



FEMA

**MEMORANDUM FOR:** Mitigation Division Directors  
Regions I - X

**FROM:** Michael F. Howard, Chief  
Risk Identification Branch

**SUBJECT:** Procedure Memorandum No. 41 – North American Vertical  
Datum of 1988 (NAVD88) Policy

**Background:** Historically, the most common vertical datum used by FEMA has been National Geodetic Vertical Datum of 1929 (NGVD29). However, the NAVD88 datum is more compatible with modern surveying and mapping technologies like Global Positioning Systems and Light Detection and Ranging (LIDAR), more accurate than NGVD29, and it is the only official vertical datum for the continental United States ([http://www.ngs.noaa.gov/PUBS\\_LIB/FedRegister/ERdoc93-14922.pdf](http://www.ngs.noaa.gov/PUBS_LIB/FedRegister/ERdoc93-14922.pdf)).

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It is important that FEMA accomplish this conversion now for the following reasons:

- The old datum, NGVD29, is obsolete and no longer supported by the National Geodetic Survey (NGS).
- As time passes it will be substantially more difficult to obtain reliable elevations referenced to NGVD29.
- Previously published heights on NGS benchmarks will not be updated. These old heights have greater errors than new NAVD88 heights, are not maintained and become less reliable as they age.
- As reference marks are disturbed or destroyed, there will be fewer and fewer NGVD29 reference points available.
- Eventually professional surveyors may have difficulty certifying elevations reference to NGVD29.

**Issue:** Map Modernization projects are currently being undertaken using either NGVD29 or NAVD88. FEMA wants new flood map projects to use only NAVD88.

**Action Taken:** The purpose of this memorandum is to communicate FEMA's Flood Hazard Mapping Program policy regarding the NAVD88. This memorandum supersedes the decision making criteria for conversion of vertical datum outlined in Appendix B of the Guidelines and Specifications for Flood Hazard Mapping Partners, April 2003. For areas within the continental United States, all new flood maps and updates that revise the majority of the map panels must be referenced to NAVD88.

When coordinating with communities regarding their flood map updates and at flood map update scoping meetings, FEMA staff and mapping partners should explain the datum conversion to community officials.

If a community opposes conversion to NAVD88, FEMA staff should arrange for a meeting with community officials, FEMA staff and the NGS State Geodetic Advisor or the NGS Liaison to FEMA to discuss the benefits of NAVD88 and the limitations of NGVD29.

If the community still opposes conversion to NAVD88 after meeting with the NGS, then a waiver may be granted to keep the map referenced to NGVD29 provided:

- The community CEOs for all jurisdictions included on the flood map provide a letter to FEMA stating that the community wants its flood map to be referenced to NGVD29 and that the community recognizes that funding may not be available in the future to update the flood map to NAVD88 if it is not done for the current map action.

Waivers should be approved by the Regional Mitigation Division Director and coordinated with the Headquarters Regional Engineer.

If you have questions regarding this policy, you may contact Paul Rooney (202-646-3123, [Paul.Rooney@dhs.gov](mailto:Paul.Rooney@dhs.gov)).

The NGS Liaison to FEMA is Ronnie Taylor (850-245-2610, [Ronnie.Taylor@noaa.gov](mailto:Ronnie.Taylor@noaa.gov)).

The NGS State Geodetic Advisors can be found at:

<http://www.ngs.noaa.gov/ADVISORS/AdvisorsIndex.shtml>

cc: See Distribution List

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