

National Height Modernization Program Plan

Reviewing Progress in 2013

Christine Gallagher

Program Analyst

National Height Modernization Program

Background

- NGS internal “Executive Steering Committee” approved HMOD Plan in Dec. 2012
- NGS released its 10-year plan in Jan. 2013
- Internal leadership developed Implementation Plans to support the NGS 10-year plan in Jul. 2013
- NGS Implementation Plans will be updated quarterly, and associated projects should include actions from the HMOD Plan

Review: 10YP and HMOD Plan

Updated NGS Ten-year Plan

Goal 1: Support **NSRS** users today

Goal 2: Modernize & improve **NSRS**

Goals 3-5: Expand **stakeholder** base;
improve **workforce** and
organizational functionality

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Height Modernization National Plan

Goal 1: Support **NAVD 88** users today

Goal 2: Modernize & improve **vertical datum**

Goal 3: Increase **technical capacity**
with stakeholder base & workforce

Tracking progress of HMOD Plan

- Strengths of the plan
 - Already completing many of the actions
 - Easy to track actions (rather than goals, etc)
 - Most actions within a ~5 year timeline
- Weaknesses of plan
 - More action oriented than strategic
 - No deadlines (did not want to contradict 10YP)
 - No leads/resources identified (like 10YP Obj. leads)

Tracking progress of HMOD Plan

- Complete: *task complete*
- In Progress: *numerous resources are actively working on task (likely part of a project)*
- Started: *some work is either ongoing or just starting (likely no project is initiated)*
- Not Started: *no work has been started*

Actions to Support NAVD 88 users (NHMP Goal 1)

Publishing NAVD 88

- Update ADJUST
- Update leveling adjustment software/process
- Implement Project Tracking for GPS
- Limit backlog

- Revise datasheet publication in dynamic areas
- Reconcile single marks in 2 databases (OPUS-DB AND IDB)
- Revise publication of multiple OPUS-DB solutions on single mark

- Evaluate/improve existing/new tools
- Conduct needs assessment
- Review products and tools regularly
- Improve transformation tools

Maintaining access to NAVD 88

- Evaluate weaknesses in NSRS
- Develop prioritization method for gaps
- Recommend actions (eg surveys)
- Update NGS contact mechanism

- Identify pilot projects to reduce error, advance research and maintain field capacity
- Coordinate with other agencies
- Identify impacts on partner products

Actions to Replace NAVD 88 (NHMP Goal 2)

Passive Control to Active Control

- Identify gaps, recommend actions (eg surveys)
- Identify partnerships, prioritize efforts
- GRAV-D, interim geoid models
- GSVS
- Update published positions in dynamic areas
- Collect data to improve motion models
- Evaluate and digitize existing documents
- Determine what to retire, update or newly develop
- Update and/or combine NGS 58-59
- Develop specs for new remote sensing technologies
- Develop specs from pilot projects

Modernize Accepting/Publishing

- Compare PAGES/ADJUST to OPUS Projects
- Enhance LOCUS
- Train OPUS-Projects users
- Integrate GPS project tracking and OPUS-Projects
- Implement leveling project tracking software
- Update NGVD 29 heights to NAVD 88
- Continue improving Vdatum
- Publish accuracies for transformations
- Publish control in other formats than datasheet

Actions to Increase Technical Capacity (NHMP Goal 3)

Expand partners

- Quantify alignment of RTNs
- Provide tool for RTN operators
- Hold RTN Symposium

- Target workshops to new audiences
- Provide training at conferences
- Develop web video modules
- Develop new outreach materials

- Host annual partner meeting
- Provide research grants
- Support regional governance model and Spatial Reference Centers

Skilled workforce

- Train the trainers and presenters
- Train in mapping software and GIS
- Train new field workers

- Leverage universities as training resources
- Collaborate with universities to advance research
- Engage students

- Publish articles
- Coordinate with partners
- Participate in conferences

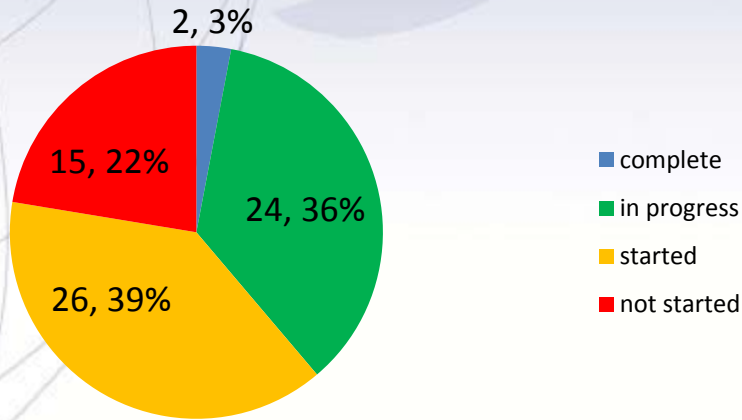
Improve program

- Emphasize project management as well as coordination between scientists and IT specialists when completing other actions in the plan

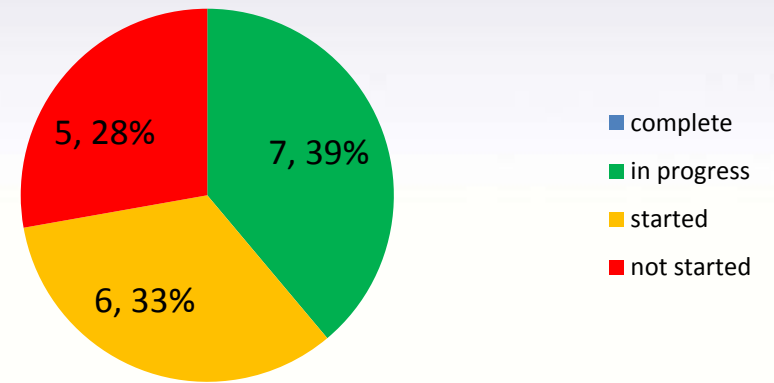
- Document benefits with stakeholders
- Document benefits with socio-economic experts

Summary

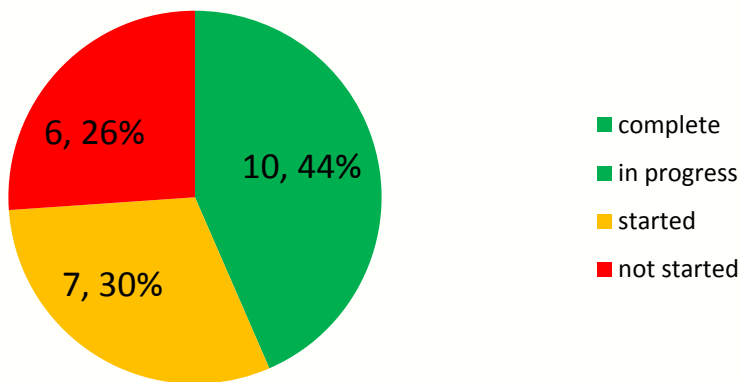
Status of HMOD actions (Nov 2013)



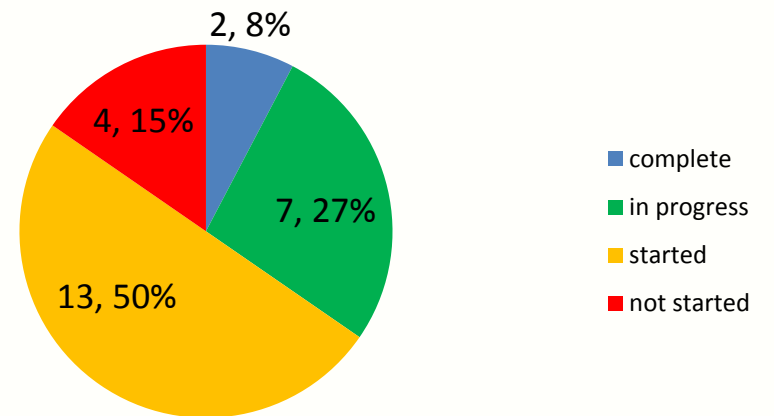
Goal 1: Support NAVD 88 users



Goal 2: Replace NAVD88



Goal 3: Increase Tech. Capacity



Caveats

- Defining completion is difficult unless there is a **defined project**
 - Formal NGS project management process is still piloting
 - Events were easiest to define as complete
- Distinction between “started” and “in progress” is somewhat arbitrary
- While starting an action shows progress, we made need to have repeat the action many times **to complete the action well**

Areas to Improve

1. Publishing Elevations (*1.1.2 - all yellow*)
2. Maintaining Online Tools (*1.1.3 - yellow with red*)
3. Improve Access to Vertical Control (*1.2.1 - red to green*)
 - Identifying, prioritizing, and recommending how to fill gaps/weaknesses (especially in areas with vertical motion)
 - Expressed need from partners
4. Stronger coordination with partners (*e.g. pilot projects*)
5. Socio-economic related efforts

2013 Major Accomplishments

- “Traditional” Height Mod
 1. 2013 Partner Meeting in Frankfort, KY
 2. GNSS Derived Heights Project (update 58-59)
 3. Collaboration with COMET (web training)

- “Expanded” Height Mod
 1. GRAV-D GPRA (Great Lakes and East Coast)
 2. OPUS-Projects beta release
 3. Geoid 12A “accuracy” map

Next Steps

1. Incorporation of internal/external feedback (if necessary)
2. Increased coordination with NGS 10 Year Plan
Implementation Plans
3. Clarify actions with development of “formal” NGS projects
 - Expected dates of completion
 - Defined deliverables
 - Responsible parties / dedicated resources

Thank you! Questions and
feedback are welcome.

Email:

Christine.Gallagher@noaa.gov

Link to plan:

<http://www.ngs.noaa.gov/heightmod/HMODPlanApprovedDec2012.pdf>