NOAA Coastal Services Center – Coastal LiDAR, bathymetry, shoreline data, and inventories of terrestrial elevation data and bathymetry

http://www.csc.noaa.gov/

Program Highlights

Data Product

- Light Detection and Ranging (LiDAR) data collected by the National Oceanic and Atmospheric Administration (NOAA) and other agencies, such as the U.S. Army Corps of Engineers (USACE) Joint Airborne LiDAR Bathymetry Technical Center of Expertise (JALBTCX) over the U.S. coast, is available at http://www.csc.noaa.gov/digitalcoast/data/coastallidar/
- Historical shoreline data with the average accuracy of measured benchmarks at 3.06 meters (10 feet), which meets the NOAA guidelines for fixed aids to navigation and objects charted as landmarks, is available at http://shoreline.noaa.gov/.
- Inventories of coastal LiDAR and bathymetric data are available at http://www.csc.noaa.gov/topobathy/.

Advantages

- LiDAR data covering most of the coast generally have sub-meter vertical and horizontal root mean square error.
- Data can be downloaded for free in user's choice of vertical datum and projection.
- Variety of shoreline data.
- Topography and bathymetry inventories survey a wide variety of sources to identify the best available information.

Disadvantages

- USACE JALBTCX elevation data in narrow strip along coast only.
- Not all of the U.S. coastline has been mapped.
- Shoreline data are dated with no update schedule provided.

Program Overview

The Coastal Services Center (CSC) is an office within NOAA devoted to serving the Nation's State and local coastal resource management programs. The CSC, with its partnerships, is acquiring high-resolution topographic data in the coastal zone and distributing it to users. The primary goal is to work with the coastal resource management community and help practitioners by supplying information or data on topographic issues.

Data Details and Availability

These data are generated through both private sector contracts and government-owned systems. The USACE-collected LiDAR data are typically targeted at a narrow strip of coastline and are usually a kilometer or less in width. Wide-area topographic LiDAR are also available for coastal areas. The vectorized shoreline data were created from scanned historical shoreline maps in raster format and are in

decimal degrees, referenced to the NAD83 datum. The accuracy of the shoreline datasets is stricter than national standards and four times the accuracy of current U.S. Geological Survey 1:24,000 scale topographic maps. This means that the original topographic sheets can be assumed to also meet NOAA guidelines and to be very accurate in their depiction of the shoreline that existed at the time of the surveys. The topographic and bathymetric inventories are compiled regionally and are not updated on a regular schedule. They integrate inventory information from a wide variety of sources to provide a reasonably comprehensive summary of what bathymetric data and topographic data are available for a particular area.

The NOAA Digital Coast site at http://www.csc.noaa.gov/digitalcoast/ also provides access to a wide variety of other data sets for coastal resource managers.

Data Applicability to Flood Mapping Program

Federal Emergency Management Agency (FEMA) Procedure Memorandum (PM) 61, *Standards for Lidar and Other High Quality Digital Topography*, provides the specifications for elevation data for regulatory flood mapping projects. Most LiDAR data will satisfy the data standards in PM 61, and thus can be used on most Risk Mapping, Assessment, and Planning (Risk MAP) projects. The metadata records for each LiDAR data set should be reviewed prior to use on a FEMA project to ensure sufficient accuracy for the project. Some LiDAR data sets also include precise near shore bathymetry. Because of the historical nature of the shoreline data, each dataset should be examined for its potential use for FEMA projects.

Data Ordering

These data are available for download directly through the CSC Web site.