

Characteristics of State Law Enforcement Liaison (LEL) Programs Supporting Statement for Information Collection Request: Part B

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

This National Highway Traffic Safety Administration (NHTSA) proposed information collection will employ statistical methods to analyze the data collected from respondents. The following sections describe the procedures for respondent sampling and data tabulation.

This study will collect information from a census of State Law Enforcement Liaisons (LELs) and the LEL supervisors from their State / sponsoring agency sponsors. “Law Enforcement Liaisons (LEL) serve as vital links and conduits between State Highway Safety Offices (SHSO) and a state’s law enforcement community” (NLELP, 2018). Within the States, LELs support NHTSA traffic safety efforts through interactions with law enforcement agencies (LEAs) and associations. LELs work to increase the number of LEAs and government leaders involved in traffic safety programs. At a minimum, LELs provide program management, technical assistance, training support, and market NHTSA’s traffic safety programs.

This information will be collected through two parallel questionnaires, one for the LELs (see Appendix A) and a separate questionnaire for the LEL supervisors from the sponsoring organizations (see Appendix B). The surveys will be conducted through one-time online web-based survey instruments. Participation in the study will be voluntary.

The following data will be collected: Number of LELs, program structure and organization, job description, program objectives, reporting requirements, performance monitoring practices, program costs, communication networks, reported usefulness of specific program practices, site and conference attendance practices, and public outreach activities. The estimated time to complete the web-based surveys is 45 minutes per respondent. No personally identifiable information will be used in the analyses. The results from the surveys will be reported in aggregate and will not identify individuals.

Study outcomes will be used to inform funding agencies and LEL programs about LEL best practices and what is required to maintain maximum LEL program effectiveness. The information will support States and other agencies and organizations in their efforts to reduce and prevent injuries among the motoring public using traffic safety programs promoted by the LELs.

B.1. DESCRIBE THE POTENTIAL RESPONDENT UNIVERSE AND ANY SAMPLING OR OTHER RESPONDENT SELECTION TO BE USED.

Currently there are 49 State Law Enforcement Liaison (LEL) programs. These programs vary widely regarding the number of LELs working under a given program (from 1 to 30 LELs per State), with approximately 240 LELs, in total, across all programs. The LEL programs also vary a great deal in the way they are organized and carry out their functions. Therefore, the NHTSA

proposes to conduct two one-time surveys. These are census collections. The first survey will target the universe of all State LELs across the country. The second survey targets the direct supervisors of the LELs in each of the 49 States that have LELs. Most of the LEL supervisors are in State Highway Safety Offices (SHSO); however, some States have agencies other than SHSOs that oversee their State’s LELs. The universe is 240 LELs and 49 LEL supervisors.

B.2. DESCRIBE THE PROCEDURES FOR THE COLLECTION OF INFORMATION.

Candidate **LEL Survey** respondents include the approximately 240 State LELs working in the 49 State Law Enforcement Liaison (LEL) programs in the United States. Candidate **State Highway Safety Office (SHSO) Survey** respondents include 49 individuals that supervise the LELs within the LEL sponsoring agency in their State (generally the SHSO).

For this study, the NHTSA will be working with the Governors Highway Safety Association (GHSA) and the National Law Enforcement Liaison Program (NLELP). The GHSA is a non-profit organization “representing state and territorial highway safety offices that implement federal grant programs to address behavioral highway safety issues” (GHSA, 2018). The NLELP was created by the NHTSA and the GHSA “to enhance the work of LELs across the country. This program is funded by NHTSA under a cooperative agreement in recognition of the effectiveness of LEL activities in reducing crashes across the country” (NLELP, 2018).

This study was requested by the SHSOs through the GHSA under the National Cooperative Research and Evaluation Program (NCREP), which is managed by the NHTSA. This information collection will be conducted by TransAnalytics, LLC (TA), the contractor hired through the NCREP by NHTSA.

Data collection is expected to take place over a 3-month period in the winter/spring of 2019.

B.2.1. PROCEDURE

We will use a multi-step approach for encouraging participation. This type of approach is consistent with survey standards endorsed by the American Association for Public Opinion Research (AAPOR), and is one that has been used by the research team to obtain high response rates in previous research studies. The specific steps in this approach are shown in Table 1 and described below.

Table 1: Survey Tasks and Timetable

Survey Task	Week of Data Collection
Advance invitation letter (US Mail)	1
Initial email with survey link, User ID & PW	2
Follow-up – 1 st email reminder	3
Follow-up – 2 nd email reminder	6

Follow-up – phone call reminder	10
Close out data collection	12

NHTSA’s contractor, TransAnalytics, LLC (TA), will provide a tracking system and conduct all survey mailings and email contacts in a way that meets the quality and schedule objectives of the project. The National Law Enforcement Liaison Program (NLELP) will provide a current list of LELs and LEL supervisors that includes mailing and email addresses and telephone numbers for each respondent.

Week 1: NHTSA’s contractor, TA, will prepare the **survey invitation letters** (see Attachment F and Attachment G) and mail them to the LELs and the LEL supervisors through the US Mail using the provided contact lists. The letters will be on GHSA letter head. They will explain the purpose of the survey, explain that it is voluntary, request participation, and advise potential respondents that, within a week, they will receive an email with the survey link and log-in information. The letter will also provide contact information for the contractor’s principal investigator should they have any questions. Before the letters are mailed, an additional quality control procedure will be completed by the contractor to ensure that the name and address on the letter matches the outer mailing label.

Week 2: Both surveys will be administered using an online web-based survey format. One week after the invitation letters are sent to potential respondents, an **initial email with link to the online survey** landing webpage will be sent to all respondents (see Appendix H). This email will include a unique User ID and Password for each respondent. It will also explain that survey participation is voluntary, that the survey should take about 45 minutes to complete, that all survey response will be confidential, that respondents’ personally identifiable information will not be linked to their responses, and that data will only be reported in the aggregate. This email will also provide contact information for the principle investigator should respondents have any questions about the survey.

Week 3: One week following the initial email with the survey link, TA will send a **follow-up reminder email** to remind respondents about the survey and to ask them to please complete the survey. This email will also confirm if the respondent is still an active LEL (or LEL supervisor, as appropriate) and request a new point of contact for the new LEL (or new supervisor) if the original recipient is no longer serving in that capacity. We anticipate that a small percentage of the initial target respondents may no longer be a current LEL or supervisor. At that point, TA will follow up with the NLELP, SHSO or NHSTA Regional offices by telephone to determine the current person in that position, if the initial email recipient could not provide the information. Any replacement respondents identified would then receive the invitation letter and, one week later, the email with the survey link User ID and Password.

Week 6: Three weeks after the first email reminder email is sent out, a **second email reminder** will be sent out. This email will stress the importance of participation and inform respondents that they have four more weeks to complete the survey (see Appendix I). The original email states that respondents should complete the survey within two to four weeks of that email. This email will, in effect, provide them with a time extension to complete the survey.

Week 10: Four weeks after the second email reminder, the TA research staff will conduct a **telephone reminder** for any respondents that still have not completed the survey. This call will serve as a reminder and an attempt to encourage non-responders to complete the survey. The research staff making the calls will also inquire as to why these non-responders have not completed the survey, which will provide input for any non-response bias analysis conducted, should a non-response bias analysis be necessary. (Note – we anticipate a response rate higher than 80%, which would mean a non-response bias analysis would not be required.)

Week 12: At the end of week 12, we will close out data collection and proceed to clean the data and begin data analysis.

Monitoring the Progress of Data Collection:

The contractor, TransAnalytics (TA), will develop a tracking system with the following features:

- Unique CaseID for every case
- Unique password for Web Survey access for every case, and
- Functionality to produce all mailings and e-mailings

The tracking database will be programmed so that project staff can generate weekly disposition reports summarizing the status of the data collection activity throughout the data collection period (e.g., number of contacts, number of surveys undeliverable, number of surveys received). In addition, we will be able to compute the response rates achieved by each stage of data collection (e.g., to the initial e-mailing, after the reminders, or after the follow-up telephone call).

During the survey administration period, TA will provide the NHTSA COR (TO) with a weekly disposition report, which will be submitted every Tuesday of the week. Survey data collection will be completed within twelve (12) weeks of the initial email to respondents with their unique Used ID, password, and the link to the online survey.

The contractor shall monitor all survey activities, including all online activities, using a unique identifier for each respondent case. Once a respondent has completed their survey, they will be sent a thank you email for completing the survey and then removed from the e-mailing list for any subsequent reminders to complete the survey. This process will allow the research team to not burden respondents with additional emails once they have completed the survey

Language accommodation: The NLELP conducts their business with LELs in English as do the sponsoring agencies that oversee the LELs. Therefore, there is no need to provide language accommodation for the two surveys. Both surveys will be conducted in English.

Electronic Database:

As surveys are completed and submitted electronically via the internet, experienced project staff will check the returns. Electronic data cleaning will be used to detect errors. These programs check for outliers, incorrect use of skip patterns, and logical consistency checks between variables to identify inconsistencies. Questionable data will be flagged by the program and then checked by referring to the survey questionnaire. Verifiable errors will be corrected.

Responses to questions will be validated for consistent data. The respondent will be notified of invalid or inconsistent responses, and given the opportunity to correct these. Some fields may require a “Select or Other” data entry field. The respondent may choose from a list of predefined options, or be provided a text area where an unlisted option may be entered. Respondents may review and edit survey responses prior to the submission deadline. A help section will be available, allowing respondents to contact the Contractor regarding difficulties completing the survey. Subsequent to a support request being submitted, the respondent will receive an e-mail notification that his or her request has been received. The e-mail will indicate a time frame as to when he or she will receive a response.

Data security is an integral part of this project. TransAnalytics survey staff has developed procedures to ensure respondent confidentiality. Each respondent will be assigned a unique study identification number. The survey instruments, as well as the electronic data files containing the survey data, will be identified only by study identification number.

Neither the online surveys nor the electronic files of the survey data will contain names, addresses or telephone numbers of facilities or respondents. Completed survey materials will be stored in locked file cabinets. All project files will be password protected, and access to the files will be limited to authorized project staff. Staff working on the project will be required to sign a confidentiality statement. The steps taken to protect the confidentiality of the data will be emphasized in staff training. Data files submitted to the NHTSA will contain no identifying information. A statement explaining respondent confidentiality and protection will be included in the survey cover letter and on the cover of the questionnaire.

For communication between the visitor and server, the web site will be secured with an SSL certificate, encrypting all communication between the respondent's web browser and the web server. The site shall use a secure session cookie to maintain the visitor's session during page transitions. At no time shall the session key be exposed in the URL, as is seen with GET requests. This is done to prevent session hijacking.

For web server process security, the web server software being used will be Apache and PHP, running on a Debian/GNU operating system. PHP shall be implemented using PHP-FPM (FastCGI Process Manager), with a unique user account given for this NHTSA project. Traditionally, with mod_PHP, or using PHP-FPM without additional configuration, all PHP processes are shared by one user. This may expose a site to XSS (cross site scripting) vulnerabilities. Utilizing the available security features of PHP-FPM, the site shall be configured such that the PHP processes are owned by the corresponding NHTSA user. This allows us to set very strict file permissions on any files or directories in the root of this project. Files are transferred to this server, which only the website manager has access to, using SFTP (FTP over SSH) to ensure encryption of the login and file transfer sessions during development.

For inputting data into the database, the database server used to store the data is configured to only accept connections from the web server. This prevents outside access to the database. In addition to the database level security, we employ firewall rules to ensure that any incoming connections attempting to reach the database server are dropped immediately at the network

level. This server is accessible only via SSH or MySQL connections coming from another server on the LAN. Failed connection attempts from anywhere are logged, and repeated attempts result in the offending IP address, or IP address range, being blocked by dynamically created firewall rules.

For delivery of data, the back-end of the site will allow for an authorized user to login to export the data. This portion of the site shall also be protected with an SSL certificate. The login link shall not be published on the site. CAPTCHA codes and banning of IP addresses for repeated authentication failures shall be implemented. Any transfer of collected data between the website manager and TransAnalytics LLC or NHTSA shall be encrypted using GnuPG or VeraCrypt. This implementation is entirely secure.

For data maintenance, the servers used to collect the data will have daily snapshot backups in the event of a disaster. Solid-state storage provides excellent disk I/O performance. The database itself will be regularly dumped, encrypted, and sent to an off-site backup server using a ZFS file system, which has state of the art resiliency, data integrity and data safety.

B.2.2. SAMPLE SIZE

These are census collections. As described in B.1, above, currently there are 49 State Law Enforcement Liaison (LEL) programs, with approximately 240 LELs, in total, across all programs. The first survey will target the universe of all State LELs across the country (n=240). The second survey will target the direct supervisors of the LELs in each of the 49 State LEL programs (n=49). The universe is 240 LELs and 49 LEL supervisors.

B.3. DESCRIBE METHODS TO MAXIMIZE RESPONSE RATES.

As described in B.2.1, we will use a multi-step approach that is consistent with survey standards endorsed by the American Association for Public Opinion Research (AAPOR), for encouraging participation. This type of has been used by the research team to obtain high response rates in previous research studies. This multi-step approach will include an advance mailed letter from the Governors Highway Safety Association (GHSA), which should ensure that most potential respondents will pay attention to our initial contact with them regarding the study. The GHSA is also endorsing the survey and placing their logo prominently on the cover of the questionnaire, along with NHTSA's logo, which should add to the perceived legitimacy of the survey and its importance for the LELs and their supervisors.

Participation in this study is voluntary. Unique usernames and passwords will be created by the web developer for each respondent. Only website visitors possessing valid credentials will be allowed to access the survey. Respondents will be assured that their answers will be confidential and only reported in the aggregate. Respondents will be informed that the GHSA, NLELP, and NHTSA will only see de-identified data and will not have access to any data that connects respondents' PII to their responses. Due to the anonymous nature of the survey, we hope that sample members will be more likely to respond and that respondents will be more candid.

The online site and questionnaire will be made lean to reduce transmission time and increase the responsiveness of the survey across pages, especially for those with low bandwidth Internet connections. Page elements will be reused, CSS code will be minified, images will be scaled or compressed to reduce the size of each page served. The site will make use of minimal transition screens, and consolidate questions into a single section where feasible. The site will use visual cues and a consistent layout that provides an easy-to-follow work flow. Navigation elements will be placed uniformly across all pages and be styled uniformly. Help screens and term definitions will be employed as necessary. This should increase ease of use and ensure better completion rates.

B.4. DESCRIBE ANY TESTS OF PROCEDURE OR METHODS TO BE UNDERTAKEN.

TransAnalytics conducted a limited cognitive testing of the surveys with a convenience sample of five (5) respondents with LEL program experience to identify any problems and refine the questionnaires. A debriefing questionnaire was developed for the cognitive testing. It covered matters such as respondent understanding of questions, overall flow of the questions, and ease of moving from one question to the next if branching is used, etc. NHTSA took the lead in recruitment of participants for the cognitive testing.

Based on the results of the cognitive testing, TransAnalytics, working with NHTSA, revised the questionnaires. The questionnaires (see Appendices A and B) are included with this OMB package, along with a question-by-question justification matrix for each questionnaire (see Appendices C and D).

The key findings from the cognitive testing are provided below, along with descriptions of the changes that were made to the survey materials to address the issues identified.

- The wording of several questions was reported to be unclear. The wording for these questions was revised based on the feedback.
- Some questions were perceived as redundant. These questions were removed to shorten the survey.

Based on the results of the cognitive testing, revisions were made to the questionnaire and the final drafts of the questionnaires were developed. The questionnaires will be delivered in an online format (estimated at approximately 45 minutes to complete) that is designed for ease of use by respondents. The on-line questionnaires will not be finalized until after OMB approval.

Data Analysis

The overall goal of this project is to improve NHTSA's understanding of LEL programs in the United States. The specific goals of the survey are to (1) identify program characteristics, costs, and State-recommended program practices; (2) identify levels/types of interactions between State LELs and their supervisors in the SHSO and with the Law Enforcement Agencies (LEAs) in

their areas of responsibility, and (3) examine different understandings across respondents of the LEL position and mission and how the work is carried out.

As the majority of questions were designed to characterize LEL program organization and operations, the data summaries will be largely descriptive, characterizing responses by frequencies and percentages of respondents. Descriptive statistics including measures of central tendency and variance (means and standard deviations) will be provided where appropriate (e.g., number of hours worked per week). Such data will be displayed using frequency histograms and other graphical representations of the distribution of responses across items with a fixed number of categorical or discrete choices, ranging from ‘yes-no’ items to items with numerous response categories.

For responses to items using rating scales (e.g., the effectiveness of varying modes of communication with prospective LEA grantees), which are assumed to have interval properties, inferential statistical tests may be performed to identify where significant differences exist as a function of respondent characteristics of interest (e.g., law enforcement liaison personnel who serve in a full-time versus a part-time capacity). Inferential tests may also be applied to examine the reliability of differences as a function of respondent characteristics of interest for items with quantitative responses (e.g., *In a typical month, how many in-person LEA site visits do you make?*).

One measure of LEL program effectiveness is its success in encouraging law enforcement agencies to participate in NHTSA-sponsored traffic safety programs designed to improve highway safety (alcohol crackdowns, speeding and seat belt enforcement, etc.). The survey includes one question that will be used as the dependent measure in analyses assessing LEL effectiveness (Question 30). Question 30 asks the LELs to report the number of LEAs within their area of responsibility, and of these, the number that participated in NHTSA’s highway safety programs in the previous year. These counts will be translated into LEL participation percentages, and then programs will be categorized as either those with “high LEA participation” or “low LEA participation.” NHTSA and GHSA will assist with the cut-point between high and low participation rate, after presentation of the range of responses to this question. The remaining questions will serve as predictor (independent) variables in an analysis (e.g., logistic regression) to determine their relative strengths in accounting for high versus low LEA participation.

Appendices C and D contain the question-by-questionnaire justification matrix for each survey (LEL and SHSO), with the right-hand column of the matrix describing how the information obtained for each question will be applied.

Qualitative data will undergo content analysis. This is the process for extracting common themes and distilling related information from a narrative. TA expects a manual review and coding process will be more than adequate to permit us to capture and summarize what is important in these responses. The manual content analysis will use the following steps:

- Read the information and record detailed notes;
- Review the data and process it for themes or patterns exhibited;

- Reduce and transform the raw data;
- Code the data for certain words or content, identify their patterns, interpret their meanings;
- Assemble, organize, and compress the data into a display that facilitates drawing conclusions – either graphics, tables/matrices, or textual displays;
- Interpret the meaning of the findings;
- Determine how the findings help answer the research question(s); and
- Draw implications from the findings.

Discrepancies between LELs’ and their supervisors’ perceptions of duties and procedures will be reported where questions are posed on both surveys (see cross-reference for LEL and SHSO Questions in Appendix E). TA will look for patterns to describe different understandings across respondents of the LEL position and mission and how the work is carried out. This will include differences in perceptions of key aspects of LEL programs and LEL duties between LELs in different programs, LELs within the same programs, and between State LELs and State Highway Safety Office personnel that work with LELs. TA will also look for patterns to describe the variety of LEL organizational approaches and the pros and cons of the different organizational approaches and how they are being carried out (e.g., whether a particular approach results in large percentages of LEAs participating in NHTSA grant activities).

One of the outcomes of the survey will be a descriptive matrix of programs by organizational type and program features and pros, cons and challenges for various LEL approaches in carrying out the LEL mission. In matrix development, LEL organizational types might be categorized (by column heading) as (1) SHSO-sponsored, (2) Non-profit agency sponsored; (3) Academic Institution-sponsored; or (4) State Commission-sponsored. Next, certain characteristics can be embedded in the matrix rows, such as (a) LELs per State (e.g. over 10, 5-10, less than 5, none); (b) LEL territory (e.g., State regions, county sheriffs, municipal LEAs); and (c) LEL job description. The matrix will include pros, cons, and challenges for each LEL organizational approach.

- Pros of certain LEL approaches (i.e., those that increase LEA recruitment) could be based on regional jurisdictions or focusing in on specific grant topics (e.g., the LEL only works on seat belt enforcement grant projects).
- Cons of certain LEL approaches (i.e., those that result in low LEA participation in NHTSA grant activities) could be the organizational type that has the LEL sponsor in the same office and their in-house work activities are not really in the scope of the original intent of a LEL’s function in a State, or possibly that the geographic region assigned to the LEL(s) is too large for the LEL to devote the necessary time with all LEAs.
- Challenges of some LEL approaches that affect ability to meet performance measures that may be outside of an LEL’s control (e.g., LEA policies).

Final Report

The final product of this study will be a full research report, published by NHTSA, which includes the following sections: Executive Summary, Background, Introduction, Research Methodology, Results and Other Findings; Limitations, and Conclusions. Appendices will also be provided (survey, tabulated data, etc.). It will be distributed to GHSA, the State Highway Safety Offices, the National Law Enforcement Liaisons Program, and other interested stakeholders through the official published report, available from NHTSA, and through presentations of findings at professional meetings and conferences.

The final report will only report findings in aggregate, in a manner that will not identify specific LELs, supervisors, or LEL programs. For example, variables, such as number of LELs in the program and other potentially identifying continuous variables will be recoded into categorical variables to protect the anonymity of respondents. Categorical variables found to have the potential for identifying respondents will be recoded into collapsed categories that protect respondent identities. All specific identifiers, such as location names (State, jurisdiction, etc.) will be removed as well to de-identify sources of responses, as will all text responses from open questions with information that could identify any respondents or State programs. No identifying information will be included in the final report.

Study outcomes will be used to inform funding agencies and LEL programs about LEL best practices and what is required to maintain maximum LEL program effectiveness. The information will support States and other agencies and organizations in their efforts to reduce and prevent injuries among the motoring public using traffic safety programs promoted by the LELs.

B.5 PROVIDE THE NAMES AND TELEPHONE NUMBERS OF INDIVIDUALS CONSULTED ON STATISTICAL ASPECTS OF THE DESIGN.

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