

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

Date: Thursday, January 12, 2011
Time: 2:00-3:30 pm East Coast time

Attendees:

Call-ins from: CA (John Canas), ID (Rayce Ruiz), IL (Sheena Beaverson), KY (Wolfgang Ziegler, Danielle Kelly), NGS online (Vicki Veilleux, Dan Winester), MT (Dan Ignotov), NM (Earl Burkholder), SC (Dick Woods), WA (Dave Steele), WI (Darin Henkel, Dave Moyer, Matt Hawpetoss, Leonard Perfetti)

Silver Spring: NGS (Renee Shields, Ronnie Taylor, Michael Dennis, Christine Gallagher, Joe Evjen, Gilbert Mitchell); CO-OPS (Kelly Kriner)

Advisors/Coordinators: Dave Minkel (AZ), Marti Ikehara (CA), Pam Fromhertz (CO), Curt Smith (ID/MT), Jim Richardson (NE), Dave Rigney (MI), Scott Lokken (NC), Dave Conner (OH), Dan Prouty (TX), John Ellingson (WI), Bill Stone (Southwestern Region)

1. NGS/CO-OPS Project Activities

- **LOCUS (Renee Shields)** – NGS has released a beta version of the LOCUS available to the public, and it is currently highlighted on the top of the NGS home page (www.geodesy.noaa.gov). Please use it, test it, and send feedback to NGS.
- **Transformation application (Renee Shields, Michael Dennis)** – NGS is developing a tool to transform data from NAD 83 (HARN or HPGN) to NAD 83 (NSRS2007). There has been a request for this tool since the release of NAD 83 (NSRS2007), and NGS had initially decided not to develop the tool because the magnitude of the transformation may have just been within the noise of the data. NGS has studied the issue again since there have been so many requests, and there seem to be parts of the country where the transformation would be a worthwhile investment. The tool is virtually done, the documentation is being finalized, and it may be rolled out as early as late February. There will also be a tool created to transform data from NAD 83 (NSRS2007) to NAD 83 (2011) epoch 2010.00. After developing the transformation from HARN to NSRS2007, the development of the transformation tool for NA2011 should be completed relatively quickly, coinciding with or quickly following the release of NA2011.
- **NA11 (Michael Dennis, Renee Shields)** – The release of NA2011 has been shifted to the beginning of April 2012, and it will coincide with the release of Geoid12. The delay was due to adding some projects from the database and a few remaining projects in specific areas of the country being looked at very closely, to be finished in March. The National Adjustment of 2011 has a webpage that is being updated (<http://www.ngs.noaa.gov/web/surveys/NA2011/>).

- **Geoid12 (Joe Evjen, Renee Shields)** – The final data grab getting GPS on bench marks (BMs) from the NA2011 has not been completed yet, and Dan Roman will be pulling data from OPUS-DB as well. There is still time to submit good clean, four hour observations to OPUS-DB that can be used for GPS on BMs component of Geoid12. Users in areas of the country without dense GPS on BMs are encouraged to continue submitting these solutions. OPUS-DB solutions submitted in the next month can still be included in Geoid12. For an exact cut-off deadline, please contact Dan Roman.
 - **Q (Curt Smith)** – What reference frames should the OPUS-DB solutions be submitted in?
 - **A (Joe Evjen)** – It does not matter because when the OPUS team completes the final data pull, they will re-process from the original observations using a consistent frame (i.e. MYCS).

2. NGS Outreach/Education

- **Height Mod webpage (Renee Shields)** – There is a new page you can visit on the Height Mod website – an “About” page that has general information about the program, links to other pages, hopefully enhancing navigation throughout the site. This page will soon include a link to the Height Mod National Plan (the draft is currently being reviewed internally). Visit it at <http://www.ngs.noaa.gov/heightmod/About.shtml>. Pages still to come and currently being developed include a “Projects” page to highlight specific projects (e.g. TX geoid slope project, adjustment of WI state-wide leveling, MS and Southern LA projects), a “Height Mod Stories” page highlighting specific cases that illustrate why Height Mod matters and what its benefits are building off of stories collected in WI, and a FAQ page building from the NGS FAQ page but also addressing Height Mod specific questions. Let us know anything that might make the site more useful for users.
- **ESRI attendance (Renee Shields, Ronnie Taylor)** – NGS is still determining who will be attending the ESRI conference. There are a number of events going on in San Diego at the same or near-same time including the Survey Summit (co-sponsored by ESRI and NSPS/ACSM), the NGS Geospatial Summit, the FGCS semi-annual meeting, and the ESRI user conference. NGS staff will be supporting all of these events in some capacity.

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

- **WI (Leonard Perfetti)** – WI is still working with NGS on a statewide vertical leveling adjustment. Vacancy announcement is out to fill the Height Mod Program Manager position, applications due Jan 20, but must be a licensed professional engineer in WI. Also soliciting for the next 2 year Height Mod master contract with a Jan 26 deadline. Further information is available online.
- **TX (Dan Prouty)** – Completing Jefferson County Height Mod survey ongoing. Dan and Cliff Middleton are looking to finalizing the blue-booking in the next few weeks.
- **SC (Dick Woods)** – Currently working on a 3 county job; recon is complete and the project will include about 250 stations.

- **NC (Scott Lokken)** – Finishing up a project in conjunction with NPS is wrapping up at Cape Hatteras and Cape Lookout. The project involves vertical points to be used for beach studies and also is connecting to CO-OPS instrumentation.
- **IL (Sheena Beaverson)** - Currently negotiating contracts for leveling this spring over 700 miles of multi-segments lines, and have released an RFP for Lidar data near the metro East St. Louis area. Sheena is planning on going to ESRI and is interested in having a coordinated “group submission” Height Mod display in the map gallery from multiple states/partners which was very successful effort in 2010.

4. Monthly presentation

Arizona Statewide Vertical Adjustment

Michael Dennis, National Geodetic Survey

A vertical adjustment was performed in Arizona, which yielded new GPS-derived orthometric heights throughout the state. The results and significance of the adjustment will be discussed, including a possible nationwide vertical adjustment using National Adjustment of 2011 ellipsoid heights and the next hybrid geoid model, GEOID12.

Slides will be made available at

<http://www.ngs.noaa.gov/heightmod/MeetingNotes.shtml>

• Q/A and other points of discussion:

- **Comment (Dave Minkel)** - This project was funded by Arizona Height Modernization Program, and it began before Michael Dennis joined NGS as an employee.
- **Q (Renee Shields)** – Will the results of this project (specifically superseded orthometric heights) change recommendations of what bench marks in Arizona to include in Geoid12?
- **A (Michael Dennis)** – Dan does have the list of superseded orthometric heights from Geoid09, and he will be looking at them again. It was difficult to get the list initially for Geoid09, but it shouldn't be as hard to add to this time for Geoid12
- **Q (Jim Richardson)** – Should there be different guidelines to do this type of adjustment nationally based on regional geoid model?
- **A (Michael Dennis)** – It is difficult question. First, we have to improve estimates of the geoid regionally. Certainly that type of information, if available, should be included in guidelines.
- **Comment (Renee Shield)** – When changes to the datasheet become final in a few months (it should occur at a similar time to release of NA2011), the geoid model used for GPS derived heights will be included, thus better allowing local users to complete some of their own similar analysis.

5. Other Business

- 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: Thursday, February 9, 2011; 2:00-3:30 East Coast Time
- Next speaker: Jim Kolva (USGS) and Renee Shields will discuss the ongoing collaborative efforts to update elevations on USGS stream gages (see below).

February 9, 2012 – USGS Stream Gages and Vertical Datums

USGS is responsible for water level and stream gages across the country where stream flow is measured for a variety of applications including permitting, navigation, and recreation. Hydrologic modeling depends on consistency of datums for forecasting and flood mapping and mitigation. USGS is working with NOAA on an effort to update their stream gage database to standardize the vertical datum used as the reference to NAVD 88. NGS and USGS are interested in partnering with interested parties across the country to work on this effort. Renee Shields together with Jim Kolva of USGS will lead a discussion on how to accomplish this goal with limited funding and resources through partnerships.

Jim Kolva has worked in the Streamgaging program of the USGS for 33 years. In 2000, he became the Office of Surface Water data program liaison and currently serves in that capacity. He is responsible for Surface Water Quality Assurance Review coordination, Office of Surface Water training coordination and support of the National Streamflow Information Program.

Renee Shields has been with NGS since 1980, and has been heavily involved in the geodetic adjustments for the North American Datum of 1983, and integration of new GPS projects into the National Spatial Reference System (NSRS). She has extensive experience in GPS and Geoid Height analysis, and has successfully used this experience to develop and conduct workshops around the country on incorporation of data into the NSRS.

Recent Past Events

December 5-9, 2011, San Francisco, CA – American Geophysical Union (AGU) Fall Meeting

December 9, 2011, New Bern, NC – Floodplain Mapping (Elevation Certificates)

January 9-11, 2012 Saratoga Springs, NY - New York State Association of Professional Land Surveyors (NYSAPLS)

Upcoming Events

January 12-14, 2012, Chamberlain, SD - SDSPLS Annual Convention

January 23-25, 2012, Hershey, PA – Pennsylvania Society of Land Surveyors Annual Conference

January 25-27, 2012, Wisconsin Dells, WI - Wisconsin Society of Land Surveyors (WSLS) Annual Institute

February 16-18, 2012, Springfield, IL - Illinois Professional Land Surveyors Association Conference

February 17, 2012, Bloomington, MN - MSPS 60th Annual Meeting 2012

February 22-24, 2012, Washington, D.C. – ESRI Federal GIS Conference

March 2012, Breezy Point, MN - 2012 MNDOT Surveys Technical Workshop

April 18-19, 2012, Champaign, IL - Illinois GIS Association Spring Conference

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

July 22 & 24, San Diego, CA – 2012 Geospatial Summit

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

September 30 – October 4, 2012 – URISA annual Conference

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