Navajo Nation Coordinate System Definition

Final Navajo Nation Coordinate System (NNCS) parameters were defined in October, 2007. The NNCS was designed such that linear distortion is minimized at the topographic surface of the Earth within the main coterminous part of the Navajo Nation. The centroid of this area was also used for the NNCS central meridian, which minimizes convergence angles for the coterminous part of the Nation. Although the definition was based on the main Nation area, the coordinate system definition provides positive coordinates for all outlying areas, including Big Boquillas Ranch, and coordinate values are less than one million meters everywhere on the Nation. In addition, it was found that the projection scale factor used for the final design would have been the same even if it was based on the all areas of the Nation (including Big Boquillas Ranch), thus linear distortion has been effectively minimized for the entire Nation. However, it should be noted that large distortion values still occur due to the very extensive coverage area and large topographic relief.

The final defining parameters of the NNCS are provided below.

Linear unit: Meter

Geodetic datum: North American Datum of 1983(1992 or 2007)

> Note: The 1992 realization ("datum tag") is also known as the High Accuracy Reference Network (HARN) realization.
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> The 2007 realization is the National Spatial Reference System of 2007 (NSRS2007) realization based on the NGS 2007 National Readjustment. For the purpose of reprojecting data, it can be considered equivalent to the 1992 (HARN) realization. However, the actual realization used for the data should be documented in the metadata to ensure spatial consistency, particularly for high-accuracy (survey-grade) data.

Projection type: Lambert Conformal Conic (single parallel)

Latitude of grid origin and standard parallel:	36° 00' 00" N
Longitude of central meridian:	109° 30' 00" W
False northing (at grid origin):	300,000.000 m
False easting (on central meridian):	600,000.000 m
Scale factor on standard parallel:	1.00023 (exact)