

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

Date: Thursday, July 12, 2011

Time: 2:00-3:30 pm East Coast time

Attendees:

Call-ins from: AL (Clint Shelley), CA (Scott Harten), ID (Rayce Ruiz), IL (Amy Eller), KY (Danielle Kelly, Wolfgang Ziegler), MI (Shawn Roy), MT (Bryce Larsen), NC (Gary Thompson), NGS (Vicki Veilleux, Dan Callahan), SC (Dick Woods, Matt Wellslager), WA (Dave Steele); WI (David Moyer)

Silver Spring: NGS (Renee Shields, Gilbert Mitchell, Ross Mackay, Christine Gallagher, Neil Weston, Steve Vogel, Dave Doyle, Juliana Blackwell, Courtney Lindo, Lucy Hall, Michael Dennis); CO-OPS (Mike Michalski, Tom Landon); NC (Dave Zilkoski)

Advisors/Coordinators: Brian Ward (AR), Marti Ikehara (CA), Pam Fromhertz (CO), Dave Rigney (MI), Scott Lokken (NC), Bill Stone (NM),

1. NGS/CO-OPS Project Activities

- **National Adjustment of 2011, GEOID12 (Shields)** – NGS has released new realization of NAD 83 (2011) epoch 2010.00, both the Multi-year CORS Solution and the National Adjustment results, and USGG2012 and Geoid12. The hybrid geoid model included results of a major adjustment of a large portion of the vertical control network on the Gulf Coast. NGS has tried to keep folks up to date. Statement will be out shortly online and published in trade magazines. Outreach materials and reports are being put together. Tools and products are being updated.

Q (Landon) – Regarding the Gulf Coast leveling project, does it span FL, AL, MS, and LA? Are all published in the database?

A (Renee) – Yes the positions are published in the database, with the exception of Louisiana and Texas where further analysis and validation is needed. MSDOT leveling was from Pensacola to Natchez. MSDOT also did a state-wide GPS survey but the vertical adjustment of that has been waiting for these results and has not yet been started. Dave Z incorporated the new (2009) leveling into gulf coast modeling (VTDP, Shinkle and Dokka from 2004). VTDP helped bring old leveling up to 2009 epoch, and marks with a rate have been published. Those marks without a rate have been restricted, and will not publish until validated. There are still secondary adjustments to do in addition to technical analysis to complete the project.

- **OPUS (Weston)** – All versions of OPUS have implemented Geoid12. Existing solutions have done test update for coordinates. Next will be to update orthometric heights.

- **GSVS 2011 (Shields)** – All data will be made available to public. Interested parties stand by. We are planning a second survey in 2013, sending folks out to check out a few possible sites. Expect to know location by end of FY.
- **Puerto Rico Vertical Datum (Doyle)** - FRN is submitted – it's all but published.
- **CO-OPS (Landon)** - CORs site set up on Shell Beach LA on Lake Bourne east of New Orleans on CO-OPS Sentinel of the Coast platform. LA Spatial Reference Center did the work. Also intend to put CORS on Amerada Pass and Casuca Pass in LA, but unsure of current coordination with NGS.

2. NGS Outreach/Education

- **Survey Summit/Esri User Conference (Shields/Henning)** – small contingent of NGS going to Survey Summit and Esri UC. There will be 16 posters in the map gallery. Two group submissions of 8 posters include information about HMOD at the national and state level, along with GRAVD, NA2011, and others. Sheena Beaverson and Brian Shaw have been coordinating the effort. Christine Gallagher will be submitting a HMOD national poster. USGS is creating one for the group on their Stream Gages.
- **Leveling training (Shields)** – Training has been taking place this week, attended by four state advisors via webinar, and several personnel here in NGS headquarters. NGS will continue developing training materials for leveling processing and adjustments and expanding capacity within NGS.
- **Gulf Coast Adjustment, AL workshop (Shields)** – NGS is working with John Russell (ALDOT) on a 1-day overview of NA2011 results, Geoid 12, Gulf Coast leveling, secondary adjustments –fairly high level to introduce what NGS is doing. We hope to combine the trip with a meeting or workshop in Mississippi coordinated through MSDOT.

3. Updates from States – e.g. outreach, projects

- **South Carolina (Woods)** – SC is currently finishing observations on 3 county jobs. Dick also notes that when he used windesc to create a file, the coordinates were 2007 and not 2011. NGS may need Malcolm to modify scripts, and Dick did send email about this to Malcolm yesterday.
- **North Carolina (Thompson)** – 4 county HMOD projects in progress. Agency transferred to Floodplain mapping program, where program was originally located. Political, but likely of benefit.

4. Monthly presentation

Presentation, to start at approximately 2:30 PM:

GPS and Flood Certificates

Gary Thompson, North Carolina Geodetic Survey

Scott Lokken, National Geodetic Survey

A key component of the National Flood Insurance Program is the completion of Elevation Certificates. With an accurate geoid model, GNSS can be used to perform surveys to measure heights to FEMA standards. This presentation will describe the methods recommended to surveyors in North Carolina for determining elevations to complete Elevation Certificates.

Q (Ikehara): How long are your OPUS occupations? Are the solutions published in OPUS-DB?

A (Thompson): 4 hr recommended for contractors.

Q (Weston): Regarding leveling to CORS, how do you transfer 88 heights?

A (Thompson): We include CORS in HMOD GPS static surveys which include occupation of NAVD 88 bench marks; can level to it, if possible, prior to CORS submission. We are only solving for 88 heights.

Q (Doyle): Have you given thought to getting away from proportional accuracy? Instead use positional accuracy?

A (Thompson): We are not to that point yet. Surveyors are required by law to report positional accuracy. We do not tell, we recommend, and we say go to those marks with the better published accuracy.

Lost phone connection and missed some discussion...

Q (Ikehara): When will you switch reference frame for RTN?

A (Thompson): We're currently running on two servers. We have made change on one server, and we will shut down the old in about a week. We have been giving our users notice this would have for approximately 3 months. Generally we have 110 on network at a time, largely due to a big influx of farmers

Q (Dennis): So you have stations with GPS derived orthometric heights with different geoid heights. Would it be helpful to have consistent GPS derived orthometric heights with 2011 ellipsoid heights and geoid 12? NGS is considering this for nation, but must determine if worthwhile.

A (Thompson): We've talked about it in general change. Need to consult with floodplain mapping program about possible impact.

A (Lokken): We want to look at difference between models. Know difference between '03 and '09 – need to look at '09 to '12. The issue is relative change – fairly smooth last time, and we'd expect to see the same effect.

Q (Ikehara): Have you discussed giant HMOD adjustment w/ others?

A (Dennis): Yes. There is general agreement that consistency would be better, but there remains a definite resource issue. Michael plans to formally propose the project, so that it will be formally considered.

Q (Ikehara): People are surprised that orthometric heights did not change. NGS should improve verbiage on datasheet to make it clear that is the case, because the recent adjustment was geometric. There is not a date published immediately next to the orthometric height, making it unclear when that height was derived.

A (Zilkoski): Datasheets should show the year that the orthometric height was derived further down in the text.

A (Dennis): More info about when it was last occupied (not necessarily the same as adjusted) would be immensely helpful.

A (Thompson): Gary will get presentation posted and send to Erika.

There will not be an August meeting. September 13, Dan Roman will report on USGG2012 and Geoid12. Expect a report from Michael on the NAD 83(2011) epoch 2010.00 in a future meeting. Always looking for ideas for topics, so let us know if there is something you would like to hear about.

5. Other Business

Gary T – thanks to NGS for getting the adjustment out!

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: September 13, 2012; 2:00-3:30 East Coast Time

Dan Roman report on USGG2012 and Geoid12. Expect to follow down the road with a report from Michael. Always looking for ideas for topics, so let us know if there is something you would like to hear about.

Recent Past Events

May 6-10, 2012, Rome, Italy – International Federation of Surveyors (FIG) Working Week

May 24, 2012, California – California Spatial Reference Center Semi-Annual Coordinating Council Meeting

Upcoming Events

July 15-18, 2012, Indianapolis, IN - 11th International Conference on Precision Agriculture (ICPA)

July 21-24, 2012, San Diego, CA – Survey Summit

July 23-27, San Diego, CA – ESRI User Conference

July 29-Aug 1, 2012, Philadelphia, PA – Transportation Research Board Geospatial Data Acquisition Technologies in Design and Construction (AFB80) Committee Summer Conference

August 17-22, 2012, Mobile, AL, and TBD, MS – Proposed workshops coordinated through state DOTs

Sept 17-18, 2012, Nashville, TN – Institute of Navigation GNSS 2012

Sept 17-18, 2012, Nashville, TN – Civil GPS Service Interface Committee 52nd meeting

Sept 30-Oct 4, 2012, Portland, OR – URISA 50th Annual Conference, GIS-Pro 2012

Oct 16-17, 2012, Naperville, IL - Illinois GIS Association Fall Conference