

1 Supporting Statement A

Shake Alert

OMB Control Number 1028-New

Terms of Clearance: None.

General Instructions

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 ShakeAlert system was established in compliance with the following authorities

- 42 USC 68 Disaster Relief Act §5132. Disaster warnings
- 42 USC 7701 Earthquake Hazards Reduction Act 2004. §7701.

The collection of information is necessary as its findings has the potential to save lives Readiness of Federal agencies to issue warnings to State and local officials.

The President shall insure that all appropriate Federal agencies are prepared to issue warnings of disasters to State and local officials. As the earthquake detection improves, the messages to populations can save lives by providing seconds of warning that strong shaking from an earthquake is coming. These seconds of extra warning can help people take protective actions, like Drop, Cover, and Hold On (DCHO) to reduce their risk of personal injury. Because seconds matter with ShakeAlert, we need to understand more about how the various parts of the alerting system work and what technical latencies or lag times exist. Without these studies, we would not understand how much time it will take for a Wireless Emergency Alert (WEA) to arrive on the devices of people. This critical information allows to better understand the channels that will be using ShakeAlerts, to determine how long it will take for people to receive the messages, so we can assist in providing information on the best protective actions in their circumstance.

- 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.**

This information is being collected for the purposes of understanding the implementation of Wireless Emergency Alerts and latency of transmissions in California, Oregon, and Washington's population areas. This survey is critical to determine technological latencies of public response to an earthquake early warning alert message. Better understanding is required to know how much time people will have to take protective actions once they

receive an alert. Further, knowledge of these latencies can help us improve and streamline our systems, once we have a better understanding of where the latencies exist and why. This involves live testing of the system with a population reporting back to us.

We developed an online and mobile survey instrument to collect this data. 9 of the questions pertained directly to exploring latencies e.g. when people received the alert, their location, the device it was received on, their telecommunication carrier, and network speed.

Question of timing of receipt of the alert

Question 1 pertains to the timing of when people received the alert. We provided a link to a website to provide exact timings at location, specifically regarding the seconds. This is critical to understanding the technical latencies that the Integrated Public Alerts and Warning System (IPAWS). As the ShakeAlert system provides only seconds of warning, understanding whether IPAWS is useful under various conditions is important if we are to use this channel for alerts. If the technical latencies are too high (e.g. 20 seconds or more), this may provide evidence that using IPAWS is not useful as an alerting channel. For the San Diego test, a pull-down menu was used to further reduce time for respondents and to establish a consistent style of reporting.

Question 2 and 3: Location. We asked respondents to provide their location, so we could understand the efficacy of the geofence. A geofence is an area that alerts go to specifically; we wanted to test if the alerting geofence holds, to determine if there would be people outside an area that could receive a ShakeAlert Message. A map of the area was provided for respondents to help them determine their location, if they were visitors to the area. Respondents could provide a zip code, physical address, or a suburb. For Question 3, if they did not know their exact location, they could provide a nearest landmark. These questions are both open text responses.

Question 4: Telecommunications provider. We asked respondents to provide their telecommunication provider, so we could determine if there were any differences in latency based on provider. This is to eliminate or explain any discrepancies in the time the message was received.

Question 5: Type of device. We asked respondents to report the type of device on which they received the message. We asked this question to determine if there were manufacturer issues and if some phones received messages faster than others.

Question 6: Network speed. We asked respondents what network speed their device was on at the time of alert receipt. This was to determine whether different network speeds means faster delivery. The answers were a check box however an open text option was available. (Note: several questions have been deleted because they were not deemed useful for the study. These specifically pertain to whether people received an alert on their Apple Watches or similar device, a tablet, and whether they were on WiFi networks. Based on further research, none of these issues have any impact on technical latencies and were removed).

Question 7-10: Four additional questions were added to explore issues of channel preference to receive an alert, as well as perceptions of the system and contents of warning messages, to improve system performance. This information is also critical, as it assists us in understanding misconceptions of the system, so we can align our messages to increasing public understanding of the system. Trust and understanding the ShakeAlert system are critical components of people taking action once they receive the alert.

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.

It allows for electronic submission of responses, as the submissions are on a website and is mobile friendly. The use of technology means the respondent does not have to mail any information to us and submission of information is a one-click option. This will save the respondent time and reduce burden of extra administration 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.

There are no efforts similar to this that we are aware at the federal level to determine the exact seconds it may take for the alerts to arrive, on behalf of the ShakeAlert System. We have reviewed the literature and found few examples of testing on this type. There is one document by the Department of Homeland Security, which was a computer simulation of the potential technical latencies in the system. This study was conducted in 2013 and has not been replicated to account for updates and upgrades to the system, innovations in technology, and networks.

Reference: Department of Homeland Security. (2013). Wireless emergency alerts computer model and simulation results. Retrieved from <https://www.dhs.gov/sites/default/files/publications/Wireless%20Emergency%20Alerts%20Computer%20Model%20and%20Simulation%20Results.pdf>

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

The respondents are all individuals at this time. No businesses will participate in this study.

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.

This survey has the potential to save lives. As the earthquake detection improves, the messages to populations can save lives. We would not understand how much time it will take for a WEA to arrive on the devices of people. This critical information allows to better understand the channels that will be using ShakeAlert Messages, to determine how long it will take for people to receive the messages, so we can assist in providing information on the best protective actions in their circumstance. This information can help save lives of Americans, as we understand more about the system and alerting channels, we can focus on improvements in innovation and

technologies.

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 the 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.

The 60-day FRN was published July 17, 2019, 84 FR 34198, announcing that we would submit this information collection to OMB for approval. We did not receive any comments in response to this notice.

In addition to our Federal Register Notice, we solicited comments from several subject matter experts about the clarity of instruction, the annual hour burden for the application materials and the interim and final reports.

All respondents said that the application instructions were clear and reported that the time estimates to complete the application and prepare the interim and final reports seemed sufficient and did not suggest any adjustments.

Table 1 Commenters on the survey or announcement

| | |
|---|---|
| ShakeAlert Coordinator U.S. Geological Survey | California Office of Emergency Services |
| Director of San Diego County Emergency Management | |

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

No payments or gifts are provided other than the remuneration of grantees.

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. We will protect information from respondents considered proprietary under the Freedom of Information Act (5 U.S.C. 552) and its implementing regulations (43 CFR part 2), and under regulations at 30 CFR 250.197, “Data and information to be made available to the public or for limited inspection.

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.

No question of a “sensitive” nature will be asked.

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.

Table 2 was created using information from Bureau of Labor Statistics USDL-21-1094, Employer Costs for Employee Compensation, published June 17, 2021 <https://www.bls.gov/news.release/pdf/ecec.pdf>. BLS reported employee compensation for Private Industry averaged \$39.01 per hour and for state and local government employees averaged \$53.68 per hour. These values include benefits and overtime.

Table 2 Respondent Burden

| Participant / Activity | Number of Responses | Minutes per response | Burden Hours | Dollar Value for Burden Hours |
|---|---------------------|----------------------|--------------|-------------------------------|
| Public individual reads announcement or instructions and completes survey | 1,000 | 7 | 117 | \$4,551 |
| Total | 1,000 | 7 | 117 | \$4,551438 |

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.)

There is no non-hour cost burden to applicants under this collection. There is no fee for application, nor any fees associated with application requirements.

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.

We used the Office of Personnel Management Salary Table General Schedule (BASE) 2021 to determine the hourly wage rate for a GS-13, step 1. To calculate benefits, we multiplied the hourly rate (\$46.39) by 1.6 to account for benefits, resulting in an hourly cost factor of \$74.22. No support staff require and no extra cost associated other than the SurveyMonkey

suit (\$900 per annum).

Table 3 Federal Government Expenses

| Position | Grade/Step | Hourly Rate | Annual Hrs | Fully Loaded Hr Rate | Total Labor Value |
|-----------------------------|------------|-------------|------------|----------------------|-------------------|
| Researcher Social Scientist | 12/5 | \$ 36.29 | 80 | \$ 36.29 | \$2,903.2 |

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

This is a new collection, in use without OMB approval.

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

- Collection began in March 2019 and with another data collection June 2019, via the FastTrack application. OMB 1090-0011, Exp 10/31/2020.
- Data analysis: June 2019 – June 2020
- Drafting internal report for organizational use – June 2019 -March 2020
- Organize future data collections in Oregon (July 2021)
- There will be one journal article published from these results combined with the future results. Analysis has begun (10/31/2019) on the article, using data collected from the surveys and technical tests (a different method of collection not involving people) and the paper is now in internal review. The paper is using geospatial analysis and statistical analysis of the answers provided. We chose a journal article so our scientific and engineering community could have access to the data and analysis easily.

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.

The expiration date will be displayed.

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

There are no exceptions.