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FEDERAL GEOGRAPHIC DATA COMMITTEE

NGAC 3DEP Subcommittee Update

National Geospatial Advisory Committee Meeting

June 28, 2023

3DEP Subcommittee Membership

Name	Organization
Gary Thompson (Chair) *	North Carolina Geodetic Survey, State of North Carolina
Gale Blackmer, Ph.D. (Vice Chair)	Pennsylvania Geological Survey
Garet Couch	National Tribal Geographic Information Support Center
Lynn Dupont *	New Orleans Regional Planning Commission
William Haneberg, Ph.D.	Kentucky Geological Survey
Karen Gaffney	North Coast Resource Partnership
David Maidment, Ph.D.	University of Texas
Mark Reichardt	Open Geospatial Consortium (Retired)
Jim Van Rens	Riegl, USA Inc.
Steven Steinberg, Ph.D.	County of Los Angeles, CA
A. Stewart Walker, Ph.D.	Lidar Magazine
Federal Contacts: Mike Tischler, Vicki Lukas (*USGS/National Geospatial Program)*	

***NGAC Member**

NGAC 3DEP Subcommittee

- Established through National Landslides Preparedness Act (NLPA) - P.L. 116-323
- FGDC coordinated with USGS/DOI to establish the subcommittee and appoint members
- Membership includes NGAC and non-NGAC members selected for subject matter expertise
- Subcommittee established work groups to develop components of initial subcommittee report

3DEP Subcommittee – Objectives

- **Objective 1:** Meet the statutory assessment and reporting requirements for the subcommittee as outlined in the NLPA.
- **Objective 2:** Provide ongoing advice and recommendations to the 3DEP program.
- **Objective 3:** Serve a liaison role between the organizations/ sectors represented on the subcommittee and the 3DEP program.

3DEP Subcommittee – Work Groups

Trends & Developments Work Group	Program Management Work Group
(A) ASSESSMENT. The Subcommittee shall conduct an assessment of—	
(i) trends and developments in— (I) the collection, dissemination, and use of 3D elevation data; and (II) science and technology relating to 3D elevation data;	(ii) the effectiveness of the 3D Elevation Program in carrying out the activities described in subsection (a)(1); (iii) the need to revise or reorganize the 3D Elevation Program; and (iv) the management, coordination, implementation, and activities of the 3D Elevation Program.
Gale Blackmer (Team Lead) **Bill Haneberg** **David Maidment** **Mark Reichardt** **Jim Van Rens** **Stewart Walker**	**Gary Thompson (Team Lead)** **Garet Couch** **Lynn Dupont** **Karen Gaffney** **Steve Steinberg**

3DEP Assessment – Contents

INTRODUCTION

THE NEXT GENERATION OF 3DEP

TRENDS AND DEVELOPMENTS IN 3DEP DATA COLLECTION AND PROCESSING

- Data Collection Technologies
- Project Data Contracting, Acquisition, Processing, and Timelines

TRENDS AND DEVELOPMENTS IN DATA DISSEMINATION

- Access to Lidar Data Products
- 3DEP Ecosystem Advances
- Dissemination Benefits of 3DEP Alignment with the National Spatial Data Infrastructure (NSDI) and Community-Accepted Standards
- Integration with and Derivation from Other Data
- Data Storage

3DEP Assessment – Contents

TRENDS AND DEVELOPMENTS IN DATA USE

- State of Texas
- Sonoma County, California
- State of North Carolina
- Post-Event Lidar Data Collection
- Precision Agriculture

COST AND EFFECTIVENESS OF 3DEP

- 3DEP Funding to Achieve Effectiveness
- USGS Budget Priorities Now into the Future
- Effectiveness Measured by the Economic Benefits of 3DEP
- Effectiveness Measured by the Value of 3D Elevation Data for Risk Reduction and Environmental Management
- Leveraging Public-Private Partnerships
- Coordination with Other Groups

3DEP Assessment – Contents

THE NEED TO REVISE OR REORGANIZE 3DEP

- 3D Elevation Federal Interagency Coordinating Committee
- 3DNTM Call for Action Part 2: Next Generation 3DEP
- 3D National Topography Model

THE MANAGEMENT, COORDINATION, IMPLEMENTATION, AND ACTIVITIES OF 3DEP

- Encouraging Greater Participation from Non-Federal Partners
- Improving Coordination with Federal Agencies
- Improving Partnerships with the Private Sector

CONCLUDING REMARKS

RECOMMENDATIONS

APPENDICES

Draft Recommendations (topics)

Overarching Recommendations

- “Stay the course” to achievement of 100% national coverage.
- Incorporate additional recommendations into its design plans when additional funding is available.

Technical/Technology

- Collaboration with contractors on validation process
- Utilization of latest technologies and products for lidar data collection and processing
- AI/ML techniques to streamline and future-proof 3DEP processing
- Software development sprints

Draft Recommendations (topics)

Partnerships

- Further leveraging The National Map Liaison network
- Communicating utility of 3DEP data to address key national priorities
- Leveraging and funding of 3DEP by Federal agencies involved in broadband mapping
- Pursue private sector investment approaches to help enable goals of next generation 3DEP

Program Enhancements/Future Plans

- Embracing and implementing 3DEP Ecosystem concept
- 3DEP data storage and dissemination
- Documenting the 3DEP system architecture to ensure interoperability
- Developing seamless 1-meter digital elevation model (DEM) for derivation of hydrography from elevation data
- Exploring workflows and processes yielding Analysis Ready Data and Decision Ready Information

Draft Recommendations (topics)

Standards

- Exploring increased representation and resources in relevant Standards Development Organizations

Governance

- Implementing design for next generation 3DEP described in the 3D National Topography Model
- Implementing the governance process outlined in the NLPA, including the 3D Elevation Federal Interagency Coordinating Committee
- Ensuring participation from a broad range of Federal agencies with a need for data delivered through 3DEP

Concluding Remarks

The Subcommittee has concluded through this assessment that 3DEP has successfully advanced its initial goal of full lidar coverage of the Nation, helping to address many of the requirements and benefits as described in the NEEA. The comprehensive management approach already established for the program and its array of partners from all national sectors has been a model for the Nation, which will only be enhanced through the establishment of an Interagency Coordinating Committee as directed by the NLPA.

There is opportunity for further, substantial improvement in 3DEP quality, efficiencies, and capabilities to support a growing range of user needs, given additional partner or appropriated funding. The vision for the next generation of 3DEP will build a modern elevation foundation for stronger, more resilient communities that strengthen and expand the U.S. economy, improve environmental and ecological decision-making, and ensure effective and efficient communication and transportation infrastructures.

The very successful public/private partnerships, established by the 3DEP and nourished by the USGS managers, should continue, with added vigor, in the next generation.

3DEP Subcommittee – Milestones

Name	Date
Subcommittee established (appointment letters signed)	July 5, 2022
Subcommittee (kick-off meeting)	Aug - Sept 2022
September 2022 NGAC meeting – Subcommittee status report	**September 7-8, 2022**
Subcommittee Work Group Meetings: Program Management WG and Trends & Developments WG	Sept – Dec 2022
FACA legal/ethics briefing	October 5, 2022
December 2022 NGAC meeting – Subcommittee status report	**December 6-7, 2022**
Subcommittee Work Group Meetings	Jan - April 2023
April 2023 NGAC meeting – Overview of draft report	**April 11, 2023**
NGAC review of draft report – NGAC comments due Friday April 28	April 11 - April 28
Subcommittee revises paper and prepares final draft report	May – June 2023
June 2023 NGAC meeting – Review/Approval of final draft report	**June 27-28, 2023**
3DEP Subcommittee report due	**July 2023**

3DEP Program Update

Mike Tischler/Vicki Lukas
USGS National Geospatial Program