

**Project Title: Fire Fighter Fatality Investigation and Prevention Program Survey**

**Statement B**

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## B. Collections of Information Employing Statistical Methods

### 1. Respondent Universe and Sampling Methods

The respondent population consists of all career and volunteer fire fighters in all 50 states and the District of Columbia. The respondent population will be developed (see **Attachment 9**) by combining multiple data sources, the: (1) National Public Safety Information Bureau (NPSIB) database (2) FireCARES and (3) the National Fire Department Registry. The National Public Safety Information Bureau database is owned by NIOSH. The FireCARES dataset is owned by Dr. Moore-Merrell and the National Fire Department Registry is publicly available.

The universe of 4,500 fire departments will be comprised of two groups. Group 1 will include all fire departments (FDs) that have experienced a line-of-duty-death (LODD) and NIOSH investigation (n=630). Group 2 will include randomly selected FDs that have not experienced a LODD (n=3,870); this group will be selected from the combined NPSIB, FireCARES and the National Fire Department Registry databases. Group 2 will be randomly selected by geographic Census region (e.g., Northeast, South, Midwest, West) and department type (career/mostly career vs. volunteer/mostly volunteer) for a total of eight strata. Fire departments missing information for geographic region and/or department type will not be eligible for participation. Within each of the strata, proportionate random sampling will be used, such that approximately 14% of fire departments will be selected within each stratum.

From the 4,500 fire departments selected, a total of 13,500 firefighters (3 per department) will be recruited for participation. See **Attachment 9** for details.

It is anticipated that approximately 2,755 of the fire departments included in the survey sample will be volunteer and 1,115 will be career, allowing sufficient power for comparisons across the two fire department types at the fire department level.

**Table B1. Potential Respondent Universe**

| Entity                               | Fire Departments     |           |       |      | N            |
|--------------------------------------|----------------------|-----------|-------|------|--------------|
|                                      | Potential Respondent |           |       |      |              |
|                                      | Midwest              | Northeast | South | West |              |
| FD Experienced LODD                  | -                    | -         | -     | -    | 630          |
| Other FDs                            |                      |           |       |      |              |
| Volunteer                            | 920                  | 639       | 954   | 242  | 2755         |
| Career                               | 288                  | 161       | 417   | 249  | 1,115        |
| <b>Total Universe of Respondents</b> |                      |           |       |      | <b>4,500</b> |

The expected response rate is 30%. The last time this survey was conducted was in 2006 (OMB No. 0920-0697). The previous response rate for the survey in 2006 was 54.9%. However, there are differences in methodology and sample. The 2006 effort surveyed Fire Chiefs at 3,000 FD's via mail, whereas the proposed effort will sample a Fire Chief, Company Officer, and Firefighter at 4,500 FDs using an online survey.

### 2. Procedures for the Collection of Information

Pilot testing of the survey was completed in November. The pilot testing consisted of interviews with 8 participants. The next phase of data collection will be collected through a one-time web-based survey. Eligible respondents include fire chiefs, company officers, and frontline fire fighters at 4,500 selected FD's.

First, the contractor will reach out via e-mail to three professional organizations, the International Association of Fire Fighters (IAFF), International Association of Fire Chiefs (IAFC), and the National Volunteer Fire Council (NVFC). The e-mail will be sent to 1 contact person at each of the 3 partner organizations informing them of the planned survey, announcing dates the survey will be administered, and asking them to identify potential members to e-mail. These organizations will assist in the recruitment by providing the contractor with e-mail addresses for members whose FD was randomly selected to participate (unless the member requests their information not be shared). See **Attachment 5** for the e-mail that will be shared by the professional organizations and **Attachment 10** for a description of the protocol.

If a professional organization is not able to provide a valid email address for a FD, the contractor will attempt to identify an email address one of two ways. First, the contractor will use the Respondent Universe dataset (referenced in Section 1) to identify any email addresses. If there is not a valid email address, the contractor will then conduct internet searches of the FD telephone number. Those FDs without a valid email provided by a professional organization or with a valid email in the Respondent Universe dataset, will be called (see **Attachment 3**). For a description of the telephone call protocol see **Attachment 10** and **Attachment 9**).

After the list of e-mails has been developed, a contractor will send an e-mail to potential respondents that will include a link to the online survey, a description of what is being asked, and additional information (see **Attachment 4**). The survey will remain open for eight weeks to allow for ample time for respondents to complete the survey. Respondents do not have to complete the survey in a single session. Up to 3 reminders will be e-mailed every two weeks after the initial invitation (see **Attachment 8**).

The survey will be administered only one time. Data will be collected and stored in survey software maintained by the contractor as respondents submit their completed surveys. Data will be transferred to the statistical software package R, and prepared for analysis. A description of data coding and preparation quality control procedures can be found in **Attachment 6**, **Attachment 9**, and **Attachment 10**.

### **3. Methods to Maximize Response Rates and Deal with Nonresponse**

Reminder e-mails will be utilized to maximize response rates. Reminder e-mails will be sent by the contractor to potential respondents with an email address. Potential respondents will be contacted up to three times in order to maximize response (see **Attachments 8 and 10**).

The purpose of this information collection is to assess whether NIOSH FFFIPP recommendations are utilized by FD's, identify barriers to implementation of recommendations, and identify areas for potential intervention projects. Higher response rates will yield more reliable information.

### **4. Tests of Procedures or Methods to be Undertaken**

The web-based version of the survey was pilot tested by 4 contractor personnel. Feedback was used to refine questions as needed, ensure accurate programming and skip patterns, and establish the time estimated to complete the survey.

### **5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data**

The data collection was designed by NIOSH and the ORISE project team. Contractor staff will collect and analyze the data for the online survey. Statistical consultation is provided by the NIOSH statistician.

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### **LIST OF ATTACHMENTS - Section B**

**Attachment 9.            FFFIPP Sampling Plan**  
**Attachment 10.        Recruitment Dissemination Plan**