML	Previous Day
PC2	Precipitation	XML	Forecast
PC3	Precip. Accum. At Surface	XML.Bz2	Forecast, Zipped
PC4	Precip. % Chance	XML	Forecast
PC5	Precip. Accum.	XML	Forecast
PC6	24 Hr Precip Accum.	GIF	Real Time
PC7	Precipitation	GIF	Real Time
PC8	Precipitation Quantity	WMS, KML	Forecast, avlbl @ pressure
PC9	Total Precipitation Rate	WMS, KML	Forecast, avlbl @ pressure
PC10	Rain QPF (Precip)	WMS, KML	Forecast, avlbl @ pressure
PC11	Freezing Rain (Precip)	WMS, KML	Forecast, avlbl @ pressure
PC12	Snow QPF (Precip)	WMS, KML	Forecast, avlbl @ pressure
PC13	Rain, Snow Reflectivity (Precip)	WMS, KML	Current
PC14	Rain, Snow Precipitation	WMS, KML	Current
PC15	Precipitation	WMS, KML	Recent Data
PS1	Barometric Pressure	XML	RealTime
PS2	Mean Sea Level pressure	XML.Bz2	Forecast, Zipped
PS3	Pressure Layer Thickness	XML.Bz2	Forecast, Zipped
PS4	Surface Pressure	WMS, KML	Forecast, avlbl @ pressure
PS5	Sea Level pressure	WMS, KML	Forecast, avlbl @ pressure
UV1	UV Index DM CP	XML	Still available?
UV2	UV Index DM B	Text	Forecast
AL1	Alerts	Cap XML	As posted
AL2	Alerts	Text	As posted
AL3	Hurricane Alerts	RSS	Just using DM bulletin?
AL4	Earthquake Alerts		As posted
WD1	Wind DM CP	XML	RealTime
WD2	Wind	XML	Forecast
WD3	Surface Wind	XML.Bz2	Forecast, Zipped
WD4	Wind	XML	Forecast
WD5	Wind Speed, Direction	XML	Historic
WD6	Wind Speed, Direction	WMS, KML	Forecast, avlbl @ pressure
HM1	Relative Humidity DM CP	XML	RealTime
HM2	Relative Humidity	XML	Forecast
HM3	Surface Relative Humidity	XML.Bz2	Forecast, Zipped
HM4	Specific Humidity	WMS, KML	Forecast, avlbl @ pressure
HM5	Relative Humidity	WMS, KML	Forecast, avlbl @ pressure
HM6	Relative Humidity	XML	Historic
TP1	Temperature DM CP	XML	RealTime, Incls Dew pt
TP2	Temperature H/L	XML	Previous Day
TP3	Temperature H/L	XML	Forecast
TP4	Surface Air Temperature	XML.Bz2	Forecast, Zipped
TP5	Temperature	XML	Forecast, Incls Dew pt
TP6	Temperature Climate	XML	Forecast
TP7	Temperature summary	XML	Forecast, avlbl @ pressure
TP8	Air Temperature	WMS, KML	Forecast, avlbl @ pressure
TP9	Dew Point temperature	WMS, KML	Forecast, avlbl @ pressure
TP10	Dew Point Depression (Temperature)	WMS, KML	Forecast, avlbl @ pressure
TP11	Surface, Soil temperature	WMS, KML	Forecast, avlbl @ pressure
TP12	US Weather Stations (Temperature)		Real Time
TP13	Eastern ON Heat monitoring network (Temperature)		Real Time
PL1	KFLA Schools	WMS/WFS	Static
PL2	KFLA LTC	WMS/WFS	Static
PL3	KFLA Pharmacies	WMS/WFS	Static
PL4	ON Hospitals	WMS/WFS	Static
PL5	KFLA Physicians	WMS/WFS	Static
PL6	ON Daycares	WMS/WFS	Static
PL7	KFLA Alcohol Retail + Est.	WMS/WFS	Static
PL8	ON Towns	WMS/WFS	Static
PL9	KFLA Population	WMS/WFS	Static
PL10	Custom Pt, Layers	Various	Static
FD1	Soil Water Contents (WTR)	WMS, KML	Forecast, avlbl @ pressure
FD2	Soil Ice Contents (WTR)	WMS, KML	Forecast, avlbl @ pressure
FD3	Vegetation retained Water (WTR)	WMS, KML	Forecast, avlbl @ pressure
FD4	Water in Snow Pack (WTR)	WMS, KML	Forecast, avlbl @ pressure
FD5	Snow mass (WTR)	WMS, KML	Forecast, avlbl @ pressure
FD6	Can. Lakes & Rivers (WTR)	WMS/WFS	Static
SS1	Sunrise/Sunset	XML	Daily
SS2	Visibility (Sun)	XML	RealTime
SS3	Cloud cover (sun)	XML	Forecast
SS4	Cloud cover (sun)	XML	Historic
SS5	Cloud cover (Sun)		Forecast, avlbl @ pressure
PP1	Census Data		WMS, KML
PP2	Mother Tongue		WMS
TF1	Incidents and Closures		KML
TF2	Todays Roadwork		KML
TF3	Planned Roadwork		KML
TF4	Road Conditions		KML
TF5	HOV lanes		KML
TF6	Construction		KML
TF7	Traffic Basemap		Direct
OT1	Text forecast		XML
OT2	Geopotential height		XML.Bz2
OT3	Marine Conditions		
OT4	Cappi		GIF
OT5	Vertical profile		CSV
OT6	Geopotential height		WMS, KML
OT7	Sea Ice thickness		WMS, KML
OT8	HurricaneMonitoring		KML
OT9	Coverage		WMS, KML
OT10	Well water Uranium		Shapefile
OT11	Toronto Water fountains		Shapefile
OT12	Toronto Ped./Vehicle volumes		XLS
OT13	Restaurant Inspections		

File Formats
XML (Extensible Markup Language)
CSV (Comma Separated Values)
WMS (Web Map Service)
KML (Keyhole Markup language)
Shapefile
WFS (Web Feature Service)
GIF (Graphics Interchange Format)



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Q & A

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