Update on New Reference Frames

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Recent Updates…

• January 2015: NGAC briefing

• April 2015: Geospatial Summit

• June 2015: Today
Terminology (reminder)

• **Horizontal Datum**
  – Geometric Reference Frame
    • Geocentric X, Y, Z
    • Latitude, Longitude, Ellipsoid Height

• **Vertical Datum**
  – Geopotential Reference Frame
    • Geoid undulation
    • Orthometric height
    • Gravity
    • Deflection of the Vertical
Since last you were briefed...

- **NGS professional discussions on various technical issues**
  
  - **Decision**: GRS-80 will continue as the ellipsoid in the new GeRF
  
  - **Decision**: Annual periodicity (glacial thaw/freeze) of the geoid will be averaged
    - i.e. there will be no “summer geoid” and “winter geoid” in Alaska

  - **Decision**: Massive (TBD) earthquakes will trigger a new airborne gravity survey

  - **Not yet decided**: Should the geoid rise (and orthometric heights shrink) as sea level rises?

  - **Not yet decided**: How much time dependency will users accept?
2015 Geospatial Summit

- April 13-14, 2015, in the Washington, DC Area
- As part of a broader “conference of conferences” with National Society of Professional Surveyors and Management Association for Private Photogrammetric Surveyors (MAPPS)
- Follows the successful 2010 Geospatial Summit. More info at the 2015 Geospatial Summit website.

- 200 in person / 100 online
- Live feedback polls

http://www.geodesy.noaa.gov/2015GeospatialSummit/
Time Dependency (horizontal)

How "plate fixed" do you want your latitude and longitude? (n=69)

- NGS
- External Constituent

- Not at all - give me ITRF style coordinates
- Remove only the average plate rotation for my points
- Remove plate rotations and earthquakes
- Remove every signal possible - never let my point change
- Other
- No opinion

June 9, 2015

NGAC Meeting, Washington D.C.
Time Dependency (vertical)

If the height of a point is changing, what do you want NGS to do about it? (n=77)

- NGS
- External Constituent

- Make the point unpublishable
- Hold the last known height fixed until a new survey is done
- Model and publish the vertical motion
- Both B and C
- Other
- No opinion

June 9, 2015
NGAC Meeting, Washington D.C.
The final Geoid Slope Validation Survey (2016? 2017?) location was chosen: Durango to Walsenburg, CO
A taste of tools to come…

Options:

- Online point by point
- Upload and convert a whole file
- Web Services
- Download and Run locally

http://beta.ngs.noaa.gov/gtkweb/
Legal Issues

• NGS and NSPS joint effort

• 48 states have legislated the words “NAD 83”

• Move to generic text: “Most recent coordinates in the National Spatial Reference System”
A website for updates

NGAC Meeting, Washington D.C.

http://www.geodesy.noaa.gov/datums/newdatums/index.shtml
NGS Webinar Series

• Began May 14, 2015

• An expansion of the monthly presentations sponsored by the National Height Modernization Program.

• Visit the Webinar Series Web-site to register, sign up to receive monthly webinar notices, and learn more: http://www.ngs.noaa.gov/web/science_edu/webinar_series/.
Thank you!