

SUPPORTING STATEMENT
3D Nation Elevation Requirements and Benefits Study 2018

OMB CONTROL NO. 0648-xxxx

A. JUSTIFICATION

1. Explain the circumstances that make the collection of information necessary.

The National Oceanic and Atmospheric Administration (NOAA) Office of Coast Survey and the U.S. Geological Survey (USGS) National Geospatial Program (NGP) are partnering to conduct the *3D Nation Elevation Requirements and Benefits Study*. This study is designed to gather information from users of elevation data (both topography and bathymetry) about their requirements for the data they need to conduct their business, and the benefits they will derive if all of their requirements could be met by readily available elevation data. An important aspect of this study is the collection of coastal and ocean requirements for elevation data, which have never been comprehensively gathered before, and the merging of this information with data about terrestrial elevation requirements.

The goal of this study is not to gather customer satisfaction information about already available 3D elevation data, but to learn more about organization's business uses and the associated benefits that could be realized from improved 3D elevation data. The results of the study will help federal mapping agencies to develop and refine future program alternatives for better 3D elevation data to meet many federal, state, and other national business needs. Clarity on what users need will help inform program management options and decisions. The results of this study will help NOAA and partner agencies develop a required national coastal mapping strategy and help the USGS NGP evaluate its program direction now that approximately 50% of terrestrial elevation data have been collected under the interagency 3D Elevation Program (3DEP).

Authorizing statutes supporting the *3D Nation Elevation Requirements and Benefits Study* include the Ocean and Coastal Mapping Integration Act (33 USC 3501), which tells federal mapping agencies to better coordinate their activities and the Coast and Geodetic Survey Act (33 USC 883a et seq), which authorizes NOAA to collect elevation data for nautical charts and safe navigation.

This study builds on the National Enhanced Elevation Assessment (NEEA) white paper finalized in 2012 (NEEA overview at <https://pubs.usgs.gov/fs/2012/3088/>), which assessed terrestrial elevation data needs assessed via a similar survey in 2010 (OMB Control No. 1028-0099). The original NEEA, and its original survey methodology, serve as a model to follow for proven utility in effective program management, as its results have guided management of 3DEP since 2012. Refreshing the NEEA with this 3D Nation study will allow 3DEP to make necessary course corrections five years into the program. With the addition of ocean and coastal requirements and benefits, federal ocean and coastal mapping agencies will be able to coalesce around informed strategies to collectively improve their service delivery as well.

The primary tool to gather information will be a voluntary online questionnaire sent to a carefully curated list of elevation data users. The questionnaire covers a wide range of business uses that depend on 3D elevation data to inform policy, regulation, scientific research, and management decisions. Voluntary in-person interviews to clarify questionnaire results may also be arranged. The online survey instrument can be accessed here:

<https://3dnation.checkboxonline.com/Survey.aspx?s=6f7513975ba340818246380e20e88650&u=1b7f7800-e21d-489a-aa74-00e59517923b&forceNew=true&test=true>.

For purposes of this questionnaire, 3D elevation data refers to topographic data (precise three-dimensional measurements on land) and bathymetric data (precise three-dimensional measurements in the water). Questions will be asked about how elevation data relates to specific Mission Critical Activities (activities that are indispensable for mission accomplishment and/or essential for effective/efficient operations in accomplishing the core mission of the organization). The questionnaire also explores where stakeholders need elevation data (geographic extent), the accuracy and update frequencies required, and assessments of how organizations would benefit from better elevation data.

This questionnaire includes questions about the technical requirements for 3D elevation data as well as questions about the benefits of 3D elevation data to participant organizations. The technical requirements may best be answered by an elevation data user who has experience working with the data. The questions on benefits including potential revenue increase, cost savings and other operational improvements may best be answered by a stakeholder or person who makes management or business decisions. If applicable, the questionnaire may be jointly completed by an elevation data user and stakeholder in order to capture both perspectives for a Mission Critical Activity.

We have also established a process whereby the questionnaire responses will be validated and confirmed with each organization or state. This same process worked to great effect with NEEA and the USGS *Hydrography Requirements and Benefits Study* (HRBS) (OMB Control Number Control Number 1028-0112), allowing higher level managers and stakeholders to validate benefits information provided by their organization's respondents.

2. Explain how, by whom, how frequently, and for what purpose the information will be used. If the information collected will be disseminated to the public or used to support information that will be disseminated to the public, then explain how the collection complies with all applicable Information Quality Guidelines.

NOAA, USGS and partner mapping agencies are working to improve the technology systems, data, and services that provide information about 3D elevation data and related applications within the United States. This 3D Nation questionnaire will help federal agencies evaluate future program alternatives that would provide enhanced 3D data to meet many Federal, State, and other national business needs. By learning more about business uses and associated benefits that would be realized from improved 3D data, the agencies will be able to prioritize and direct

investments that will best serve user needs over the course of the next few years.

The 3D Nation study information will be analyzed by NOAA, USGS and the contractor doing the study to help determine requirements and benefits of elevation data. Post-survey analyses will project out the costs for data acquisition, processing, QA/QC, life-cycle data management, data distribution, as well as benefits over the geographies and the number of years needed to deliver the program scenario being evaluated. The ROI analyses can be used to identify geographies where more-frequent or less-frequent updates would yield higher or lower ROIs for those areas so decision-makers can identify where more-frequent updates are warranted. The ROI analyses will also be able to highlight different geographies in which different data accuracies might yield higher ROIs.

Collected responses will be aggregated at the agency and national levels in subsequent reports and assessments following Information Quality Guidelines for quality, integrity, utility and objectivity. Responses associated with individuals will not be distributed, but the information collected will be used to support publicly disseminated information. The information collection process will be guided by an interagency management team led by NOAA and USGS with contracted support from Dewberry Consultants LLC. Dewberry was the contractor on the original NEEA study, as well as the HRBS. The information collection will be conducted using a standardized template. Responses are one-time and voluntary.

The sections of the questionnaire include:

- Respondent Information – name, contact information, organization type, etc. (all users asked to respond)
- Mission Critical Activity, Business Use, Program Name (all respond)
- Elevation Data Requirements and Benefits (subsections only required if a user indicates a need for that type of data)
 - Inland topography
 - Inland bathymetry
 - Nearshore bathymetry/topobathymetry
 - Offshore bathymetry
- Information Access Methods and Final Comments (all respond)

The online tool will direct respondents to only the sections of the survey applicable to them. Frequently Asked Questions and Benefits Examples will be hyperlinked from relevant questions for ease of access, and also visible in total.

NOAA Coast Survey and USGS NGP will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NOAA standards for confidentiality, privacy, and electronic information. See response to Question 10 of this Supporting Statement for more information on confidentiality and privacy. The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to Section 515 of Public Law 106-554.

The practical utility of this updated information collection has been well demonstrated by how

integral the original NEEA was/is to effective USGS 3D Elevation program management. NOAA and USGS anticipate similar benefits to both terrestrial and ocean/coastal federal mapping programs with this follow-on 3D Nation study. The work will culminate in a final report along the lines of the original NEEA study (available at <http://www.dewberry.com/services/geospatial/national-enhanced-elevation-assessment>) and summary white paper (<https://pubs.usgs.gov/fs/2012/3088>). These analyses will inform federal agency mapping coordination and planning to meet more stakeholder needs with mapping dollars, increase efficiencies and avoid redundant collections.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological techniques or other forms of information technology.

The 3D Nation questionnaire will be conducted via an online survey tool located on NOAA's Office of Coast Survey site for ease of access, data collection and recording. (URL: XXX). The online tool will direct respondents to only the sections of the survey applicable to them. Frequently Asked Questions and Benefits Examples will be hyperlinked from relevant questions for ease of access, and also visible in total. Alternatives (e.g. accessible electronic PDF, printable PDF, paper survey mailed to respondent, verbal) will be provided to any respondents who seek to provide input via other methods. The direct results of the information collection will not be made available to the public at all. However, any aggregated analyses and reports will be made available to the public over the Internet.

If voluntary in-person interviews are conducted to clarify questionnaire results, the interviewers will use laptops to directly enter the answers being provided. This will help the contractor and NOAA/USGS keep all acquired information in a single database.

4. Describe efforts to identify duplication.

Based upon a scan of federal mapping agency and partner activities, we do not believe there is currently any national effort since the original NEEA study to collect elevation requirements and/or re-examine the queries asked in 2010. Even more importantly, there has not been a national study that incorporates ocean/coastal into an assessment of 3D elevation data needs.

In April 2017, the state of Florida undertook a study of state elevation data needs for its own purposes; organizers of that study requested NOAA/USGS input on the questions to ask of Florida state agency representatives. Lessons learned from both the original NEEA and the Florida study have helped to improve the approach that NOAA/USGS are taking to this national 3D elevation study. If Florida respondents indicate unwillingness to respond to the 3D Nation questionnaire because they feel it duplicates their earlier efforts, NOAA/USGS and contractor will follow up with the Florida study organizers to request that input and fill in any gaps with in-person interviews.

A process is also included within the study design to validate the survey information collected through interviews or workshops. These will be conducted with each participating Federal

agency, state, and non-governmental or private organization. This validation process is intended to identify questionnaire responses that may describe the same or similar Mission Critical Activities in order to consolidate responses that may be duplicative.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

The questionnaire is not anticipated to have a significant impact on small entities such as small businesses, organizations, or government bodies. The short duration of the survey will likely not impose a significant economic impact on a respondent.

6. Describe the consequences to the Federal program or policy activities if the collection is not conducted or is conducted less frequently.

If the collection is not conducted, NOAA/USGS and federal mapping partners will not have current data upon which to base elevation mapping program management decisions. We will only be able to rely on the 2010 NEEA results, which do not include ocean/coastal mapping data requirements, and do not provide the USGS an effective means to gauge the results/impact of its 3D Elevation Program to date. NOAA, USGS and partner mapping agencies are working to improve the technology systems, data, and services that provide information about 3D elevation data and related applications within the United States. By learning more about business uses and associated benefits that would be realized from improved 3D data, the agencies will be more informed and able to prioritize and direct investments that will best serve user needs over the course of the next few years.

7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines.

There are no special circumstances related to the 3D Nation study inconsistent with OMB guidelines.

8. Provide information on the PRA Federal Register Notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

A Federal Register Notice was published on February 24, 2017 (82 FR 11558), soliciting public comments on the study. It included a link to a draft of the questionnaire in case any respondents wanted to review the actual questionnaire. The comment period was open until April 25, 2017, but no comments were received. In an effort to ensure broad awareness of the planned study and any opposing views or constructive feedback, NOAA and USGS subsequently sent the draft

questionnaire out to stakeholders, associations and other groups who might care to review and comment on it (e.g. the American Society for Photogrammetry and Remote Sensing and Association of American State Geologists).

NOAA and USGS also developed an outreach plan to inform stakeholders at related conferences and workshops about the study. The plan was implemented via a number of conferences and association meetings, where we offered to make the questionnaire available to anyone who cared to review it. These opportunities included the 2017 national MAPPS meeting of firms in the surveying, spatial data and geographic information systems fields; the Joint Airborne Lidar Bathymetry Technical Center of Expertise Summer 2017 Workshop; the National States Geographic Information Council (NSGIC) 2017 Spring meeting; and the American Shore and Beach Preservation Association (ASBPA) 2017 Fall meeting. Reaction was very positive, as many of those in the briefs had participated or knew of the NEEA study; coastal states at the NSGIC and ASBPA meetings were especially pleased that ocean/coastal elevation data was being added to the study. Questions during these sessions included when the survey would start, how will participants be identified, could anyone take the survey, and could they answer for more than three mission critical activities.

NOAA and USGS also received comments in the document from a few 3D Elevation Program Working Group and Interagency Working Group on Ocean and Coastal Mapping members. Responses from non-feds were mainly informal, ranging from emails to verbal comments and questions during presentations. All responses were positive; no negative feedback was received on the intent and planned process for the 3D Nation Study. Examples of text comments and the few emailed comments include:

- This is superb.
- My only suggestion is to consider “Question 2. Which type of organization do you represent?” as one-third of all state geological surveys are state-government-mandated more-or-less, and university-based. So university-based state geological surveys, like me, would wonder whether to say they are state government, or academic.
- The questionnaire looks good.
- Should be “Commonwealth of the Northern Mariana Islands.”
- Is there going to be a glossary that defines all the technical terms in the document?
- Will there be a map (s) which shows the huc-2 or -4?
- A respondent could be interrupted while completing the survey or need to check on some information. Can they pause and then resume?
- On approximate size of features: While the sizes make sense here, the descriptions of those sizes (e.g. survey-level features) are a bit odd. Also, you say “size of the features” but half your descriptions reference scales, not features. Maybe ask the size of the smallest features that need to be resolved and just give the choices in meters.
- On horizontal accuracy needed: Accuracy measure? 95%? 90% circular error? All points within? RMSE?

Comments like the last two above helped NOAA and USGS to refine and improve the questions to be more clear.

9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.

N/A.

10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.

There is no assurance of confidentiality provided. However, the information will be stored on the NOAA Coast Survey Nautical Charting system, which has an approved Privacy Impact Assessment (NOAA6501, with valid Authority to Operate). Results will be downloaded to Coast Survey resources. The applicable System of Records Notice is Commerce/NOAA-11, Contact Information for Members of the Public Requesting or Providing Information Related to NOAA's Mission (82 FR 3721, amended notice published January 12, 2017).

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.

N/A.

12. Provide an estimate in hours of the burden of the collection of information.

Because this will be an attentive, knowledgeable, and highly motivated sample, we anticipate a response rate of approximately 80% for the online survey (yielding 800 actual respondents of the invited 1000).

We have performed user testing of the questionnaire as coded within the survey software and have found that the time spent to answer the questions and review the Frequently Asked Questions as needed within the questionnaire was approximately 60-90 minutes without taking time out to consult others within the organization. We estimate that the average respondent may take between 30 and 60 minutes to consult within their organization as needed.

Note that most survey participants will not be responding to the entire questionnaire, but a subset, depending on the focus of their activity. The majority of respondents will have one Mission Critical Activity and one geographic area they are interested in which results in 42 questions being asked. For example, participants from the 20 non-coastal states will never see questions 36-61; participants whose focus is on offshore activities will only see questions 1-10 and 49-68.

Therefore, we believe that 2.5 hours per respondent should be sufficient to complete the questionnaire and consult within an organization for input, but to err on the conservative side, we will round up to 3 hours.

13. Provide an estimate of the total annual cost burden to the respondents or record-

keepers resulting from the collection (excluding the value of the burden hours in Question 12 above).

\$0, no additional record-keeping required.

14. Provide estimates of annualized cost to the Federal government.

The costs incurred by the Federal government include the contract to design and administer the questionnaire, conduct analyses and deliver reports over an 18 month period, at an estimated \$1.1M total, \$875K in year 1, \$300K in year 2. There will be no additional costs beyond the normal labor costs for staff. Anticipated staff tasks include 3D Nation study project management, outreach (emails/calls/briefs/webinars) to potential respondents to encourage voluntary input, and a subset of follow-up interviews using regional agency representatives to clarify questionnaire responses.

3D Nation Study Federal Agency Annual Labor Costs (using \$60 average staff hourly rate)		
Activity/Hours	# of employees	Cost
3D Nation study project management/ 200 hours	2 (NOAA/USGS)	\$24,000
Pre-survey outreach to stakeholders/ 3 hours	20 (various fed'l mapping agency reps)	\$3,600
Post-survey follow-ups/20 hours	10 (regional liaisons)	\$12,000
	Total:	\$39,600

15. Explain the reasons for any program changes or adjustments.

This is a new information collection.

16. For collections whose results will be published, outline the plans for tabulation and publication.

Once all of the *3D Nation Elevation Requirements and Benefits Study* data have been collected, consolidated and verified, and concurrence received from the Federal and state agency points of contact, analysis of the data can be performed. Follow-on analyses will project out the costs for data acquisition, processing, QA/QC, life-cycle data management, data distribution, as well as benefits over the geographies and the number of years needed to deliver the program scenario being evaluated. These analyses can be used to identify geographies where more-frequent or less-frequent updates would yield higher or lower ROIs for those areas so decision-makers can identify where more-frequent updates are warranted. The ROI analysis will also be able to highlight different geographies in which different data accuracies might yield higher ROIs.

The *3D Nation Elevation Requirements and Benefits Study* final report will fully document the study. This would include an overview of the study goals and project scope; documentation of the study process; a summary of the data that was gathered during the study, to include the full details of the consolidated and validated stakeholder input (with no attribution to individual

respondents); the results of the analysis of the gathered data; and recommendations and conclusions. The results will be available through NOAA and USGS webpages.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.

N/A.

18. Explain each exception to the certification statement.

N/A.