



## New Datums Are Coming!

# New Datums

### NOAA is Replacing NAD 83 and NAVD 88.

NOAA's National Geodetic Survey (NGS) will be replacing the datums of the National Spatial Reference System (NSRS), including **the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88)**. NGS will provide the tools to easily transform between the new and old datums. Read the NGS Ten-Year Plan and visit the **New Datums Web page** on our site to learn more.

### Benefits

The new reference frames (geometric and geopotential) will rely primarily on **Global Navigation Satellite Systems (GNSS)**, such as the Global Positioning System (GPS), as well as on a gravimetric geoid model resulting from NGS' **Gravity for the Redefinition of the American Vertical Datum (GRAV-D)** Project.

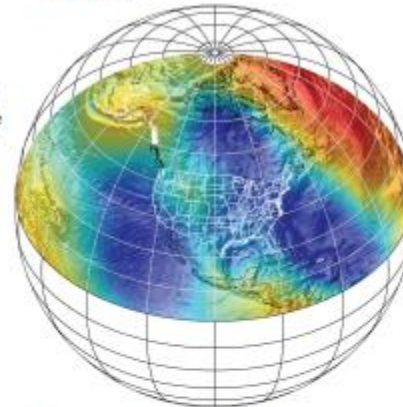
The target accuracy of differential orthometric heights (heights relative to sea level) in the geopotential reference frame will be 2 centimeters over any distance, where possible.

### What You Can Expect

The magnitude of change with the new datums will vary depending on the datum you are using and your geographic location. The new geometric datum will change latitude, longitude, and ellipsoid height between 1 and 2 meters. In the conterminous United States (CONUS), the new vertical datum will change heights on average 50 centimeters, with approximately a 1-meter tilt towards the Pacific Northwest.

### How You Can Prepare

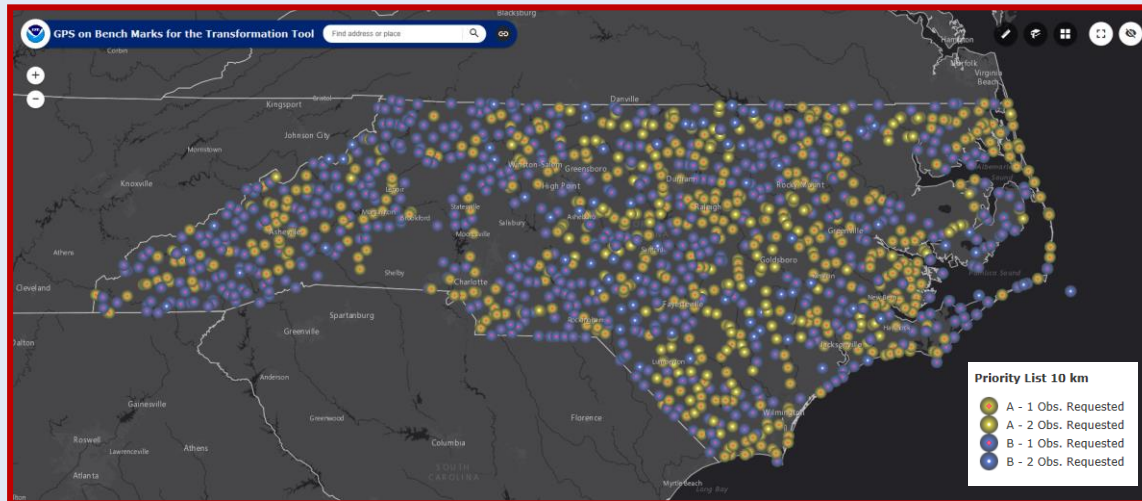
- Learn if **legislation** or other formal documents referencing NAD 83 and NAVD 88 need to be changed in your state.
- **Transform existing data** to the latest NSRS datums and realizations; i.e. NAD 83 (2011), GEOID12B, and NAVD 88.
- **Obtain precise ellipsoidal heights** on NAVD 88 bench marks, and visit the GPS on Bench Marks Web page to learn more.
- Require and provide **complete metadata** on all mapping contracts. See our website for more details.



*The new datums will extend across CONUS and U.S. territories. The geometric datum replacing NAD 83 will be consistent with geocentric global reference frames defining latitude and longitude. The geopotential datum replacing NAVD 88 will be based on a gravimetric geoid model, enhanced by data from NGS' Gravity for the Redefinition of the American Vertical Datum (GRAV-D) Project.*

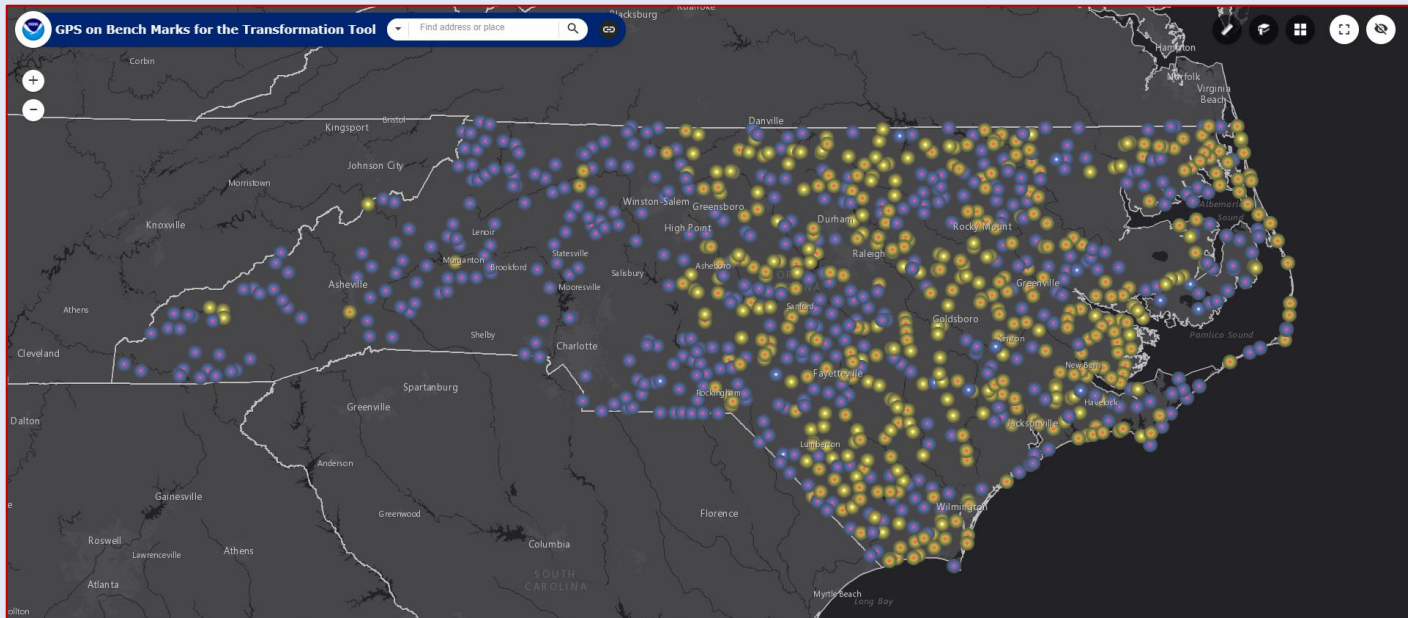
# National Geodetic Survey GPS on Bench Marks 2020/2021

- 2020
  - NGS has prepared a list of geodetic monuments that we review for possible GNSS data collection



# National Geodetic Survey GPS on Bench Marks 2020/2021

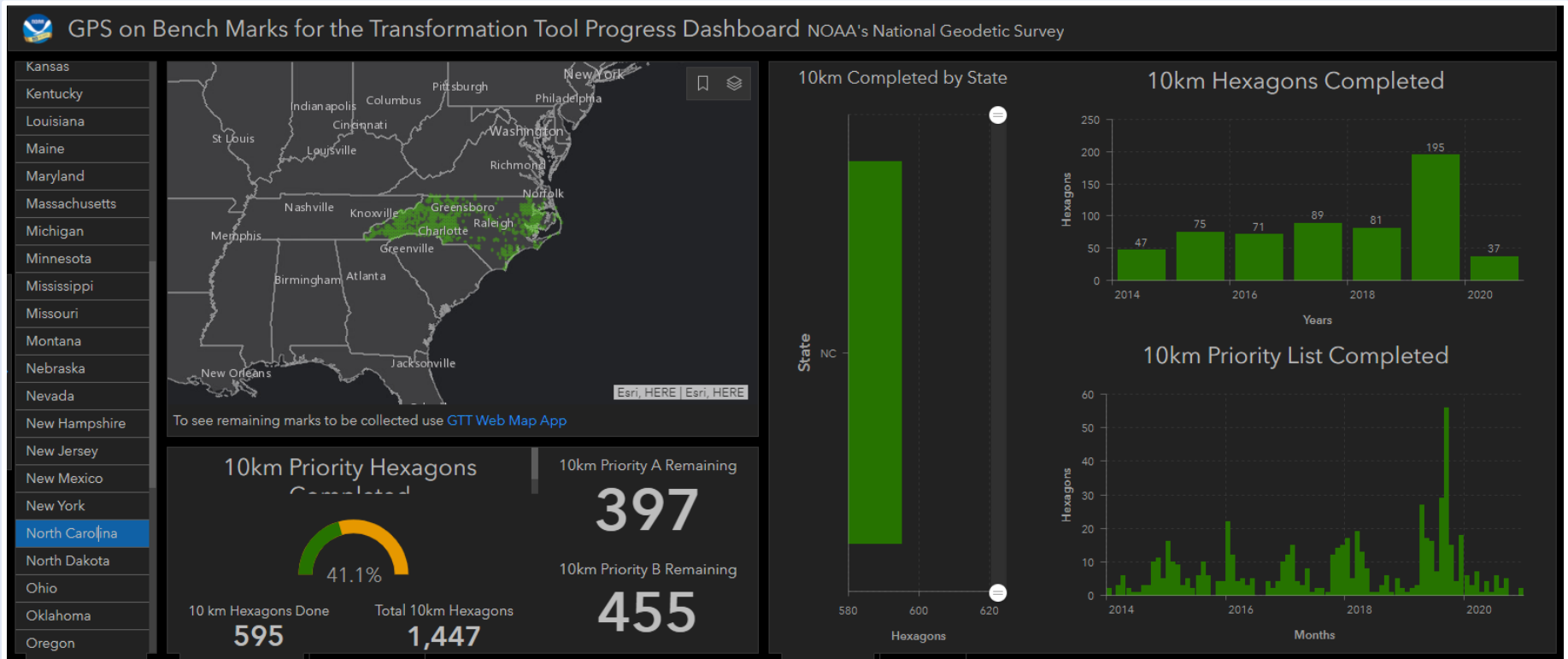
- 2020 (status as of 1/11/2021)
  - NGS has prepared a list of geodetic monuments that we review for possible GNSS data collection



North Carolina Emergency Management



# National Geodetic Survey GPS on Bench Marks



North Carolina Emergency Management





# Absolute Gravity Meter Data Collection

- Twenty (20) gravity marks established
  - AB Tech Community College (Asheville)
  - Southwest Community College (Sylva)
  - Shelby-Cleveland County Regional Airport (Shelby)
  - McDowell Tech Community College (Marion)
  - Foothills Regional Airport (Morganton)
  - Wilkes Community College (Wilkesboro)
  - Rutherford County Airport (Rutherfordton)
  - Tri-County Community College (Murphy)
  - Ashe County Airport (Jefferson)



# Relative Gravity Meter Data Collection

- New gravity marks established (January – June 2021)
  - Sparta area
  - Northeast North Carolina
  - Other areas requested by the National Geodetic Survey



**North Carolina Emergency Management**

