# NOAA GIS Tool for Safe Navigational Products

NOAAâ€™s just-completed first-edition VDatum tool will allow users to combine and transform geospatial data from different sources onto a single vertical reference surface, removing the largest obstacle GIS users face when creating products that enable safe navigation and serve other vital purposes for coastal communities.

The Vertical Datum Transformation tool, known as VDatum, allows users to produce a set of consistent geospatial data over coastal and interior areas of the contiguous U.S., removing the differences between the vertical reference systems of land- and water-based data. Information about where the water meets the land becomes increasingly important when talking about sea level change and climate change, and is essential to the safety and economic vitality of coastal communities.

NOAA defines the geospatial reference system for the United States. This National Spatial Reference System provides the backbone for all of the nation's positioning and navigation services, including GPS.

Water level data and land elevation data are generally not based on the same reference system. VDatum enables users to merge these disparate data to a single 'zero' point for uniformity of measurement. This is essential for precise planning on the coast or along a lakeshore. For example, marsh restoration relies on accurate geospatial data to determine how high the tide will rise in a marsh, what vegetation will be affected, how often certain parts will be inundated, and how sea level change will affect the ecosystem of the marsh.

"VDatum is essential for merging spatial data from different sectors of the environment, so that positions and heights are uniformly accurate," said Doug Brown, NOAA's VDatum program manager. "With this tool now covering the contiguous U.S., users can save time and eliminate inconsistencies when converting geospatial data from one datum to another."

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