

**Department of Transportation  
Federal Aviation Administration Office of Environment and Energy**

**SUPPORTING STATEMENT**

**Supporting Statement for a Collection RE:  
Neighborhood Environmental Survey  
OMB Control Number 2120-0762**

**INTRODUCTION**

This information collection is submitted to the Office of Management and Budget (OMB) to request renewed three-year approval clearance for the information collection entitled Neighborhood Environmental Survey, (OMB Control No. 2120-762)

**Part A. Justification**

**1. Circumstances that make collection of information necessary.**

Currently, the FAA defines significant noise as a Day-Night Average Sound Level (DNL) of 65 decibels (dB) or more. Over the last three years, the FAA has used the existing collection to gather information regarding the public's opinion on aircraft noise. FAA has analyzed this collected data and is currently reviewing the results and draft report. FAA believes that there may be a need to conduct additional analysis and/or collection as FAA continues to examine the data.

So far, FAA used the collected data to update the relationship between aircraft noise exposure and its effects on communities (annoyance) around U.S. airports. The survey collected data from a representative sample of airports and households surrounding each of the airports, and related the annoyance level to the noise exposure for each household address. The selected participants for the study represented a wide range of conditions with respect to number of operations, nighttime operations, temperature, population in proximity to the airport, and fleet mix, and the results from the study are generalized to the relevant population of U.S. airports. The same survey instruments and data collection procedures was used for all of the airports, and the survey was conducted during the same time period at all airports. Further application of these uniform procedures for additional collection, if necessary, will result in data that can be compared across airports and that can be used to construct a national dose-response curve relating annoyance levels to aircraft noise exposure.

The FAA currently uses the "Schultz Curve" (Schultz 1978)<sup>1</sup>, which was created based on multiple modes of transportation and surveys collected using different survey instruments at different times. Re-examination of the data shows that if aviation is examined separately, the percent of people highly annoyed was higher at DNL 65 dB than specified in the Schultz curve, which included rail and street traffic noise surveys in addition to aviation noise surveys

<sup>1</sup> Formalized by FICON (1992); FICON refit the data used by Schultz with a logistic regression model, and arrived at a curve with very similar shape within the range of aviation noise commonly encountered.

(Woodward et al., 2009). The Schultz curve was constructed using eleven existing surveys that had been conducted before 1974, and none of these surveys involved aircraft noise from U.S. airports. The surveys had different designs, questionnaires, and annoyance scales. Additional data may be needed to provide FAA with more insight into the change in perception.

The Federal Aviation Administration will use the information from the survey to derive the empirical guidance to inform the agency's direction regarding aviation noise. The proposed research will establish a reliable and updated relationship between exposure and surveyed reaction of individuals to noise. A single survey instrument will be used for all airports and households surveyed, and a single method for determining noise exposures; contrast to previous studies, which relied on existing surveys with different instruments. Much of the previous data on reactions to aircraft noise was collected in the period between 1960 and 1985, and the proposed study will allow assessment of responses to current airport conditions.

## 2. How, by whom, and for what purpose is the information used.

Individuals living within a given proximity to specific airports are asked to voluntarily respond to surveys. The Federal Aviation Administration will use the information from additional collections to supplement information from the original collection. The completion of the original research has led FAA to believe that additional collection may be needed to continue to expand the understanding of the relationship between aviation noise and individual's reaction to noise.

## 3. Extent of automated information collection.

Data collection will be conducted using both a paper mail survey and a computer-assisted telephone interview (CATI). The mail survey will provide the primary measure of estimating the dose-response curve. Conducting a web survey, rather than a mail survey, would not permit adequate coverage of those that do not have access to the web (Dillman et al, 2008; Millar and Dillman, 2011). In addition, mail surveys yield significantly higher response rates than web surveys (Manfreda, et al, 2008; Millar and Dillman, 2011; Dillman, et al., 2008)). Some consideration was given to providing the respondents a choice between a paper mail and a web survey. This was rejected because a number of studies have found that giving respondents a choice depresses response rates (Dillman, et al., 2008).

For the mail survey, an information technology system will be used to track respondents and to record, store and maintain the data.

The telephone survey will be conducted with an interviewer being assigned eligible households via an electronic call scheduling system. This system prioritizes calls to occur when the respondent is most likely to be at home and it allows the interviewer to set appointments for any time that is convenient to the respondent. As the interview proceeds, the responses are entered directly into the database by the interviewer. These data are then stored in a centralized database that is used for analysis.

## 4. Efforts to identify duplication.

Since noise is typically the most immediately objectionable community impact of aviation, it is

critical to collect updated community annoyance data. Failure to update data and relationships will cause FAA to continue to rely on data that is at least 30 years old and continue to have the public and members of Congress question the validity of the current level of significance.

The currently used relationship between transportation noise exposure and noise is based on data collected primarily in 1960's and 1970's from variety of countries. There are multiple indications that people's perception of noise has changed as well as has typical noise exposure around American airports. In addition, even though DNL 65 dB contours have decreased significantly over last 30 years, opposition and challenges regarding aircraft noise have not. Finally, in the last 15 years, multiple studies (see Miedema et all 2001, Medema et all 2998, Janssen et all 2011) have created additional dose-response curves which have shown a shift from the current Schultz (1979) Curve. (see, for example, Miedema and Vos, 1998, Groothuis-Oudshoorn and Miedema, 2006, Brink et al., 2008, and Janssen et al., 2011). These studies, however, are conducted using multiple survey modes and instruments, and many of the most recent surveys have been conducted in Europe.

Previous surveys on reactions to aircraft noise in the U.S. have been conducted using different survey instruments and procedures, and were conducted on purposively chosen sets of airports. The most recent systematic study of airports was the TRACOR study described above, which took place around 1970. Airport operations (and possibly community reactions) have changed since 1970, and this survey is necessary to update the relationship between aircraft noise exposure and its effects on communities in the U.S.

#### 5. Efforts to minimize the burden on small businesses.

This effort will not impact small businesses or other small entities.

#### 6. Impact of less frequent collection of information.

Previous surveys on reactions to aircraft noise in the U.S. have been conducted using different survey instruments and procedures, and were conducted on purposively chosen sets of airports. The most recent systematic study of airports was the TRACOR study described above, which took place around 1970. Airport operations (and possibly community reactions) have changed since 1970, and this survey is necessary to update the relationship between aircraft noise exposure and its effects on communities in the U.S.

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#### 7. Special circumstances.

#### **EXPLAIN ANY SPECIAL CIRCUMSTANCES THAT WOULD CAUSE THIS INFORMATION COLLECTION TO BE CONDUCTED IN A MANNER:**

- **REQUIRING RESPONDENTS TO REPORT INFORMATION TO THE AGENCY MORE OFTEN THAN QUARTERLY;**  
No participant will be asked to provide information more often than quarterly. Participation will be a one-time event.
- **REQUIRING RESPONDENTS TO PREPARE A WRITTEN RESPONSE TO A COLLECTION OF INFORMATION IN FEWER THAN 30 DAYS AFTER RECEIPT OF IT;**  
We are requesting that mail surveys are completed within 2 weeks of receipt. However, this is not a mandatory request. It is intended to convey the time frame under which the study is operating. This follows standard procedures as followed in Dillman et al (2008).
- **REQUIRING RESPONDENTS TO SUBMIT MORE THAN AN ORIGINAL AND TWO COPIES OF ANY DOCUMENT;**  
No participant will be asked to submit more than the original copy of the data collection instrument.
- **REQUIRING RESPONDENTS TO RETAIN RECORDS, OTHER THAN HEALTH, MEDICAL, GOVERNMENT CONTRACT, GRANT-IN-AID, OR TAX RECORDS FOR MORE THAN THREE YEARS;**  
No participant will be asked to retain 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;**  
No invalid statistical survey is anticipated.
- **REQUIRING THE USE OF A STATISTICAL DATA CLASSIFICATION THAT HAS NOT BEEN REVIEWED AND APPROVED BY OMB;**  
No unapproved data classification activities are anticipated.
- **THAT INCLUDES A PLEDGE OF CONFIDENTIALITY THAT IS NOT SUPPORTED BY AUTHORITY ESTABLISHED IN STATUE 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**  
All pledges are supported by the authority established in statute or regulation.

- **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.**

No trade secrets or items of similar confidential information will be requested.

#### 8. Compliance with 5 CFR 1320.8:

A notice was published in the Federal Registry on November 30, 2017 (82 FR 56851).

There were five responses to this notice. The notice received comments from three individuals and a writer for the Aviation Noise Report.

Two individuals ask for detailed information on what would be collected. Information regarding the original collection was provided to the individuals so they were able to understand the type of information that would be collected. The third individual submitted a complaint regarding aviation noise. The FAA redirected that person to the appropriate venue to send the noise complaint as the comment was out of scope.

A writer for the Aviation Noise Report submitted two comments. The comments were focused on the results of the existing collection and when the information would be available. The FAA responded that the work was under review and would be released when that review was finalized.

#### 9. Payments or gifts to respondents.

We are proposing two types of incentives for participants in the study. We propose to include a \$2 incentive in the first mailing of the mail survey questionnaire package. Pre-paid incentives of this size have been shown to significantly increase response to mail surveys (Church 1993; Dillman, Smyth, and Christian 2008; Edwards, et al, 2005). In a recent meta-analysis of incentive experiments, for example, Mercer et al (2014) found incentives of this size to increase response rates by approximately 10 percentage points for a mail survey.

For respondents selected for the telephone survey, we propose to offer a \$10 incentive, paid after the survey is completed. An incentive is necessary because we are requesting additional participation from the household. Promised incentives on telephone surveys have been found to be effective in improving response (Singer, et al, 1999). The meta-analysis by Mercer et al (2014), for example, predicts this amount would increase response rates by approximately 5 percentage points.

#### 10. Assurance of confidentiality:

Volunteers who participate in this study will be told that “The information you provide will be maintained confidential to the extent allowed by law.”

Westat, the study contractor, has its own policy and procedures regarding assurance of confidentiality and a pledge that all employees must sign. Westat provides all safeguards mandated by Privacy and Confidentiality Acts to protect the confidentiality of data gathered for this study. Westat data security procedures comply fully with procedural safeguards for computerized records as outlined in the U.S. Department of Health and Human Service's *General Administrative Manual* under "Safeguarding Records Contained in Systems of Record" and specified by the National Institute of Standards and Technology Federal Information Processing Standards (FIPS).

This study will be submitted to the FAA Office of Human Subjects Review. Westat has its own internal IRB under provisions specified by its multiple project assurance plan.

Personally identifiable information (PII) will be collected as part of this data collection effort. All selected households will be assigned a study ID. The study management system (SMS) will contain both the selected household's address and the study ID, but no names. Data is maintained in a separate database from the SMS or address information. Only a limited number of Westat project staff will have access to the SMS. The SMS will be maintained on a restricted-access drive within the Westat firewall. Completed paper questionnaires will be kept in a locked location. Once scanned, data will be maintained on a secured database within the Westat firewall and will be accessible by only a limited number of Westat project staff. Data will be identified only through the study ID. No names or identifiers will be used in reports or delivered to the FAA as part of the final dataset.

11. Justification for collection of sensitive information:

The survey will not include any questions of a sensitive nature.

12. Estimate of burden hours for information requested:

The hour burden for the Neighborhood Environmental Survey is shown in Tables A12-1 and A12-2 below. The mail questionnaire will take approximately 5 minutes (.08 hours) and the telephone instrument approximately 20 minutes (.33 hours) to complete. These estimates are based on experience using these instruments in a pilot study (see Section B.4). We anticipate the Neighborhood Environmental Survey instruments to be very similar in length as those in the pilot.

The total estimate of respondent burden would not exceed 1,544 hours annually in a period between 2018 and 2020. The annualized cost is calculated with a wage rate of \$23.98 per hour for 1,544 burden hours (CES-National, 2013) and is estimated to be \$37,025.

Table A12-1. Estimate of respondent hour burden

Type of respondent	Number of respondents	Frequency of response	Average time per response minutes/hour	Annual hour burden
Mail survey	10,007	1	5/60 (.083)	831
Telephone survey	2,140	1	20/60 (.333)	713
<b>Total</b>	<b>12,147</b>			<b>1,544</b>

Table A12-2. Annualized cost to respondents

Type of Respondent	Number of respondents	Frequency of response	Average time per response	Hourly wage rate	Respondent cost
Mail survey	10,007	1	.083	\$23.98	\$19,927
Telephone survey	2,140	1	.333	\$23.98	\$17,098
<b>Total</b>					<b>\$37,025</b>

13. Estimate of total annual costs to respondents.

The cost burden on respondents and record-keepers, other than burden hours, is zero.

14. Estimate of cost to the Federal government.

Based on the current Neighborhood Environmental Survey budget, the total cost to the Federal Government for the proposed survey would not exceed \$1,634,235 for a period between 2018 and 2020. This amount includes all direct and indirect costs of the design, data collection, analysis, and reporting phases of the study, as well as the production of public-use and restricted data sets. The annual costs of Federal employees for monitoring the contract are estimated to be \$1,039,802. These costs are based on 30 percent of the Project Officer's time, 30 percent of an individual's time to support ongoing data analysis and to coordinate the Neighborhood Environmental Survey program, as well as an additional 1 FTE that includes several FAA staff who contributed to the content of the instrument.

15. Explanation of program changes or adjustments.

This is a renewal of an existing collection.

16. Publication of results of data collection.

The product of this work will be summary data reports on level of people annoyed by aircraft

noise versus noise level. Only statistical summaries of the information will be published and no personally identifiable information will be disclosed. The analysis will be completed through a regression analysis for the dose-response data. See Supporting Statement B on details of dose-response regression. If needed we plan to collect data fomr a period between 2018 and 2020. The data analysis would be done within 12 months after completion of data collection with final reporting of any results expected by the end of 2020.

17. Approval for not displaying the expiration date of OMB approval.

We are not seeking such approval.

18. Exceptions to certification statement.

There are no exceptions to the certification statement.



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