

Nova Scotia Coordinate Referencing System

Frequently Asked Questions



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Grid Shift Files

How do I obtain the ATS77 to NAD83(CSRS) 1997.0 grid shift file?

The grid shift file is licensed. Please contact GeoInfo@gov.ns.ca to complete a license application to obtain the file.

What is the difference between the GS7783.GSB and NS778301.gsb grid shift files?

The GS7783.gsb file defines the transformation between ATS77 and NAD83(1989) "NAD83 Original". NAD83 Original values were calculated using terrestrial observations (angles and distances).

The NS778301.gsb file uses High Precision Network monuments coordinated using GPS to define the transformation parameters between ATS77 and NAD83(CSRS) 1997.0.

What is NTV2.0?

NTV2.0 is a grid shift between NAD27 and NAD83(1989) ("NAD83 Original")

Coordinates

Are there NAD83(CSRS) values on all NSCMs?

NAD83(CSRS) coordinates have been precisely calculated for all Nova Scotia High Precision Network (NSHPN) monuments. These monuments have been directly observed using GPS. NAD83(CSRS) values can be calculated for other NSCMs using the NS778301.gsb grid shift file. This file is used in the online

Coordinate Transformation tool. On average, the accuracy of NAD83(CSRS) coordinates generated this way is decimeter level. Differences between ATS77 NSCM values converted to NAD83(CSRS) using the grid shift file and observed NAD83(CSRS) values can range from a few centimeters to meter level. In most cases it is better than 10 cm. Monuments that have worse agreement tend to point to distortions in the ATS77 network.

The best way to obtain highly accurate NAD83(CSRS) values is to use GPS in conjunction with a) the Nova Scotia Active Control Stations (NSACS) network or b) NRCan’s PPP service.

How do NAD83(CSRS) coordinates differ from historic datum values?

Datum	Sample Size	Horizontal Position Differences				General Direction
		Min (m)	Max (m)	Mean (m)	Std. (m)	
NAD83(Original)	8	0.06	0.49	0.32	0.13	SE
ATS77	135	3.94	5.57	4.60	0.32	SW
NAD27	105	46.07	61.15	53.47	4.14	SW