Rich Rewards from NOAA’s CORS and GRAV-D Programs

Since 1807, NOAA’s National Geodetic Survey (NGS) and its predecessor agencies have partnered with surveyors in both the public and private sectors to place hundreds of thousands of survey marks throughout the United States, determining positional information for each mark. Each survey mark is published with accurate horizontal and/or vertical information such as latitude, longitude, and/or height. This collection of more than 1,500,000 points, plus more than 1,300 Continuously Operating Reference Stations (CORS) which the National Geodetic Survey coordinates and monitors, form the National Spatial Reference System (NSRS). The NSRS provides more than $2.4 billion in potential annual benefits to the U.S. economy, according to a new independent study. The study finds that the NOAA CORS network alone provides an estimated $758 million per year in benefits.

The study estimates that an additional $522 million in annual economic benefits could be generated by the implementation of a new vertical reference system, allowing users to determine more precise elevations using the Global Positioning System (GPS), with approximately $240 million saved from improved floodplain management alone. Development of this new reference system would result from the completion of a new NOAA initiative, Gravity for the Redefinition of the American Vertical Datum (GRAV-D), which will allow surveyors and scientists to employ GPS to determine more precise and accurate elevations than currently possible, in less time and with less effort. Because the current vertical datum is anchored by less accurate, more costly survey monuments, there are elevation errors ranging from 16 inches to 6 feet relative to sea level. When GRAV-D is successfully completed and the new elevation system is accessed using the CORS network, these elevation errors will be reduced to just under an inch.

The study, conducted for NGS by Leveson Consulting of Jackson, New Jersey, will be followed by a more refined evaluation of the benefits of the CORS network and the future impact of the new NOAA GRAV-D initiative designed to replace the existing North American Vertical Datum established in 1988 (NAVD88).

For more information, contact NGS:
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