



What is it?

GPS on Bench Marks

NOAA's National Geodetic Survey encourages anyone with survey-grade Global Positioning System (GPS) receivers **to help perform GPS on Bench Marks** (GPS on BMs) **to prepare their community to take full advantage of the benefits of the modernized National Spatial Reference System (NSRS)**. GPS on BM data submitted by the **end of December 2021** will be used to create new tools and coordinates to be released with the modernized system.

Why Participate?

The nation's current height system, the **North American Datum of 1988 (NAVD 88)**, is based on historic geodetic leveling surveys that use thousands of benchmarks, most of which have not been positioned with GPS. Adding GPS data on these marks allows them to be used in the modernized NSRS. It will also improve the local accuracy of the coordinate transformations between NAVD 88 and the upcoming **North American-Pacific Geopotential Datum of 2022 (NAPGD2022)**.

How to do it? It's 1-2-3:

Recover

Observe

Report

1. Find local bench marks. Visit our website at [Geodesy.noaa.gov/GPSonBM](https://geodesy.noaa.gov/GPSonBM) for a priority listing of marks to occupy and maps to help you find them. Contact your **NGS geodetic advisor** for more details, or email us at ngs.GPSonBM@noaa.gov.

2. Collect GPS on your selected bench mark following careful field procedures.

- Complete reconnaissance at your selected mark to ensure its usability, and submit a mark recovery via the NGS Mark Recovery Form.
- Use a fixed-height tripod (recommended), and brace the legs with sandbags or chain.
- Verify antenna type, height and plumb.
- Collect a 4+ hour GPS data file.
- Take two photos of the mark, and note any changes to the existing mark description. (Tip: use **observer field log** with these steps.)

3. Share your data by uploading to our **Online Positioning User Service (OPUS)** on the NGS website at [Geodesy.noaa.gov/OPUS](https://geodesy.noaa.gov/OPUS).

Contribute!

NGS will use submitted data to compute coordinates in the modernized NSRS and develop tools supporting transformations between NAVD 88 and NAPGD2022.