

# Guide for Public Use Files of the Neighborhood Environmental Survey

Contracts DTFAC-15-D-00008 and DTFAC-15-D-00007

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This data users' guide provides a detailed description of the Public Use Data File (PUF) for the Neighborhood Environmental Survey (NES). For additional information about the survey population and procedures, refer to the full report<sup>1</sup>.

## 1 About the Neighborhood Environmental Survey

The purpose of the FAA Neighborhood Environmental Survey (NES) is to study the relationship between aircraft noise exposure and its effects on communities around U.S. airports. The NES collected data on annoyance from a representative sample of airports and households surrounding each of the airports in the study, for the purpose of relating the percentage highly annoyed to the noise exposure at the respondent's residence. The 20 airports selected for the study represent a wide range of conditions with respect to number of operations, nighttime operations, annual temperature, population in proximity to the airport, and fleet mix. The same survey instruments and data collection procedures were used for all respondents, and the survey was conducted during the same period at all selected airports. The results from the study can be applied to populations similarly exposed to aircraft noise in the vicinity of large U.S. airports.

## 2 Survey Population, Instrument and Data Availability

### 2.1 Target Population and Frame

The target population of the survey was residents of households who live in proximity to an airport meeting the eligibility criteria for this study. The sampling frame of airports consisted of airports determined by FAA to have a minimum of 100 average daily operations in 2011. To ensure the sample of residents surveyed would include those in high levels of noise exposure, airports were eligible for the study if they met predetermined thresholds for number of households exposed to high noise levels as defined by Day-Night Average Sound Level (DNL). Eligible airports were assumed to have at least 100 households exposed to aircraft noise of DNL 65 dB or above, and at least 100 households with DNL 60 dB and DNL 65 dB. A total of 95 airports in the United States were identified by FAA to meet these criteria. However, at the household sampling stage it was discovered that only three of the airports had at least 100 addresses in the highest noise exposure stratum of 70 or more dB, and only nine airports had at least 100 addresses with noise exposures between 65 and 70 dB. This was likely due to change in airport operations between 2011 (the year of FAA's data) and the start of the survey.

### 2.2 Key Variables

The NES Survey instrument consisted of the following 10 questions:

**Question 1** asked if there was more than one person age 18 or older living in the household.

**Question 2** requested the total number of persons age 18 or older if Question 1 was "Yes."

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<sup>1</sup> Miller, Nicholas P., Joseph J. Czech, Kurt M. Hellauer, Bradley L. Nicholas, Sharon Lohr, Eric Jodts, Pam Broene, David Morganstein, Jennifer Kali, Xiaoshu Zhu, David Cantor, Jeannie Hudnall, Karen Melia, "Analysis of the Neighborhood Environmental Survey", US Department of Transportation, Federal Aviation Administration, Final Report, January 2021.

**Question 4** Requested the first name of the person completing the questionnaire.

**Question 5, parts A-M** asked the level of annoyance with various environmental factors.

**Question 6** requested the respondent to rate their neighborhood on a scale of 0-10.

**Question 7** asked the respondent's year of birth.

**Question 8** requested the respondent's gender.

**Question 9** asked the respondents Hispanic origin.

**Question 10** requested the respondent's race.

**Question 11** asked the sex, age, and month born of all adults in the household.

Item 3 was an instruction for the adult with the next birthday to complete the survey and did not request data.

## **2.3 Excluded Data**

Personally Identifiable Information (PII) was removed from the PUF. This means that the data set does not include, at a minimum, any of the following: name, address, telephone, or latitude and longitude (geolocation) of respondents' residence.

These detailed indirect identifiers would greatly increase the chance of successfully identifying a respondent if released to the public. Additional such variables include airport identifier, DNL value, birth year, race/ethnicity with more detailed categories, as well as variables from the telephone survey which are more sensitive and increase the risk of data disclosure.

## **2.4 Public Use Files**

After completion of the data processing cycle, the collected data are stored in files for public use and archival purposes.

### **2.4.1 File Types NES**

#### **2.4.1.1 CSV Data File Format**

CSV data file variable names and labels for the NES are provided in Table 1. Table 2 lists the potential values of the variables in Table 1.

**Table 1. CSV Data File Variable Names and Labels**

#	Variable	Label	Type
1	BASEIDX	Encrypted Base Id	Character
2	DNL_GROUP	Day Night Sound Level Bands	Numeric
3	MNumAdult	Mail How Many Adults in HH	Numeric
4	MALNseTrafficX	Mail AL: Noise from Traffic Numeric	Numeric
5	MALSmellTrafficX	Mail AL: Smells Dirt from Traffic Numeric	Numeric
6	MALSmellOtherX	Mail AL: Smoke Gas Bad Smells Else Numeric	Numeric
7	MALLitterX	Mail AL: Litter Poorly Kept Housing Numeric	Numeric
8	MALACX	Mail AL: Noise Aircraft Numeric	Numeric
9	MALNeighborX	Mail AL: Neighbors Noise Numeric	Numeric
10	MALOtherNseX	Mail AL: Other Noise Numeric	Numeric
11	MALBusinessX	Mail AL: Undesirable Business Property Numeric	Numeric
12	MALNoParksX	Mail AL: Lack of Parks Numeric	Numeric
13	MALPubTransitX	Mail AL: Inadequate Public Transportation Numeric	Numeric
14	MALCrimeX	Mail AL: Crime Numeric	Numeric
15	MALCitySvcesX	Mail AL: Poor City County Services Numeric	Numeric
16	MALothProbX	Mail AL: Other Problems Numeric	Numeric
17	MRateNeighborhoodX	Mail Neighborhood Rating Numeric	Numeric
18	MHighAnnoy	Indicator for High Annoyance	Numeric
19	MGender	Mail Gender	Numeric
20	MRaceEthnicity	Mail Respondent Race/Ethnicity	Numeric
21	MAgeCat	Mail Categorical Age	Numeric

**Table 2. Potential Values for Each Data Variable**

Variable	Potential Values
DNL_GROUP	1= DNL Less than or Equal to 55 2= DNL Over 55 to 60 3= DNL Over 60 to 65 4= DNL Over 65 to 70 5= DNL Over 70
MNumAdult	1= 0 to 1 Adult 2= 2 Adults 3= 3 or More Adults
MALNseTrafficX MALSmellTrafficX MALSmellOtherX MALLitterX MALACX MALNeighborX MALOtherNseX MALBusinessX MALNoParksX MALPubTransitX MALCrimeX MALCitySvcesX MALOthProbX	1= Not At All Annoyed 2= Slightly Annoyed 3= Moderately Annoyed 4= Very Annoyed 5= Extremely Annoyed
MRateNeighborhoodX	0 =WORST 10= BEST
MHighAnnoy	0= No 1= Yes
MGender	1= Male 2= Female
MRaceEthnicity	1= Hispanic 2= White Alone, Non- Hispanic 3= Black and Other Races
MAgeCat	1= 0 to 29 Years Old 2= 30 to 49 Years Old 3= 50 to 64 Years Old 4- 65 Years or Older

**2.4.1.2 SAS Data File Format NES**

SAS format follows the Excel format. See section 2.4.1.1.

## 2.5 Treatment of Multiple Responses

Some respondents checked more than one response to the scale variables. In those cases, we calculated the average of the checked values and present that value in the public use file. Where the average values are not whole numbers they are presented as decimal fractions.

The outcome variable HIGH\_ANNOY was defined using the responses to MALACX, aircraft annoyance reported in the mail survey. HIGH\_ANNOY was set equal to one if the respondent reported being “very” (4) or “extremely” (5) annoyed by aircraft noise and was set equal to zero if the respondent reported being “not at all,” (1) “slightly,” (2) or “moderately” (3) annoyed by aircraft noise. Sixty-seven of the respondents checked more than one response to Question 5e. For example, 13 respondents checked both 4 (very) and 5 (extremely) annoyed. For respondents who checked more than one response, HIGH\_ANNOY was defined to be one if the average was 4 or higher and zero otherwise.