Government of Alberta

Lands Division
Alberta Sustainable Resource Development

Surveys & Technical Services Section
Geodetic Control Unit

Fact Sheet 01
February 2010

NAD83 Data Products

Introduction

Coordinates and other information for Alberta Survey Control Markers (ASCMs) are available from SPIN (https://alta.registries.gov.ab.ca/spinii). Until 1994, the coordinates of ASCMs were referred to the North American Datum 1927 (NAD27). In the 1980s, Canada and several other countries agreed to adopt the new North American Datum 1983 (NAD83). Since June 1994, the coordinates of ASCMs have been referred to NAD83. This fact sheet reviews the details of this conversion.

Available Data Products

Geodetic Control (via SPIN) distributes ASCM information as either marker identification (ID) cards or preliminary ID cards. Both an ID card and preliminary ID card contain an extensive amount of information for one ASCM. Preliminary ID cards contain information due to be approved. Urban and rural index maps are also available. Urban index maps show the location of ASCMs within municipalities and districts under the former Municipal Integrated Surveying and Mapping (MISAM) program. Rural index maps show the location of ASCMs outside the MISAM program areas. Urban index maps are typically produced at a scale of 1:20 000. Rural index maps are produced at a scale of 1:250 000.

Preliminary NAD83 Coordinates

Since late 1986, various preliminary NAD83 coordinates have been made available for some markers in Alberta (see Table 1). For most markers in Alberta, the coordinates computed in October 1993 by the Network Maintenance Integration Project (NMIP) were only a few centimetres different from those computed in January; the October values reflect improved consistency between the coordinates of markers in southern B.C., and NAD83 coordinates already adopted for markers in the state of Washington.

Table 1:
Preliminary NAD83 coordinates available for Alberta

Readjustment	No. of markers	Coordinates available
Continental	Under 1000	Late 1986
western integration	over 10000	Late 1990
NMIP Jan.'93	over 30000	April 1993
NMIP Oct. '93	over 30000	Dec. 1993

Federal Adoption

The NAD83 datum was adopted as the official national datum by the U.S. government in 1989, and the Canadian government in 1990. Because of Canadian adoption, NAD83 is the official datum for all federal surveying, mapping, charting and position-based information systems.

Final NAD83 Coordinates

In March 1994, a subsequent NAD83 Alberta "refresh" readjustment was completed. Coordinates computed in this readjustment differed from the preliminary October 1993 values by up to several decimetres. The NAD83 coordinates from the refresh readjustment were adopted on June 6, 1994 as final values by Geodetic Control (formerly of the Resource Data Division).

NAD83 Data Products

The following data products are available from Geodetic Control: NAD83 ID cards, NAD83 preliminary ID cards, and a NAD27 EXCEL spreadsheet listing. The content and format of the NAD83 data products differ slightly from the old NAD27 products. For example, a NAD83 ID card contains rigorously derived accuracy qualifiers for the marker's coordinates. Urban index maps include grid lines referenced to both NAD27 and NAD83. Since rural index maps are produced at a relatively small scale, NAD83 rural index maps are indistinguishable from the NAD27 versions.

Phase-out of NAD27

From June 6, 1994 to March 2001, NAD27 coordinates for ASCMs had been available from the Geodetic Control only in multiple listing formats. Since March 2001, NAD27 coordinates are only available via an excel spreadsheet. Coordinates referenced to NAD27 have not been rigorously maintained since June 1, 1994; only NAD83 coordinates are rigorously computed for new ASCMs. If the coordinates of a marker need to be revised because of movement or the integration of additional observations into the control network, only the marker's NAD83 coordinates are revised.

More Information

This fact sheet is one of a series published by Lands Division, Geodetic Control Unit. For more information, please visit our web site at:
Geodetic Control Unit
or contact us at (780) 422-1291 or fax (780) 427-1493.