

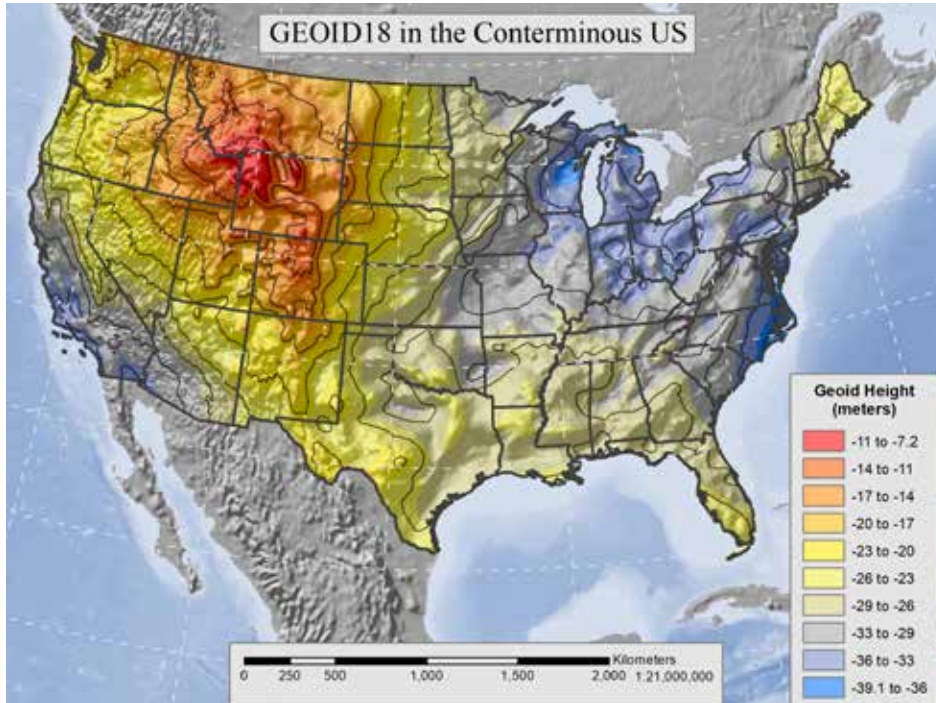
# National Geodetic Survey

geodesy.noaa.gov

*Positioning America for the Future*



# GEOID18



National Oceanic and Atmospheric Administration

# National Geodetic Survey [geodesy.noaa.gov](http://geodesy.noaa.gov)

*Positioning America for the Future*



# GEOID18

The **National Geodetic Survey (NGS)** provides a hybrid geoid model to convert height measurements from **Global Positioning System (GPS)** observations into height values that account for gravity and suggest the direction of water flow. Historically, to obtain precise height information for planning, mapping, and construction, surveyors and engineers relied on control markers known as Bench Marks.

Now **GPS data collected on Bench Marks (GPSonBM)** are used to build new models and tools like **GEOID18** and the upcoming 2022 Transformation Tool. NGS has crowd-sourced the GPSonBM data collection, and several thousand new GPSonBM observations have been contributed by volunteers. This new data improves GEOID18's accuracy.

GEOID18 replaces GEOID12B in the Conterminous U.S., Puerto Rico and the U.S. Virgin Islands. It converts between NAD 83 (2011) and the vertical datums: NAVD 88, PRVD02, and VIVD09. GEOID18 will be the last hybrid geoid model before the National Spatial Reference System is modernized and the vertical datums are replaced by the North American-Pacific Geopotential Datum of 2022.

**Use GEOID18 to access national height datums from anywhere with precise GPS data!**

**Why GEOID18 is better than GEOID12B:**

- **Constrained to NAVD88, PRVD02, and VIVD09 using 32,357 GPSonBM data points, a 26% increase over GEOID12B**
- **More accurate! Significant new national and regional scale analyses and filtering of GPSonBM data, provided cleaner, more consistent dataset resulting in 25% better overall fit of the model to the bench marks**
- **Better elevation and gravity data**
- **Improved geoid modeling and digital elevation modeling techniques**