

Understanding Vertical Datums: Frequently Asked Questions

To continue the recovery process in New Jersey, FEMA has developed Best Available Flood Hazard Data maps for certain coastal communities affected by Hurricane Sandy.

"[Best available flood hazard data](#)" is defined as the most recent flood risk maps FEMA has provided. Preliminary Work Maps for Stafford Township with the Best Available Flood Hazard Data were released on June 17, 2013 and have been adopted by the Township. The maps are in effect for Stafford Township in connection with permitting as of August 7, 2013.

The elevations shown on the Preliminary Work Maps are referenced to the North American Vertical Datum of 1988 (NAVD88). Preliminary and future effective FIRMs will also be referenced to NAVD88.

Here's a look at what vertical datums are and how to use them with the updated maps, in question and answer form.

What is a Vertical Datum?

A vertical datum is a base measurement point (or set of points) from which elevations are determined. Historically, the standard datum used by the Federal government was the National Geodetic Vertical Datum of 1929 (NGVD 29). However, the North American Vertical Datum of 1988 (NAVD 88) is now the national standard.

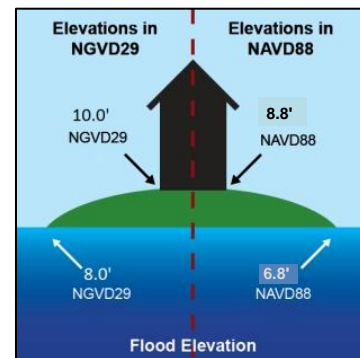
Why are there so many vertical datums?

Over the years, different datums have been established based on the technology and information on hand and the need for a vertical reference point in a given area. The use of Global Position Systems (GPS) satellites to measure elevations and observations from coastal gages have helped government agencies develop new, more accurate datums, such as NAVD 88, which allow for the better comparison of elevations.

Why does it matter which vertical datum an elevation is referenced to?

Elevation values based on different vertical datums cannot be used together directly since they are based on a different vertical reference point (See graphic). When comparing the best available data released by FEMA with elevation information on Elevation Certificates and other documents from different sources, care must be

taken to ensure all elevations are in the same datum. If they are not the same, a conversion factor must be applied so that the values are referenced to the same datum before they are used. Failure to do so can result in improper structure design (e.g., building at the wrong elevation) which can have serious implications in terms of complying with community and state building requirements. Flood insurance rates can also be impacted.



Why is FEMA using NAVD88 for the updated maps?

NAVD88 is more compatible with modern surveying and mapping technologies like Global Positioning Systems (GPS). It also is more accurate than the previous national vertical datum, NGVD29.

What do I do if I have elevation information for my house but the information is not in the NAVD88 datum?

When you have elevations referenced to different datums, you will need to apply a conversion factor in order to properly compare the two. In Stafford Township, the conversion factor is 1.2 feet. If an elevation certificate is using the 1929 datum, 1.2 feet must be subtracted from any elevation listed to come up with the current 1988 datum-based elevation.

What do I do if I am not sure?

If you have an Elevation Certificate or other document showing the home's elevation, please contact the Community Development Department for a determination.

Please call (609) 597-1000 x 8529, 8531 or 8530.