

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

Date: Thursday, April 14, 2011
Time: 2:00-3:30 pm East Coast time

Attendee list may be incomplete.

Attendees:

Call-ins from: AK (Pat Kalen), John Canas (CA), Rayce Ruiz (ID), KY (Wolfgang Ziegler, Dan Farrell), NC (Dave Zilkoski, Gary Thompson), PA (Brad Foltz), Greg Hauger (TX), WI (David Moyer), NGS (Dan Callahan, Vicki Veilleux, Dan Winester)

Silver Spring: NGS (Renee Shields, Michael Dennis, Lucy Hall, Ross Mackay, Sonita Tiwari); CO-OPS (Michael Michalski)

Advisors/Coordinators: Dave Minkel (AZ), Marti Ikehara (CA), Dave Newcomer (FL), Monroe Rivers (KS), Denis Riordan (MS), Curt Smith (ID/MT), Scott Lokken (NC), Cliff Middleton (TX), Dan Martin (VT), John Ellingson (WI)

Introduction/Welcome (Renee Shields)

General announcements: NGS' annual leadership is taking place this week in West Virginia.

NGS Activities

Greg Hauger reported that the recon is still underway on the geoid slope validation survey in Texas.

Michael Dennis: Adjustment of passive control is planned to ensure consistency with the active control network when the Multi-year CORS solution is completed and published. An official announcement will be posted on line very soon. It has only been delayed this long because of the difficulties getting the planning committee together. Since a new geoid model will be created to take advantage of the updated elevations, there is also discussion of an adjustment of the height mod projects currently in the NGS database to recompute GPS derived orthometric heights.

Renee Shields: A larger plan for the web site where information on this adjustment is posted will be a section of NGS' web site that covers datum definitions in addition to changes to the NSRS, whether it be for this adjustment or in connection with the new datums outlined in NGS' Ten-year Plan.

Renee Shields: In response to a question from Cliff Middleton, Renee reported on the progress of the activities she is involved with to assist USGS with updating datums on coastal water level gages and on stream gages. The coastal gages are being looked at in Texas to establish a model for prioritizing gages and identifying resources to perform the surveys to tie the gages to tidal datums. The stream gage effort is moving along with updates pending on gages in North Carolina, observed in height mod surveys being done by NCGS. Also it is expected that a large

portion of these gages can be updated using VERTCON, but the resources need to be found to evaluate and identify those gages.

Renee reported on the funding status. Assuming a budget is finally passed for the federal government it will be several weeks before the numbers trickle down to NGS. It is too late this year to advertise funding opportunities and get them out the door. We are not sure what to expect in FY12, but it is not likely earmark funds will be a part of appropriations in the near future. Assuming that the National Height Modernization program continues to be funded, Renee hopes to identify projects across the country that will enhance infrastructure needed to support NGS' long range new datum plans.

Updates from States – e.g. outreach, projects

Dave Doyle is doing a couple of webinars on Enhancements to the NSRS on April 18 and May 26.

Dan Martin: A regional meeting of US state and local government subcommittee of CGSIC (<http://www.navcen.uscg.gov/?pageName=cgsicMeetings>) will be held in Groton, CT on April 27. Dan is on the program to give an update on CORS and CORS products.

Dan Martin: Vermont is planning a project called Cooperative Observations for Geoid Orientation and Vertical Transformation (COGOVT). Do observations on a collection of marks repeatedly once a year between now and the new datums release from the Ten-year Plan. Data would be collected and submitted to OPUS. The goal is to establish ellipsoid heights on bench marks at the 30 km spacing that Dan Roman recommends as optimal for the geoid model.

Marti Ikehara asked about when the next geoid model would be released. Michael Dennis confirmed there would be a new model after the National Adjustment is done. That model would be used if a National height mod adjustment is done.

Gary Thompson, NC: Four county height mod projects in progress; stream gage ties being done; statewide aerial imagery collection has been completed. They are hoping to get funding to resurvey $\frac{1}{4}$ of the state each year so the state is completely done every 4 years. Also trying to identify funding sources to refly statewide Lidar.

Patrick Kalen (AK): DOT has just awarded contracts for half a dozen airports to be surveyed. Renee reported GRAV-D would be back in Alaska soon.

Dave Minkel: statewide vertical adjustment of the height mod projects has been completed but results not yet published; also planning a leveling workshop in Gallup, NM in mid-June – so far 50-70 people are interested. Dave is looking for other trainers to assist.

Brad Foltz (PA): The height mod workshop and regional meeting yesterday was very good – well attended and people were very engaged.

Marti Ikehara asked Michael Michalski of CO-OPS if he had heard anything about co-locating a CORS at the San Francisco tide station. Michael did not but would look into it.

Cliff Middleton: Cliff and Dave Zilkoski have compiled a report on the process used for the Harris Galveston subsidence study which is being reviewed at NGS. Also there are 2 Sentinel tide stations that will be up and running in the next few months at Galveston and the Texas Point at the Sabine River. Greg Hauger added that the Sentinel at Galveston has been collecting data for about a month. CORS will be installed at the Sentinel sites.

Monthly presentation

Presentation: Height Matters: Use and Analysis of Vertical Data in GIS

The vertical component of geospatial data is becoming increasingly important in GIS for a wide range of applications. This presentation will provide a brief overview of vertical data in GIS, and it will show how Height Modernization results can be used in GIS to assess topographic surface model accuracy.

Presenter: Michael Dennis, National Geodetic Survey: Michael Dennis is a geodesist at NOAA's National Geodetic Survey where he performs research and assists in development of products and services that define, maintain, and provide access to the National Spatial Reference System. Mr. Dennis is a Professional Engineer and Surveyor with private sector experience, and he is an officer and Fellow of the American Association for Geodetic Surveying.

If you thought of any questions after the meeting, or were unable to attend but have questions after viewing the presentation, please contact Michael Dennis (Michael.Dennis@noaa.gov).

You will find the presentation linked to the schedule at:

<http://www.ngs.noaa.gov/heightmod/Presentations/HeightModMonthlyMeetingSchedule.pdf>

Q&A:

Q: In a contract how specific do you recommend people get regarding what control to use, say for height mod surveys?

A: You could specify things like which datums, and you could state what would not be acceptable, such as values from VERTCON. It's difficult to know how to be specific enough without being too specific. There's a responsibility on the part of the surveyor to know how reliable the control is, say in areas of known subsidence. But if you have information that can help the contractor do the right thing (example is a Lidar company without surveyors on staff) then more information is better. You need to be sure you don't provide misinformation. Something you could add to the contract is to have the project certified by a surveyor.

Q: In Michael's example, did you ever learn the reason for the bias you saw?

A: No, and I've generally seen biases of a quarter to a third of a foot in airborne GPS. Gary Thompson has not seen that. They do require the deliverable to be surveyor certified, and also require they fly over a calibration range they have set up.

Q: On the project was there targeted GPS ground control or was it all airborne based.

A: It had GPS ground control. Sometimes the company will identify points after the fact that they can use to geo reference the Lidar.

Other business

At ACSM there is planned a 1-day workshop in OPUS Projects. The timing of this is still being worked out, but we anticipate it will be split into 2 4-hour sessions, possible Monday afternoon, July 11 and Tuesday morning, July 12.

Please send any feedback on the new format of the meetings (e.g. having guest speakers, arrangement of agenda, topics you'd like to hear about) to Renee Shields (renee.shields@noaa.gov).

Next meeting: Thursday, May 12, 2011; 2:00-3:30 East Coast Time

Next month's speaker and topic: "Updated coordinates and velocities for NGS Continuously Operating Reference Stations (CORS)" by Giovanni Sella.

Recent Past Events

March 3-5, Aurora, CO – Professional Land Surveyors of Colorado Rocky Mountain Surveyor Summit

March 11, Ames, IA – Society of Land Surveyors in Iowa

March 19, Lincoln, NE – Southeast Nebraska Land Surveyors Association

March 21-24, Houston, TX – SPAR (3-D imaging, remote sensing, and GIS)

March 28-30, Hershey, PA - GIS-T

April 1-2, Albuquerque, NM – New Mexico Professional Surveyors Annual Conference

April 4-8, Logan, UT – Utah Geographic Information Council Annual Conference

April 7, 2010 – Riverside, CA – Riverside Flood Control and Water District, "State of the NGS" presentation

April 7-8, Linthicum Heights, MD – Maryland Society of Surveyors

April 13-14, New Cumberland, PA – Great Lakes Region Height Modernization Consortium workshop and meeting

Upcoming Events

April 14-15, Little Rock, AR – Arkansas Society of Professional Surveyors Spring Conference and Meeting

April 18, May 26, Webinar – Modernization of the National Spatial Reference System

April 19-21, La Vista, NE – Nebraska GIS Symposium

April 27, Groton, CT – Meeting of US State and Local Government Subcommittee of the CGSIC

May 9, Webinar – GRAV-D: Informational Update

May 10-12, Corbin, VA – River and Valley Crossings workshop

May 24-26, Corbin, VA – Geodetic Digital Leveling

May 26, Webinar – Modernization of the National Spatial Reference System

May 26, La Jolla, CA – at Scripps Institution of Oceanography, California Spatial Reference Center semi-annual Coordinating Council Meeting

June 20-21, New Orleans, LA – National Real Time meeting – surveying best practices

Mid-June, date TBD, Gallup, NM – Leveling workshop

July 7-15, San Diego, CA – ACSM sponsors Survey Summit in conjunction with ESRI

July 11, San Diego, CA – FGCS semi-annual meeting

July 17-21, Chicago, IL – Coastal Zone 2011

November 1-4, Indianapolis, IN – GIS Pro 2011 (URISA)