

SUPPORTING STATEMENT Part A
U.S. Department of Commerce
National Oceanic & Atmospheric Administration
3D Nation Elevation Requirements and Benefits Study
OMB Control No. 0648-0762

SUPPORTING STATEMENT PART A -

Abstract

This is a request for extension of an approved information collection.

NOAA, the U.S. Geological Survey (USGS), and partner agencies work to continually improve the technology systems, data, and services that provide information about 3D elevation data and related applications within the United States. By periodically assessing business uses and associated benefits from improved 3D mapping data, the agencies can more effectively prioritize and direct investments that will best serve user needs over time.

The 3D Nation Study is a follow-on to the National Enhanced Elevation Assessment (NEEA) white paper finalized in 2012 (NEEA overview can be found at <https://pubs.usgs.gov/fs/2012/3088/>). The 3D Nation Study incorporates coastal and ocean requirements for elevation data together with terrestrial elevation data needs. The study assesses needs for 3D elevation data in terms of Mission Critical Activities, geographic extents of data needs, collection standards and accuracy requirements, frequency needed, and anticipated benefits of having the required data.

Because 3D data are collected and used to meet a wide range of mission critical needs, the 3D Nation Study seeks input from managers and data users from a variety of government entities (e.g., Federal, State, local, Tribal) as well as not for profit, academic, and private/commercial entities. The findings will update a baseline of national business needs and associated benefits for 3D data and associated technologies. This study is intended to inform the design of directed future programs that balance requirements, benefits, and costs at a national scale. More information is available at <https://my.usgs.gov/confluence/display/3DNationStudy>. From lessons learned with the 2018 survey, NOAA and USGS will ask the same questions, but will change how those questions are shown in the online survey tool to enable respondents to streamline their input and save time in answering.

Justification

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

NOAA Office of Coast Survey and USGS's National Geospatial Program (NGP) began a partnership in 2016 to conduct the 3D Nation Elevation Requirements and Benefits Study (OMB CN 0648-0762). 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, and the merging of this information with terrestrial elevation requirements.

The goal of this study is not to gather customer satisfaction information about already available 3D elevation data, but to periodically assess various organizations' business uses and the associated benefits that would be realized from improved 3D elevation data. The results of this ongoing study 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 continue to help inform program management options and decisions.

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. The Geospatial Data Act (43 USC 2801 et seq), though signed into law more recently than the initial 3D Nation Study, reinforces a study goal on standards with the requirement for all federal agencies to establish and use data standards in acquisition and archive of geospatial data.

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 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 initially guided management of the 3D Elevation Program (3DEP) since 2012. Revisiting stakeholder requirements periodically, as we are doing now with the 3D Nation Study, allows 3DEP to make necessary course corrections eight years into the program. With the addition of ocean and coastal requirements and benefits, the 3D Nation Study enables federal ocean and coastal mapping agencies to coalesce around similar informed strategies to improve service delivery.

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

NOAA, USGS, and partner mapping agencies on the 3D Elevation Program (<https://www.usgs.gov/core-science-systems/ngp/3dep>) along with the Interagency Working Group on Ocean and Coastal Mapping (<https://iocm.noaa.gov/about/iwg-ocm.html>) 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 current 3D Nation Study information is being analyzed by NOAA, USGS, and the contractor doing the study to help determine requirements and benefits of elevation data. Post-survey analyses are in work to 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 are 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 information on the study that will be shared via Internet (iocm.noaa.gov and usgs.gov/3dep). The information collection will be conducted using a standardized template. Responses are one-time and voluntary.

The primary tool to gather information is 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 direct results of the information collection are not made available to the public. Aggregated analyses and reports are made available to the public via Internet sites listed above. The online survey instrument used in 2018 can be accessed here: <https://my.usgs.gov/confluence/display/3DNationStudy/Questionnaire>.

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 are 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 standards, accuracy and update frequencies required, and assessments of how organizations would benefit from better elevation data.

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 directs respondents to only the sections of the survey applicable to them. Frequently Asked Questions and Benefits Examples are hyperlinked from relevant questions for ease of access, and are also visible in total.

NOAA Coast Survey and USGS NGP 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 expected in late 2021 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.

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 monetary benefits 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 simple check-in process whereby each organization responding to the questionnaire may validate its responses if they choose to do so. This same process worked to great effect with NEEA and the USGS Hydrography Requirements and Benefits Study (OMB Control Number Control Number 1028-0112), allowing higher level managers and stakeholders to validate benefits information provided by their organization's respondents.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.

For ease of response, the 3D Nation questionnaire is conducted via an online survey tool located on NOAA's Office of Coast Survey site for ease of access, data collection and recording. The online tool directs respondents to only the sections of the survey applicable to them to reduce burden. Frequently Asked Questions and Benefits Examples are 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 respondents, verbal) can be provided to any respondents who seek to provide input via other methods.

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

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Question 2

Based upon a scan of federal mapping agency and partner activities, we do not believe there is currently any national effort to collect elevation requirements except the 3D Nation Study (OMB Control No. 0648-0762) currently in work. There is a related study on terrestrial hydrography (surface water) with

which the 3D Nation Study managers coordinated to avoid duplication; this study employed similar methodology to collect current and future user requirements and the associated benefits for improved terrestrial hydrography. This study was conducted in 2014-2016 and the final report is available from USGS here: <https://www.usgs.gov/core-science-systems/ngp/national-hydrography/hydrography-requirements-and-benefits-study#:~:text=The%20Hydrography%20Requirements%20and%20Benefits,benefits%20for%20improved%20hydro%20data.&text=the%20importance%20of%20related%20geospatial,%2C%20geology%2C%20and%20many%20others>. Even more importantly, the 3D Nation Study is the only 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 helped to improve the approach that NOAA/USGS took for the 3D Nation Study.

A process is also included within the study design to validate the survey information collected through interviews or workshops. These are conducted with willing Federal agency, state, and non-governmental or private organization participants. 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 impacts small businesses or other small entities, describe any 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 consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

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 older study results, which may be obsolete in terms of stakeholder needs and improvements in data acquisition technologies and techniques. 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 in the future.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner inconsistent with OMB guidelines.

There are no special circumstances and this collection will be conducted in a manner consistent with OMB guidelines.

8. If applicable, provide a copy and identify the date and page number of publications in the Federal Register of the agency's notice, required by 5 CFR 1320.8 (d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Public comment for this extension request was published in the Federal Register on January 29, 2021 (86 FR 7542); no comments were received.

Additionally, NOAA reached out to agency stakeholders and prior/future likely respondents from NOAA itself, the Bureau of Ocean Energy Management, U.S. Army Corps of Engineers, U.S. Geological Survey and the U.S. Department of Agriculture (USDA) 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. Only one comment, supportive in nature, was received: "The 3D Nation Study is a worthwhile effort which we anticipate will help focus and guide a diversity of stakeholders into a common vision and improve efficiency and effectiveness of our elevation programs" (USDA).

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

No payments or gifts for respondents are part of this study.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy. If the collection requires a systems of records notice (SORN) or privacy impact assessment (PIA), those should be cited and described here.

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 or attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

Sensitive questions are not part of the study.

12. Provide estimates of the hour burden of the collection of information.

Because this will be an attentive, knowledgeable, and highly motivated sample, we anticipate a minimum 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.

During the 2018 survey, we learned that more survey participants than expected wanted to respond to multiple geographies (e.g., both terrestrial and nearshore, or terrestrial and inland bathymetry). To facilitate these responses in less time, we will modify the survey construction to enable responses that include multiple geographies for a Mission Critical Activity, rather than requiring the respondent to complete input on one geography before going to the next. The questions will not change, just how the respondent sees them on the screen. Therefore, we believe that 2 hours per respondent should be sufficient to complete the questionnaire and consult within an organization for input.

Information Collection	Type of Respondent (e.g., Occupational Title)	# of Respondents/ year (a)	Annual # of Responses / Respondent (b)	Total # of Annual Responses (c) = (a) x (b)	Burden Hrs / Response (d)	Total Annual Burden Hrs (e) = (c) x (d)	Hourly Wage Rate (for Type of Respondent) (f)	Total Annual Wage Burden Costs (g) = (e) x (f)
3D Questionnaire	Physical Scientist	285	3.508	8000	2	1600	\$53.88	\$86,208
Totals				800		1600		\$86,208

- The Hourly Wage Rate for Physical Scientist was obtained from the BLS 2019 Occupational Employment and Wage Estimates.

13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected on the burden worksheet).

There are no costs to the respondents as a result of this survey.

14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information.

Going forward, the costs incurred by the Federal government include a contract to update and administer the questionnaire, conduct analyses and deliver reports over an 18 month period, at an estimated \$1M total, \$750K in year 1, \$250K in year 2. There are no additional costs beyond the contract cost and normal labor costs for staff managing the contract and overseeing the study. 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.

Cost Descriptions	Grade/Step	Loaded Salary /Cost	% of Effort	Fringe (if Applicable)	Total Cost to Government
Federal Oversight	NOAA V/III USGS 13/10	165K 102K	15% 15%		\$24,750 \$15,300
Other Federal Positions					
Contractor Cost		1M	100%		\$1,000,000
Travel					0
Other Costs:					
TOTAL					\$1,040,050

15. Explain the reasons for any program changes or adjustments reported in ROCIS.

There are no changes to the information collection since the last OMB approval.

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The analysis of the 2018 3D Nation questionnaire results is still ongoing, delayed by such events as a furlough and the Covid pandemic. It is due to be completed by August 2021. Initial tabulations and analyses shared with respondents via seminars and update briefs include maps and graphics of all

Mission Critical Activities reported by geographic area of interest, pie charts of quality level and frequency requirements for each of the four data types (topographic, inland bathymetry, nearshore and offshore bathymetry), and benefits reported by business use,

In general, the process for the study from collection to publication is as follows:

- Once all of the 3D Nation Study data are collected, consolidated and verified, and concurrence received from the Federal and state agency points of contact, analysis of the data begins.
- 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 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 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 that display would be inappropriate.

We are not seeking approval to hide the expiration date.

18. Explain each exception to the certification statement identified in “Certification for Paperwork Reduction Act Submissions.”

The agency certifies compliance with [5 CFR 1320.9](#) and the related provisions of [5 CFR 1320.8\(b\)\(3\)](#).