

1 Supporting Statement for Paperwork Reduction Act Submissions

Earthquake Report
OMB Control Number 1028-0048
Current Expiration Date: 03/31/2012
Terms of Clearance: None

General Instructions

A Supporting Statement, including the text of the notice to the public required by 5 CFR 1320.5(a)(i)(iv) and its actual or estimated date of publication in the Federal Register, 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 in Section A below. If an item is not applicable, provide a brief explanation. If the collection of information will employ statistical methods, Section B of the Supporting Statement must be completed. OMB reserves the right to require the submission of additional information with respect to any request for approval.

Specific Instructions

A. 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.***

The U.S. Geological Survey (USGS), in accordance with the Earthquake Hazards Reduction Act of 1977 (Public Law 95-124, 42 U.S.C. 7701 et. seq) is required to collect, evaluate, publish, and distribute information concerning earthquakes. Accordingly, Survey policy (Geological Survey Manual 120.1.1) requires geophysical surveys and investigations of earthquakes affecting the United States and its territories and offshore areas. The information required is for studies of the nature of earthquakes and the mitigation of the impact of earthquakes on the public. The U.S. Government has collected these data continuously since 1930 using this questionnaire.

A URL Link to the Earthquake Hazards Reduction Act of 1977 is provided below:

[Earthquake Hazards Reduction Act of 1977 \(Public Law 95-124\)](http://www.usbr.gov/ssle/seismicsafety/42usc.htm)
<http://www.usbr.gov/ssle/seismicsafety/42usc.htm>

- 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 information will be used by the USGS to provide overviews of the effects produced by earthquakes on humans and on the human environment. Summaries of the effects of earthquakes, and isoseismal maps that represent these effects in map form are published in *Preliminary Determination of Epicenters* publications of the USGS, in Open-File Reports, or in research publications. Summaries and maps are also distributed electronically from USGS earthquake information Web pages. The printed version of the Earthquake Report questionnaire was formerly mailed to postmasters because of the geographic coverage

the post offices represented in the general population distribution within the United States. In 1998 we began experimenting with having an electronic version of the form on the World-Wide Web, where it is available (<http://pasadena.wr.usgs.gov/shake/>) as a possible link to people who are looking at the USGS earthquake information Web Site. We have collected data exclusively with the Web-based questionnaire since 2002.

The questions are grouped by several categories.

- 1) **“Identifying Information”** (name, e-mail address, and phone) is optional.
This question is included on the questionnaire because it is our sense that many respondents are aware that they are contributing important observations and want to be recognized and available for further consultation by USGS seismologists.
- 2) **“Location when the earthquake occurred”**
This response requires the respondents’ Zip code and requests more detailed optional information. The Zip code is required to group the response with others from the same geographical area. The additional optional address information is desirable because it enables USGS seismologists to study variations of shaking within Zip codes.
- 3) **Effects of the earthquake**
The remaining questions following the “location” questions address effects of the earthquake. The respondents are asked to provide information about how they perceived the earthquake, about effects of the earthquake on inanimate objects, and about damage caused by the earthquake to the respondent's building. The responses to these questions are automatically input into an arithmetic algorithm, and a seismic intensity is produced, which is an estimate of the strength of earthquake shaking at the respondent’s location.

The seismic intensities derived from the questionnaire are presented to the public immediately after the collection of data, in the form of maps showing the extent and severity of the shaking as perceived by the public. The first such map typically appears on our web site within minutes of the occurrence of a newsworthy earthquake, and the maps are updated as new reports appear. The maps and the associated intensity data are also used by schools to teach students about earthquakes -- where they occur and what are the effects; by both graduate and undergraduate students in universities that are studying the physical sciences; by insurance companies to set insurance rates for damage and to settle claims for damage caused by earthquakes; by researchers who are studying seismic risk in the United States and through whom the information influences the building codes that effect the construction methods and costs of erecting earthquakes throughout the U.S.; and, as input to environmental impact studies for any building requirements of the U.S. Government such as those connected with the construction of hospitals, dams, nuclear power plant, waste-disposal sites, office buildings, etc.

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 2002, the “Can You Feel It” survey switched from an entirely paper driven process to an electronic process whereby participants may, and are encouraged, to submit their data via the Internet. The electronic form is located at: <http://earthquake.usgs.gov/earthquakes/dyfi/form.php?enabled=false> . The electronic form does not increase the amount of time that it takes the respondent to complete the survey. However the electronic format reduces the burden of printing a hard copy of the form and returning the completed form to the USGS to be manually entered into a database. The USGS has created a nearly fully automated system to process the data that are collected on line, which enables a huge

savings of USGS personnel time. However “real-person” time is needed to respond to the open-ended comments at the end of the survey.

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.

No other organization gathers this type of earthquake information at the national scale like the USGS *Did You Feel It?* Survey. Since the damage/effects from earthquakes vary with each earthquake, there is no available information that can be used in lieu of that supplied by each questionnaire.

5. If the collection of information impacts small businesses or other small entities (Item 5 of OMB Form 83-1), 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.

Web Questionnaires are posted on the USGS web-site (<http://earthquake.usgs.gov/earthquakes/dyfi/>) within minutes following earthquakes that might be large enough to be felt. Questionnaires are made available to respondents immediately after the occurrence of the earthquake, because most respondents are able to provide the most reliable information soon after the occurrence of the event. For the type of earthquake for which data is collected, the frequency of collection cannot be reduced, because each such earthquake has the potential to provide unique information. Failure to collect this information would mean that the intensity data base for United States earthquakes would become out-of-date. This lack of information would seriously affect research on seismic risk in the United States.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

(a) requiring respondents to report information to the agency more often than quarterly.

Not applicable in this collection.

(b) requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it.

Not applicable in this collection.

(c) requiring respondents to submit more than an original and two copies of any document.

Not applicable in this collection.

(d) requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records, for more than 3 years.

Not applicable in this collection.

(e) 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.

Not applicable in this collection.

(f) requiring the use of statistical data classification that has been reviewed and approved by OMB.

Not applicable in this collection.

(g) 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.

This collection does not include a pledge of confidentiality.

(h) 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.

This collection does not require proprietary, trade secret, or other confidential information not protected by agency procedures.

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 3 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. [Please list the names, titles, addresses, and phone numbers of persons contacted.] Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 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 December 6, 2011, we published a Federal Register notice (76 FR 76177) announcing that we would submit this information collection to OMB for approval. The notice provided a 60-day public comment period ending on February 6, 2012. We did not receive any comments in response to this notice.

In addition to our Federal Register Notice, we solicited comments from several potential respondents about the clarity of instruction and the annual hour burden.

We sought feedback from the community that applies our data to scientific and engineering purposes by publishing technical papers on the methodology and by giving technical presentations at meetings of scientific societies. The respondents said that the application instructions were clear. The respondents also concurred with our estimated burden time for the application to be about. In addition to soliciting comments from potential respondents we have relied on our past experiences. For the past 75 years, Federal, State, and local government personnel have filled out a similar questionnaire. The web-based

methodology was described to the seismological and earthquake engineering community in the publication: Wald, D.J., Quitoriano, V., Dengler, L.A., and Dewey, J.W., 1999, Utilization of the Internet for Rapid Community Intensity Maps: Seismological Research Letters, v. 70, p. 680-697. We also note, that the questionnaire includes an "Additional Comments" section, within which respondents sometimes make suggestions for improving specific aspects of the Web questionnaire and associated web site. We have refined and updated the web questionnaire and the websites over the years, based on feedback from a variety of peer-reviews and comments.

In 2010 and 2011, we received a detailed review of our questionnaire by representatives of the Macroseismic Working Group of the European Seismological Commission. The lead representative of that group, Dr. Roger Musson, is listed below. Feedback on our questionnaire was positive and many aspects of our questionnaire are currently being adopted internationally.

The names and contact information of persons consulted on this information collection are listed in the table below.

Table 1. Contact Information

1. Professor Lori Dengler, Dept. of Geology, Humboldt State University, #1 Harpst St., Arcata, CA, 95521, ph: (707) 826-3115, e-mail: lad1@humboldt.edu
2. Roger MW Musson, British Geological Survey, West Mains Road, Edinburgh EH9 3LA, Great Britain, ph: 44 131 650 0205, e-mail: rmwm@bgs.ac.uk
3. James D Goltz, Governor's Office of Emergency Services, Earthquake and Tsunami Program, California Institute of Technology, MC 104-44, Pasadena, CA, 91125, ph: (626) 356-3810, e-mail: jim.goltz@oes.ca.gov

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

No payments or gifts are given to respondents.

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

The records for this collection are maintained in the Privacy Act System of Records identified as Earthquake Hazards Program Earthquake Information (Interior/USGS-2) published at 74 FR 34033 (July 14, 2009).

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

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 burden hours.**
- * **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. Instead, this cost should be included in Item 14.**

The questionnaire is seldom completed by the same person for different earthquakes, since earthquakes do not occur in the same place each time. We presume that respondents do not consider completing the questionnaire a "burden," because response is completely voluntary and depends on the respondent seeking-out our web-page as a medium for reporting his/her observations. The exceptionally high response rates (we have received as many as 170,000 responses for individual earthquakes and more than 10,000 responses for a number of earthquakes) indicates that respondents recognize the importance of providing this information for research purposes in order to find ways in which to avoid loss of life and extensive damage due to earthquakes.

Based on our own experience and feedback received from the consultation process, we estimate it will take an average of 6 minutes for the respondent to supply the requested information, once the respondent has chosen to "visit" the questionnaire Web-page and fill out the form. This includes time needed to read and understand instructions. Information is already acquired in the normal course of business and personal activities and needs only to be transferred to the questionnaire. USGS experience indicates that about 300,000 web questionnaires will be returned each year, though this response level fluctuates dramatically depending on the occurrence of earthquakes. Assuming 300,000 respondents each spending 6 minutes on a questionnaire, the total hour burden is 30,000 hours.

We estimate the dollar value of the annual burden hours to be \$894,300.00 (see Table 2) based on the National Compensation Survey: Occupational Wages in the United States December 2009 – January 2011 published by the Bureau of Labor Standards Occupation and Wages, reference date July 2010 (<http://www.bls.gov/ncs/ncswage2010.htm>, as accessed 2012). The particular values utilized are:

- Individuals. Average hourly wage is \$21.29 multiplied by 1.4 to account for benefits (\$29.81).

Table 2. Estimated Dollar Value of Annual Burden Hours

Respondents	Hourly Pay Rate (\$/hr est.)	Hourly Rate Including Benefits (1.4 x hourly pay rate)	Total Annual Burden Hours	Total Annualized Cost
Individuals	\$21.29	\$29.81	30,000	\$894,300

13. Provide an estimate of the total annual [non-hour] cost burden to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14).

- **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]. 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.**

There is no non-hour cost burden to the respondents under this collection.

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. Agencies also may aggregate cost estimates from Items 12, 13, and 14 in a single table.

The total estimated annual cost to the Federal Government to maintain this on-line information collection and evaluate the responses is estimated to be \$84,070.00. This includes hourly wages and benefits for four (4) federal employees. Table 3 below shows Federal staff positions and grade levels associated with this information collection. We used the Office of Personnel Management Salary Table 2010-DEN (http://www.opm.gov/oca/12tables/html/den_h.asp) to determine the hourly wages. We multiplied the hourly wage by 1.5 to account for benefits.

\$1200 is the cost (annualized over three years) of a PC devoted to collection and processing of the data; \$800 is the cost of an annual update of zip-code boundaries; and \$400 is the average cost of geocoding responses.

Federal Staff	Grade	Hourly Pay Rate	Hourly Rate incl. benefits (1.5 x hourly pay rate)	Estimated time spent by Federal Employees (hours)	Cost per federal staff (Hourly Pay Rate incl. Benefits x Number of Hours)
Supervisory Geophysicist	GS 15/7	\$70.19	105.28	160	\$16,846.00
Geophysicist	GS 15/5	\$66.29	99.44	320	\$31,819.00
Geophysicist	GS 12/5	\$40.10	60.15	480	\$28,872.00
IT Specialist	GS 11/6	\$34.44	51.66	80	\$4,133.00
				SUBTOTAL	\$81,670.00
Operational Costs		Annual Amount			
PC devoted to collection and processing of the data		\$1200			
Update of zip-code boundaries		\$800			
Cost of geocoding responses		\$400			
				SUBTOTAL	\$2,400
				TOTAL	\$84,070.00

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

We are reporting 300,000 responses and 30,000 burden hours for this collection. This request increases by a factor of 1.5 the burden hours from our previous request. This adjustment is based on our experience in administering this collection over the past 3 years, during which we had many more responses than we anticipated in 2008. As noted above, however, the number of responses depends strongly on where earthquakes occur with respect to population centers, and we do not know this in advance.

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.

This collection has been a part of the USGS network for more than 75 years. There are no plans to discontinue this ongoing information collection. The results are published in USGS earthquake-related publications are also displayed on the USGS earthquake information Web Site. It is not published for statistical use.

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. We will display the expiration date

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions."

There are no exceptions to the certification statement.