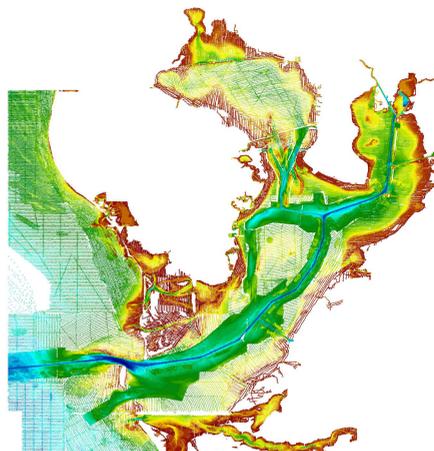


USGS National Elevation Dataset (NED)

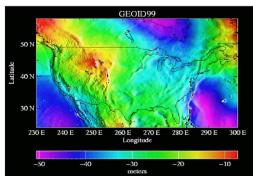
Web site: gisdata.usgs.gov/ned/



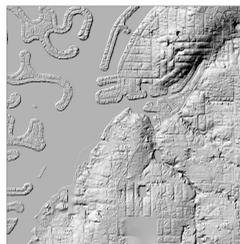
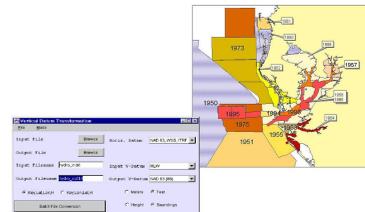
NOAA Hydrographic Survey Database

Web site: www.ngdc.noaa.gov/mgg/bathymetry/hydro.html

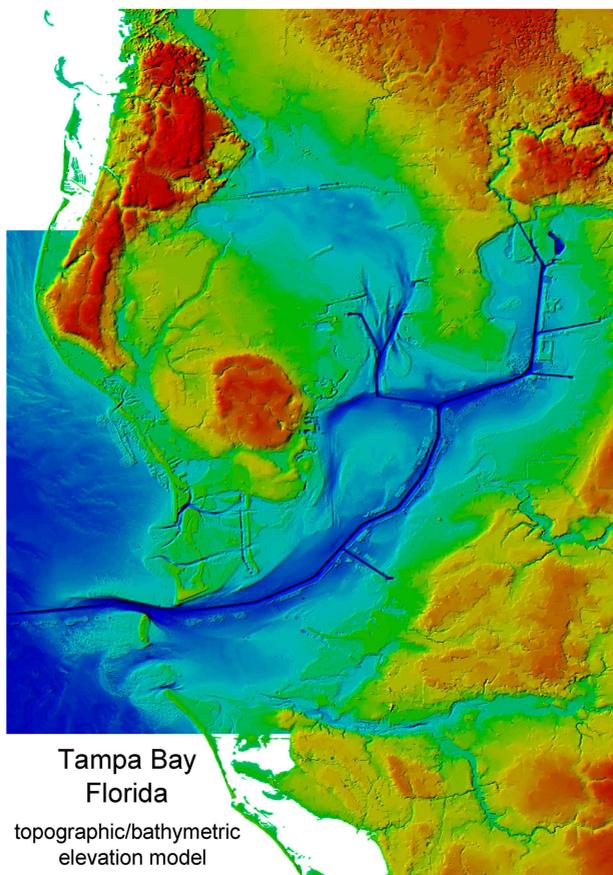
The "best available" topographic data and bathymetric data were extracted from USGS and NOAA data collections, respectively. Both types of data were processed with tools for vertical datum transformation developed by NOAA's National Geodetic Survey (NGS). VERTCON and GEOID99 were used to transform the topographic data into a vertical reference frame defined by the NAD 83 (86) ellipsoid. VDatum, a new tool developed by NGS, was used to convert the bathymetric soundings from their tidal datum (mean lower low water or mean low water) to the ellipsoid vertical reference.



ArcInfo and Grid were used to process and format the topographic data for merging with the bathymetric data. ArcView was used to perform spatial-temporal filtering to select the most recent soundings from the multiple hydrographic surveys of Tampa Bay. After conversion to the common vertical datum, TOPOGRID was used to generate the merged raster elevation surface from the input topographic and bathymetric point data. The result is a 1-arc-second (approximately 30-meter) resolution grid. ArcMap and ArcScene were used to prepare visualizations of the integrated topographic/bathymetric elevation model.



Ongoing work on the project includes updating parts of the merged elevation model with recent, high resolution, high accuracy data to demonstrate the usefulness of incorporating 3rd-party data sources. In this example, 3-meter topographic data derived from a LIDAR survey of Pinellas County, Florida conducted by the University of Florida are shown.



Tampa Bay
Florida
topographic/bathymetric
elevation model

The merged topographic/bathymetric elevation model is the first in an effort to demonstrate the integration of diverse coastal datasets. The project is addressing concerns of users who have identified the difficulty in using USGS and NOAA data together at the land/water interface. The merged elevation model is useful for applications such as storm surge modeling, sediment transportation and deposition studies, habitat assessments, and shore-line delineation.

