Datum Transformation Grid (.GTX)

Coordinate readjustments in VDatum require datum transformation grids for their **interpolation** in VDatum. A datum transformation grid is a **regular, rectangular array of height values** that comprised of evenly spaced rows and columns.

The intersection of a row and a column is called a **grid point**. Rows contain grid points with the same latitude coordinate, and columns contain grid points with the same longitude coordinate. The height of the surface at each grid point is defined by the height value assigned to that point. The height values are stored in order starting with the minimum longitude (column) and minimum latitude (row) coordinates.

GTX file types

File name	Description
NCLA	NADCON 5.0 latitude shifting model. Horizontal location of NAD 83(1986) relative to NAD 27. North shift, units of arc seconds.
NCLO	NADCON 5.0 longitude shifting model. Horizontal location of NAD 83(1986) relative to NAD 27. West shift, units of arc seconds.
HPGNLA	NADCON NADCON 5.0 latitude shifting model. Horizontal location of NAD 83(HARN) relative to NAD 83 (1986). North shift, units of arc seconds.
HPGNLO	NADCON 5.0 longitude shifting model. Horizontal location of NAD 83 (HARN) relative to NAD 83(1986). West shift, units of arc seconds.
Gxx	GEOIDxx model. Location of NAVD 88 relative to GRS 80 ellipsoid or NAD 83 (NSRS2007/CORS96). Values are negative throughout the conterminous U.S.

GTX file types

File name	Description
TSS	Inverse topography of sea surface. Location of NAVD 88 relative to LMSL. In the near future, this file will be named as TSSxx where xx is from the corresponded Gxx.
MHHW	Tidal model. Location of MHHW relative to LMSL. Values are always positive.
MHW	Tidal model. Location of MHW relative to LMSL. Values are always positive. MHW is closer to LMSL than MHHW.
MTL	Tidal model. Location of MTL relative to LMSL. This surface is "near" LMSL.
DTL	Tidal model. Location of DTL relative to LMSL. This surface is "near" LMSL.
MLW	Tidal model. Location of MLW relative to LMSL. Values are always negative. MLW is closer to LMSL than MLLW.
MLLW	Tidal model. Location of MLLW relative to LMSL. Values are always negative.