

**The Supporting Statement for OMB 0596-NEW**  
**Development of Approaches to Enhance Forest Service/Public**  
**Joint Understanding and Consensus on Fire Management Strategies**  
(Short title: Homeowner Risk Reduction Behaviors Concerning Wildfire Risks)  
April 2007

**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 project, as proposed, responds to the human dimension research component of the National Fire Plan passed by Congress in 2002. It enhances the two-way flow of information regarding wildfire and risk reduction preferences between the USDA Forest Service and homeowners located in the wildland-urban interface. The goal of the project is to increase understanding of homeowner behavior and potential responses to various sources of risk. A critical component of this process is to ask the communities what they are doing and why they are doing it. A survey of the homeowner population is the most effective and statistically valid approach to expanding our understanding of these issues. The proponents will make initial contact with homeowner associations and use the associations as a vehicle to identify and contact homeowners.

Part of homeownership is the individual acceptance of a wide variety of risks. These risks can arise from external sources, such as a neighbor slipping on ice, or through internal actions by the homeowner, such as failing to provide a fire extinguisher in the kitchen. The link between the homeowners' perceived risks from a particular threat and their behavior to mitigate that threat is the focus of this project.

Specifically, this study will evaluate what homeowners perceive as threats to themselves and their property from wildfire, and the risk reduction behaviors they have undertaken. Understanding the link between risk perceptions and risk reduction behaviors will provide policymakers with information necessary to manage effectively the risks homeowners' face from catastrophic wildfire, as well as how to communicate effectively risk and risk reduction behaviors.

The assumption is that individual homeowners will undertake certain behaviors to reduce the perceived risk of damage from a wildfire up to a level that optimizes expected utility. Achieving a balance between perceived risk of damage from a wildfire and risk reduction behaviors is the simultaneous set of decisions that homeowners make.

For example, a homeowner constantly balances the decision of how much time, effort, and resources to put into reducing the threat of wildfire risk against the actual reduction in that risk. This type of tradeoff is common and one that individuals and households face daily. Improving understanding of factors influencing household decisions about risk reduction behaviors in relation to wildfire risks will provide

important information to Forest Service managers. This information will assist Forest Service managers in the design of risk communication materials and enhance dialogues with the target communities.

**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.**

**a. What information will be collected - reported or recorded? (If there are pieces of information that are especially burdensome in the collection, a specific explanation should be provided.)**

Collected information will include:

- The risk perceptions of homeowners regarding wildfire,
- Risk reduction behaviors concerning wildfire risks,
- Desired treatment options for forest management, and
- Socio-demographic data.

Information generated from this survey falls under Forest Service file code 5190-3, with a retention period of 50 years.

**b. From whom will the information be collected? If there are different respondent categories (e.g., loan applicant versus a bank versus an appraiser), each should be described along with the type of collection activity that applies.**

The proponents will make initial contact with homeowner associations and use the associations as a vehicle to identify and contact homeowners. Information will be collected from selected homeowners in the western US who have been affected by major wildfires.

**c. What will this information be used for - provide ALL uses?**

The data collected from this effort will benefit the USDA Forest Service and the communities surveyed. In order to reduce the risks associated with wildfires, reports generated from the data, will target Forest Service personnel responsible for working with communities and homeowners. Each community surveyed will receive a summary of the results. This summary will help homeowners better understand the preferences their homeowners' association has regarding actions or behaviors to be undertaken to reduce the risks from wildfire. In addition, the research community will benefit from the data, as it will be used to expand our understanding of the relationship between risk perceptions, risk reduction behavior and risk communication.

**d. How will the information be collected (e.g., forms, non-forms, electronically, face-to-face, over the phone, over the Internet)? Does the respondent have multiple options for providing the information? If so,**

**what are they?**

The proponents will make initial contact with homeowner associations and use the associations as a vehicle to identify and contact homeowners. The information will be collected using a survey instrument administered via the US Postal Service.

**e. How frequently will the information be collected?**

Once from each respondent

**f. Will the information be shared with any other organizations inside or outside USDA or the government?**

Published reports using the aggregated data will be available to all interested parties and the academic community.

**g. If this is an ongoing collection, how have the collection requirements changed over time?**

This is not an ongoing collection.

**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.**

The data collection efforts will not involve the use of web-based surveying or other technology based approaches. The data collection effort is an application of the statistically proven method of mail surveying as detailed in Dillman (2000) *Mail and Internet Surveys: the Tailored Design Method*.

Step 1: All members of the targeted homeowner associations will receive a pre-notice letter indicating that they will receive a survey in the mail and briefly explaining the project.

Step 2: The second step is to send a survey to the entire population of the homeowner association with a more detailed cover letter.

Step 3: Non-respondents will receive reminder notices approximately two weeks after the initial mailing.

Step 4: Non-respondents will receive another copy of the survey one month after the initial mailing.

Step 5: Final contact with non-respondents, consistent with the approach discussed by Dillman.

Use of these methods will result in the desired 75-percent response rate. The proponents anticipate this response rate because the surveyed communities are

very involved with the issue of wildfire and are therefore highly motivated to have their preferences heard. The survey has the support of the leadership of the homeowner association surveyed.

**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.**

This project will collect data from homeowner associations not previously surveyed regarding wildfire risks, risk reduction behaviors, and information sources relevant to undertaking risk reduction behaviors. Secondary data from this source does not exist. Based on discussions with Forest Service personnel and literature reviews, the proponents are of the opinion that the data is not currently available elsewhere.

**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.**

No surveying of small businesses will occur. There will be no impact on small businesses.

**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.**

The information needed to determine successful communication strategies and messages must come from personal communication with homeowners that have experienced wildfires and have chosen whether to undertake risk reduction behaviors. Understanding the factors that motivate such behaviors is critical to designing effective risk communication strategies for the USDA Forest Service.

**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;**

Statistical techniques used are designed to produce valid and reliable results that can be generalized to the universe of study. No sampling techniques are used; all homeowners of the targeted homeowner associations will have the opportunity to participate in the project.

- **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**

The collected information is in an anonymous database within a spreadsheet program.

- **Requiring respondents to submit proprietary trade secret, 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 other special circumstances. The collection of information will be in a manner consistent with the guidelines in Title 5 CFR 1320.6.

- 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 describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

Publication of the 60-Day Federal Register Notice requesting comments on this information collection occurred on June 5, 2006, in Volume 71, on page 32302. The Forest Service received one comment in response to the Federal Register notice. The essence of the comment was that the Forest Service should not use prescribed fire as a treatment option. The comment did not address the issue of risk perceptions by homeowners in the wildland-urban interface, which is the focus of this survey. Therefore, no changes to the survey or data collection methods and analyses resulted from the comment.

**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 record keeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

Proponents met with USDA Forest Service personnel are actively involved with the homeowners risk reduction efforts and education of homeowners regarding wildfire risk reduction efforts. In addition, personal interviews with homeowners that have experienced major wildfires contributed to the development of the survey instrument (see names below).

The proponent plans to conduct a final pretest of the survey instrument in a focus

group context and via regular mail. Use of a pretest will refine the survey instrument and minimize the burden to the public. Modifications to the survey instrument will consist of minor changes in wording, if necessary, to make sure that all respondents are interpreting the statements as intended.

**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.**

Comments were solicited from the following individuals:

- Gene Garton, P.O. Box 605, Camp Sherman, OR 97730
- Wayne Ellingson, Box 775248, Steamboat Springs, CO 80477-5248
- Tom Burton, P.O. Box 773671, Steamboat Springs, CO 80477

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

There will be no payments or other re-enumeration to respondents.

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

The identity of each respondent will remain separate from the respondent's statements on the survey instrument. Only an aggregate form of the data collected will be used.

**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.**

Proponents anticipate that none of the respondents will perceive the questions as sensitive in nature. The only possible sensitive questions relate to the typical socio-demographic items (e.g. income).

**12. Provide estimates of the hour burden of the collection of information. Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated.**

- **Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13**

of OMB Form 83-I.



- a) Description of the collection activity
- b) Corresponding form number (if applicable)
- c) Number of respondents
- d) Number of responses annually per respondent,
- e) Total annual responses (columns c x d)
- f) Estimated hours per response
- g) Total annual burden hours (columns e x f)

Table 1

(a) Description of the Collection Activity	(b) Form Number	(c) Number of Respondents	(d) Number of responses annually per Respondent	(e) Total annual responses (c x d)	(f) Estimate of Burden Hours per response	(g) Total Annual Burden Hours (e x f)
Mail Survey	Survey	1500	1	1500	0.33 hrs (20 min.)	500
Focus Group	Survey	21	1	21	1.0	21
Mail Survey Pre-Test	Survey	50	1	50	0.33 hrs (20 min)	17
Totals	---	1571	---	1571	---	538

Non-respondents will incur less than 1 minute of burden. Non-response rate is estimated at 25 percent and is not included in table above due to minimal burden.

**Record keeping burden should be addressed separately and should include columns for:**

- a) Description of record keeping activity:
- b) Number of record keepers:
- c) Annual hours per record keeper:
- d) Total annual record keeping hours (columns b x c):

There will be no record-keeping burden on respondents.

- **Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories.**

Table 2

(a) Description of the Collection Activity	(b) Estimated Total Annual Burden on Respondents (Hours)	(c) Estimated Average Income per Hour	(d) Estimated Cost to Respondents
Mail Survey	500	\$20	\$10,000
Focus Group	21	\$20	\$420
Mail Survey Pre-Test	17	\$20	\$339 <sup>1</sup>
Totals	538	---	\$10,759

<sup>1</sup> ROCIS database values

- 13. Provide estimates of 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 shown in items 12 and 14). The cost estimates 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.**

There are no capital operation and maintenance costs. There are no costs to respondents to this survey beyond the time needed to respond. (See Table 2 on page 7)

- 14. Provide estimates of annualized cost to the Federal government. Provide a description of the method used to estimate cost and any other expense that would not have been incurred without this collection of information.**

The response to this question covers the actual costs the agency will incur as a result of implementing the information collection. The estimate should cover the entire life cycle of the collection and include costs, if applicable, for:

**Employee labor and materials for developing, printing, storing forms**

**Employee labor and materials for developing computer systems, screens, or reports to support the collection**

**Employee travel costs**

**Cost of contractor services or other reimbursements to individuals or organizations assisting in the collection of information**

**Employee labor and materials for collecting the information**

**Employee labor and materials for analyzing, evaluating, summarizing, and/or reporting on the collected information**

Cost to the government: **\$6,000**. This total includes survey administration (duplication and mailing): \$4,000; Travel: \$1,500; Miscellaneous expenditures: \$500

- 15. Explain the reasons for any program changes or adjustments reported in items 13 or 14 of OMB form 83-I.**

This is a new collection; there are no program changes or adjustments.

- 16. For collections of information whose results are planned to be published, outline plans for tabulation and publication.**

Information from the questionnaires will be input into a computer spreadsheet program. Researchers will maintain the spreadsheet. Back up of data files will be on CD or tape. The data will be analyzed using SAS, EXCEL, and LIMDEP software packages. The data will be analyzed using univariate descriptive statistics, as well as multivariate statistical analyses such as qualitative response models and

ANOVA. Dr. Rudy King, Biometrician at the Rocky Mountain Research Station in Ft. Collins, Colorado will consult in the evaluation of the statistical analyses.

Additional detail on the primary model to be analyzed with this data collection is given below. The main objective of this research is to explore the relationship between an individual's risk perceptions and their risk mitigating behaviors as it relates to a natural hazard such as wildfire. Many times, no matter how aggressive one is in their efforts to mitigate the risk of a natural disaster, there is no guarantee that their actions will be sufficient to protect them against the whims of nature (c.f. Mileti and Sorenson 1987). Nevertheless, from a public policy perspective, it is important to understand what influences consumers' risk perceptions to gain an understanding of how risk perceptions impact the probability of acting to reduce or avoid a risk.

We investigate what influences individuals' risk perceptions and what factors predict whether they will undertake certain behaviors to protect themselves from the risk. Understanding the factors that influence risk perceptions and risk reduction behaviors will provide policymakers and homeowner associations with the necessary information required to effectively communicate a priori the risks to individuals from a catastrophic event. Achieving a balance between an individual's perceived risk of damage from a wildfire and their willingness to engage in risk reduction behaviors is the trade-off made by homeowners. This type of tradeoff is a common decision that individuals face on a daily basis. For example, the decision to smoke cigarettes involves the tradeoff of the risks associated with cancer and the benefits that an individual derives from smoking (e.g. weight control, stress reduction). A better understanding of the relationship between a set of explanatory variables, risk perceptions and risk mitigating behaviors will enhance the decision-making ability of those charged with managing wildfire risks.

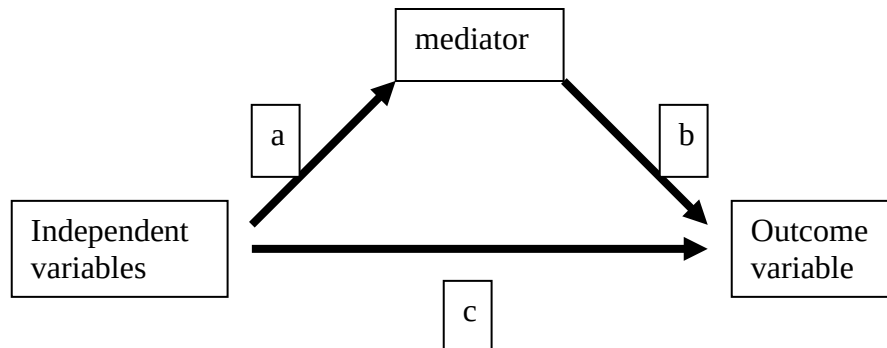
## Model

The literature in psychology, economics, sociology and other social science disciplines has identified a number of potential factors that influence the behaviors of individuals in addressing risk from natural hazards such as wildfires. This project explores the impact that the following factors have on undertaking risk-mitigating behaviors:

- experience with wildfire;
- subjective knowledge of wildfire risk;
- efficacy of risk reduction activities;
- controllability of wildfire risk; and
- efficacy of risk mitigation information.

Measures of these concepts (i.e. subjective knowledge, experience and efficacy) will be used as the independent variables to explain the variability in undertaking risk-mitigating behaviors. In addition, we will evaluate the mediating effect that

subjective risk perception has on risk mitigating behaviors. The primary model that we will test is from the psychometric literature on mediation. Specifically, the work of Barron and Kenny (1986) in the *Journal of Personality and Social Psychology* will provide the analytic framework for our analysis. Their model is represented by the following figure.



Each of the three paths (a, b and c) are estimated using regression analysis. The functional relationships that will be estimated are as follows:

Path a: mediator (risk perception) = f(independent variables)

Path b: outcome (risk mitigating behavior) = f(mediator)

Path c: outcome = f(independent variables)

We hypothesize based upon the literature in this area that path c will NOT be statistically significant. However, paths a and b will be statistically significant. This model will be tested using the data from each of the three sites independently as well as in the aggregate. This exploratory research is designed to obtain internal validity for the three communities studied and not for generalizability beyond these groups (external validity).

Policymakers have a difficult task when communicating risk to diverse constituent populations. It is critical to understand what influences an individual's perception of risk as well as their risk mitigating behaviors to effectively communicate risk information and then to have that lead to the desired action outcome. From a policy perspective, it is important to understand the process by which consumers respond to various types of risk information (e.g. educational information, the impact of the actual risk). Policymakers want to know what factors can be used as policy tools to

motivate risk reduction behaviors. These results will provide support for the premise that educating people on the risks associated with a natural hazard will in turn affect their perceptions of their vulnerability and the severity of the risk thus encouraging them to protect themselves. In addition, their actual experience with a hazard and their belief that particular risk reduction behaviors are efficacious can directly impact whether they protect themselves from the hazard. Thus, the belief that "*If only they knew!*" is not enough to persuade consumers to protect themselves from the impact of natural hazard risks such as wildfires.

The results of the survey will provide the quantitative foundation for internal agency reports, reports to each homeowners association, and peer reviewed literature. All reports will be available to respondents and USDA Forest Service personnel.

**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.**

No such approval requested, survey instrument to display expiration date.

**18. Explain each exception to the certification statement identified in item 19, "Certification Requirement for Paperwork Reduction Act."**

No exceptions sought.