



## 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:

- **On the Web**  
geodesy.noaa.gov
- **NOAA Office of Legislative Affairs**  
202-482-4981

Socioeconomic  
**Benefits**