

**NOAA, National Geodetic Survey
HEIGHT MODERNIZATION COORDINATION MEETING
DRAFT NOTES
SSMC3, Room 8836**

Date: Thursday, April 11, 2013
Time: 2:00-3:30 pm East Coast time

Attendees:

Call-ins from: AK (Pat Kalen), AL (Brian Harris, Brian McGill), CA (John Canas), ID (Keith McGuire), IL (Mike Blumhoff, Sheena Beaverson); KY (Wolfgang Ziegler), NC (Dave Zilkoski), NC (Dave Zilkoski), NGS (Vicki Veilleux, Dan Callahan, Dan Winester), SC (Matt Wellslager), WA (Dave Steele); WI (David Moyer, Leonard Perfetti); Esri (Kevin Kelly); NWS (Victor Hom); USACE (Mark Huber); USGS (Paul Rydlund)

Silver Spring: NGS (Christine Gallagher, Lucy Hall, Jonetta Johnson, Michael Dennis, Courtney Lindo, Tim Hanson, Brian Shaw, Ross Mackay); CO-OPS (Michael Michalski, Tom Landon)

Advisors/Coordinators: Brian Ward (AR), Ed Carlson (HI), Dave Rigney (MI), Denis Riordan (MS), Scott Lokken (NC), Mark Armstrong (OR), Cliff Middleton and Dan Prouty (TX), Dan Martin (VT), John Ellingson (WI)

Note:

It is NGS' habit to only capture names of attendees who speak up at the initial roll call or during the meeting. We respect those who may wish to attend anonymously. If you want your name captured in the recorded notes, and you do not see it listed here, email Christine.Gallagher@noaa.gov, or ngs.htmod@noaa.gov.

1. NGS and Height Mod related announcements:

a. National Height Modernization Program (Christine Gallagher):

-The Height Mod Partner meeting is still planned for Apr 30-May 1 in Frankfort, KY.

b. Bluebooking (Michael Dennis)

-The effort to improve the bluebook process continues to move forward, albeit slowly.

c. Shapefiles (Brian Shaw)

-A shapefile for leveling extent has been completed and distributed to the advisors.

2. Other announcements / questions (Open to all callers):

None

3. Monthly presentation

“Use of GNSS to Establish a Vertical Datum”

Paul Rydlund, U.S. Geological Survey

The U.S. Geological Survey (USGS) uses Global Navigation Satellite Systems (GNSS) technology to monitor natural hazards, ensure geospatial control for climate and land use change, and gather data necessary for investigative studies related to water, the environment, energy, and ecosystems. Establishing a vertical datum is fundamental to a variety of these integrated earth sciences, and this presentation will provide an update on a new USGS Techniques and Methods Report.

Paul Rydlund is a supervisory hydrologist with the USGS Missouri Water Science Center in charge of hydrologic data collection, processing, and dissemination for the majority of streamflow gaging stations throughout Missouri. He received consecutive bachelor’s degrees in Business and Geological Engineering from Northwest Missouri State and the University of Missouri at Rolla. He went on to receive his Master’s degree in Civil Engineering from the University of Missouri at Rolla and began working for the USGS in 1996 with project emphasis in hydraulic and hydrologic modeling, water quality, and surveying. Paul has practiced as a licensed land surveyor in Missouri and provides technical guidance among USGS surveyors throughout the country. Paul chairs a national USGS GNSS committee and instructs GNSS classes within the USGS survey community.

Questions/Answers:

Q (Dave Zilkoski): During the training, how much background do you provide on geoids, datums, etc?

A (Paul): In the manual we provide a brief geodesy background with such details. However, we also direct trainees and GS staff to review online resources and webinars on <http://www.ngs.noaa.gov/corbin/>. We also instruct them to read the manual (<http://pubs.usgs.gov/tm/11d1/>), which also has some background material.

Q (Dave Zilkoski): When presenting VERTCON as a transformation tool, do you caution users since there are issues using the tool in some places around the country?

A (Paul): Yes, we definitely caution the use of VERTON, and we try to educate folks and ensure they understand a distinction between a simple conversion tool such as VERTCON or CORPSCON or when resurveying is the appropriate method to transform to a current datum.

Q (Ed Carlson): It seems that OPUS is recommended for Level 1 quality observations, but OPUS does not always work in the Pacific. Do you alert users to the fact OPUS cannot always be used?

A (Paul): We are aware the document does not address every different scenario, but we attempt to provide the guidance that can be applied most places. We address the unique cases as they come up. The manual is put forward that some form of survey should be possible in circumstances such as Hawaii where OPUS solutions are not permissible (e.g. any localized RT work).

Q (Pat Kalen): We also have similar challenges in Alaska. Is there additional guidance?

A (Paul): The solution is a moving target, and GRAVD will hopefully provide improved options

Q (Jim Richardson): What are you doing to validate bench marks that you use?

A (Paul): Before going into the field, we review recovery notes. We sometimes complete a least squares adjustment and “throw-out” the bench marks with the highest residuals. Validation can be challenging. Ultimately the user must “accept” what is considered the “truth” to be used for localizations or any other control surveys and move forward from there.

Q (Dave Zilkoski): What accuracy do you assign your Levels 1, 2, 3 and 4?

A (Paul): We do not assign accuracies; rather, the document describes a hierarchy of best practices. Accuracies or uncertainties are left as a result of the best practice, and different assessments of uncertainty are described in the manual

Q (Dave Zilkoski): Would you agree your document is describing how to establish vertical control rather than a vertical datum?

A (Paul): Yes. Datum may be an ambiguous term and I would agree that the more appropriate term might be the control that is used behind the datum.

Q (Michael Dennis): Have you considered submitting the observations to NGS, so it can become control?

A (Paul): Yes, but we have to balance the level of effort versus staying close to our mission. Submissions to OPUS-DB are certainly not as cumbersome, but “blue booking” requires more effort to which much of our mission area funding is reimbursable (not appropriated) to spend additional time/money. This is a tough balance.

Q (Ed Carlson): Did your presentation refer to a tablet application for entering description and recovery notes?

A (Paul): The USGS GNSS manual has only .pdf documents available as handwritten or electronic form; however, we have several folks in our organization that are proficient with mobil application development for tablets, PDA’s or smart phones. We anticipate documentation of similar metadata available via mobile device in the near future.

4. Other Business

Important Links: Previous months' meeting notes and a list of future meeting presentations can be found at: <http://www.ngs.noaa.gov/heightmod/MeetingNotes.shtml>

Next meeting: May 9, 2013

Guest Presentation:

Examining Vertical Stability of Deep Rod Marks in Marshes

Dr. Philippe Hensel, National Geodetic Survey

Recent Events

Mar 15-17, 2013, Albuquerque, NM - New Mexico Professional Surveyors Conference

Mar 23-27, 2013, Reno, NV – California Land Surveyors Association / Nevada Association of Land Surveyors 2013 Conference

Mar 24-28, 2013, Baltimore, MD - ASPRS Annual Conference

Upcoming Events

April 24-26, 2013, Prescott, AZ- Arizona Professional Land Surveyors 2013 Conference

April 30 - May 1, 2013, Frankfort, KY-2013 Height Modernization Partner Meeting

Sept 16-19, 2013, Providence, Rhode Island – GIS-PRO '13 (URISA Annual Conference)