

COSINE On-Line 2019 - A “Summary” of Updates and Changes to the Application



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COSINE Software Suite



Three Major Components

- **COSINE Database** for data storage is now a spatially enabled dataset/layer in the Land Information Ontario (LIO) Warehouse
- **COSINE Maintenance and Loading Module** has been developed as a set of custom tools and applications that work within the MNRF corporate LIO Editor
- **COSINE On-Line Viewer** has been revised to maintain all existing functionality but improve the user experience, by being more stream-lined and easier to use

COSINE On-Line Viewer 2019



Updates and Enhancements

- As you choose each specific horizontal or vertical datum you see the horizontal and vertical control related to your choice(s)
- What you see is what you get – accurate map display
- Stream-lined interface – less keystrokes or mouse clicks required
- Ontario Provincial View- allows access to NAD27-Horizontal Control from Toronto when you choose the NAD27TOR datum and the map viewer automatically zooms into the Toronto area
- Reference Sketches are integrated with the station report when available – two separate menus are no longer required
- Output information with respect to all horizontal and vertical datums is provided for each control station or benchmark

COSINE On-Line Viewer 2019



Updates and Enhancements

- New easier to read standard COSINE Report format
- Includes Control Station or Benchmark Photo if available
- Options for UTM, MTM, etc., are maintained in text output
- GeoLab™ IOB format included as an output option for loading into your network adjustments
- KML Output to allow for easy integration with Google Earth™ or other GIS applications, etc..
- Field Ready Application – works seamlessly on your laptop, tablet or smart phone

COSINE On-Line 2019 – Landing Page

Opening View



[Français]

Ontario  COSINE Online Service

About Navigation Map Layers Search For/Zoom To Distance Tool and Printing

COSINE Retrieval x < I want to...

- COSINE Layers

- Horizontal/3D**
 - ☐ NAD83-CSRS V6 (Epoch 2010.0)
 - ☐ NAD83-CSRS V3 (Epoch 1997.0)
 - ☐ NAD83-ORIG
 - ☐ NAD27-Toronto
- Vertical**
 - ☐ CGVD28:78
 - ☐ CGVD28:Pre 78
 - ☐ CGVD2013
- Special/Miscellaneous**
 - ☐ Destroyed
 - ☐ Unclassified

Select Station(s):

Text Search 

0 stations selected.

Select Report Type

☒ COSINE Report

☐ Text Report

☐ Detailed Version ☐ Station Version

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COSINE On-Line 2019 – Datum Selection



Datum Focused Selection Bar

COSINE Retrieval ×

- COSINE Layers

Horizontal/3D

- ☐ NAD83-CSRS V6 (Epoch 2010.0)
- ☐ NAD83-CSRS V3 (Epoch 1997.0)
- ☐ NAD83-ORIG
- ☐ NAD27-Toronto






Vertical

- ☐ CGVD28:78
- ☐ CGVD28:Pre 78
- ☐ CGVD2013

Special/Miscellaneous

- ☐ Destroyed
- ☐ Unclassified

Select Station(s):

Text Search     

0 stations selected.

COSINE On-Line 2019 – Filter Criteria




Text Selection and Filter Criteria


COSINE Retrieval

Filter Criteria


Additional Filter Criteria

Monument Status: 

☒ Existing or Destroyed/Unknown
☐ Existing Only
☐ Destroyed/Unknown Only

Horizontal Order: 

☐ CSRS Class A
☐ CSRS Class B
☐ CSRS Class C
☐ CSRS Class D
☐ CSRS Class E
☐ First Order
☐ Second Order
☐ Third Order
☐ Toronto Third Order
☐ Fourth Order
☐ Unclassified

Vertical Order: 

☐ First Order
☐ Second Order
☐ Second Order B
☐ Third Order
☐ Toronto Third Order
☐ Fourth Order
☐ Unclassified

COSINE On-Line 2019 – Output Formats



Output Options

Select Report Type

☒ COSINE Report

☐ Text Report

☒ Detailed Version ☐ Station Version

☒ Show Grid Coords

☐ Input for GeoLab®

☒ Lat/Long ☐ UTM ☐ MTM

Zone

☐ KML Output

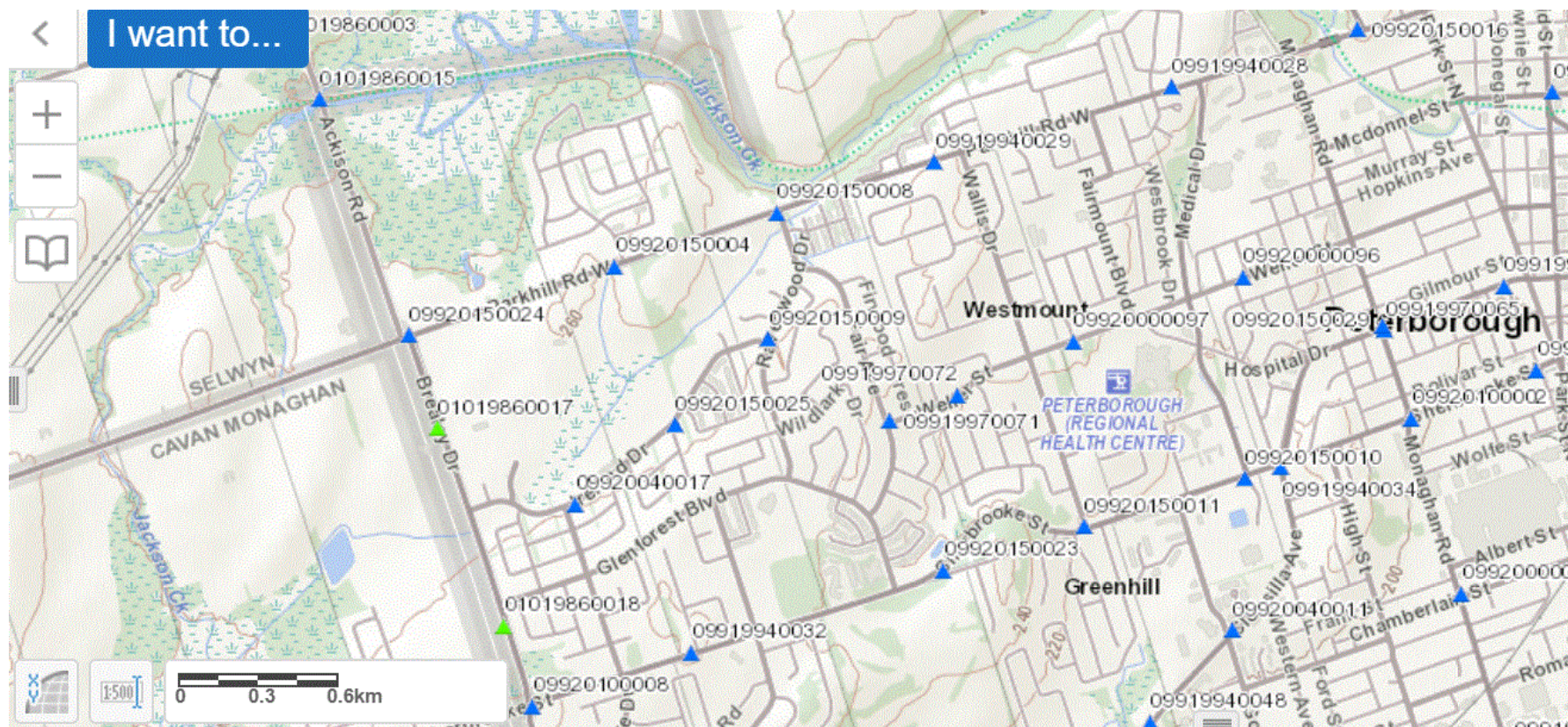
☐ Reference Sketch

View Report

COSINE On-Line 2019 – Map Display



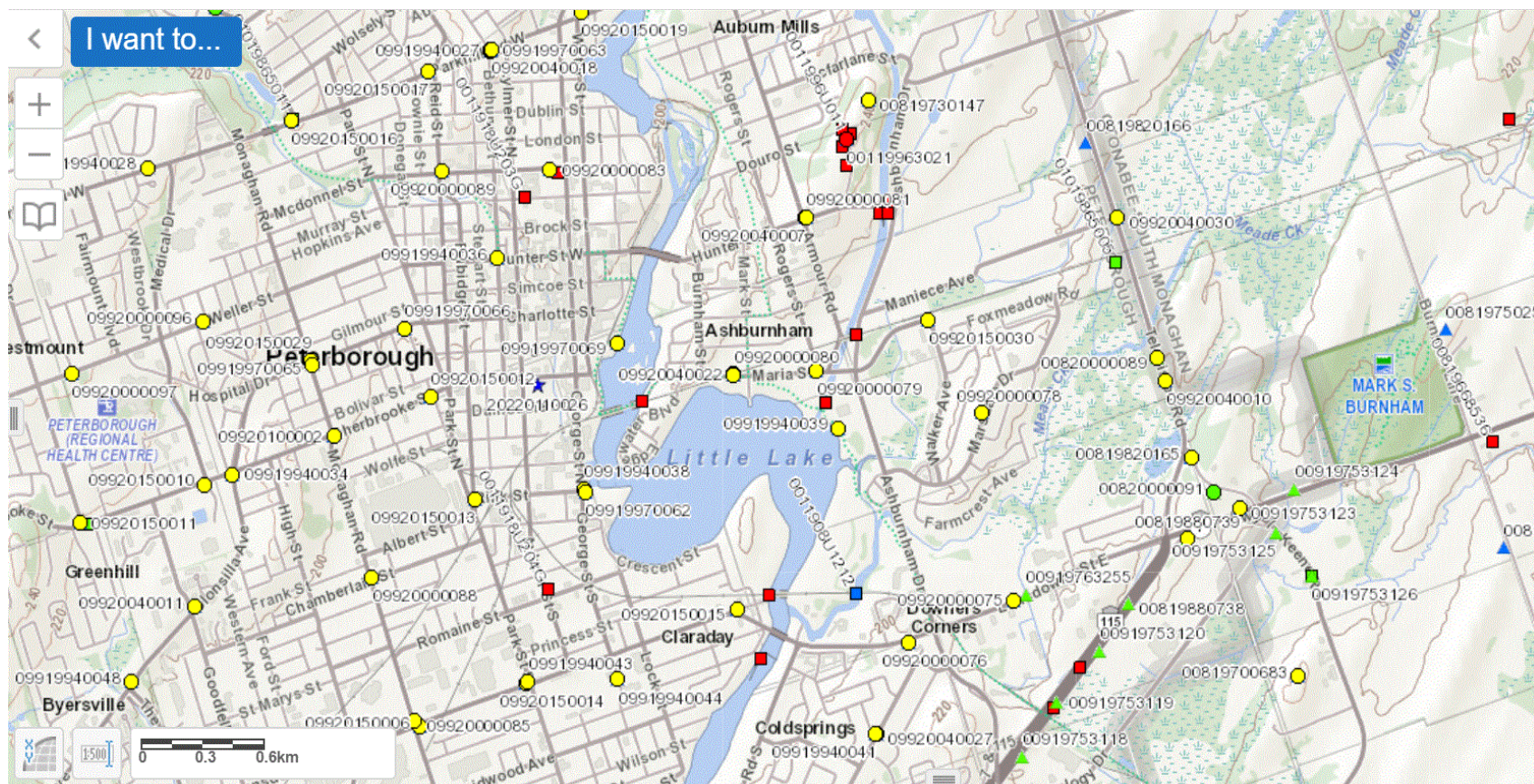
View of Peterborough NAD83-ORIG Control



COSINE On-Line 2019 – Map Display




View of Peterborough NAD83-ORIG + NAD83-CSRS + Benchmarks



COSINE On-Line 2019 – Standard Report



New Standard Report Format



Ontario Ministry of Natural Resources and Forestry

COSINE Station Report

Retrieval Date: 2018-Oct-03

Station:

00119963021

Control Survey Information Exchange

00119963021

AKA Names: 001963021, 963021, CBN PETERBOROUGH, CBN963021, PETERBOROUGH

Number of Ref Sketches: 1

Networks [usage]: 1514CS [WTD], 2096 [FREE], 2096AV [FREE], 2096V [FREE], 2108 [FIX], 2108CS [FIX], 2111 [FIX], 2111CS [WTD], 3263 [FIX], 3291 [FIX], 3291CS [FREE], 96 [FREE], A2ANDB2 [WTD], C2ANDD2 [FREE], CBN31A [WTD]

Known Status: Existing

Last Reported Visit:

Monument Type: CPillar

Station Type: GPS

Relation to Ground: +0cm

Location Description:

PETERBOROUGH CBN PILLAR. CONCRETE PILLAR WITH STEEL TOP PLATE IN GROUNDS OF ASHBURNHAM MEMORIAL PARK, IMMEDIATELY NORTH OF PETERBOROUGH CENTENIAL MUSEUM AND ARCHIVES (CIVIC NO. 300 HUNTER STREET), ABOUT 355 M NORTH (MEASURED ALONG ACCESS ROAD TO PARK AND MUSEUM) FROM CENTRE OF HUNTER STREET, 123.4 M NORTHEAST OF NORTHEAST CORNER OF MUSEUM, 36.8 M SOUTHWEST OF SOUTHWEST CORNER OF KIWANIS CLUB OF SCOTT'S PLAINS MONUMENT (SQUARE CONCRETE PIER WITH COMPASS-CARD ON TOP), 21.3 M WEST OF CENTRE OF ROAD TO LOOKOUT. ELEVATION TAKEN ON TOP AT CENTRE OF MAIN CIRCULAR PLATE ANCHORED ON TOP OF PILLAR.

No Photo

Horizontal (Ellipsoidal) Control Data

Datum: NAD-1983:CSRS:CBNV6-2010.0		Horiz Order: CSRS Class A		Ellipsoidal Order: Second Order	
Latitude: N44° 18' 38.776773"	Longitude: W78° 18' 10.447772"	Ellipsoidal elev: 208.255			
UTM Zone: 17	E: E715107.561	N: N4909928.491	C. S. F.: 1.00013643	Mrd1 Conv: 1° 53' 05.2"	
UTM Zone: 18	E: E236575.183	N: N4911697.385	C. S. F.: 1.00042082	Mrd1 Conv: -2° 18' 30.8"	
MTM Zone: 10	E: E400302.704	N: N4908559.959	C. S. F.: 0.99997948	Mrd1 Conv: 0° 50' 10.7"	

Datum: NAD-1983:CSRS:CBNV3-1997.0		Horiz Order: CSRS Class A		Ellipsoidal Order: First Order	
Latitude: N44° 18' 38.777369"	Longitude: W78° 18' 10.448829"	Ellipsoidal elev: 208.250			
UTM Zone: 17	E: E715107.537	N: N4909928.509	C. S. F.: 1.00013643	Mrd1 Conv: 1° 53' 05.2"	
UTM Zone: 18	E: E236575.160	N: N4911697.404	C. S. F.: 1.00042083	Mrd1 Conv: -2° 18' 30.8"	
MTM Zone: 10	E: E400302.680	N: N4908559.977	C. S. F.: 0.99997948	Mrd1 Conv: 0° 50' 10.7"	

Datum: NAD-1983:ORIG		Horiz Order: Second Order		Ellipsoidal Order: Unclassified	

COSINE On-Line 2019 – Standard Report



New Standard Report Form – Part II

Datum: NAD-1983:ORIG		Horiz Order: Second Order		Ellipsoidal Order: Unclassified	
Latitude: N44° 18' 38.787810"		Longitude: W78° 18' 10.445660"		Ellipsoidal elev: 208.XXX	
UTM Zone: 17	E: E715107.597	N: N4909928.833	C. S. F.: 1.00013642	Mrdl Conv: 1° 53' 05.2"	
UTM Zone: 18	E: E236575.243	N: N4911697.724	C. S. F.: 1.00042082	Mrdl Conv: -2° 18' 30.8"	
HTM Zone: 10	E: E400302.746	N: N4908560.300	C. S. F.: 0.99997947	Mrdl Conv: 0° 50' 10.7"	

Vertical (Geoidal) Control Data

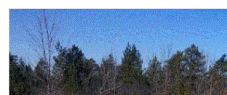
Datum: CGVD2013		Vert Order: First Order		Elevation: 243.411	
Meridional defl:		Prime vert defl:		Undulation:	
Datum: CGVD28:78		Vert Order: First Order		Elevation: 243.742	
Meridional defl:		Prime vert defl:		Undulation:	

Maintenance / History

Date	Description
2018-Jul-18	Inspected by Geodetic Survey Division in 1999. Status: Good Accessible by passenger car or light truck and a walk of less than 50 m.

Reference Sketches


00119963021 – March 19, 2016



COSINE On-Line 2019 – Standard Report



New Standard Report Format for a Benchmark

Ontario Ministry of Natural Resources and Forestry		COSINE Station Report	
Control Survey Information Exchange		Retrieval Date: 2018-Oct-03	
 <p>AKA Names: 00196U011, 96U011 Number of Ref Sketches: 1 Networks [usage]:</p>		<p>Station: 0011996U011</p> <p>Known Status: Existing Last Reported Visit: Monument Type: - Station Type: SPIR Relation to Ground: +0cm</p>	
<p>Location Description:</p> <p>Township: PETERBOROUGH CONCRETE PILLAR WITH STEEL TOP PLATE IN GROUNDS OF ASHBURNHAM MEMORIAL PARK, IMMEDIATELY NORTH OF PETERBOROUGH CENTENIAL MUSEUM AND ARCHIVES (CIVIC NO. 300 HUNTER STREET), ABOUT 355 M NORTH (MEASURED ALONG ACCESS ROAD TO PARK AND MUSEUM) FROM CENTRE OF HUNTER STREET, 123.4 M NORTHEAST OF NORTHEAST CORNER OF MUSEUM, 36.8 M SOUTHWEST OF SOUTHWEST CORNER OF KIWANIS CLUB OF SCOTT'S PLAINS MONUMENT (SQUARE CONCRETE PIER WITH COMPASS-CARD ON TOP), 21.3 M WEST OF CENTRE OF ROAD TO LOOKOUT, SIDE BOLT IN SOUTHEAST SIDE OF PILLAR, 1.00 M BELOW TOP OF PILLAR.</p>		<p>No Photo</p>	
Horizontal (Ellipsoidal) Control Data			
Datum: NAD-1927:SCAL		Horiz Order: Unclassified	
Latitude: N44° 18' 39.0XXXXX"		Longitude: W78° 18' 09.9XXXXX"	
UTM Zone: 17		Ellipsoidal elev: 243.XXX	
E: E715123.XXX		N: N4909719.XXX	
E: E236577.XXX		N: N4911487.XXX	
E: E400315.XXX		N: N4908350.XXX	
C. S. F.: 1.00013105		C. S. F.: 1.00041534	
Mrd1 Convgt: 1° 53' 05.5"		Mrd1 Convgt: -2° 18' 30.5"	
Mrd1 Convgt: 0° 50' 11.0"			
Vertical (Geoidal) Control Data			
Datum: CGVD2013		Vert Order: First Order	
Elevation: 242.448			
Meridional defl:		Prime vert defl:	
Undulation:			
Datum: CGVD28:78		Vert Order: First Order	
Elevation: 242.779			
Meridional defl:		Prime vert defl:	
Undulation:			
Maintenance / History			
Date		Description	
2018-Jul-18		GSC; last inspected: 1999	

COSINE On-Line 2019 – Standard Report

Standard Report Format-Benchmark

with Photo Reference Sketch



2018-Jul-18

GSC; last inspected: 1999

Reference Sketches



0011996U011 – March 19, 2016



COSINE On-Line 2019 – Standard Report



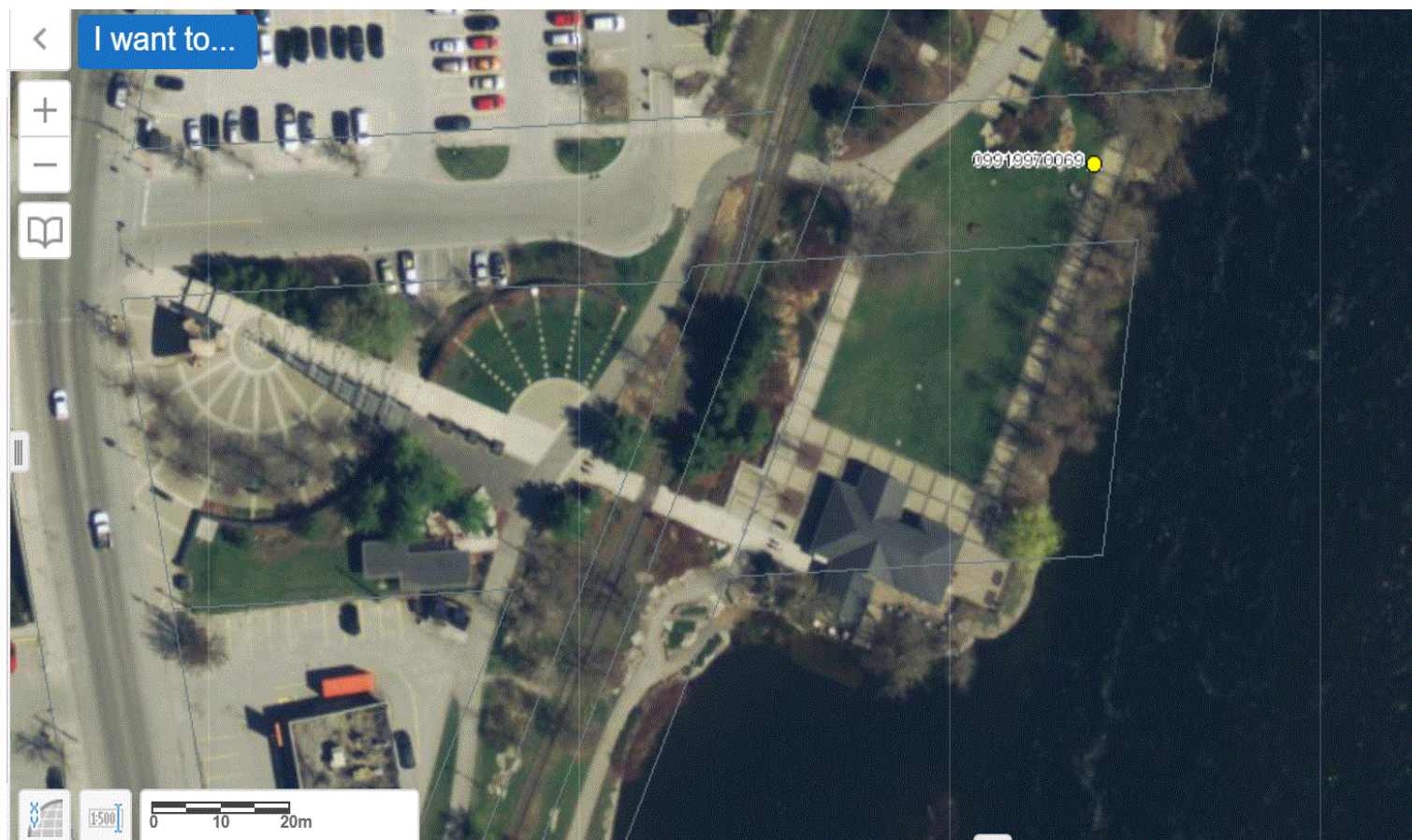
New Report Format – Benchmark with no Reference Sketch

 Control Survey Information Exchange		Station: 0011960U522
AKA Names: 00160U522, 60U522, DOT 55, VA290 Number of Ref Sketches: 0 Networks [usage]:		Known Status: Existing Last Reported Visit: Monument Type: BM Station Type: SPIR Relation to Ground: +0cm
Location Description: PETERBOROUGH - TRENT CANAL LIFT LOCK NO. 21 (Peterborough Lift Lock), COPPER PIN IN TOP OF CANAL WALL ABOVE LOCKS, 1.1 M SOUTHEAST OF TOP OF STAIRWAY AND 3.3 M NORTHEAST OF SOUTHWEST FACE OF WALL. ESTABLISHED BY DEPARTMENT OF TRANSPORT.		
Horizontal (Ellipsoidal) Control Data		
Datum: NAD-1983:ORIG		Horiz Order: Unclassified Ellipsoidal Order:
Latitude: N44° 18' 29.3XXXXX"		Longitude: W78° 18' 01.1XXXXX"
Ellipsoidal elev:		
UTM Zone: 17	E: E715322.XXX N: N4909642.XXX c. s. f.: 1.00017022	Mrd1 Conv: 1° 53' 11.3"
UTM Zone: 18	E: E236768.XXX N: N4911396.XXX c. s. f.: 1.00045224	Mrd1 Conv: -2° 18' 24.0"
UTM Zone: 10	E: E400511.XXX N: N4908270.XXX c. s. f.: 1.00001262	Mrd1 Conv: 0° 50' 17.0"
Vertical (Geoidal) Control Data		
Datum: CGVD2013		Vert Order: First Order Elevation: 213.000
Meridional defl:		Prime vert defl: Undulation:
Datum: CGVD28:78		Vert Order: First Order Elevation: 213.330
Meridional defl:		Prime vert defl: Undulation:
Maintenance / History		
Date	Description	
2018-Jul-18	Established by Dept of Transport (GSC) 1960. Inspected 1988.	
Reference Sketches		
Reference sketch for 0011960U522 is not available.		

COSINE On-Line 2019 – Imagery Display



Imagery View with NAD83-CSRS Control Shown



COSINE On-Line 2019 – Map Display



Assessment Parcel Activated on Map Background



COSINE On-Line 2019 – Address Location



New Find Address Feature

Find Address

I want to...

+

-

📖

Enter the address you are searching for (for example: '300 Queen' or 'Queen and Yonge') and municipality then click 'Search'.

Required fields are marked with an asterisk.

Address *

300 Water Street

Municipality *

Peterborough

Search

Close

Results

📍 300 Water Street, City of Peterborough, ONTARIO

📍 301 Water Street, City of Peterborough, ONTARIO

📍 Water Street, City of Peterborough, ONTARIO

📍 Water Street, City of Peterborough, ONTARIO

COSINE On-Line 2019 – Secure URLs



Items to note regarding the recently released version of COSINE

- The COSINE On-Line URLs have changed – one new URL for English and one new URL for French – ensure you are using the secure https:// URL to be able to use all the new features of COSINE On-Line, including location-based services in the field

English:

<https://www.gisapplication.lrc.gov.on.ca/cosineONT/Index.html?viewer=COSINE.OntarioViewer&locale=en-US>

French:

<https://www.gisapplication.lrc.gov.on.ca/cosineONT/Index.html?viewer=COSINE.OntarioViewer&locale=fr-CA>

- **There is no longer a separate Toronto window in COSINE** – Toronto data is now merged into one Ontario map view and is accessed by selecting the NAD27-Toronto Datum layer – COSINE will then shift the map view to the Toronto area automatically.

COSINE On-Line 2019

– Summary of Changes



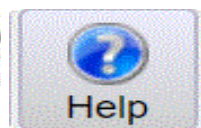
Items to note regarding the recently released version of COSINE

- Retrieval Tools are available immediately on the landing page with the map of Ontario.
- Map layers are now separated by horizontal or vertical datum. There is no default horizontal or vertical datum, so the user must make a datum choice before they zoom in and see control points shown on the map.

The standard COSINE report has been re-designed and incorporates maintenance information, a photo of the station (as they become available), and additional details regarding the last known visit to the station, etc.

- Reference sketches are now included in the standard COSINE Report format by default – no need to choose them from a separate menu.
- COSINE is now mobile and fully functional on all field platforms – laptops, tablets and smart phones.
- KML Output format has been added to allow for export of basic point data to Google Earth™ or GIS.
- On-screen functions are supported by address and street intersection searches.
- The “I want to ...” button at the top left of the map display includes three convenient options for users: a link to the COSINE Home Page, a link to the Feedback Page, and a link to the Help Guide.

I want to...



COSINE On-Line 2019

- Summary of Feedback



Items to note regarding the recently released version of COSINE

- Although you can view control information for one (or more) datums, the New Standard COSINE Output Report Format provides information related to all available datums horizontally and vertically – to accelerate and simplify the user experience
- Printed output is continuous – one control station or benchmark after another – to be more environmentally friendly
- **Possible Future Updates to COSINE On-Line 2019**
 - Output Datum Toggle Switch – All available datums or only selected datum(s)
 - COSINE Standard Report Format Print Toggle Switch – Continuous Print or One-Station per page output

COSINE On-Line 2019

- Support Contact



COSINE Questions

- Use in context help and COSINE User Guide
- Use COSINE Feedback Form or Geodesy Ontario Web-site contact form, or Email or call

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