# ₁Supporting Statement A

# The National Map Corps – Volunteered Geographic Information Project

# OMB Control Number 1028-NEW

## Terms of Clearance: None

### General Instructions

A completed Supporting Statement A must accompany each request for approval of a collection of information.  The Supporting Statement must be prepared in the format described below, and must contain the information specified below.  If an item is not applicable, provide a brief explanation.  When the question "Does this ICR contain surveys, censuses, or employ statistical methods?" is checked "Yes," then a Supporting Statement B must be completed.  OMB reserves the right to require the submission of additional information with respect to any request for approval.

### Specific Instructions

### Justification

1. **Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.**

The mission of the USGS National Geospatial Program (NGP) is to organize, maintain, publish, and disseminate the geospatial baseline of the Nation's topography, natural landscape, and built environment through *The National Map*, a set of basic geospatial information provided as a variety of products and services.

Through Office of Management and Budget Circular A-16, the Federal Government assigns leadership responsibilities for themes of geospatial data among Federal agencies. Based in part on this assignment, and because of the unique niche of the Program to provide national coverage of topographic data, the primary focus of the program is to provide national leadership in *The National Map* themes of hydrography and elevation.  The role of the other six layers of *The National Map* is generally to provide contextual or reference information to its cartographic products and services.  The objective of the Program for these layers is to maintain current coverage by obtaining the data from other organizations and suppliers with a minimum investment of Program resources.

NGP is currently pursuing a two-pronged approach for acquiring and maintaining structures data. First, the Program is seeking authoritative national sources for the structures data included in the NGP Data Lifecycle Management Plan. Negotiations are continuing with a variety of agencies including NGA, Oakridge National Laboratories, the U.S. Post Office and the U.S. Census Bureau. A second arm of NGP's strategy is to deploy *The National Map* Corps (*TNM*Corps) in using new technologies and Internet services to enable members of the public to produce volunteered geographic information (VGI) that will update and enhance the datasets.

The volunteer effort of TNMCorps to collect and improve structures data provides several benefits to the Program and its users:
- Participation in *The National Map* Corps is easy. Complete registration instructions and editing guidelines can be found at
  *https://my.usgs.gov/confluence/display/nationalmapcorps/Home*
- *The National Map* Corps benefits the agency and the participants by providing opportunities for citizen participation in USGS science
- Participation in *The National Map* Corps raises geographic awareness and improves users' skills in using web-based tools
- Volunteer participation improves government efficiency and saves resources
- Volunteer participation improves public access to data and data quality

The use of The National Map Corps and VGI will result in more complete national datasets in *The National Map* with improved positional and attribute accuracy.


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. Be specific. If this collection is a form or a questionnaire, every question needs to be justified.**

The *TNM*Corps is the name of the NGP project that encourages citizen participation in volunteer map data collection activities. NGP is using crowdsourcing - new technologies and Internet services to georeference structure points and share this information with others on map-based Internet platforms - to produce volunteered geographic information (VGI). People participating in the crowd sourcing will be considered part of the *TNM*Corps.


In general, the National Structures Database has been populated with the best available national data. This data will be exposed for initial improvement by *TNM*Corps volunteers via the online Map Editor (the instrument). In addition, the data will go through a *TNM*Corps peer-review process before passing through quality assurance sampling procedures at USGS prior to submittal into the National Structures Database.

Once part of the National Structures Database the data are then available to the NGP and to the public at no cost via The National Map and ultimately US Topo.

In 2012, the Colorado Pilot was launched.  In less than 10 months, 143 volunteers collected, improved, or deleted data on more than 6,400 structures in Colorado. The volunteers' actions were accurate and exceeded USGS quality standards. Volunteer-collected data showed an improvement of approximately 25 percent in both location and attribute accuracy for existing data points. Completeness, or the extent to which all appropriate features were identified and recorded, was nearly perfect.

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 and specifically how this collection meets GPEA requirements.**

In an era where dwindling budgets struggle to coexist with mandates for transparency and citizen involvement, crowd-sourcing is a viable solution for many agencies. VGI is not new to the USGS, but past efforts have been hampered by available technologies. Over the past two decades, the USGS has sponsored various forms of volunteer map data collection projects. In 1994, the Earth Science Corps was established, and over the next seven years 3,300 volunteers annotated between 100 and 300 topographic paper maps each year. Citizen mappers reviewed every feature of their "adopted" topographic map and provided the USGS with the. As valuable as the updates were, the technology was not yet available to take full advantage of the work done by the volunteers. In addition, some quadrangles were so out of date, the amount of work needing to be completed could be quite daunting to the volunteer who was asked to complete edits within 12 months.

Realizing the limitations of the first VGI effort and taking advantage of new technology, the program was revamped and renamed The National Map Corps in 2001. Emphasis shifted from manually annotating every feature on the published map to collecting man-made structures using hand held GPS units which had recently become affordable to the average citizen. Between 2003 and 2006, over 1,000 citizen mappers collected over 22,800 data points which were submitted in a variety of formats both analog and digital. As time passed and technology changed, VGI at the USGS also evolved.  In 2006, a web-based collection tool was launched in order to help standardize the submission process, but the transition from the database onto the USGS topographic maps remained problematic and continued to require a fair amount of USGS resources to process. In 2008, the program was suspended due to lack of resources.

Today, the perfect storm of improved technology, social media, and ever decreasing resources has once again made crowd-sourcing an attractive option. After several pilot projects to determine the viability of bringing back the volunteer mapping program, *The National Map* Corps volunteers are successfully editing 10 different structure types in all 50 States, including schools, hospitals, post offices, police stations and other important public buildings. Using *National Agricultural Imagery Program* (NAIP) imagery as the primary base layer, volunteers

collect and improve structures data by adding new features, removing obsolete points, and correcting existing data. Edits are contributed through a web-based mapping platform (Potlatch 2) built using open source technology developed by OpenStreetMap . The USGS configured the Potlatch 2 editor so that the resulting data would conform to USGS specifications. For editing in Structures—VGI, users select among background layers that provide different types of maps and levels of detail. Four background layers are based on Web Mapping Services (WMS) provided by *The National Map:* aerial imagery (orthophotos), scanned topographic sheets (digital raster graphic, or DRG), and a base map with selected layers from *The National Map* and available at different scales or zoom levels.

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 Item 2 above.**

The structures data theme is one of the six low-investment maintenance themes of *The National Map.*  Over the years a variety of approaches has been pursued to acquire and maintain structures data.  Most recently, data were acquired through coordination with the Homeland Infrastructure Foundation-Level Data (**HIFLD**) Working Group, the National Geospatial-Intelligence Agency (NGA), and the states that provided their structures data.  This effort improved the completeness and accuracy of some structures data.  In order to maintain and augment these data, NGP pursued partnerships with a number of states.  Because each state had different drivers and approaches to updating their data, the datasets they shared varied in their quality, completeness and format.  Another issue was that many states either chose not to participate for a variety of reasons, or are not maintaining structures data.  Thus the effort of NGP to bring these datasets together into a consistent, seamless national coverage, required a level of effort and resources that was out of alignment with the objective to find suppliers with a minimum investment of Program resources.


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

This information does not affect small businesses or other small entities.

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.**

Not collecting this information would hamper the Federal Government's efforts to effectively map manmade structures for *The National Map*.

7. **Explain any special circumstances that would cause an information collection to be conducted in a manner:**
   * **requiring respondents to report information to the agency more often than quarterly;**
   * **requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;**

* **requiring respondents to submit more than an original and two copies of any document;**
* **requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than three years;**
* **in connection with a statistical survey that is not designed to produce valid and reliable results that can be generalized to the universe of study;**
* **requiring the use of a statistical data classification that has not been reviewed and approved by OMB;**
* **that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or**
* **requiring respondents to submit proprietary trade secrets, or other confidential information, unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

There are no circumstances that require us to collect information in a manner inconsistent with OMB guidelines.

8. **If applicable, provide a copy and identify the date and page number of publication 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 in response to the PRA statement associated with the collection over the past three years, and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

   **Describe 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.**

   **Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every three years — even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.**

   On May 16, 2014, we published a 60-day Federal Register notice (79 FR 28536) announcing that we would submit this ICR to OMB for approval. In that notice we solicited public comments for 60 days, ending July 17, 2014. We did not receive any responses to our Federal Register Notice.

   We consulted with the individuals listed in the table to obtain their views on the information above. They concurred with our estimates and no changes were suggested.

| Individuals | Contact information |
|---|---|
| Lea Shanley, Director, Commons Lab<br>Science and Technology Innovation Program<br>Woodrow Wilson International Center for<br>Scholars | Lea.Shanley@wilsoncenter.org |
| Joseph J. Kerski, Ph.D.,<br>GISP \| Education Manager<br>ESRI | jkerski@esri.com<br>ESRI<br>1 International Court<br>Broomfield, CO 80021-3200 |
| Mark E. Duewell<br>Program Manager - Missouri Spatial Data<br>Information Service (MSDIS) | duewellm@missouri.edu |

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

Thank-you cards are occasionally provided to participants in acknowledgement of their participation.

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

No assurance of confidentiality is given to respondents

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. 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.**

The collection does not include sensitive or private questions.

Names and contact information (e.g., email address) will be maintained for the purpose of follow-up contact to clarify responses. Our primary purpose for collecting contact information is to follow-up with the respondents to verify the submission as a valid and reliable entry and to invite participation in the subsequent field seasons. Respondent names or e-mail addresses will not appear in any of our reports without permission.

This collection includes a PIA for email addresses. See National Map Reengineering Project (NMRP), Major Application Privacy Impact Assessment, Version 5.

**12. Provide estimates of the hour burden of the collection of information. The statement should:**
   **\* Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**
   **\* If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**
   **\* Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here.**

   - We anticipate approximately 1,000 users will register each year and estimate that it takes 5 minutes to complete the registration form.
   - We anticipate 1000 users will read the editing guidelines, which takes an estimated 55 minutes to work through.
   - For edits, we expect to receive 75,000 responses annually, and estimate that research and editing time will average 10 minutes. Time estimates in each case are based on informal trials of new users, experienced volunteers, and/or staff; all numbers represent expected 3-year averages.
   - We estimate the dollar value of the annual burden hours to be $406,485 (based on the Employer Costs for Employee Compensation-June 2014 (USDL-14-1673) published by the Bureau of Labor Statistics, US Department of Labor[1].

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[1] http://www.bls.gov/news.release/archives/ecec_09102014.pdf

**Table 2. Estimated Dollar Value of Annual Burden Hours (Add rows as necessary)**

| Description of Respondents | Number of annual Responses | Estimated Completion Time per Response (minutes) | Total Annual Burden Hours | Hourly Pay Rate ($/hr est.) | Total Dollar Value of Annual Burden Hours* |
|---|---|---|---|---|---|
| User registration and reading guidelines | 1,000 | 60 minutes (5 minutes to register + 55 minutes to read guidelines) | 1000 | $30.11 | $30,110 |
| Edits | 75,000 | 10 minutes (includes research and edit time) | 12,500 | $30.11 | $376,375 |
| Total | 76,000 | | 13,500 | | $406,485 |

13. **Provide an estimate of the total annual non-hour cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected in item 12.)**
    * **The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life) and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information (including filing fees paid for form processing). Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.**
    * **If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.**
    * **Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.**

Other than costs that may be associated with access to the internet and the use of a computer or tablet, we estimate that the annual non-hour burden cost will be zero.


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.**

**Table 4. Annual Cost to the Federal Government (Add rows as necessary)**

We estimate the total annual cost to the Federal Government is **$423,843**, estimated using Salary Table 2014-GS, Incorporating the 1% General Schedule Increase Effective January 2014 and Hourly Basic Rates by Grade and Step (no locality).

| Federal Position | Grade/ Step | Hourly Rate | Hourly Rate incl. benefits (1.5 x hourly pay rate) | Estimated time spent by Federal Employees (annualized hours) | Estimated Federal employee salary/benefit annualized costs |
|---|---|---|---|---|---|
| Project Lead | 12/5 | $33.06 | $49.59 | 2080 | $103,147 |
| Technical Lead | 9/2 | $20.78 | $31.17 | 2080 | $64,834 |
| Outreach Lead | 12/9 | $36.95 | $55.43 | 2080 | $115,294 |
| Developer | 4/1 | $11.87 | $17.81 | 520 | $9,261 |
| Structures Integration | 12/10 | $37.92 | $56.88 | 417 | $23,719 |
| Structures Integration | 11/9 | $30.83 | $46.25 | 1250 | $57,813 |
| Structures Integration | 9/9 | $25.48 | $38.22 | 1250 | $47,775 |
| | | | | **Total** | **$421,843** |

| Total Annual Cost to the Federal Government | |
|---|---|
| Exhibit and outreach materials | $2,000 |
| Operational Costs | $421,843 |
| Total | $423,843 |

**15. Explain the reasons for any program changes or adjustments in hour or cost burden.**

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.**

Data from the collection will not published as a reference. Public may download selected current data as a subset of the collection using web tools.

**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.**

Not applicable for this request.

**18. Explain each exception to the topics of the certification statement identified in "Certification for Paperwork Reduction Act Submissions."**

There are no exceptions to the certification statement.