

## **System Analysis of Automated Speed Enforcement (ASE) Implementation Revised Supporting Statement for Information Collection Request**

### **B. Collections of Information Employing Statistical Methods**

The proposed study, *System Analysis of Automated Speed Enforcement (ASE) Implementation*, involves a **census** of current and recently discontinued Automated Speed Enforcement (ASE) programs in the United States.

#### **B.1. Describe the potential respondent universe and any sampling or other respondent selection method to be used.**

As of September 2011, the highly experienced contractor research team for this project (M. Davis and Company, Inc.) has identified 104 jurisdictions with current ASE programs (54 well-established ASE programs and 50 new ASE programs that have started operations since the contract for this project was signed in June 2010) and 14 jurisdictions that have recently discontinued their ASE programs. This is our respondent universe - a total N of 118 respondent jurisdictions that currently have or recently discontinued ASE programs as of September 2011.

The sampling frame for this information collection was determined through two primary sources. The Insurance Institute for Highway Safety (IIHS) maintains a regularly updated database of existing ASE programs throughout the country. We used this IIHS database as a starting point and determined identified over 90% of the current ASE program population to be included in our information collection. The remaining 10% of the ASE programs were identified through the research team's inquiries to the ASE equipment vendors operating in the United States. Information on recently discontinued ASE programs was also available through these sources. Given the small universe of ASE programs in the United States and the potential for wide variability in these programs, the entire population will be invited to participate in this information collection.

In consultation with the National Highway Traffic Safety Administration (NHTSA), the contractor will mail questionnaires to all 118 active and recently discontinued ASE programs in order to obtain participation from as many jurisdictions as possible. Despite efforts by the contractor to contact personnel from all jurisdictions, participation is voluntary and we anticipate that some jurisdictions will not respond.

The contractor projects the following response ratios for the data collection process:

- 25% of the agencies promptly and completely respond during the data collection process
- 50% will respond but with incomplete information and data
- 25% of the agencies contacted will simply not respond in any timely or meaningful manner

The list of 118 currently identified jurisdictions to be included in this census is provided in Attachment C: ASE Site List by Program Status.

Three basic types of ASE programs are targeted in this information collection (established ASE programs, new ASE programs, and discontinued ASE programs). Table 3 shows the distribution of ASE programs by State and type of program. We seek OMB approval to attempt to collect information from all 118 ASE programs.

**Table 3: Automated Speed Enforcement Programs by State and Type**

State	Current ASE - Established Program	Current ASE - New Program	Discontinued ASE Program	Total
Arizona	11	6	1	18
California	0	1	1	2
Colorado	3	2	0	5
District of Columbia	1	0	0	1
Florida	0	0	1	1
Illinois	1	0	0	1
Iowa	2	2	0	4
Louisiana	5	1	3	9
Maryland	6	19	0	25
Massachusetts	0	0	1	1
Missouri	0	6	0	6
New Mexico	1	0	1	2
North Carolina	0	0	1	1
Ohio	7	5	2	14
Oregon	3	1	0	4
South Carolina	0	1	0	1
Tennessee	8	1	0	9
Texas	0	0	2	2
Washington	6	5	1	12
<b>18 States &amp; DC</b>	<b>54</b> (46%)	<b>50</b> (42%)	<b>14</b> (12%)	<b>N = 118</b> (100%)

We expect current (established) ASE programs and discontinued ASE programs will have the most useful information, therefore, the follow-up efforts will concentrate on these programs. Along with focusing on current and discontinued programs, geographic representation will be considered. States that have ASE programs, in which no programs have responded will be followed up more vigorously than States in which some ASE programs have responded.

## **B.2. Procedures for collection the information**

The targeted participants for the information collection are the 118 current and discontinued ASE programs. The information collection will use two versions of a paper-and-pencil questionnaire – one for current ASE programs and one for discontinued ASE programs. The only difference in the questionnaires is that the discontinued programs questionnaire uses the past tense and it includes questions exploring the reasons why they discontinued their ASE program. The two

questionnaires with cover letters are provided in Attachments D and E. Electronic PDF fillable form versions of the questionnaires will be made available to respondents upon request.

The procedures for administration of the information collection are as follows:

The contractor will use a mail information collection method with follow-up mailings, emails, telephone calls, and/or possible site visits designed to maximize response rates. The information collection procedure to be used is as follows:

- First, the NHTSA Contract Officer Technical Representative (COTR) for this project, Randolph Atkins, will send out a letter from NHTSA headquarters to each of the Chiefs of Police for the 118 ASE sites informing them about the census underway and requesting their participation; letting them know that a questionnaire packet will arrive shortly.
- One week after the NHTSA COTR letter is mailed to all of the sites; the contractor will mail a questionnaire packet to each of the 118 ASE programs. Each questionnaire packet will include (1) a cover letter explaining the purpose of the questionnaire, the voluntary nature of the questionnaire, contact information for the research team, and a request for their participation, (2) the questionnaire with the required OMB Control Number and OMB Expiration Date, and (3) a postage-paid envelope for returning the questionnaire (see Attachments D and E).
- Three weeks after the initial questionnaire packets are mailed out, the contractor research team will make follow-up contact attempts by email (if email address is available) and/or telephone with ASE site agencies that have not returned the questionnaire and not indicated refusal to participate to check on the status of the non-returned questionnaires and encourage respondents to complete them. For those respondents that prefer it, a PDF fillable form version of the questionnaire will be made available upon request.
- Six week after the initial questionnaire packet mailing, a second complete questionnaire packet will be mailed to all ASE programs that have not responded.
- One week after the second questionnaire packet is mailed out to non-responders; the research team will begin to execute an intensive follow-up effort via email, telephone, and site visits, as appropriate, in order to gather data from those sites that have not responded, to date. This intensive follow-up effort is described in more detail in section B.3., below.

Throughout the information collection period, as questionnaires are returned, the research team will examine the returns to determine if they are complete and, if incomplete, what data is missing. The research team will then follow-up with sites that responded with incomplete information in an attempt to obtain any information that is missing.

ASE sites that indicate they do not want to participate in the information collection will be coded as refusals and will be removed from the list of ASE programs with which the research team will follow up.

**B.3. Describe methods to maximize response rates and to deal with issues of non-response.**

This data collection effort will involve two phases. The initial phase will be conducted by mail with mail, email and/or telephone follow-up reminders (as described in section B.2., above). This will be followed by a more intensive follow-up phase for non-responses and incomplete responses through emails (when deemed appropriate), telephone calls, and eventually, if necessary, site visits. This process is described in further detail below:

The mail information collection process with initial follow-ups is described in B.2., above.

The initial letter from NHTSA is designed to raise the awareness of respondents prior to the arrival of the information collection packet with the questionnaire. This will allow respondents to mentally plan for the information collection and be on the look-out for it prior to its arrival. This should also minimize the possibility of the questionnaire packet getting overlooked in the in-coming mail and increase the likelihood that respondents will get started with the questionnaire soon after it arrives.

The initial follow-up emails and/or calls will remind respondents of the questionnaire and reinforce the importance of completing it. This should result in more questionnaires being completed. The second questionnaire packet will be an additional reminder and will provide additional questionnaires in case the original questionnaires had been misplaced or discarded.

Given that law enforcement agencies nationwide are challenged by both budget and staff considerations, and have other priorities with regard to the nature of their work, it is expected that many agencies will require multiple follow-ups to obtain the required information for this study. While our hardcopy / PDF questionnaire options are designed to maximize the return rate, based on extensive experience working with law enforcement agencies over the last three decades, the contractor estimates that intensive, hands-on follow-up will be needed to achieve the projected 75% response rate.

The Intensive Follow-up Phase for Incomplete Responses and Non-responses:

Seven weeks after the initial questionnaire packet mailing, the research team will begin to execute its intensive follow-up effort with the selected programs using follow-up emails (when appropriate), telephone calls, and eventually, site visits. This process will work as follows:

For those respondents that returned **incomplete questionnaires**, follow-up phone calls will be made to the respondents that completed the questionnaires. If email addresses are available, the research team will first send emails to the person(s) responsible for completing the questionnaire to let them know the call is coming and to inform them of the missing information that will be requested on the call. This contact information is requested in the questionnaire and should be

available. Attempts will be made to complete any missing information that can be completed via the telephone. If there are attachments that were not returned, these will be requested, and every effort will be made to acquire these data. Additional follow-up calls will be made, as needed.

For those agencies in the sample that **did not respond** at all, the research team will start with phone calls to the agencies, determine who is responsible for their ASE programs, and gather contact information for those persons. The research team will then phone those individuals to determine the status of the questionnaire and to encourage completion of the questionnaire. Additional follow-up calls will be made, as needed.

The research team has staff located in Arizona, Colorado, Philadelphia, and the Washington, DC area, allowing local site visits in many jurisdictions. The project has budgeted for 15 site visits to follow-up with agencies that have not responded adequately after attempts to collect the information via mail, email, and telephone. Experience has shown that face-to-face inquiries may be required for data collection with some law enforcement agencies, so these site visits will be strategically chosen to maximize returns.

Using this multi-modal approach to collecting data (mail, email, phone, and site visits) will help achieve the projected response rate of 75%.

#### Non-response bias:

There are two types of non-response bias – item response bias and unit response bias. Based on our pre-test of the questionnaire, we believe that **item non-response bias** will be minimal. The five items respondents are asked to include with the returned questionnaire may be the most difficult for the research team to obtain. These are copies of: (1) the ASE equipment checklist for each ASE enforcement deployment; (2) a sample ASE notice; (3) an evaluation or a plan for an evaluation of the effects of their ASE program on reducing crashes; (4) an evaluation or a plan for an evaluation of the effects of their ASE program on traffic speeds; and (5) an evaluation or a plan for an evaluation of public acceptance of their ASE program. Most programs should have attachments (1) and (2). The respondents will need to find the documents, make photocopies, and include the documents in the return packet. We expect that full-scale evaluations (items 3, 4, and 5) have not been done and are not being planned in most jurisdictions. Respondents will have the option to send the five attachments via mail, email attachment, or fax. Follow-up contacts will minimize item non-response bias. Any remaining non-response bias will be recorded, reported and discussed in the final report.

Using this multi-modal approach to collect data (mail, email, phone, and site visits) will also help the research team reduce **unit non-response bias**. As stated above, selecting programs for intensive follow-up will be determined based on the returns from the mailed questionnaire component. We will target selected programs based on ASE program type (established, new, discontinued ASE) and locality (State and the District of Columbia). We will ensure an equitable representation of type and locality in the final data set. It is expected that these intensive follow-up contacts will minimize unit non-response bias in the final data.

As noted earlier, since the universe of ASE programs in the United States is small and there is

potential for wide variability in these programs, the entire population will be invited to participate in the information collection. However, it is highly likely that a sizeable percentage of respondent ASE programs will choose not to participate in the information collection. Given the variability within this small ASE program population and the potentially large impact that non-responses may have on the data, it is unlikely that accurate estimations can be made and that weighting would be useful. Therefore, we will not be able to make inferences about the entire U.S. ASE program population based upon our results. The results reported in this study will apply only to the programs that choose to participate in this information collection. Nevertheless, we are confident that we will be able to get a large enough response rate to meet the goals of the study. To the extent that it is possible, we will compare non-responding jurisdictions with participating jurisdictions using publically available data such as jurisdiction size, size of police force, and start and end dates of ASE programs to explore possible response biases.

**B.4. Describe any tests of procedures or methods to be undertaken.**

A pretest of the census questionnaire was conducted in December 2010 with two respondents from two jurisdictions with current ASE programs. In each case, the questionnaire took less than 60 minutes to complete. Overall, the respondents felt the questionnaire was thorough and easy to understand and navigate. The respondents provided feedback on the questions and the format. This pre-test feedback was incorporated into the revised questionnaires to be used in the census (See Attachments D and E).

**B.5. Provide the name and telephone number of individuals consulted on statistical aspects of the design.**

The following individuals have reviewed technical and statistical aspects of procedures that will be used to conduct the *System Analysis of Automated Speed Enforcement (ASE) Implementation* census of current and discontinued ASE programs:

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