

# Height Modernization Workshop

Friday, December 1, 2006  
8:00 AM – 5:00 PM  
School of Mines  
Golden, Colorado

Height Modernization provides accurate height information by integrating Global Positioning System (GPS) technology with existing survey techniques. The horizontal component of the NSRS is in place and functioning. The vertical component of the NSRS is not, and therefore the full potential and national benefits of real-time measurement of heights are not yet a reality. It has been proven that GPS can efficiently establish accurate elevations by following Height Modernization standards, specifications and techniques, for all types of positioning and navigational needs, thus providing a denser, more accurate 3-dimensional (latitude, longitude and height) geodetic control network.

In 1998, the U.S. Congress directed NGS to conduct a National Height Modernization Study. Up until the time of the study, there were many indications that considerable efficiencies and cost savings could be achieved through the utilization of GPS technology when applied to surveying and in particular, the measurement of heights. This study proved this and projected in some cases a 90 percent cost savings over conventional surveying methods. Moreover, the study indicated the emergence of many height modernization applications ranging from improvements to air and marine navigational safety, to precision farming and mining, and from high accuracy flood mitigation and mapping to real-time monitoring of gravity and aquifer-based water systems. These findings caught the attention of Congress and the Administration and over the past six years nearly \$40 million has been appropriated with 90 percent going to 11 participating states to initiate implementation of the study nationwide.

Participating in this program creates a great opportunity for the State of Colorado. Height Modernization will help improve Colorado's ability to manage assets, respond to disasters and emergencies, mitigate flood impacts, potentially reduce homeowner's flood insurance rates, and plan our future using modern technologies such as GPS and geographic information systems (GIS). It can improve our surveying, engineering, construction and mapping techniques by providing us with a much better 3-dimensional control network.

This workshop, designed to provide and gather information, will explain what Height Modernization is and identify how an improved survey network can benefit Colorado. Scheduled as a full-day Workshop, topics to be discussed include:

- How Height Modernization programs were started in other states
- Technologies used in Height Modernization and results to date of Height Mod programs
- How Height Modernization can benefit Colorado and its network issues
- What is needed for Colorado to implement a Height Modernization program

Speaker list includes representatives from North Carolina, Arizona, Wisconsin, NGS experts on Height Modernization and gravity and will include discussion about our local Height Mod activities.