

Country Brief: Modernization of the United States National Spatial Reference System

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"The National Oceanic and Atmospheric Administration's (NOAA) National Geodetic Survey (NGS) has been tasked for the past 214 years to provide location positioning for all aspects of commercial, scientific, and engineering applications within the U.S. Our mission is "to define, maintain and provide access to the National Spatial Reference System (NSRS) to meet our nation's economic, social, and environmental needs." The NSRS is an assemblage of geophysical and geodetic models, tools, and data. The most visible components are the North American Datum of 1983 (NAD 83) and the North American Vertical Datum 1988 (NAVD 88). Together NAD 83 and NAVD 88 provide a consistent spatial reference framework for myriad geospatial applications and positioning requirements throughout the United States.

NGS is engaged in the ongoing and comprehensive multi-year project of modernizing the NSRS. A makeover necessitated by technological developments and user accuracy requirements, all to provide a modern, accurate, accessible, and globally aligned national positioning framework that exploits the power and utility of the Global Navigation Satellite System (GNSS) - of both today and tomorrow. The modernized NSRS will include four new-generation geometric terrestrial reference frames (replacing NAD83) and a geopotential datum (replacing NAVD88).

The briefing will discuss the multi-year project of modernizing the United States National Spatial Reference System (NSRS), NGS activities, and motivations for these efforts. Ancillary projects such as Gravity for the Redefinition of the American Vertical Datum (GRAV-D) provide the framework data and tools to ease the transition to the new reference frames and geopotential datums. The focus will be on the planned evolution of the NSRS as outlined by the "National Geodetic Survey Ten-Year Strategic Plan, 2019-2023."