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Background

The Transportation Equity Act for the 21st Century (TEA21) (P.L. 105-178), section 1207(c), directed the Secretary of Transportation to conduct a study of ferry transportation in the United States and its possessions. In 2000, the Federal Highway Administration (FHWA) Office of Intermodal and Statewide Planning conducted a survey of approximately 250 ferry operators to identify: (1) existing ferry operations including the location and routes served; (2) source and amount, if any, of funds derived from Federal, State, or Local governments supporting ferry construction or operations; (3) potential domestic ferry routes in the United States and its possessions and to develop information on those routes; and (4) potential for use of high speed ferry services and alternative-fueled ferry services. The Safe, Accountable, Flexible Efficient Transportation Equity Act A Legacy for Users (SAFETEA-LU) Public Law 109-59, Section 1801(e) required that the Secretary, acting through the Bureau of Transportation Statistics (BTS), establish and maintain (biennially) a national ferry database containing current information regarding routes, vessels, passengers and vehicles carried, funding sources and such other information as the Secretary considers useful. In 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted, reestablishing the mandate that BTS maintain the ferry database.

Although ferries have a long history of moving passengers and freight in America, less is known about this mode of transportation than any of the other modes. Regularly surveyed, routine statistics like the number of ferry operators and the number of passengers carried were undocumented prior to the establishment of the National Census of Ferry Operators (NCFO). Part of this knowledge gap was due to the industries structure. State and local public transportation agencies operate some ferry systems, but others are privately owned and operated. Another complication is that many operators provide ferry services as well as dinner and sightseeing cruises, whale watching and other types of excursions. As such, it is often difficult to separate these activities.

The original data collection in 2000 was conducted because the existing data sources on ferry operations lacked some of the critical information needed for a national ferry database. To obtain the missing data, the Federal Highway Administration (FHWA) contracted to survey all known operators. The survey was conducted by the Volpe National Transportation Center, a branch of the U.S. Department of Transportation (DOT). Once the information was verified, it was assembled into a National Ferry Database. Subsequent data collections have been conducted by BTS. At each step, BTS has made revisions to the census questionnaire to improve the nature of the data collected, maximize the usefulness of the NCFO database, and adhere to the mandate's outlined in MAP-21. The NCFO database has been an important source of information for various industry agencies. It has also been a key source of information used in the development

of Intermodal Passenger Connectivity Database, also produced by BTS. The NCFO data is also used to inform the Secretary for the allocation of funds for FHWA's ferry grant program.

Population of Interest

The NCFO is a census of all known ferry boat operations within the United States and its territories, encompassing the 50 States, Puerto Rico, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands. In addition to ferry operations providing domestic service within the U.S. and its territories, operations providing services to or from at least one U.S. terminal are also included. Ferry operations included within the scope of the NCFO are those providing itinerant, fixed route, common carrier passenger and/or vehicle ferry service. Railroad car float operations are also included within the scope of the NCFO. Ferry operations that are exclusively non-itinerant, such as excursion services (e.g., whale watches, casino boats, day cruises, dinner cruises, etc.), passenger only water taxi services not operating on a fixed route, LoLo (Lift-on/Lift-off) freight/auto carrier services, or long distance passenger only cruise ship services are not included within the scope of the census. Efforts to enumerate ferry operations within the U.S. for the 2010 census resulted in a frame of 243 active ferry operations for the calendar year 2009. In 2014, a total of 202 operators were identified in the final enumeration for calendar year 2013. The drop from 2009 to 2013 was due primarily to the way in which they were defined and contacted. Many of the operators for 2009 were included under "umbrella" operators (e.g., State DOTs).

Questionnaire Design

The content of the questionnaire was originally established by the legislation requiring the data collection. The content was then reviewed and modified by the Office of Survey Programs using feedback from a number of DOT staff affiliated with the previous study. A draft of the questionnaire was reviewed by staff within the United States Maritime Administration (MARAD), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the American Association of State Highway and Transportation Officials (AASHTO), and the Passenger Vessel Association (PVA). In addition to those efforts, BTS conducted on site interviews with four ferry operators to get feedback on the 2010 form. The goal of these interviews was to make sure that the wording and layout of the questionnaires is easy to understand and complete. Additional changes were made to the 2014 form to bring the data collection in line with MAP-21 legislation (i.e., the NCFO database had to be consistent with ferry data collected by the Federal Transit Administration as outlined on their National Transit Database).

Data Collection

All known ferry operations are encouraged to participate in the NCFO. Since it is a census of establishments, each ferry operation is asked to select the person or persons within the operation who is most knowledgeable about the operation to complete the questionnaire. Thus, it is up to the operator to decide who the individual respondent will be. The Bureau of Transportation Statistics sends an initial mailing via USPS Priority or FedEx to each operator to invite them to take part in the NCFO.

In 2010 the initial mailing included a paper questionnaire and a cover letter that contained a web link to an online version of the questionnaire. Both versions of the questionnaire had many key fields pre-populated with data from the previous census since much of this data (e.g., vessel information, route information, etc.) may not change from year to year rather. BTS simply asked the operator to review the previous information for accuracy and either delete outdated information or add any new information that does not appear on their questionnaire.

A follow up reminder was sent out three weeks after the initial mailing that simply included a link to the web based questionnaire. A third and final mailing was sent three months later that included a second copy of the paper questionnaire. The remaining non-responders were then contacted by phone to ensure that they received their questionnaire and to determine if they need any assistance in completing the form. These phone calls were then followed up with actions specific to the operator to gain cooperation. In 2014 a paper questionnaire was mailed to ferry operators, followed by follow up phone calls to non-responders. In some cases PDF versions of the questionnaire were sent to operators via email upon request.

Confidentiality

By law (5 United States Code 552(b)(4)), any confidential business information we may collect is kept confidential and is not be made public or shared outside of the U.S. Department of Transportation. Under federal law (18 United States Code 1905), employees and contractors working on this census are subject to penalties if they make public ANY information that could reveal confidential business information.

Questions regarding passenger and vehicle boardings have historically been deemed by operators to contain business sensitive information. A final question is included in the questionnaire so the operator can indicate which questions, if any, they deem to be asking for confidential business information. Any information the respondent justifies as containing business sensitive information is excluded from the final data set. Population totals for these fields requires imputation, and is identified as such in BTS reports.

Data Cleaning

In 2010 NCFO, all completed NCFO operator information were entered into the database using the online data collection tool. The data collection tool contained built in editing rules to ensure responses contained the correct range and format as defined in the data schema. Additional clarification of data entries and data cleaning was conducted based on information gathered from the ferry operator's websites, as well as the US Army Corps of Engineers and USCG vessel databases helped verify the accuracy of the data we received.

In 2014, the data were entered into an Access database that mirrored the census questionnaire. This data was then exported into excel tables. A series of frequency and cross-tab reports were then produced by two separate analysts. These reports were then compared in a specially designed excel spreadsheet to help identify discrepancies in the data. This process provided for a much tighter control of the data entry and cleaning process from the previous effort.

Response Rates

The 2006 NCFO achieved a response rate of 89% through the efforts of a number of organizations and people. BTS followed the same strategies for the 2008 census and achieved an 88% response rate. These techniques include the use of an advance letter to inform operators about the census as well as articles in industry related publications and announcements at conferences; and availability of a toll-free number for respondents to call in the event they have questions about the survey.

In 2010 a total of 202 operators from the list of 243 providing service in 2009 completed the NCFO questionnaire for a response rate of 83%. Response rates were calculated using a simple ratio of the number of completed questionnaires over the number of active operators. In 2014, a total of 129 operators returned completed questionnaires from an initial list of 237 operators. After a thorough non-response analysis, 35 operators from the initial list were deemed out of scope (either because they did not qualify or they were covered by an umbrella agency return). This resulted in an overall response rate of 63.9%.

Imputation

The missing passenger boarding data for the 2006 NCFO was accomplished by way of multiple imputation models. A report detailing these efforts and their results can be downloaded from the NCFO main page. In 2008 the nearest neighbor approach was utilized to impute missing passenger boarding data. In 2010 and 2014, the multiple imputation approach was employed.