

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

Date: Thursday, October 14, 2010

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

Call In Number: 877-426-5014, PASSCODE: 8484480

Attendance:

Call-ins from: IL (Sheena Beaverson), NM (Earl Burkholder), SC (Lou Lapine), LA (Roy Dokka), Andy Semenchuk (MI), John Canas (CA), Dave Steele (WA)
Silver Spring: NGS (Gilbert Mitchell, Tom Landon, Renee Shields, Bill Henning, Sonita Tiwari)
NGS Call-Ins, incl. Advisors: John Ellingson (WI), Dave Moyer (WI), Monroe Rivers (KS), Cliff Middleton (TX), Dan Martin (VT), Jim Harrington (AL), Dave Newcomber (FL), Dave Rigney (MI), Marti Ikehara (CA), Pam Fromhertz (CO), Jim Richardson (NE), Vicki Veilleux, Erika Little, Charlie Geoghegan, Curt Smith (ID)

Because there was little news to bring regarding the normal topics of budget, grants, infrastructure, and models and tools, the format for this meeting was modified to accommodate some discussion time, either for a specific topic raised during the meeting, or more generally, to identify topics the participants would like to hear about in future meetings.

Grants/Budget status

- No change from previous months beyond the fact that NOAA was operating on a Continuing Resolution passed by Congress to carry our budget through December 3rd.
- Renee asked those on the phone if they would like to share any news they had, or ideas for alternative funding sources that may have worked for them.
- Dave Steele reported that he had attended the Hydrographic Services Review Panel Meeting in Portland, OR the previous day, and several attendees, including Dave, testified about the value of the services rendered by NGS. Specifically Dave reported on the Height Modernization program and the lack of funding. The Panel will send the head of NOAA a recommendation to take funding received from the President for transportation, and direct more of that into infrastructure through NGS programs. Gilbert described his efforts to get some of the ARRA funds last year from NOAA, but Leadership felt it was more important to use those funds to support
- Chris Pearson reported that Amy Eller had been a positive reaction to getting support for transportation research programs in IDOT. Nothing certain would be decided till next spring.
- Sheena Beaverson met with several of their people on the Hill, but the current feeling is to have a moratorium on earmarks. In preparation for DC visit, the University developed 10-11 1-pagers on uses of Lidar. Renee requested the link to the 1-pagers so we could be sure to have it on NGS' Illinois page.
- Jim Harrington mentioned some efforts in Alabama to apply for some funds from the Gulf of Mexico Alliance (GOMA). Roy added that the advisors and partners along the

Gulf met to discuss a strategy for moving forward with a proposal to include (Roy Dokka and David Mooneyhan) creating a white paper to describe a regional plan for achieving capability for measuring mm scale water level change. There is about \$3.5Million in funding that is available.

Infrastructure, Models and Tools, etc.

Software Developments

- **VDatum:** Renee reported from Doug Brown that a plan to transition VDatum to an operational mode, including maintenance planning, and that a briefing was scheduled for later in the month (**Renee later heard this first briefing was internal only**). Marti asked about whether VDatum wasn't already fully operational. Renee said she believes this application has been developed in an ad hoc way, and it is being changed into a completed application with a plan for maintaining the model. It has been slow moving without a long term strategy, and this operational plan is to move past that. Lou added that the VDatum folks are looking for some feedback on it from users, who can contact Dave McFarland.

NGS and CO-OPS Project activities

- Renee reported the southern Louisiana project was completed (field work) and deliverables are being submitted by the contractors. Results will be eventually posted online.
- CO-OPS reported that the Circulatory study from the tri-office collaboration (USACE/USGS/NOAA) in Mobile Bay is being done – includes instillation of some short term water level stations; also storm surge project in Mobile County, a December window for installation of some gages.
- Marti asked Tom if he was aware of a teleconference meeting on Humboldt being held next week. She invited by email several CO-OPS folks but had not yet heard back if anyone could call in. Meeting is to discuss the tidal and geodetic datums there that are in question.
- Chris added that he is working with Richard Snay on updates to HTDP, and it would be very helpful if folks on the west coast can test or validate the models that are being created.

STATE PROJECTS

- Renee asked for updates from states, but none were reported.

DISCUSSION: Cliff Middleton raised an issue on information published on NGS datasheets that had been a topic of discussion in the NGS Products and Services Committee (PSC) meeting. At this point the meeting moved into a discussion that continued the remainder of the time.

Note: This discussion concerns orthometric heights only.

Issue: Since the re-observations of benchmarks in Southern Louisiana, in 2004, 2006, and now in the past month, publication of elevations on datasheets for stations in the region has changed. In 2004 approximately 100 stations were observed in the southern counties of Louisiana, south of the I-10 line and an area of known subsidence. In 2006, the 100 were re-observed along with another 200, bringing the total of bench marks that had been validated up to approximately 300

stations, and expanding the area north so that a larger area was observed. A subset of these 300 marks was re-observed September 2010. The orthometric heights for these stations have been published as NAVD 88 heights with an epoch date attached. Publication of all heights at bench marks in the NGS database in the project area (defined by latitude/longitude boundaries) that were not observed in these projects was suspended. Those stations are now published with the elevation field replaced with ***, and "NOT PUB" is printed in the datum field. Previously published NAVD 88 heights in the area are not printed in the superseded section of the datasheet, and are only available to the public on special request through the NGS Information Center. The question for consideration is whether these heights should be made available on the datasheet, and should they be shown in the superseded section of the datasheet, or perhaps under another kind of heading since no replacement height is available for them.

This transcript is not intended to be word-for-word, but the gist of the discussion is captured. Some sections have been abbreviated to avoid repetition but the opinions expressed are complete. Some clarifying words were added where context was needed. Feedback such as has been captured here can be valuable to NGS as we try to improve our products with our customers' requirements in mind.

Cliff Middleton, NGS: I don't think it was ever the intention of the people who proposed this plan [to not publish the heights] to make them disappear, but merely to restrict them. ... This doesn't really serve our constituents very well. ... One thing that seems to be a stumbling point for NGS is we seem to be afraid to put any data out there that can be used incorrectly, but really any data you put out there can be used incorrectly. We should be pretty well covered with the information on the data sheets now about the stations being in the subsidence areas. Putting the heights in the superseded section tells people it isn't good for control. NGS shouldn't be hiding anything from anybody unless for other reasons like security.

Marti Ikehara, NGS: Had come across a mark recently in California for which the GPS height differed significantly from the GPS height and is now superseding the leveled height, for which the NAVD 88 height, previously published under the superseded section, was suddenly not showing that superseded heights.

Roy Dokka, Louisiana Spatial Reference Center, LSU: What NGS did has worked out exceedingly well. There was initially shock among [a few] surveyors. People want to know that when they go to NGS they know they are getting good data. Roy recently reviewed FEMA flood maps, and he found there was a continued tendency for people to put existing bench marks, whether they are good or not, on the flood maps. He feels we should continue to not publish those marks, that the data is available to those who really want it. [Renee commented that another option is to create another area for these heights, not call them superseded] Roy felt that if the height was on the data sheet people would assume it was good. If the height is there the statements to not use the height for control needs to be stated in a more obvious way than is there now.

Marti: The heights were good at some time, we shouldn't be hiding historical data.

Gilbert commented that the data is no good and shouldn't be published, but that it is available for those who really want it.

Marti: it isn't available without great difficulty and time, without getting someone at NGS to take the time to get the data.

Lou Lapine, South Carolina Geodetic Survey: You can't protect people from injuring themselves. You've got to put the data out there with a warning and people have to be smart enough to use it. And if they aren't smart enough they suffer the consequences. NGS should continue to publish for historical [reasons] or subsidence studies. There is this thread in NGS that all passive control is no good, but that is only limited to certain parts of the U.S. We're perfectly happy with the values we still have for passive control.

Marti quoted Dave Zenk that we should publish on the top of every datasheet that it is only good the day it is published. The next day it is not necessarily good... We shouldn't try to protect the ignorant at the expense of being able to help the intelligent.

Roy Dokka: NGS has tons of data that isn't made available. ... Roy downloaded all these datasheets a couple of month ago.

Andy Semenchuk, Michigan DOT: Are you talking about getting rid of all superseded data?

Renee: that hasn't been proposed yet. The issue in Louisiana is that we are not replacing it with good data. When we changed how these were published, we didn't have a place to put this kind of data and we wanted to ensure folks didn't use the bad [heights] combined with the good ones.

Andy: you should keep and show everything as Marti said. There are times you have projects that are tied to that and you come back, you have no idea why it's gone because you don't have that record and we live in an age when we have look back and trace it forward. We can't abandon the data, we can't hold everyone's hands, but for those who need it, it's there.

Roy: Then why do we need NGS, NGS is the authority.

Renee: NGS isn't out there surveying everything like in the old days.

Roy: but NGS has established national CORS. You make it possible for people anywhere in the country to do these things if your gravity model is good. The emphasis at NGS in terms of new spending is GRAV-D. I agree that in many parts of the county the land is not as dynamic as here in the Gulf Coast. But people want to hear the truth and they assume what they get from NGS is the truth. If it ever changes you'll have surveyors sued, projects fall down. You may want to think of this in terms of a regional solution.

Lou: We've had superseded values forever, but no one mistakenly uses them.

Chris Pearson, NGS: The other thing is what if someone needs to refer to an as built or you want to refer to a larger survey you might take things back to an older datum.

Roy: as Gilbert said the data is still there. What you need to do is improve your database.

Chris: the difficulty is it's impossible to get to or impractical to do that. It might cause significant problems. It's not an accuracy issue.

Roy: then you need to create a bigger button to get to the older data.

Renee: The problem is in some cases you can't even tell there is older data looking at the data sheet.

Gilbert: Roy hit on it. Consistency is what people want.

Lou: Someone goes and find a mark, he looks in the NGS database, and it doesn't have any superseded values or a current values. What does he do? What if he uses it and finds out the value he started with has been superseded. He'd never know.

Roy: No one is saying to hide anything, it's all there. You just have to go through additional steps to get at it where they basically understand they are now using values NGS doesn't have confidence in.

Sheena Beaverson: But usability would imply that would be a single step or a simple series of steps. Once you go out of your way to make things difficult to access, they are also difficult to manage that difficult information.

Lou; 99% of NGS users get data from the datasheet. Where do they go if not there. ... This is going in the direction of each state maintaining its own database. It's important for NGS to listen to all their customers, not just those in subsidence areas.

Jim Richardson: There are 2 classes of users Roy is talking about: the surveyor, i.e. the geospatial practitioner, and the client. If the practitioner doesn't know what he's doing the effect is to the client, not directly to the practitioner. If the surveyor makes a mistake and a bunch of maps are made based on wrong information, the surveyor may not be directly impacted so much as the many users of the map.

Marti: is it our [NGS'] job to police the surveyors?

Renee: Perhaps I will put together a kind of survey or set of questions on what NGS should be putting on the NGS datasheet, perhaps some examples, send that out to the mail list, and see what kind of response we get.

Marti: looked up the definition of 'superseded'

- To cause to be set aside, especially to displace an inferior, obsolete, or antiquated.
- 2nd definition includes the notion of replacing in addition to setting aside.

End of Discussion – thank you to those who contributed.

Ideas for future discussions

- NGS needs to provide a guideline or guidance on how to use the heights that are created from height mod in a project.
- How do users replace height modernization monuments.
- Hear from vendors, NGS folks, even folks on the Hill on where we will get the funding for maintaining the NSRS. If funds are not available to maintain CORS they will eventually be turned off.

Other

Bill Henning: something we need to talk about is validating RTNs. Original concept was the administrators of the RTN could use the CORS, then create a kind of 60 day plot of the results, and see the relation of the antennas to the network. The proof, though, is what kind of answers is the RTN giving. Two projects have been proposed to test this, but they have not been activated. One is planned in Oregon, and one we thought to do in Southern Louisiana, coinciding with the re-observations. The concept is to compare results to the network, then repeat the test with different times of day, length of session, etc. The idea in Louisiana is to have fiducial marks that you could re-visit and monitor. It would be done more frequently of course in dynamic areas. There is a problem identifying who would be able to do the work. This could be a good topic for future discussion.

Dan Martin also raised the issue of how to continue to validate the static network that you use to validate the RTN. For horizontal it isn't that difficult since there is little horizontal movement in most parts of the country. Vertical is more difficult. Even in areas thought to be very stable, there are differences that happen over long periods of time. You don't necessarily see the changes so what you think is stable is really moving but there is no way to correct for it.

Chris mentioned the U.S. velocity models. Even knowing the vertical motion of the point you need a way to transfer the velocity to your remote location.

Roy: All these things point to NGS' mission to define the NSRS, to maintain it; and education, since many surveyors are still the older traditional surveyors not using GPS and not familiar with geodesy.

Renee re-iterated the desire to have more discussions as part of the monthly meetings and invites everyone to send topic suggestions to her.

OTHER

No other business, but Renee commented she would like to see more open forums and discussion opportunities like this.

NEXT MEETING – NOTE DATE AND TIME CHANGE:

Since the next regular scheduled meeting would fall on Veteran's Day the November meeting will be moved forward a week to November 18, and will be from 3-4:30 East Coast time, rather than 2-3:30. Similarly the December meeting is moved forward to December 16, also at 3-4:30 pm. (For those in Silver Spring, the location in December has also changed to SSMC3, Room

8514.) It is expected that with the new year, the regular schedule of the 2nd Thursday of the month will resume.

Recent past events

September 13, Houston, TX – Hurricane Ike Review meeting

September 14-17, Denver, CO – GIS in the Rockies

September 15, Mobile, AL – NOAA Day

September 20-22, Fairbanks, AK – International Gravity Field Service

September 21-24, Portland, OR – ION GNSS 2010; included the annual CORS forum which Giovanni moderated. NGS staff Jake Griffiths and Andria Bilich presented. Was well attended.

Sept. 28 – Oct. 1, Orlando, FL – URISA 2010

October 6-9, Osage Beach, MO – MSPS Annual Conference – Renee reported it was well attended, about 80 people in spite of a beautiful day and golf tournament conflict.

Upcoming events

October 18-22, Longmont, CO – 2010 North American Intercomparison of Absolute Gravimeters

October 20-21, Chicago area - Illinois GIS Association will have a conference in Chicago area at the NIU Naperville campus facilities. Bill Henning will present the keynote on the 21st. Also Chris Pearson is giving a GPS workshop, and Bill and Chris are collaborating on a technical session on RTN guidelines.

October 20-21, Columbus, OH – Great Lakes Height Modernization Consortium workshop and meeting.

October 21-November 3, Denver, CO - Geological Society of America meeting in Denver, CO is looking to host a session on LIDAR Applications for Geologists. Members from the IL Height Mod team have tentatively agreed to speak there.

October 26-28, Corbin, VA – NGS Digital Geodetic Leveling Workshop; Erika reported there is still room in the class.

November 5, Chillicothe, OH – (PLSO) Fall CPD Workshop, Height Modernization

2011

February 2-5, Atlantic City, NJ – (NJSPLS) Height Modernization workshop

February 7-9, New Orleans, LA - International Lidar Mapping forum – Illinois has submitted an abstract and is waiting to hear.

February 21-25, Anchorage, AK – Alaska Surveying and Mapping Conference

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

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

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