

Supporting Statement
U.S. Department of Commerce
National Oceanic & Atmospheric Administration
Generic Clearance for NOAA Citizen Science and Crowdsourcing Projects
OMB Control No. 0648-NEW

Introduction:

The National Oceanic & Atmospheric Administration (NOAA) realized that it had a variety of citizen science and crowdsourcing (CSC) projects, which required but did not have approval from the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA). After consulting with OMB, NOAA is requesting a new generic clearance for its citizen science and crowdsourcing (CSC) projects, which meet the six criteria listed below. The first four criteria must be met for NOAA to consider a specific set of scientific activities to be a CSC project. The last two criteria are requirements for a CSC project to be conducted under this generic clearance.

1. Either the project involves an open collaboration in which individuals or organizations participate voluntarily in a scientific activity, which assists NOAA in meeting its mission, or it is a crowdsourcing project, which assists NOAA in meeting its mission.
2. The project does not financially compensate the voluntary participants for their time.
3. The project is not principally an opinion poll.
4. The project does not principally collect information on or about the voluntary participants.
5. NOAA designed the project to contribute to research and science, not to collect highly influential scientific information¹.
6. The project requires but has not received OMB approval under the PRA.

Examples of the CSC projects that do not meet the last criterion and would not be included under this generic clearance are as follows:

1. A CSC project that is part of a larger information collection, which OMB has approved;
2. A CSC project with fewer than 10 voluntary participants per year; and
3. A CSC project funded by a NOAA grant for which the recipient of the grant is not conducting the collection of information at NOAA's specific request and the terms and conditions of the grant do not require NOAA's specific approval of the collection of information or collection procedures.

Approval of this generic clearance would allow NOAA to do the following:

1. Be more responsive to the Citizen Science and Crowdsourcing Act (15 U.S.C. 3724), as well as the other laws, Executive Orders (EOs) and Federal policies or plans, which authorize and/or support NOAA's CSC Projects;
2. Come into compliance with the PRA more rapidly and efficiently; and, therefore.

¹ Information NOAA or OMB determines: (i) could have a potential impact of more than \$500 million in any year, or (ii) is novel, controversial, or precedent setting or has significant interagency interest.

3. Obtain additional scientific information and be able to continue to use previously obtained scientific information that support its mission to understand and predict changes in climate, weather, ocean, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources.

Once OMB has approved this information collection request (ICR) and the CSC projects included with it, OMB would quickly review each additional information collection (i.e., CSC project) after NOAA submits an abbreviated ICR for that CSC project. Hereafter, this supporting statement uses the term “mini-ICR” to refer to an abbreviated ICR and the term “project” refers to a distinct set of CSC activities or a program, which would have a fixed or unfixed duration. A Federal Register Notice and the associated public comment period would not be required for each additional CSC project.

NOAA relies on scientific information. CSC projects allow NOAA to collect qualitative and quantitative data that help inform scientific research and monitoring, validate models or tools, support STEM learning, and enhance the quantity and quality of data collected to support NOAA’s mission. NOAA would use the information gathered under this generic clearance to support the activities listed above and that might provide unprecedented avenues for conducting breakthrough research.

The information collected under this generic clearance would be from voluntary participants who actively seek to participate on their own initiative through an open and transparent process (NOAA would not require participation and often would not select participants) and the data would be available to support the scientific research (including assessments, tools, models, etc.) of NOAA and its partners. Its partners include states, tribal or local entities, business or other for-profit organizations, and not-for-profit institutions or organizations. In collaborating with other federal agencies and/or non-federal entities, NOAA could sponsor citizen science or crowdsourcing projects to collect information that supports its mission. All CSC projects must comply with NOAA policies and the scope of this generic clearance, which includes, but is not limited to, the natural, applied, social, and cultural sciences as they apply to crowdsourcing and citizen science activities. Finally, personally identifiable information (PII) would only be collected when necessary and in accordance with applicable federal procedures and policies. For a CSC project not within the parameters of this generic clearance, NOAA would submit a separate information collection request to OMB for approval of that project.

Two appendices are included as supplemental documents. Appendix A briefly describes the federal laws, Executive Orders (EOs), and Federal policies or plans that authorize and/or support NOAA’s CSC projects. Appendix B contains the template with instructions for the mini-ICRs for the CSC projects NOAA would submit to OMB for approval under this generic clearance.

Notes:

1. The ICR for the EPA’s Generic Clearance for Citizen Science and Crowdsourcing Projects (OMB Control No. 2080-0083) was the model for this ICR.
2. OMB has approved three of NOAA’s CSC projects under separate OMB Control Numbers. At some point, NOAA will move them from their current clearances to this generic clearance. They are Billfish Tagging Report (0648-0009), Groundfish Tagging Program (0648-0276) and SWFSC Sea Turtle Sightings Project (0648-0808). For the purposes of

SSA Item 15, we will simplify OMBs review by ignoring them for now. However, we have included them in the burden and cost estimates in Items 12 - 15.

- 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.**

1.1 Citizen science and crowdsourcing: Innovative research methods that engage the public

CSC are tools that engage, educate and empower the public to apply their curiosity and contribute their talents to a wide range of scientific and societal issues. Citizen Science is a form of open collaboration where the public can participate actively in the scientific process through methods that include asking research questions, collecting and/or analyzing data, interpreting results, or engaging in problem solving. Crowdsourcing is a process where individuals or organizations respond to an open call for contributions of information from a large group of individuals (“the crowd”).

1.2 NOAA’s mission

NOAA’s mission is to understand and predict changes in climate, weather, ocean, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources. Its vision of the future includes healthy ecosystems, communities, and economies that are resilient in the face of change. CSC projects support NOAA’s mission and vision. They do that by helping to ensure national efforts to conduct a variety of scientific activities are all based on the best available scientific information and that all parts of society (e.g., communities, individuals, states, tribal or local entities, business or other for-profit organizations, and not-for-profit institutions or organizations, including underserved communities) have access to accurate information sufficient to effectively participate in and benefits from NOAA’s efforts to meet its mission and achieve its vision of the future. The scientific activities mentioned above include those that help NOAA and its partners: 1) understand and predict changes in climate, weather, ocean, and coasts; 2) mitigate and prepare for adverse changes in climate, weather, ocean, and coasts and the associated risks to the nation; and 3) effectively and efficiently conserve and manage coastal and marine ecosystems and resources.

In EO 13985 (Advancing Racial Equity and Support for Underserved Communities Throughout the Federal Government), the term “underserved communities” refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. To meet the goals of this EO, NOAA fosters the sound use of science and technology and conducts leading-edge research. Likewise, NOAA conducts educational activities to increase the public’s knowledge and understanding of weather, climate, ocean, and marine resource issues so that they can make appropriate decisions. See Appendix A for descriptions of the Federal laws, EOs and Federal policies or plans that authorize and/or support NOAA’s CSC projects.

1.3 Benefits of research using citizen science and crowdsourcing approaches in NOAA research

CSC can create engaging opportunities for the public to experience their environment, contribute environmental data at a more local level, and provide opportunities to analyze large environmental datasets. These methods give people the ability to easily share data they encounter in their communities and environments. Whether it is an individual taking photos of endangered species they come across on a walk, someone at home identifying fish in underwater imagery, or a hiker collecting magnetic field data from their cell phone's magnetic sensor, NOAA's CSC projects provide people a fun and accessible way to contribute to science or foster a greater appreciation of their natural environment and community. In addition, CSC projects promote greater openness in the scientific process by actively encouraging participation in various aspects of research. Researchers using CSC are committed to the dissemination of data and results back to the public.

Many federal and non-federal organizations are already using innovative CSC tools to advance their missions. These tools are especially valuable if data are distributed across space and time or when projects rely on large datasets. Often, successful CSC projects result from iteration of the design based on feedback from the participants. In addition, there could be uncertainty about whether the time and effort to create a project would capture the interest of the public and yield meaningful public participation. Speed and flexibility are beneficial to develop, test, and implement good CSC projects to allow, for example, internet-based activities to evolve with technology and variable participation over time. An expedited approval process would facilitate incorporation of CSC methods into NOAA's research and scientific initiatives, which would provide large datasets with diverse information that can provide a more thorough understanding of issues related to NOAA's mission.

The growth and success of CSC is tied closely with advances in technology. Enhanced tools and methods are constantly making CSC more feasible and effective. NOAA researchers want to respond to and interact with industries through technology development. For example, the ability to quickly involve new technologies could allow NOAA researchers to contribute to testing and using low-cost sensors to collect scientific data. In addition, an expedited approval process is consistent with OMB Memo M-10-06², which promotes the use of new technologies and greater openness in government.

1.4 Federal support for citizen science and crowdsourcing

The Crowdsourcing and Citizen Science Act (CCSA), which is Section 402 of the American Innovation and Competitiveness Act of 2017, authorizes agencies to harness the ingenuity of the public by using open innovation methods such as CSC. In addition, the CCSA and 16 U.S. Code § 742f (Powers of Secretaries of the Interior and Commerce) authorize NOAA and other agencies to use voluntary participants and volunteers, respectively, in CSC projects. A number of other laws authorize NOAA to conduct scientific activities in support of its mission, including the types of activities conducted in conjunction with CSC projects. However, with three exceptions, those other laws do not authorize NOAA to use volunteers in conducting those activities. Several EOs and Federal policies and plans provide additional authorization and/or

² OMB Memo M-10-0. Open Government Directive. December 8, 2009.
https://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_2010/m10-06.pdf

support for CSC projects. Appendix describes all of the above. The mini-ICR for each project submitted under this generic clearance would identify the regulation mandating authorizing and/or supporting that CSC project.

In addition, CSC projects are in line with the Paperwork Reduction Act's intent to "ensure the greatest possible public benefit from and maximize the utility of information created, collected, maintained, used, shared, and disseminated by or for the Federal Government

1.5 Design principles for citizen science and crowdsourcing projects

CSC projects under this generic clearance would include the following design principles:

1. Participants have a meaningful role in the research project, and can act as contributors or collaborators.
2. Projects have a genuine scientific question or goal.
3. Projects are low-burden for participants.
4. Projects include active management of data and data quality, including a data quality assurance plan and ongoing evaluation of data quality and data management.
5. Projects are opt-in and participants have full control over the extent that they participate.
6. The data gathered and/or analyzed are shared with participants and generally made publicly available, unless there are security or privacy concerns that prevent this.
7. Participants receive feedback on how their contribution adds to the project, e.g., how their data will be used and what the research findings are.
8. Project leads will evaluate scientific output, data quality, and the impact on participants.
9. Projects are designed to contribute to research and science, not to collect highly influential scientific information.

NOAA CSC projects would have clear linkages to community problems and concerns, and this participatory, "translational science approach" differentiates citizen science research from NOAA's traditional research activities. The objective of CSC projects under this proposed generic clearance would be to use a rigorous research approach and then apply findings to real-world problem solving with benefits to the participants.

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 relies on scientific information. CSC techniques allow NOAA to collect qualitative and quantitative data that might help inform scientific research and monitoring, validate models or tools, support STEM learning, and enhance the quantity and quality of data collected to support NOAA's mission. NOAA would use the information gathered under this generic clearance to support the activities listed above and might provide unprecedented avenues for conducting breakthrough research.

Collections under this generic clearance would be from participants who actively seek to participate on their own initiative through an open and transparent process (NOAA would not require participation and typically would not select participants) and the data would be available to support the scientific research (including assessments, tools, models, etc.) of NOAA and its

partners. Its partners include states, tribal or local entities, business or other for-profit organizations, and not-for-profit institutions or organizations. Often in collaboration with other federal agencies and/or non-federal entities, NOAA would sponsor citizen science or crowdsourcing projects to collect information that supports its mission. All collections would comply with NOAA policies and the scope of this generic clearance, which includes, but is not limited to, the natural, applied, social, and cultural sciences as they apply to crowdsourcing and citizen science projects. Finally, personally identifiable information (PII) would only be collected when necessary and in accordance with applicable federal procedures and policies. If a new CSC project would not be within the parameters of this generic clearance, NOAA would submit a separate information collection request to OMB for approval of that new project.

As with any of NOAA's scientific endeavors, CSC projects would have approved data quality and data management plans as part of their project design before implementation. NOAA would provide employees resources for developing data quality and data management plans³.

The methods used for collecting information could vary greatly across projects and the popularity and application of CSC methods continue to grow with new and low-cost portable technologies. Therefore, the modes of data collection under this generic clearance would include the following:

1. paper or digital questionnaires, data forms and surveys;
2. focus groups or interviews;
3. new and existing online collaboration tools;
4. fields in a cell or smart phone applications (apps);
5. online web-based forms or interactive computer interfaces that elicit information;
6. social media platforms;
7. text or SMS messages;
8. readings from sensors (personal, mobile, stationary or portable) or other mobile, portable or stationary instruments readings either sent back to NOAA in real-time, through an online data collection site, or through another acceptable mode listed here;
9. analog or digital audio or video recordings;
10. digital or analog photographs; and
11. information collected automatically through an app, computer, the metadata accompanying a digital photograph, or a mobile sensor.

Information could be actively collected and actively submitted information (such as descriptions, measurements, photographs, etc.) as well as passively submitted information (such as the metadata accompanying actively submitted information, e.g., date, time, and location stamps automatically included with apps and digital photographs, etc.).

All CSC activities under this ICR would be consistent with the citizen science or crowdsourcing definitions in Section 3 of the Citizen Science and Crowdsourcing Act of 2017. The NOAA citizen science coordinator would review all CSC projects to be submitted under this generic clearance to ensure they comply with the parameters in this ICR and all other legal and

³ See the NOAA Information Quality Guidelines at:

<https://www.noaa.gov/organization/information-technology/policy-oversight/information-quality/information-quality-guidelines#>, which were last updated November 4, 2021

administrative requirements. In addition, all projects submitted under this ICR would manage PII according to the Federal regulations.

CSC projects submitted under this generic clearance could be a stand-alone project or the methods could be incorporated into an existing or new project, including, but not limited to, projects in the following typology:

- **Data gathering projects.** These projects could include 1) observation, characterization and documentation of natural phenomena or general environmental health observations or 2) screening environmental conditions, including using specialized equipment provided by project leaders to record and submit data, or submitting samples plus descriptors (e.g., of air or water) for testing. Data could be collected using technologies mentioned above, through structured data forms, surveys, focus groups or interviews, submitting photographs or other media, or providing written observations.
- **Classification/problem solving projects.** Participants' tasks could include: 1) observation of recorded materials provided by project organizers (images, video, etc.) through structured data submission forms, surveys or questionnaires in an online or computer program, clicking boxes, highlighting parts of text or image, and providing comments and/or annotations; 2) Classification of images or sounds using structured data submission forms or clicking boxes in an online or computer program; 3) Transcribing information, by typing handwritten logs or notes; or 4) Problem-solving or manipulation of data. Tasks 1-4 may be conducted via structured actions or instructions or with "human-based computational game" or "game with a purpose", a human-based computational technique in which a computational process performs its function by presenting certain steps to humans in an entertaining way.

Data gathering and classification/problem solving projects could include participants providing information, opinions or observations about a research subject's environmental surroundings. To the extent applicable, these projects would accord with all NOAA policies and regulations related to human subjects research.

CSC projects under this generic clearance could include the following types of questions or requests of participants:

- **Profile/Preference information.** Projects could request a username and/or password as well as user preference information to facilitate or customize the user experience. Participants could be asked to submit an email address, name, and zip code, as well as acknowledge a privacy policy or terms agreement. Participants could also be presented with an opportunity to be placed on a mailing list for the project. This includes projects administered through a web form or mobile application.
- **Personal and Contact Information.** CSC projects could solicit contact information. This information could be necessary to organize and analyze data (i.e., it could be necessary to know which data points are from the same observer). Projects could request contact information (name and email address, zip code, address and phone number) to

provide participants with project updates and share data. Participants would be made aware that the publically available data on contact information would be anonymized and aggregated, for example, by census tract, zip code, city, or some other higher level than individual addresses.

- **Experience and Expertise.** For data quality purposes, CSC projects could request information to evaluate the skill level of the participant by asking about their experience with the project topic. Questions could be about a person's age range, level or topic of education, participation in organizations, or professional experience.
- **Demographic Information.** To assess participation in NOAA CSC projects by underserved communities and to determine if changes in recruitment and retention efforts are needed to increase their participation, some projects would ask participants to provide demographic information such as some of the following: race and ethnicity, gender and sex, age, geographic residence, income, and education level.
- **Information about Observations.** Projects could request accompanying information, such as the date and time of the activity, the location (e.g., GPS coordinates, address, zip code, etc.), the weather (e.g., temperature, precipitation, wind, humidity, visibility, etc.), and a description or characterization of the location (e.g., vegetation type, type of water body, environmental condition, etc.) or personal senses (e.g., smell, visual cues, sound, etc.).
- **Training.** CSC projects could need to train participants for the purpose of soliciting quality data and increasing participant benefits including education and engagement. Participants could be asked to read materials, watch training videos, or attend training sessions in-person or virtually via a webinar. To ensure that participants understand the training, they could be assessed through testing instruments like a questionnaire or survey, which would be administered online or through a computer program, on paper, in a cell phone app, or in-person.

Recruitment and retention of voluntary participants

The related issues of recruiting and retaining sufficient numbers of voluntary participants, including those from underserved communities, are important for CSC projects. Participants in almost all NOAA CSC projects would be self-selected. Citizen scientist would voluntarily decide to participate and report. Participants would need to proactively seek out opportunities, respond to an email, or actively sign up for a project in order to participate. Outreach and advertising materials would provide information on how to participate but would not assume participation from anyone. Several existing CSC projects employ engagement tactics to support continued participation, and reduce non-response including newsletters with appreciation, motivation and results delivered to participants, and optional bi-weekly reminders to participants. The CSC project requested under this generic clearance would utilize some of these techniques while acknowledging that participants have full control over whether to participate or not.

Most CSC projects would track participation and, when possible, participation by underserved communities and retention. Some CSC projects would provide opportunities for participants to

submit negative data, for example, information on the time and effort to attempt to obtain an observation in the event of no observation.

The mini-ICR for each project submitted under this generic clearance would, among other things, identify the purpose of the CSC project, the type(s) of information to be collected, from whom it would be collected, the use of the information, the method(s) of information collection, the affected public, and the recruitment and retention methods to be used.

- 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.**

In order to encourage participation and reduce burden on participants, CSC efforts often would utilize information technology that is available to a number of potential participants on cell phones, personal computers, tablets, etc. The projects submitted under this generic clearance could collect information electronically through new and existing online collaboration tools, cell phone applications (apps) or SMS, web-based forms, online computer programs or forms, social media platforms, or sensors (personal, mobile, stationary or portable).

- 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.**

For each information collection to be conducted or supported by NOAA under this generic clearance, NOAA would ensure that it neither collects nor maintains similar data and that such data are not available from other sources known to NOAA. Citizen science projects would collect new information that is not already available (e.g., magnetic field data to fill in the gaps in the mapping of Earth's magnetic field). In these citizen science projects, voluntary participants would contribute valuable data that can fill data gaps.

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

Participants in the CSC projects under this generic clearance typically would be individuals, not small businesses or other small entities. For all projects, including those in which small businesses or other small entities participate, the collection tools would provide quick and simple methods for the voluntary participants to enter and/or submit the data. All activities would be voluntary and thus respondents would not face any burden if the activity does not interest them.

- 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 unable to collect information through citizen science or crowdsourcing methods under the proposed generic clearance, NOAA would be unable to adapt and utilize these innovative tools in a timely manner to engage the public in NOAA science. With these methods, NOAA would

benefit from the public's knowledge, expertise, and willingness to contribute to its scientific endeavors, including those that rely on large and geographically comprehensive datasets. The public and other organizations are beginning to capture and organize data with smartphones and portable sensors; NOAA's involvement would allow publically generated data to effectively support NOAA research, including initiating data collection, developing innovative methods for data processing, and managing data quality. NOAA research innovation significantly benefits by NOAA researchers having access to the newest technologies affording the opportunity to contribute meaningfully to low-cost sensor testing and use. Moreover, members of the public enjoy participating in CSC projects, which are fun, educational, engaging, and allow more open communication between NOAA and the public. NOAA CSC projects and those in other agencies have gathered millions of data points contributed by hundreds of thousands of voluntary participants who have benefited by being involved in these CSC projects. Finally, projects under this generic clearance would allow Agency researchers to test ideas more quickly, respond to the project's needs as they evolve, and incorporate feedback from participants for flexible, innovative research methods that involve the public in a variety of aspects of scientific research.

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

Each information collection would be voluntary. Therefore, no collection would require respondents to: 1) report information to NOAA; 2) prepare a written response; 3) submit any document; 4) retain any records; or 5) submit proprietary trade secrets, or other confidential information.

With very few exceptions, the information collections would not be in connection with a statistical survey and would not be used to generalize to the universe of any study. For those exceptions, the project-specific mini-ICRs would explain the statistical methods, which would be used. The collections would not require the use of a statistical data classification that has not been reviewed and approved by OMB. Where appropriate, there would be a pledge of anonymity. However, in most cases, NOAA would not collect confidential information and a pledge of confidentiality is not required.

Some CSC projects would require the citizen scientists to provide contact information and/or demographic information as discussed above in Item 2. When that would occur, NOAA would treat that data as confidential and not release it. NOAA has demonstrated that it has instituted procedures to protect information confidentiality to the extent permitted by law. Those information collections would include a pledge of confidentiality supported by disclosure and data security policies, which are consistent with the pledge and which do not unnecessarily impede sharing of data with other agencies for compatible confidential use. The response to Item 10 below includes the pledge of confidentiality that NOAA would use with each such collection.

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

In accordance with 5 CFR 1320.8(d), a notice for public comment was published in the Federal Register (Vol. 87, No. 165) on Friday, August 26, 2022.

We only received comments from Friends of Animals. Their following comment provides a good summary of their position on the proposed generic clearance for NOAA's citizen science and crowdsourcing (CSC) projects.

In general, Friends of Animals believes that the use of citizen science can be a helpful tool for NOAA to acquire scientific information. Collecting information via crowdsourcing like this can be done in ways that enhance NOAA's mission. However, efforts should be made to ensure that the information collected is reliable, accurate, and free of biases.

Their comments include the following two suggestions to help ensure the information collected is reliable, accurate, and free of biases.

1. NOAA should ensure that people who participate in citizen science are qualified to do so.
2. When NOAA decides to use citizen science data, NOAA should use a consistent mix of both citizen and non-citizen science data collection.

NOAA agrees it is vital that the information collected be held to a high scientific standard and using biased, inaccurate, or unreliable information would not further NOAA's mission and could have great potential to cause harm. The following message from Dr. Richard Spinrad (the NOAA Administrator) is in the introduction to the NOAA FY22-26 Strategic Plan. It emphasizes the importance of having and using good scientific information.

Underpinning all of the agency's achievements and day-to-day work is a commitment to scientific integrity by promoting a continuing culture of excellence and decision-making based on sound, transparent and reliable scientific activities.

The information collection request (ICR) for the proposed generic clearance for NOAA's CSC projects identifies a number of steps NOAA has taken and would continue to take to help ensure its services, product and policies are based on reliable, accurate and unbiased information, including information from its CSC projects. Those steps are discussed below.

Design Principles for Citizen Science and Crowdsourcing Projects: These principles include the following two items: (4) Projects include active management of data and data quality, including a data quality assurance plan and ongoing evaluation of data quality and data management and (8) Project leads would evaluate scientific output, data quality, and the impact on participants. As with any of NOAA's scientific endeavors, CSC projects would have approved data quality and data management plans as part of their project design before implementation. NOAA would continue to provide employees resources for developing data

quality and data management plans⁴. The following statement from the ICR for the NESDIS CrowdMag project provides an example of the steps taken to address data quality.

This project will collect the following information: magnetic field data from the phone's magnetic sensor, time of measurement, location of measurement, location accuracy, and the model of the participant's phone (so that we know which type of sensor was used to collect the magnetic field data). The NCEI magnetic field research team will use these data to assess the utility of incorporating crowdsourced magnetic field data to help improve NOAA's models used in navigation and geolocation applications.

Certification: NOAA is required to submit to OMB an abbreviated ICR for each of its CSC projects. Each such ICR contains several certification statements, including the following: The collection would provide qualitative and quantitative data that help inform scientific research and monitoring, validate models or tools, support STEM learning, and enhance the quantity and quality of data collected to support NOAA's mission.

Dissemination of CSC Data and Results to NOAA Partners and the Public: CSC projects promote greater openness in government, which includes the rapid dissemination of CSC data and results to NOAA partners and the public. This aspect of openness provides an opportunity for NOAA partners and the public to review and comment on the quality of the data provided by CSC projects. In accordance with the Presidential Memorandum on Transparency and Open Government, CSC projects approved under this generic clearance would disclose information rapidly in forms the public can readily find and use and in compliance with the data policies outlined on Data.Gov.

Experience and Expertise: For data quality purposes, CSC projects could request information to evaluate the skill level of the participant by asking about their experience with the project topic. Questions could be about a person's age range, level or topic of education, participation in organizations, or professional experience.

Training: CSC projects could need to train participants for the purpose of soliciting quality data and increasing participant benefits including education and engagement. Participants could be asked to read materials, watch training videos, or attend training sessions in-person or virtually via a webinar. To ensure that participants understand the training, they could be assessed through testing instruments like a questionnaire or survey, which could be administered online or through a computer program, on paper, in a cell phone app, or in-person.

Testing Equipment: To ensure the accuracy of testing procedures, a CSC project would often provide the equipment and training necessary to provide accurate results. The following statement from the ICR for the NOS HABScope project provides an example of this.

⁴ See the NOAA Information Quality Guidelines at: <https://www.noaa.gov/organization/information-technology/policy-oversight/information-quality/information-quality-guidelines#>, which were last updated November 4, 2021

With this project, researchers and citizen science volunteers collect water samples and test them with a HABScope, which is a portable microscope system that uses video and artificial intelligence to quickly analyze water samples for near real-time cell counts of *Karenia brevis*, the organism that causes red tide in the Gulf of Mexico.

Digital Photography: The sighting information for marine mammals or other protected species provided by citizen scientists include digital photos to allow NOAA to confirm the species identified.

Supplemental Data: The data provided by citizen scientists typically supplement information collected by NOAA scientists. For example, the ICR for the NESDIS Crowdsourced Bathymetry Projects includes the following statements.

While these data are oftentimes nowhere near the quality or accuracy of professionally collected data, they can still fill the gaps where data are scarce. It is incredibly useful along coastlines where survey vessels may not visit often. In addition, while the data may not actually go on to a nautical chart, it can be used in aiding in the identification of uncharted features and assisting in verifying charted information. Access to water depths collected globally supports not only NOAA's many mission areas reliant on bathymetry, but also broader U.S. national interests and global governance.

To allow for consideration of the differences in quality by source, the metadata for the associated databases would identify the sources of the information.

They did not comment on cost and hour burden.

In the development of each CSC project, NOAA made (or would make) use of the CSC efforts by other federal agencies (e.g., EPA, DOI, NASA, and HHS), as well as resources provided by the Federal Community of Practice on Crowdsourcing and Citizen Science (FCPCCS).

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

Under the CCSA, NOAA CSC projects cannot financially compensate the voluntary participants for their time. However, these projects can provide a prize or another type of incentive to participate, as well as reimbursements, such as for the voluntary participants' travel and equipment costs. For example, some NMFS tag return projects provide a hat, t-shirt or a more substantial reward to voluntary participants. Under 16 U.S. Code § 742f, NOAA is authorized to provide for incidental expenses such as transportation, uniforms, lodging, awards (including nominal cash awards) and recognition, and subsistence of such volunteers without regard to their places of residence. If a CSC project under this generic clearance plans to insure any such costs, the mini-ICR for that project would include an explanation of and justification for them.

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.

If NOAA believes a confidentiality pledge would be useful and feasible for a specific CSC project, it would use the following or a similar statement.

We appreciate the confidential nature of some of the data being collected by this CSC project. NOAA will handle such data as a form of protected personal information and will maintain the confidentiality of such information consistent with legal authorities available to it, including but not limited to the Privacy Act (5 U.S.C. Section 552a) and the Trade Secrets Act (18 U.S.C. Section 1905). NOAA will protect such data from public disclosure to the extent permitted by law and it has instituted procedures to provide that protection.

Neither a SORN nor a PIA would be required.

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.

No NOAA CSC project would ask any questions of a sensitive nature.

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

NOAA would use a variety of platforms and media to collect information from voluntary participants or volunteers in its CSC projects. We expect that there would be a range of burden hours depending on the details of the CSC project, including the data collection method employed. The estimates of the burden for three years are approximately as follows: 672,000 respondents, 3.5 million burden hours, and a \$103.25 million wage burden cost.

The total annual wage burden cost is based on the National Compensation Survey: Occupational Wages in the United States for All Occupations. We used the average hourly wage rate for All Occupations of \$29.76. That wage rate is for May 2022, the latest period for which data are available⁵. The resulting estimate of the total annual wage burden cost is approximately \$31.1 million.

The mini-ICR for each project submitted under this generic clearance would include estimates of the average annual number of participants, average annual number of responses per participant, average minutes per response, and average annual burden hours.

⁵ See https://www.bls.gov/oes/current/oes_nat.htm

Table 1. Estimates of the Number of Respondents and Burden (Item 12).

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/ Response (minutes) (d)	Total Annual Burden Hours (e) = (c) x (d)/60	Hourly Wage Rate (for Type of Respondent) (f)	Total Annual Wage Burden Costs (g) = (e) x (f)
NOAA CSC Projects	General public	223,855	33.37	7,469,893	9.29	1,156,525	28.01	\$34,418,184
Totals				7,469,893		1,156,525		\$34,418,184

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 would not be fees associated with participation in the CSC projects included under this generic clearance. For most CSC projects, participants would not be required to purchase or maintain any equipment or supplies to collect and/or submit data. However, for some CSC projects, some low-cost sensors or other technical or low-tech supplies would be necessary to complete all of the data collection tasks should the participants decide to do so. The estimated annual cost to participants for those CSC projects is \$120,381.

The mini-ICR for each project submitted under this generic clearance would include an estimate of the total annual cost to participants in that CSC project.

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.

The anticipated annual cost to the Federal Government is approximately \$22 million. That estimate is for all NOAA costs associated with the CSC projects NOAA expects to conduct or support under the proposed generic clearance. Those costs include: 1) salaries and benefits for the NOAA staff involved in those projects; 2) the cost of supplies and travel; 3) the cost of incentives or reimbursements for the citizen scientists; and 4) NOAA funding for associated contracts, grants and cooperative agreements. NOAA used information provided by the point of contact (POC) for each CSC project to estimate the costs. The NOAA staff cost estimates reflect the number of FTEs by GS or pay band level provided by the POCs, the pay schedules for step 3 of each GS or pay band level for the Washington, DC area, and benefits equal to 50 per cent of the associated salaries. NOAA estimated the CSC projects would require about 129 FTEs with the GS levels ranging from GS 10 to GS 15 and that the total cost of staff salaries and benefits is about \$19 million. Therefore, NOAA expects its staff costs to account for about 86 per cent of the total cost of the CSC projects. These estimates are for the 50 current CSC projects NOAA initially plans to submit under this generic clearance and new projects NOAA would submit later.

Table 3. Federal Government Cost Estimates (Item 14).

Cost Descriptions	Grade/Step	Loaded Salary /Cost	FTEs	Fringe (if Applicable)	Total Cost to Government
Federal Oversight etc.	On average GS 12/2	\$144,049.87	129		\$18,602,233
Other Costs (primarily contract costs)					\$3,063,041
TOTAL					\$21,665,274

The mini-ICR for each project submitted under this generic clearance would include an estimate of the average annual cost to the government for that CSC project.

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

This is a new collection.

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.

Because the information collected with each project is for NOAA scientific purposes, NOAA expects to publish the results of analyzed data in peer-reviewed scientific journals, white papers, NOAA reports, or NOAA strategic research plans, which would be available to the public.

The annual and multi-year schedules would vary by project. The mini-ICR for each project submitted under this generic clearance would specify those schedules, including beginning and ending dates of the collection of information, completion of report(s), publication dates, and other actions.

In accordance with the Presidential Memorandum on Transparency and Open Government, CSC projects approved under this generic clearance would disclose information rapidly in forms the public can readily find and use and in compliance with the data policies outlined on Data.Gov.

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.

Written and electronic information collection would display the following notification:

OMB Control #0648-0XXX
 Expiration date: XX/XX/202X

For any CSC project where displaying that information would be inappropriate, the mini-ICR for each of those projects would include an explanation of why that display would be inappropriate.

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\(b\)\(3\)](#).

For each CSC project under this generic clearance, the appropriate NOAA line office would certify compliance with 5 CFR 1320.9 and the related provisions of 5 CFR 1320.8(b)(3). The mini-ICR template in Appendix B includes the certification statement.