What vertical reference systems are in use in Nova Scotia?	In 1935, the **Canadian Geodetic Vertical Datum of 1928 (CGVD28)** was adopted as the official height referencing system in Canada. Since that time, CGVD28 has been in use in NS. CGVD28 heights were published for the Nova Scotia Coordinate Control System (NSCCS) reference frame. In 2013 the **Canadian Geodetic Vertical Datum of 2013 (CGVD2013)** was released, replacing CGVD28 as the official height referencing system. CGVD2013 heights were published shortly afterwards for the Nova Scotia High Precision Network (NSHPN) reference frame.
What are the differences between CGVD28 and CGVD2013?	**CGVD2013 is approximately 60 cm above CGVD28 in NS**. The actual value depends upon location and varies by about 10 cm across the Province. CGVD28 is a tidal datum defined by mean sea level whereas CGVD2013 is a gravimetric datum defined by an equipotential surface known as a geoid. CGVD28 was realized using levelling observations whereas CGVD2013 was realized using satellite measurements of gravity and Global Navigation Satellite Systems. The accuracy and accessibility of CGVD2013 is superior to CGVD28.

Traditional Levelling Networks   Modern Geoid Model

	CGVD28	CGVD2013
Coast to Coast Agreement	> 1 m	< 3 cm
Local Consistency	< 5 cm, some outliers	< 10 mm
Source	Levelling runs	Satellite observations
Accessibility	Benchmarks	Anywhere

How do I transform between CGVD28 and CGVD2013?	Conversions between CGVD28 and CGVD2013 can be made using NRCan's GPS-H application (web and desktop versions): http://webapp.geod.nrcan.gc.ca/geod/tools-outils/gpsh.php?locale=en
How do I setup my GNSS RTK controller to work in CGVD2013?	The CGG2013 geoid model can be downloaded from NRCan and loaded onto your GNSS RTK controller. You must sign in. http://webapp.geod.nrcan.gc.ca/geod/data-donnees/geoid.php?locale=en
Related Technical Support Documents:	
Useful Links:	http://www.nrcan.gc.ca/earth-sciences/geomatics/geodetic-reference-systems/9054#_Canadian_Geodetic_Vertical Elevations for federal benchmarks: http://webapp.geod.nrcan.gc.ca/geod/data-donnees/passive-passif.php?locale=en
Additional Illustrations:	
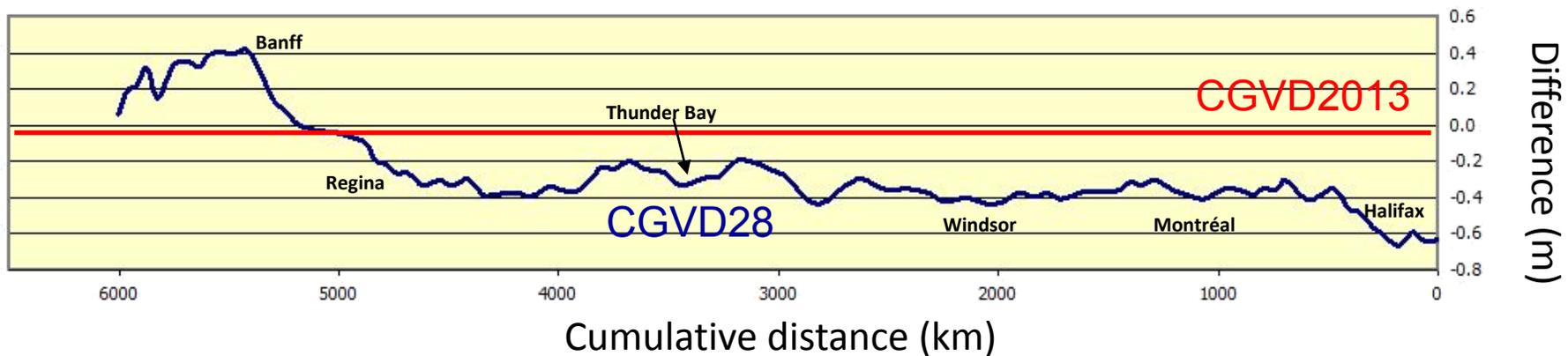
CGVD2013 location compared to CGVD28 across Canada (from NRCan)