Rear Admiral D.T. Glenn
Assistant Commandant for Command, Control, Communications, Computers and Information Technology
U.S. Coast Guard
c/o Docket Management Facility (M-30)
U.S. Department of Transportation
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590

VIA DOT Docket Management System [http://dms.dot.gov]

RE: National Recreational Boating Survey: Collection of Information Under Review by the Office of Management and Budget
OMB Control Number 1625-0089/ Docket No. USCG 2007-28578

Dear Admiral Glenn:

Before providing my comments, criticisms and suggestions concerning the survey design and proposed survey instrument, included in the Coast Guard OMB package for public review, I need to make it perfectly clear that I and my company are currently pursuing legal action against individuals and organizations associated with the project funded by the US Coast Guard to the Foundation for Recreational Boating Safety, Education & Environmental Awareness (FRBSEEA), which led up to this OMB submission package.

Briefly stated, I, through my company Applied Research Services in Ann Arbor, Michigan wrote the greatest majority of the proposal accepted and funded by the Coast Guard for the development of a 10 year, biannual program of highly standardized surveys to meet the needs of both the Coast Guard and governmental and nongovernmental "partners".

Once I realized my private sector research company could not submit the proposal directly, I contacted a senior faculty member at Michigan State University who will ultimately brought in FRBSEEA as the organization meeting the requirements for submissions only from nonprofit boating-related organizations.

I firmly believe that the proposal accepted by the government set out a very high quality approach to allowing for a wide variety of "partner" input, as well as the strongest possible emphasis placed on implementing a research and sampling design, as well as survey instrumentation utilizing the highest quality methods available for such a project.

Before I was summarily terminated by the Foundation (which promised but never delivered me a contract as was promised repeatedly), nor has it yet paid my company “significant payables due”, I was engaged (without a contract) by the Foundation, with Coast Guard approval, to serve as the Chair of the Scientific Advisory Committee (SAC), which I assembled from some of the most prominent survey researchers nationally.

My overall responsibility was to review the prior boating survey research, evaluate alternative research methods and instrumentation, and utilize the SAC to “advise” on the total research design for a 10 year program of biannual nation/state surveys, including each of its elements from overall design (for example, cross-sectional surveys biannually versus a rotating panel design - which I specifically proposed in the accepted and funded proposal), relevant sampling frames to be considered, details of the sampling approach for each frame, mode(s) of data collection, and instrument development (utilizing the concept of a "core questionnaire" expected to be utilized each year of data collection, along with a “supplemental topics questionnaire” from which topics and questions to address them could be selected as required over time, by the USCG and its “partners”.

I believe a reading of the original proposal with OMB guidelines in mind would amply document the high level of science that I had hoped to bring to the project. For my own personal experiences until my termination, I can say without hesitation that the results of the project as reflected in the Coast Guard OMB submission demonstrates gross failures in project management and project deliverable utility and quality, largely since they were prepared and submitted by untrained and inexperienced Coast Guard project officials (who did not even involve the past CG Project Officer (Bruce Schmidt – at least during my tenure as SAC Chair) to have any role in the new project’s development, even though he had the most recent first hand project experience during his role in the 2002 survey.

The day-to-day person responsible for the administration of our project for the Coast Guard, Dr. Philippe Gwet, is simply unqualified to have been placed in his project manager/officer administrator role. He is an employee of a contractor hired by the Coast Guard to help staff their projects), and although mathematically and statistically trained, he repeatedly proved his ignorance of many of the most crucial tenants of survey research design, questionnaire development, and survey data analysis. He certainly repeatedly showed flagrant disregard for OMB and its requirements. Since he is also the signatory to the current Coast Guard OMB submission package, he has signed off on a package containing few of the details required by OMB to allow a thorough and thoughtful review of the proposed program of surveys, and worse, as noted below, the package contains "language" concerning the comparability of the proposed data collections to prior data, which as discussed (below) is a complete falsehood.

Equally culpable for the wholly inadequate content of the OMB submission package currently under public review is the project director of the funded Foundation FRBSEEA, who is a market research descriptive statistician, at best, spending most of the time working and traveling worldwide for the National Marine Manufacturers Association (the Foundations “large” for-profit arm) which was kind enough to send in a letter of support).

The project once implemented awarded favored “good-olde-boy” status to the academic researcher, from Michigan State University (a close “friend” of Jeff Hoedt, the CG’s Administrator over the project, and the recommender of its funding to the Admiral). This senior faculty member, who has received substantial funding from the Foundation in the past, and who has a close personal relationship with the Foundation’s project director, appears to have been assigned the ultimate responsibility for the draft questionnaire presented in the OMB package, after I was terminated. The MSU faculty member referred to, now specializes in market research quality

Internet surveys of known boaters, and surveys of boat show attendees. Admittedly, I could be wrong... and somebody else with less than appropriate competence did the questionnaire development work reflected in the submission.

Whomever the draft questionnaire authors were, they show in their draft OMB instruments a less than amateurish understanding of basic telephone questionnaire construction techniques intended for CATI implementation, much less any evidence that they have training or knowledge in the areas of measurement theory and psychometrics, particularly related to measurement implications in ongoing programs of survey research, nor in theories useful in explaining important boating-related behaviors including unsafe practices and accidents and injuries useful in program development and evaluation, a key objective of the CG National Boating Survey.

The SAC I Chaired was a parallel organization to the group I invented and named in the proposal called the Collaboratory of Partners (COP), which was Chaired by the MSU academic (above). The SAC and COP were to work in parallel and tandem, and he and I were to be equal project-co-directors (at least per out proposal - although never in reality where he was always given the loudest voice by the Foundation's project director).

As the original proposal clearly describes, the COP (composed of governmental and private sector "partners", and the USCG) was to identify its data requirements over the anticipated 10-year horizon and pass them to me and the SAC for "translation" into a high quality total research design including the overall research design, its sampling requirements and its instrumentation. Per the proposal, we jointly committed that SAC design efforts would be routinely shared with the COP, to ensure that we were meeting its needs, through the development of the most appropriate high quality research design and (repeating "core" and supplemental topics) instrumentation plausible (emphasizing minimizing both sampling of measurement errors to the extent possible).

As was emphasized in the request for proposals which led to our submission, the Coast Guard clearly was keenly (and appropriately) focused on the importance of "standardization", and a nationally convened meeting sponsored by the Coast Guard a couple of years earlier, emphasized the same requirement. This emphasis on standardization was not only for the obvious reasons, but more importantly based on a history of surveys since the 1970s which are totally incomparable to each other in virtually every possible way (from total research design, to sampling frames, sampling approaches, respondent selection, data collection methods, instrumentation and their" items" and response categories, etc.

My understanding when I began drafting the proposal was at the Coast Guard wanted to make up for many years of less that high-quality surveys, and/or the complete lack of ability to compare data over time... which "all" OMB guidance strongly emphasizes. Furthermore, at our pre-selection meeting with Coast Guard officials, they specifically emphasized the importance of standardization where ever possible, since they had a primary goal in be able to look at "changes over time".

Again, I refer readers back to the original accepted proposal. It placed exceptional emphasis on having me and the SAC design a "program of research" covering a 10-year period in which I specifically offered to ensure appropriate comparability in methods and instrumentation over each biannual survey (which meets USCG/COP data requirements). Through a high degree of

standardization in the selection of sampling frames, sampling procedures, and instrumentation, it was my goal to avoid experiences with the Coast Guard's surveys which, going back to the 1970's never use the same survey research vendor more than once. Upon review of Coast Guard National Boating Surveys prior to today, it is not surprising to have found when I developed a comprehensive matrix of each prior survey and its research design and questionnaire content that each vendor implemented their own methods and instruments, virtually guaranteeing incomparability of crucial data a problem I would think the OMB would place a high priority on avoiding again in the future, which is clearly predictable based on the current Coast Guard OMB submission.

As the original proposal lays out in detail it was my responsibility with the SAC to ensure standardization and comparability in subsequent surveys across a "total survey design" focused on the assessment of "change" over time, by providing highly detailed sampling plans for each sampling frame to be used, so that in subsequent surveys over time each vendor would utilize the same detailed methodology. It was also my responsibility with the SAC to ensure the "core" questionnaire to be used in each biannual round of data collection, and the "supplemental topics questionnaire" (both developed to meet USCG/COP data requirements) utilized appropriate question and response category formats and metrics to allow the reliable detection of important changes over time).

Overall, the information provided by the United States Coast Guard in this OMB submission process to date amply demonstrates that the Coast Guard learned virtually nothing from its admittedly poor performance in the management development implementation and data dissemination of its boating surveys over the last 30 years, and it is intent on providing such a loose sampling frame work and shockingly flawed questionnaires as reflected in its current OMB filing, that the potential for collecting high quality data that can actually be legitimately and rigorously analyzed to identify how boating and boating safety can be improved over future years is close to zero.

Subsequently, I will provide specific and detailed examples of what I perceive to be substantial methodological flaws in the research design, the sampling frames, and the proposed instrumentation.

Before doing so, however, I believe it is important to note how little detailed information has been provided to OMB concerning specific elements of the project and its methods that OMB specifically requests be included in the agency's submission package. (see [1]QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS - Office of Information and Regulatory Affairs, Office of Management and Budget, January 2006 (which I provided to the USCG).

SPECIFIC CONCERNS ABOUT THE OVERALL RESEARCH DESIGN

OMB, in its guidance language to agencies recognizes how crucial it is to consider in any survey (whether a 10 year long program of biannual surveys such as proposed by the Coast Guard, or a single cross-sectional survey), the importance of the "total research design". As OMB officials well know, there are many well-known textbooks and those written for practitioners of surveys which

emphasize that once the key research issues have been identified (e.g. key data elements, how the data is to be used (for example, for trend or change analysis, and how it is to be analyzed (and results presented) to ensure that it meets the requirements of its end-users), each element of the total research design (the overall design, sampling frames, sampling approaches, instrumentation, analysis approaches, etc.) needs to be consistent with such higher-level requirements.

The original proposal accepted and funded by the government to FRBSEEA tried to educate the Coast Guard to get them to understand that both research designs as well as data analytic capabilities have moved much of the academic and government research community to recognize that independent cross-sectional surveys over time, even when they collect the same data with the same precise methodologies, are nonetheless limited in what is recognized to be the area of most crucial concern in most ongoing programs of survey research. That is, as noted above, the assessment of whether “change” has occurred over time, which is the very essence of the Coast Guard Office of Boating Safety’s mission.

As the USCG OMB package suggests, the resulting data from the 10 year program of research is premised on a variety of data uses and users, from providing national and state level estimates of specific characteristics of boats and boaters (and related safety issues), as well as to help identify “prevention intervention” programmatic areas where boats and boaters safety can be improved, to assist states in the implementation of needed programmatic assistance, and to provide key data to policy-makers.

As has been the practice in prior Coast Guard surveys, the overall research design proposed in the OMB package carries on the (previously failed) conduct of independent cross-sectional surveys biannually over a 10-year period. As Kish (Survey Sampling, John Wiley & Sons Inc., 1965) and many other survey and sampling experts since have long recognized, while independent samples (assuming true comparability across all of their elements) provide the potential for reliable estimates of change over time, or trends in the data, they only provide the ability to look at "gross changes” not “net” changes. Reliably assessing and monitoring net changes over time, allows researchers to observe how "individuals" change their individual boating-related behaviors (attitudes and relevant beliefs), which is fundamental to intervention and training program planning and program evaluations, while the assessment of gross changes does not provide such crucial programmatically useful and "actionable" information.

In the original proposal accepted and funded by the government to FRBSEEA, I gave specific attention to such issues and personally recommended that the government consider implementing a "rotating-panel" design for its 10 year program of biannual surveys. Such designs are increasingly frequently utilized in government and academic research. Their fundamental premise is that during the first year of data collection (particularly relevant to the RDD survey design offered by the Coast Guard) a high quality national probability sample would be drawn.

In a rotating panel design, during the second biannual survey an appropriate fraction of those individuals interviewed during the baseline year would be randomly selected and included in this second survey. Determination of what that sampling fraction should be from the first year for inclusion in the second survey requires statistical “power” calculations beyond the scope of this commentary. However, OMB officials are certainly well familiar with the methodologic and

statistical issues, no doubt.

The remaining (and typically greatest proportion) of the second biannual survey would be composed of an entirely new RDD probability sample, ensuring that highly accurate national and statewide estimates can be made.

There are many "high science" variations on the rotating-panel design approach. Depending on the specific project and its requirements, sometimes respondents are carried over multiple waves of interviewing… but I am competent that OMB officials are well aware of the costs and benefits of such approaches.

Overall, a rotating-panel design provides the best of both worlds... collecting information most useful for program planning and evaluation by observing how individuals change over time, while at the same time providing reliable current population data for policy-makers.

It should also be noted, that the total costs of a 10 year program of planned survey research over the years should be substantially lower if a rotating-panel design is implemented. Such cost savings arise since a large fraction of the cost of completing an interview with a randomly selected household/respondent using RDD methodologies is in reaching "eligible" households... rather than businesses, unassigned telephone numbers, continuous "ring-no-answers", constant busies, etc. By collecting appropriate re-contact information on individuals during the baseline survey, “maintaining” the fraction of the sample to be reinterviewed two years later (typically via letters and postcards during the two-year interval – at VERY low cost!) to help make the “panel” willing to complete their next interview The greatest majority of households to be reached for their second interview two years later will also have very low costs associated with reaching these households (since it's telephone number is known and other sources for contact in case that number is not working two years later would be collected during their baseline interview).

It is worth noting that a copy of the original proposal (with specific details concerning my strong recommendations for a rotating-panel design) was not only accepted by the government without any negative comments once funded, and was sent to each member of the SAC. During the SAC’s first formal meeting, I also spent substantial time speaking to the importance of seriously considering the rotating-panel design approach. I can say with complete truthfulness (and a professionally generated manuscript from tape recordings of the meeting) that there was never any arguments presented against such a design, and substantial support for it.

Even though the rotating-panel design was discussed in detailed in the original accepted proposal and accepted by the original SAC, the Coast Guard OMB submission never spoke to the potential of a rotating-panel design, nor did they give any specific justification for what ultimately turns out to be the old way of doing surveys over time... treating each as an independent sample.

My interpretation of OMB requirements for this submission suggests that the Coast Guard owes public and OMB reviewers justification for why they are continuing to utilize antiquated cross-sectional approaches over 10 years rather than an overall research design which truly addresses their fundamental concerns about reliably assessing changes and trends over time, with data that is truly both accurate and “actionable”.

CONCERNS ABOUT SAMPLING ERROR ISSUES

CONCERNS ABOUT DUAL-FRAME AND DUAL MODES OF DATA COLLECTION ISSUES

The Coast Guard proposes to use a dual-frame and dual method of data collection design, including a population based random digit dialing telephone survey component, and a second frame based on information available to the Coast Guard from registered boater lists collected by individual states, using a mailed survey approach.

The Coast Guard provides virtually no useful information concerning whether these data from different sources and based on different methods are to be compared to each other in some way or combined with each other (which does not seem to be the case) in some way. Certainly there is overlap in the instrumentation for each frame concerning boat characteristics, for example.

To what extent has the Coast Guard assessed how these two sources of information will be compared, combined, or whatever? The information concerning this important matter in the Coast Guard OMB package barely addresses such issues, and specifically fails directly to justify the clarify the criticality of both components and how they complement or supplement each other.

OMB requires submitting agencies such as the Coast Guard to provide such justification, where is it? (See [1]QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS - Office of Information and Regulatory Affairs, Office of Management and Budget, January 2006).

In such justification I believe it is also important to justify the two different sampling frames, their "costs and benefits" from utility, reliability and generalizability perspectives, and the implications of utilizing different modes of data collection on the quality of the data collected.

CONCERNS ABOUT THE MAIL SURVEY'S RESPONSE RATE ISSUES

It is simply a truism that over the last 10 years and longer we have seen substantial drops in response rates across the most prominent and well respected surveys nationally. To a large degree, such factors are beyond the control of survey researchers assuming they use appropriate and "proven" methods to enhance the potential for response rates (respondent and item) that are as high as possible.

Concerning the sampling frame based on boater registration lists, "based on the results of the 2002 National Recreational Boating Survey", the Coast Guard anticipates "a response rate of about 35% from the mail survey" of registered boaters (pg 15). How can such a low expected response, which is only likely to decrease with each biannual survey, be considered by the government to provide "precise estimates" of anything?

Furthermore, it should be noted that in the 2002 survey, monetary incentives were provided to mailed survey respondents, nonetheless resulting in such low response rate that it's generalizability was questioned by the CG Office of Boating Safety, and the data from the 2002 survey were never publicly released (according to Jeff Hoedt at a publicly recorded meeting).

Why would that very Coast Guard Office of Boating Safety responsible for the proposed project and for the preparation of this document recommend in its OMB submission a sampling frame providing data that have proven to be fundamentally flawed in so many ways as to be considered useless according to the Coast Guard itself?

Speaking of "monetary incentives", it is interesting that I could find no evidence of any discussion of the value (or lack thereof) of such an approach given prior experience in similar Coast Guard surveys. I would have thought that there would have been a fundamental level of detail on this topic as required in the OMB package.

To heighten concerns about this proposed registered boater mailed survey and associated frame, in the OMB package the Coast Guard states (pg 10): “The Coast Guard anticipates that a few states (3 to 7) will not provide their registration databases for sampling, although those states are not known at the present time.”

It is important to point out that in the last Coast Guard National Boating Survey (2002), 19! states did not provide registered boater lists to the Coast Guard or survey vendor. Even worse, a substantial number of those states are bounded by the Atlantic or Pacific oceans or Gulf Coast, which certainly are known to have very different boater and boat characteristics than in-land states.

During the first SAC meeting I organized and ran with Coast Guard participation, a presentation was made by the Ph.D. Director of the 2002 survey, who has a superb record of scholarly survey research. She specifically urged that boater registration lists not be used in the future because of their lack of generalizability and projectability (based on “coverage” and response rate concerns, among others).

What has the Coast Guard specifically done to reduce the number from a 19 states refusing to provide registered boater lists in 2002 to the Coast Guard's estimated 3-7 states for the proposed new surveys?

OMB document requirements require the USCG to provide such information based on quite contrary prior experience. Furthermore, OMB requires sufficiently detailed information to allow OMB to judge whether the data obtained through selected sampling frames meet the high standards expected for federally sponsored national surveys of such importance to the public's health and safety.

CONCERNS ABOUT APPROACHES TO MAXIMIZING THE RESPONSE RATE FOR THE MAIL SURVEY OF REGISTERED BOATERS

There is a very substantial body of methodological research concerning approaches for maximizing response rates to both mail and telephone questionnaires. The OMB package submitted by the Coast Guard does not contain a single reference to even the most well respected of all of these works... including by Dr. Dillman, who I selected to be on the SAC among other nationally prominent RDD and telephone survey experts who have published prominently on such issues.

The brief few paragraphs concerning approaches to maximizing response rates in the OMB package are also internally inconsistent, and demonstrate to great potential for lack of standardization over biannual surveys... (pgs 15-16)

> 3. We plan to send two reminders at approximately 2 to 3-week intervals to sampled respondents. The first reminder will be a postcard after 2 weeks thanking those that had completed the questionnaire and encouraging those respondents who had not to complete theirs as soon as possible. After two additional weeks, the third reminder sent will be a complete packet with a second copy of the survey. There is also the possibility of a telephone follow up for respondents with a known telephone number. Although the states boat registration databases generally contain only owners' addresses, match services provided by commercial vendors could be used to obtain phone numbers."
>
> The CG also wrote on page 15 that "based on the results of the 2002 National Recreational Boating Survey, we anticipate a response rate of about 35% from the mail survey. We expect to receive at least a 20% response to the first mailing and first reminder; a 15% response to the second reminder; and a 20% response to the third. If we have still not received a 35% response rate after 6 weeks, we will respond with a last reminder."

Per paragraph #3 - Huh? "We plan to send two reminders at approximately 2 to 3-week intervals"… Waving the flag of "standardization" which is it, and based on what empirical evidence? More inconsistencies are in the second sentence above, where the three-week interval is not even mentioned. So I guess the Coast Guard really does not care about "standardization" since vendors could interpret such language anyway they want. And the paragraph ends with another fundamental deviation from the concept of standardization to ensure comparability, since there is also the "possibility" of a telephone follow-up for respondents with a known telephone number from a number "matching service". So in some years there may be a telephone follow-up component and in other not.

The paragraph below #3 not only suggests that the Coast Guard is willing to accept such a low response rate as 35% that the probability that responders represent the population of interest must be called into question.

Furthermore, the comment that "If we have still not received a 35% response rate after 6 weeks, we will respond with a last reminder." Another shocking statement! With the best possible interpretation what the Coast Guard considers to be an acceptable response rate fails to meet any rational academic and government standards... including the OMB's. Worst case is the potential interpretation that survey vendors might consider sampling activities that are not fully probability-based... which can be inferred from the notion that there is a magic response rate to be reached after which data collection will be closed. Not exactly "high science" or appropriate guidance to future vendors expected to do high-quality "standardized" survey research, allowing the collection of comparable data over time.

CONCERNS ABOUT THE RDD SURVEY COMPONENT

In general, most of the obvious and appropriate design considerations were covered in various parts of the OMB package specifically concerning the random digit dialing (RDD) telephone survey component.

While it is obvious that the sampling approach utilizing the Waksberg-Mitofsky RDD methodology was obviously designed by sampling experts, what was missing again, however, were specific details of the sampling process (to guide future vendors to utilize a standardized approach to ensure comparable data over the 10 year program of research). Also missing were specific justifications and error estimates anticipated concerning adult, child and “boat” level data for critical survey estimates. While it was quite lovely to see pages of current population statistics relevant to the first survey in the OMB package, how relevant they will be for future surveys is more than in doubt.

My goal as the Chairman of the SAC, and the individual responsible for writing up the methodological details, was to have a step-by-step "protocol"... obviously standardized, by definition, so that different vendors over different years would implement the sampling methodology in precisely the same way (given no major external pressures to modify the initial design).

Similarly, I would have provided detailed step-by-step procedures concerning the appropriate weighting of the data, to account for different probabilities of selection, within the RDD frame and within the household. More about “weighting of the data” is discussed subsequently.

I would also have provided detailed information concerning approaches to maximizing the response rate for the RDD survey component for adults and child data. As above, incentive issues should be discussed, as should the implications of the anticipated response rates to the RDD survey related to both adults and children.

As best as I could understand the sampling design for children from the OMB submission package, nowhere does it recognize that the number of child on whom data is collected would be substantially smaller (by about 2/3) than the adult sample size, since information to be collected on a randomly selected child is through an adult “proxy”, in households were both a children and adults live, which is a minority of all households in the US.

CONCERNS ABOUT THE ANTICIPATED RESPONSE RATES FOR THE RDD SURVEYS

Based on expected response rate data presented in Table 1 (of the CG OMB submission): Cost Evaluation of the Surveys, without quibbling about small details not included in the table, the effect of response rate for the proposed RDD surveys must combine the expected 65% response rate to the screener with the expected 40% rate for the questionnaire yielding (.65 X .40= ~26%).

Unless I am missing something obvious, an expected response rate of 40% to a national survey of such importance immediately raises most serious questions about differences between responders and nonresponders. The more they differ, the less generalizable and reliable the

data are for populations of interest.

I would hope that OMB would guide Coast Guard staff to develop and implement sound and tested procedures to ensure that the response rate is as high as possible. Sufficient details were not provided in the Coast Guard OMB submission to make the case that such rigorous response rate enhancing procedures are known to the Coast Guard and its staff.

Imagine if the response rate approximates 26%. If anything close to that is the expectation, OMB should disallow the project since it has little chance at huge cost to produce quality data.

CONCERNS ABOUT MEASUREMENT ERROR ISSUES

CONCERNS ABOUT THE QUESTIONNAIRES

The draft questionnaires presented is more poorly conceived, documented, formatted, and justified than other elements of the Coast Guard OMB package.

Unlike my comments concerning the RDD sampling approach detailed in the OMB submission package, which was obviously developed by highly competent sampling professionals, the draft questionnaires, particularly the RDD interviews suggest development by most likely "market researchers", with little or no training in design considerations for telephone surveys, nor knowledge of basic RDD questionnaire (and “item/response category”) construction techniques, particularly when measuring change over time is of the fundamental interest.

Listed below are a series of fundamental flaws which severely threatened the internal validity and utility of any data produced, except for potentially cross-sectional analytic purposes rather than time series analyses, a much more robust and powerful analytic approach particularly relevant and useful for program planning purposes, policymaking, and program evaluation (all expressed purposes of the project according to this submission by the Coast Guard).

Please give appropriate consideration to the following concerns which are based on measurement theory, "best psychometric practices", empirical evidence from other surveys from many fields, and again which account for the basic requirement of the ability to detect important changes over time reliably.

The following comments and criticisms are in no particular order of importance.

Looking at the random digit dialing telephone questionnaires in particular, I again feel like I am looking at an instrument that was churned out by a market research firm, and indeed one with little experience in telephone survey instrument development or proper formatting of questions, response categories, and instructions to interviewers concerning how to handle particular anticipated problem questions.

Such problems include "questions" embedded in tables with multiple questions, particularly with questions at the top of the table. In many cases, such tabularized question formats used in most of the draft questionnaires will require future survey vendors to untangle and translate into an RDD questionnaire with complete questions.

As ONLY an example (among many across ALL questionnaires), look at page 2 of the U.S.C.G. Screener Survey for States Sharing Boat Registration Data. Question 4. is below. (Following the sampling tables.)

4. Starting with yourself, what is the age and first name of everyone living in your household?

Persons	Gender	Age	Boated in 2007?	Boated prior to 2007?
Yourself	❑ Male ❑ Female		❑	❑
Person 2	❑ Male ❑ Female		❑	❑
Person 3	❑ Male ❑ Female		❑	❑
Person 4	❑ Male ❑ Female		❑	❑

For a CATI questionnaire, this question table represents four “independent questions”. If this was given to five different competent survey researcher vendors, they would translate two of the questions, “Boated in 2007” and “Boated prior to 2007” into actual question formats that every interviewer would be expected to use. It is completely realistic to predict, however, that each of these five vendors would write different forms of these questions! So again, out the window goes comparability across surveys.

Why not consider laying out the draft CATI (RDD) questionnaires, as they should be, one question following another. “Standardized” all questions in table formats currently by rewriting the 2 non-questions such as:

> “About how many times did that 23-year-old male boat in 2007?”
>
> _____ # (Zero is acceptable)
> DK (Probe for closest answer before accepting DK)
>
> And…
>
> “About how many times did that 23-year-old male boat prior to 2007?”
> _____ # (Zero is acceptable)
> DK (Probe for closest answer before accepting DK)

By the way, psychometrics and measurement theory would dictate that rather than saying “2007”, the precise time period of interest be embedded in such questions (for example, from Jan 1 – Dec 30, 2007). On this same topic, it seems relevant to note that boating surveys in prior years conducted on behalf of the Coast Guard typically used an Oct. 19XX – Sept 19XX + 1 timeframe as the boating year of interest.

Why was the change to using the calendar year or as the basis made? Since interviewing was anticipated by the government to begin in approximately October 2007 (now unrealistic, it would seem), from a psychometric perspective, the earlier approach is more sound, since it minimizes recall bias, because for many American boaters, boating activities substantially drop off after the

Labor Day holiday, while greatest use is in summer months preceding it.

Again, where is the justification by the Coast Guard in making this change? Furthermore, what are the implications for recall bias?

Notice also that in the verbiage following the question #4, there is not even any suggestion these boating topics questions will be covered at that moment!

The questionnaire authors of this table and tables similar to it across the RDD surveys in many cases provided also provide no indication whether or not there should be “neutral probing” done if the answer is "Don’t Know" or give a “Refusal” to any of the four questions, or what code should be used for such responses so that they are consistently used over the 10 yr. program of surveys.

As discussed subsequently, providing standardized “Don’t Know” and “Refusal” response categories is both an art and science that only experienced CATI questionnaire developers can bring to the project. Further discussion of such categories is provided below, since it extends beyond “questions” in tabular format.

This Q4. table also shows the lack of the authors awareness that it is their obligation to provide crucial interviewer (and CATI programmer) instructions where required. For example, the table allows for four person to be enumerated, which is goofy. Many US households have substantially larger household compositions, with the 2000 census finding 2.59 on average. How many persons should the enumeration data be collected on for this survey? Let other national surveys guide this decision. Obviously, if a cut point must be used, for example limiting the total number to 8 or whatever, interviewers must be given "standardized instructions” on what to say if there are more people than slots allow.

One other rather important and discouraging finding in the above question is that the authors clearly do not understand that there are standardized methods for collecting household composition data. As written, after the respondent answers the questions for themselves, they can mentioned a child next, or an adult… at their whim. That is not consistent with the concept of EPSEM (or at least “known”) probability sampling, which most competent survey researchers strive for. I believe you will find that it is standard government and academic practice to ask respondents to enumerate their households in a standardized manner... for example, "Starting with the oldest member of your household, what is their age and gender? What about the next oldest household member?... etc.”

Hammering appropriately on my redundant theme... imagine how many different ways different vendors over the years could rewrite Q4. (and other questions like it) as independent items (as CATI systems require), unless it is properly re-written “now” with standardized “rules” for item construction typically used by telephone survey professionals, for all future vendors to use to ensure comparability.

Before pointing out other serious questionnaire flaws which demonstrate the lack of knowledge about "best practices" in CATI survey development, I hope that readers will reflect on the

number of serious methodological problems easily illustrated by selecting Q4. above, as an exemplar of a wide range of serious questionnaire flaws. If a competent CATI questionnaire design methodologist evaluated each question as currently constructed individually, without doubt, the greatest majority would fail the tests of science, and thus jeopardize the entire government expenditure for this important multi-year program of survey research.

Below I select a variety of other questions from the included instruments in the OMB package to make certain "obvious" critical comments not associated with Q4. above, but which are nonetheless equally flawed.

Take the very next question, for example.

5. Does any one in this household own a REGISTERED recreational vessel?
   - ❑ Yes
   - ❑ No

First, where is the “Don’t Know” category? Does the USCG and its questionnaire’s authors really think that a significant fraction of randomly selected respondents will not respond “Don’t Know to this question? And the problem is exacerbated by using the term "REGISTERED recreational vessel” *which should have been clarified and defined in the question itself.

Furthermore, to ensure that numerical values assigned to analysis datasets are consistent over different survey years (to enhance the potential for comparative analyses), the survey authors should remove all checkboxes (undoubtedly from their typical Internet survey experiences), and place numerical values in front of each response category that CATI programmers can consistently enter each surveys data set (e.g. 1. Yes 2. No 9. DK), enhancing the potential for relatively straightforward comparability analyses of data over the years.

A brief related comment is in order. The number is assigned to each response category should not be arbitrarily assigned, but rather assigned based on a "standardized ‘best practices’ approach" which meets common response category scoring conventions. For example, this Yes/No/DK question could also be scored with “0”= YES, “1”=No, etc. Knowledge of appropriate metrics to use for scoring ultimately should be driven by the formats anticipated for presenting data results, and the analytic requirements routines being executed during analysis. Unfortunately, the Coast Guard has provided literally no relevant detailed information concerning analysis plans and associated data metric requirements, as OMB guidance documents require.

Another rather shocking discovery during my review questionnaire(s) review is the Coast Guard's flagrant disregard for highly detailed and specific OMB requirements regarding the measurement of questions including race and ethnicity. In the Telephone Survey for States Not Sharing Boat Registration Data To Be Completed by Adults Residing in U.S. Households question 112 and 113 on these topics (immediately below) have no resemblance to the required OMB content.

112. Please indicate the racial type that best describes you.

- ❑ African American or Black
- ❑ Asian or Pacific Islander
- ❑ Caucasian or White
- ❑ Native American or Aleutian Eskimo
- ❑ Mixed Race
- ❑ Other

113. Are you of Hispanic or Latino origin or descent?

- ❑ Yes
- ❑ N o

The OMB standards for data on race and ethnicity (Source: QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS - Office of Information and Regulatory Affairs, Office of Management and Budget, January 2006 (which I provided to the USCG) provide a minimum set of two categories for data on ethnicity.

Hispanic or Latino and
Not Hispanic or Latino,

and five categories for data on race collected from individuals:

American Indian or Alaska Native,
Asian,
Black or African American,
Native Hawaiian or Other Pacific Islander, and
White

Standardized questionnaire formats utilizing these categories are available in many federally sponsored OMB approved surveys. It is notable that most of them include a “Refusal” category (sometimes with specific instructions to interviewers about whether to probe or not, and if so with what standardized "neutral, unbiased " approach(s) including "standardized verbiage" all interviewers use when probing.

As an aside, the whole issue of Don’t Know and Refusal categories obviously needs greater consideration than the questionnaires presented for review provide, as suggested earlier.

Most RDD/CATI survey scientists would agree, I believe, that decisions about when to “allow” Don’t Know responses are nontrivial. Rarely is it appropriate to decide that each and every question includes a Don’t Know and a Refusal category. To use the most obvious example, most academic and government questionnaires do not include/allow Don’t Know response categories regarding "factual matters" which the individual, by definition, knows the accurate answer to. A classic example would be for the gender measure, or age, etc. in such cases where a “Don’t Know” (DK) response is received, the questionnaire would typically have specific verbiage and instructions to interviewers concerning how to probe without bias or losing the respondents willingness to complete their screener or interview. Making such corrections to the draft instruments now will ensure greater consistency in the interview administration process over time, helping to ensure the reliability of change oriented data analyses over the years.

A final comment on Don’t Know and Refusal categories. I believe it is a fairly common practice

among rigorous telephone survey researchers during the questionnaire development process to review each and every question individually to determine the appropriateness of these categories, and to specify within the draft questionnaire how unexpected DK or Refusal responses will be handled by interviewers in a standardized manner.

I would urge that OMB requires that each and every question in each survey instrument be thoughtfully evaluated concerning such factors by a competent CATI survey questionnaire researcher before final OMB approval is given.

On the theme of measuring "demographics", hopefully an attempt will be made to revise most of the demographic questions to conform with standards set by national survey instruments including by the US Census or taken from other nationally respected surveys. These include measures relevant to demographics including education and income, location information concerning the respondent (for example, FIPS codes), etc. Compatibility in demographics with other national surveys, particularly concerned with similar topics (for example, by the US Fish and Wildlife Service), is a particularly important consideration, since there may be requirements to compare and contrast survey data from different government sources.

In general, contrary to OMB submission requirements, the Coast Guard OMB clearance package under review provides no information concerning the sources for any questionnaire “items” were presented. This would suggest that previously used questions from prior Coast Guard surveys measuring precisely the same topics were not reviewed by the draft questionnaire's authors. Had this been done, the authors at least would have learned something about proper item response category construction for CATI interviews, if not providing them with at least some “better” measures then they likely created on their own.

On the topic of introductions to households and their enumeration of eligible respondents for random selection, competent reviewers would undoubtedly agree that introductions to questionnaires to household members not only are required to contain specific content and language required by OMB (for example, concerning confidentiality and freedom to choose whether to cooperate or not), but among their other important purposes are determining whether the telephone number reached is eligible for the survey (likely excluding businesses, college dormitories, etc.), and then subsequently "enumerating the household" for eligible respondents for the random selection process of the individual to represent the household by completing the interview.

I have, and I would expect that OMB will have, great curiosity concerning why respondents of different ages are considered to be eligible across the different survey instruments provided in the OMB package. For example, in the introduction to the Telephone Survey for States Not Sharing Boat Registration Data To Be Completed by Adults Residing in U.S. Households, the 3rd paragraph reads “Are you a person 16 years of age or older who resides in a U.S. household?” If yes, they continue with more questions. Hence, for this questionnaire a 16 year old is considered an adult.

Yet, in the “Screener Questionnaire for States Sharing Boat Registration Data” and in the “Screener Questionnaire for States NOT Sharing Boat Registration Data” the equivalent

question reads: “Are you a person 18 years of age or older who resides in a U.S. household?” If yes, they continue with more questions. Hence for these questionnaires an 18 year old is considered an adult.

Paradoxically, here we find that in screening the household and enumerating it, an 18 year old adult must provide that information. Counter intuitively, to say the least, as noted immediately, above a 16-year-old appears to be eligible to complete the main questionnaire, but not the screener!

How does the Coast Guard justify the currently proposed approach with mis-matched ages? What are the consequences to using the proposed form from a sampling error and representativeness perspective?

At least one more crucial issue deserves to be brought out on this matter. All forms of the question, whether asked of a 16-year-old or an 18-year-old or older, ask if the person on the telephone “resides in a US household”. To state the obvious, far and away the greatest majority of American adults live in a US household! The Coast Guard and the government need to ensure that they asked whether the individual on the telephone is a "resident" of the household being called!

As currently constructed, a childcare worker or neighbor who happens to answer the phone during a neighborly visit can become the eligible respondent, and the way subsequent questions work, they could easily complete the rest of the screener or questionnaire based on their own household not on the randomly selected household! Obviously, such an error would completely destroy the ability of project surveys to claim that they are based on true probability sampling techniques, and any data produced would not meet the most primitive requirements for high quality survey research.

Next, I wish to call your attention to questions in various instruments in the package which utilize question construction approaches relying on open-ended responses.

In the Telephone Survey for States Not Sharing Boat Registration Data To Be Completed by Adults Residing in U.S. Households I have selected Q.8 (below), as another example of less than competent questionnaire development practices.

> **8. Why didn't you wear a life jacket when out on the water on the "identified boat” 2007?** (Explain.)
> _____
>
> _____

Besides missing the word "in" before 2007 (and DK and Refusal issues), what is a completely open-ended question like this doing here? First, collecting completely open-ended data when unnecessary increases respondent burden, a fundamental OMB concern, since it requires at least the interviewer to expend significant time typing out textual responses (typically required to be as close to “verbatim” as possible).

Obviously, Coast Guard officials and project staff responsible for questionnaire construction did

not take the time to evaluate prior boating surveys conducted by the Coast Guard where similar questions have been asked. Although the form of the question itself might not be identical, the responses provided from prior surveys would have allowed Q8. and similar open-ended questions, to be largely closed-ended... with an open-ended response category for “Other responses”.

Without even bothering to look at prior surveys, it is obvious that the above question should have been written using a form such as:

> "8. Why didn't you wear a life jacket when out on the water on the "identified boat in 2007? (INTERVIEWS, DO NOT PROBE UNLESS DK GIVEN. PROBE BY SAYING: "Are you sure there aren’t any reasons you did not wear your life jacket on the identified boat in 2007?”)
>
> 1. No life jackets available
> 2. Not enough lifejackets for all boaters
> 3. I do not need a life jacket because I am a safe boater
> 4. I do not need a life jacket because I am an expert swimmer
> 5. Lifejackets are too expensive
> 6. Lifejackets are too uncomfortable
> 7. Always boat in safe waters (e.g., few boats, waves, winds, near shore, etc.)
> 8. Etc. (from prior questionnaires)
> 9. Any other reason mentioned (specify) _____
> 99. DK (NOT ALLOWED WITHOUT PROBING) ()

A methodological question associated with the form I have offered immediately above, is whether or not it should be a “select all that apply” question or a “Main Reason” only question. For each question if the instruments, clear instructions must be given to both interviewers and respondents concerning whether multiple answers are allowed or only one.

Again, I encourage readers to generalize from this example to many other questions in the questionnaires. In questions using a revision approach such as I suggested, a “select all that apply” might well be appropriate. That judgment is up to those requiring these specific data. If it is judged it should be a “select all that apply” question type, it would be appropriate to revise the question itself to a form such as:

> "8. What are the reasons you didn't you wear a life jacket when out on the water on the "identified boat in 2007? (INTERVIEWERS, SELECT ALL THAT APPLY, AND PROBE FOR “ANY OTHER REASONS”)

In cases where such questions serve the government and its partners best with only a single response, the question form might be modified as:

> "8. What is the MAIN reason you didn't you wear a life jacket when out on the water on the "identified boat” in 2007? (INTERVIEWERS, ONE ONLY (MAIN)… PROBE FOR “MAIN” IF MORE THAN ONE IS MENTIONED – ASKING: “Which of those is the MAIN reason…?”)

I would hope that my reconstruction also helps address what the “(Explain)” “instruction” at the end of Q8. as originally written is meant to imply. It certainly is not anything resembling a clear and standardized interviewer or respondent instruction (or “probe”) as it is currently written.

In summary concerning the open-ended questions throughout the questionnaires... both for the

purpose of reducing respondent burden, and collecting higher-quality data that requires less post-processing (for example, for translating open-ended text into discrete categories for analysis for tens of thousands of respondents), careful inspection should be given to each question by experts skilled in CATI questionnaire development to determine their optimal formats. As noted above, prior Coast Guard boating surveys can certainly be helpful in closing up some of the currently completely open-ended questions so that they are primarily closed-ended, with an opportunity for open-ended responses if not covered by anticipated response categories.

Another major shocking error in the RDD instruments (further suggesting lack of expertise by the authors in RDD questionnaire development is a very serious error of omission. Since the earliest days of random digit dialing probability-based surveys, it is considered a fundamental requirement to identify the number of household telephone numbers associated with a randomly selected household. Obviously, a household with three different household numbers has three times the probability of selection then a household with only one residential phone number. For the questionnaire authors not to have been aware of the critical nature of such questions and their status as "required for weighting purposes" provides further evidence that the authors of the instruments have little experience or the methodological sophistication to understand primitive data collection requirements related to sampling issues.

Somewhat along the same line, where is the detailed discussion concerning how cell phones will be handled? What are the criteria for allowing cell phones reached during the RDD calling process in terms of eligibility for inclusion in the survey? What are the implications for counting the numbers of cell phones associated with the household when accounting for probabilities of selection during weight variable construction (and are special questions need for this purpose)?

Probably because the questionnaires' authors appear to be most familiar with Internet surveys, their naïveté seems to have led them to believe that the greatest majority of questions asked include: (Interviewer: Read the options.) I have not included example questions from the RDD surveys concerning this matter, since it is literally littered with that interviewer or instruction.

I am certainly not going to pretend that I reviewed each and every question in detail to determine whether such an interviewer or instruction is necessary, however, where it is not, additional respondent burden is generated, and in many quick to see by eye-balling questions, restructuring of the question itself will allow respondents in most cases to provide an accurate response without requiring reading the list, unless necessary. Again, a competent RDD survey professional should evaluate each and every question concerning this matter. In my personal experience conducting hundreds of RDD surveys, if respondents are required to listen to all response categories even after they have provided an appropriate answer based on the main question itself, the potential for "terminations" during the interview is likely to increase each time the interviewer forces the respondent to hear potential response categories they already thoughtfully considered. Do not misunderstand, however, they are positively are questions in the instruments where the (Interviewer: Read the options.) instruction is fully appropriate.

Another often repeated and flawed approach to questionnaire construction is easily illustrated by the following two questions (50 and 51), from the Telephone Survey for States Sharing Boat

Registration Data To Be Completed by Adults Residing in U.S. Households.

50. Have you ever completed a boating safety course?

❑ Yes ❑ No (Skip to question 57.)

51. How many boating safety courses have you completed?

Number completed: _____

To reduce significantly total respondent burden (to collect the data associated with the draft questionnaires), and at the same time collect high quality and psychometrically appropriate and meaningful) data, with a simple modification to question 51, only one question of this type needs to be asked. An example reducing these two questions to a single question might be as follows:

50/51. How many boating safety courses, IF ANY, have you completed?
Number completed: _____ (Zero is allowable. If greater than 98, use "98")
99. DK (Probe neutrally for best estimate to avoid a DK, if possible)

The last issue I wish to discuss is frequent usage throughout the questionnaires of ordinal or categorical response categories when the underlying "metric" is continuous. First, consistent with the notion of identifying reliably documented changes and trends over time, survey researchers are well aware that using ordinal measures (any Likert-like scale) of which there are many across the instruments throws away critical data that decreases the power of data analyses aimed at detecting change over time, as well as potential cross-sectional population subgroup differences.

Although I could go into a long-winded explanation I will avoid that to simply strongly urge OMB to require that wherever possible ordinal response categories be translated into a more continuous metric in order to increase the potential for reliably measuring changes over time.

CONCERNS ABOUT THE ROLE OF THEORY IN QUESTIONNAIRE DEVELOPMENT

As noted in the OMB package requirements, the Coast Guard clearly emphasizes the importance of the data to be collected for program planning and evaluation purposes, which are consistent with the responsibilities of the Coast Guard Office of Boating Safety.

Boating safety and accidents and incidents related problems which fall under the aegis of the Coast Guard positively require thoughtfully planned intervention programs to better educate the public concerning boater safety issues and behaviors.

There is a huge body of research from a variety of fields including most importantly public health, which have carefully studied "risk-taking behaviors" such as fast and unsafe driving, substance use and abuse when operating equipment and vehicles, factors influencing lack of appropriate "preventive" and safety practices, and many similar topics directly relevant to the mission of the Coast Guard and its Office of Boating Safety.

Without belaboring the point, while the draft RDD questionnaire in the OMB package measures "behaviors" related to boating safety (such as life preservers, their use, boater training, boat safety features and equipment, accidents and incidents, and so on, there is absolutely no attempt to offer any questions which are based on theoretical frameworks and explanatory models (for example, the Health Belief Model, Prochaska's model of change, the work of Fishbein and Ajzen on behavioral intentions concerning future behaviors, models useful for predicting and explaining the importance of "social influences" on risky behaviors, and others.

The very purpose of such models is to help us understand what precipitates inappropriate and unsafe behaviors, while illuminating specific areas where interventions are likely to be most effective to bring about desired behavior change.

It is worth noting briefly that in the draft of the RDD general population survey I developed as the Chairman of the SAC and the individual responsible for questionnaire development (available upon request), I attempted to overcome the greatest majority of flaws discussed above in the instrument construction as presented in the OMB package. And according to specific instructions I received from the Coast Guard concerning their desired content for the "core questionnaire" as originally planned, I developed questionnaire modules containing questions (primarily from the knowledge, attitude, and social influences domains from tested and validated theories, as noted), specifically for the purpose of providing detailed information required for successful program prevention planning and implementation.

It is appropriate to note it is appropriate to note that among the specific "mandatory" data collection requirements dictated to me and the SAC by the Coast Guard for inclusion (all of which are presented at the end of this document) is the following:

5b. Bullet 4:
"Per the Strategic (NBSAC) Plan: Include questions to determine what motivates boaters to boat safely. Include questions on the targeted message, and the delivery system as well as what motivated them to take a boating course."

To collect such information without the benefit of guidance from relevant theories tested in practice is foolish and anti-scholarly. Nonetheless, there is no evidence in the draft questionnaires that I could find which appears to be driven by theory that can be helpful in designing "better" boater educational and safety programs, a fundamental project objective.

Does OMB condone blithely writing questionnaire items un-informed by extant and relevant literature, especially when such data are to drive needed and more effective safety intervention programs? I surely hope not. The USCG should be required, per OMB requirements, to address how "theory" was used in all relevant aspects of questionnaire development, and if not used, why not?

A brief note related comment links back to the concept of a "core" questionnaire as well as a "supplemental topics questionnaire". The kinds of measures directed by models aimed at explaining and improving safety behaviors under the original concept would have been most

likely (and appropriately) recommended as supplemental module(s) not used in each biannual survey, and, prioritized in importance by the COP for timing and frequency. It should be noted that an alternative approach utilizes what OMB calls a “split panel”, where respondents are randomly assigned into different groups to receive different supplemental topics).

Unfortunately, the state-of-the-art concept of a core and supplemental questionnaire (used by many federal agencies in national surveys over time) with many topics desired by the wide range of partners) was not implemented as evidenced in the Coast Guard's OMB package.

Why was such a useful and oft used concept of a repeating “core”, with priorities or split-panels for “supplemental (lower priority topics” ranked by the COP – never done accomplished by the COP’s academic Chair? in any rigorous form by the COP Chair) not discussed in the OMB submission?

CONCERNS ABOUT PRETESTING THE QUESTIONNAIRE

In the OMB document “QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS” (Office of Information and Regulatory Affairs Office of Management and Budget, January 2006), which I (as the original SAC Chairman) annotated and submitted to the Coast Guard as requirements for successful OMB project approval, long ago, there are substantial discussions given to the importance of the “pretesting” new instrumentation, and even alternative methods and their costs and benefits are elucidated. Competent survey research scientists would use a variety of pretesting methods covered in the OMB document, from potentially focus groups, to minitest-population surveys, in order to help identify measurement problems within the instruments, particularly the RDD telephone questionnaires.

No place in the OMB package did I see any discussion by the Coast Guard concerning plans for pretesting what is clearly a “new” instrument, with “items” never before used (other than in possibly in Internet and mailed surveys by the questionnaire’s authors).

Hopefully, as noted above, the questionnaire in its present form will be translated into an appropriate and standardized CATI instrument, with clear and standardized directions to both interviewers as well as to "programmers". After appropriate rewriting of the instrument by RDD survey experts, I would hope that the government would build in appropriate pre-test methods for the baseline survey vendor to conduct required rigorous pretests to ensure the questionnaires ease of administration, clarity to respondents, actual average length of administration time, evaluation of how well the child sampling and interviewing component works, and which questions “work” (measuring what they are intended to without causing respondent confusion) and those that do not, preliminary estimates of reliability and validity (where possible), etc. To not do rigorous pretesting on a brand-new questionnaire deviates from high quality survey research “best practices” and would be fool-hardy. Obviously, the purpose of pretesting is to find errors and correct them. OMB has clear reporting requirements on this matter.

Given current OMB requirements related to data collections not requiring OMB approval, for example, where the number of subjects is less than 8, I believe, OMB approval should be

requested to authorize larger pretests, with sample sizes determined by experts to meet fundamental pretests requirements.

I would hope readers would agree that rigorous pretesting is particularly crucial before the launch of the baseline survey, since errors of omission or co-mission not identified and corrected during a properly conducted pretests, will most likely be replicated over subsequent biannual surveys... leading to data of such poor quality, as was charged in the 2002 survey, that it will never be utilized or disseminated.

It is also important to note that pretesting will be crucial to determine the costs and complexities associated with collecting data on children randomly selected from households. While this approach holds great promise for providing data on our youth, collecting unreliable data at significant cost obviously makes no sense. Therefore, before launching the baseline survey, I would most strongly urge special rigorous testing of the random child selection and data collection process. I worry, for example, based on personal experience with such designs I developed for the CDC, that the current draft child related instrument (completed by an adult proxy respondent) does not account appropriately for situations where the initial adult respondent is not knowledgeable about the randomly selected child's boating related knowledge, attitudes and behavior (KAB). Some protocols in the literature suggest that for the child interview the most knowledgeable adult concerning the child's boating KAB be asked to complete their interview. Although this is only one possible solution aimed at collecting the highest possible quality data on children it certainly deserves consideration. As best as I can interpret current questionnaire efforts to collect data on a randomly selected child, emphasis is placed on having the original respondent answer child related questions, even before the adult respondent has experienced the kinds of questions that might be asked concerning the child's boating relevant experiences. Fortunately, alternative protocols for handling such problems are available in a wide variety of high quality government and academic instruments.

A final comment concerning the collection of child data from proxy adult respondents may be helpful. One way to test the reliability of data collected from proxy respondents is to use the pretesting process I have strongly recommended. As an example, in one form of the pretest related to child data, their data should be collected from the randomly selected adults respondent. Additionally, the set of child questions should be asked of that individual who the original adult respondent believes is the most “knowledgeable adult concerning the child's boating related experiences”. Comparing the results using statistical measures of agreement will show how closely these two different types of adult proxy respondents answer questions related to the randomly selected child. Obviously, one simple measure of interest is the number of Don’t Know responses at the item/question level. Additionally, formal measures of agreement such as using the Kappa statistic will provide important clues concerning consistencies and differences between child data for different types of adult proxies, allowing an optimized decision concerning the type of proxy most likely to provide reasonably complete and accurate child information.

In the case where pretesting confirms substantial discrepancies across many child data elements between the originally randomly selected adults respondent and the perceived "most knowledgeable adult concerning the child's boating experiences", serious consideration should

be given to whether or not the reliability of child data collected is worth the costs. We should keep in mind, however, that children are frequently passengers and operators of boats, they contribute to accidents and injuries, and unless they are accounted for in the survey, data collected can only be generalized to the adult population, not the population of all boaters (as has been the case in all prior USCG Boating Surveys).

While I have focused immediately above primarily on questionnaire pretesting before the baseline launch, the government and our citizens would be well served by a complete test of all methodological procedures and instrumentation to be used in this important project. Without question, the need for important modifications in both methods and questionnaires for the “final baseline launch” must be completed before it is too late. To do anything less than rigorously test the entire "survey system" in terms of all of its elements from sampling plan execution dry runs, to questionnaire pretests, data analysis and displays tests with weighted and unweighted data prior to formal launch would be a serious deviation from "best survey research practices".

While I personally understand the great pressure the Coast Guard feels to launch this survey ASAP (originally planned by them for Oct. 2007, since the last survey in 2002 findings were basically never disseminated, OMB hopefully will not allow the Coast Guard to give short shrift or inadequate resources to the baseline survey vendor so that they can properly conduct crucial pretesting activities to help ensure high standards and rigorous methods aimed at achieving high quality and utility research data.

WEIGHTING THE DATA FOR DIFFERENTIAL PROBABILITIES OF SELECTION

In the random digit dialing surveys of adults and children in particular, respondents will have differential probabilities of selection based on a wide variety of possible factors. These include the potential for different sampling rates across geographic strata, multiple residential telephone numbers, multiple eligible household members to select as the random adult or child “respondent” (and a similar host of weighting factors come into play when “boats” are the unit of analysis and one boat is randomly selected for multiple questions as is inherent in much of the current telephone surveys).

As I wrote in the original USCG accepted proposal, it was my intend through my SAC responsibilities, to literally create a cookbook for subsequent survey vendors to use which led them step by step through the weighting process for different units of analysis (e.g., adults, children, and boats). Obviously, the funded foundation and Coast Guard officials have failed to appreciate the importance of cookbook-like step-by-step protocols which will help ensure comparability across the 10-year program of biannual surveys.

Therefore, the United States Coast Guard should justify its willingness to provide vendors with minimalist research design, sampling, questionnaire and data analysis requirements, since as redundantly noted, failure to collect comparability over time is highly probable, and such a decision is in direct conflict with OMB guidelines concerning ongoing programs of surveys, since OMB has years of experience with the negative consequences of "underspecified" project requirements... all too frequently resulting in useless data and often at very high cost.

Since only one weight variable can typically be used in multi-staged designs for a particular unit

of analysis, consideration should have been given to whether or not the weight variables constructed for different purposes (initially built to account for different probabilities of selection) should also account for differential nonresponse (geographically or within population subgroups), a frequently used weight component in many government and academic studies.

Furthermore, many national surveys include in a weight variable a new or post-stratification component. Sometimes the post-stratification is back to the most current population estimates (e.g., CPS), and sometimes a standard or reference population is utilized for post-stratification purposes... especially to evaluate change and trends over time. Such a weight component would involve selecting a standardized population such as the 2000 Census, and post-stratifying each biannual survey's data to it.

I gave detailed consideration to such issues in the proposal the government accepted. As noted above I also informed the USCG that the OMB document "QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS" (Office of Information and Regulatory Affairs Office of Management and Budget, January 2006), clearly required such discussion and relevant details of weighting plans. Where are they?

Again, from the perspective of standardization and comparability of data over the years, a cookbook like weight development document is required for future vendors conducting the biannual surveys, or again, each will develop its sampling weights as it chooses, ensuring incomparability across data collections and serious deviations from high quality standardized methods.

CONCERNS ABOUT DATA ANALYSIS

Competent survey researchers and virtually every quality textbook on the subject of high quality academic and government research recognizes the importance of understanding the key research data required from a project, and the data formats that are most likely to illuminate crucial findings for program planners, evaluators, and policy-makers.

Within this Coast Guard OMB package, there is literally nothing more than lip service concerning data analysis quoted immediately below.

"14. Publication of collected information:

The contractor selected to conduct the survey will use advanced statistical software such as SAS or SPSS to generate frequencies of responses, cross-tabulations on key variables using weighted data. National, Coast Guard regional and State-wide estimates of recreational boats, boating households, boaters, boating exposures, practices, and activities during the boating season will be published in a report and disseminated to boating safety officials. Results of the survey will be compared to previous boating surveys.

The entire project will take approximately 12 months. The contractor will start working on this project in October 2007, and is expected to complete report by June 2008."

According to OMB document “QUESTIONS AND ANSWERS WHEN DESIGNING SURVEYS FOR INFORMATION COLLECTIONS” (Office of Information and Regulatory Affairs Office of Management and Budget, January 2006), OMB clearly requires a detailed discussion of data analysis plans and examples of data output formats likely to be of greatest use to end-users.

Nonetheless, as the Coast Guard #14. response indicates, there are no useful analysis-related details presented.

There are no examples of “dummy tables” reflecting how crucial data will be displayed are provided, whether for cross-sectional findings or for analyses comparing survey results over time.

No information is provided concerning how the mailed survey data will be analyzed, whether alone or in combination (or for comparative purposes) with the national RDD telephone survey data.

Nothing has been said about for which analyses different weight variables might be required, especially as the unit of analysis of interest changes from households, to individual adults or children, to boats.

No information is provided concerning the data analytic techniques to be used when analyzing cross-sectional data other than the production of "frequencies of responses, and cross tabulations on key variables using weighted data” (see response 14 (above). Over the past 30 or more years, one would think the Coast Guard would have conducted one or more boating surveys which provides appropriate and detailed cross-sectional data analytic procedures, yet where are they?

Most importantly, absolutely no attention has been paid to the importance of evaluating the data over time for change and trend analytic purposes... to meet the needs of program planners, evaluators, and policy makers. Where are example data displays of this most important driving purpose for the 10 year program of research?

With the advent of powerful time series-like analytic techniques over the past 10 years, with the proper total research design, au currant time series analysis analytic approaches, including fixed and random effects models, have the potential for providing extraordinarily insightful data concerning change and trends over time. Yet, the Coast Guard fails to account or recommend any relevant statistical approaches.

Ultimately, the data is "everything”... and to not present its most important formats and analytical procedures in a standardized manner for survey vendors to use, the Coast Guard fails to comply with OMB requests for such information raising serious questions about the Coast Guard's ability to successfully carry out its proposed 10 year program of biannual research. If passed Coast Guard boating surveys are reasonable predictors of the way future surveys will be conducted, with little explicit guidance across all elements of the total research design, as before, why should the OMB grant the Coast Guard's project’s approval?

I cannot fail to comment with extreme umbrage and concerns about the truthfulness of the United States Coast Guard in the last sentence in paragraph 1 in # 14 (above), that "*Results of the survey will be compared to previous boating surveys."*

I have tape recordings of Mr. Hoedt, Administrator of the USCG Office of Boating Safety, the "real" (behind the scenes) project director... not Dr. Gwet, who is an employee of a firm which contracts staff to government agencies which are understaffed. Mr. Hoedt ran the pre-selection meeting prior to the award to the Foundation, participated directly in the first COP and SAC meetings (on-site or via telephone), and he has stated publicly that one of the purposes of the project resulting in this OMB package was to overcome totally inconsistent and incomparable data from prior surveys. Not only were their research designs, sampling frames, and questionnaires almost completely incomparable, he took direct responsibility for not publicly releasing the 2002 survey data... the last survey conducted, because of serious quality concerns, and a concomitant lack of a Coast Guard plan for project data dissemination which is only touched on in the CG's #14 response (above).

To suggest that "*Results of the survey will be compared to previous boating surveys*" further reduces the credibility and shows the naïveté of the project's most senior leadership (Hoedt and Gwet, included), whom I assume have ultimate responsibility for OMB document preparation and truthfulness.

Since the proposed research design and instrumentation included in the present OMB package reflects a research design, sampling frames, and questionnaire differences largely inconsistent with prior surveys, on what basis can the proposed baseline survey possibly be compared to prior surveys, when they were so methodologically different they could not be meaningfully compared to each other; and to my knowledge they never have been… since any competent survey methodologist would challenge the utility and appropriateness of comparing wholly different data, based on very different research designs and instrumentation.

<u>SOME OTHER OBSERVATIONS BEFORE MY TERMINATION</u>

If I could summarize what I believe were the overarching principles which would drive a successful "high science" project leading to the production of high quality and standardized sampling methodologies and instrumentation (and thus comparability and the ability to reliably detect change over time for the "partners" needing such data), it was first based on the application of the highest possible scientific standards, given realistic budget constraints presented by the Coast Guard for what it could afford over its 10 year program of surveys.

Second, and no less important, it was based on the premise that the SAC and the COP would have strong and collaborative communications and planning. The third premise was that the Coast Guard, after many years of attempts to conduct a competent program of surveys was finally serious, about doing it the "right way", and had a clue about the direction they wanted to take and what they "needed" to repeatedly measure at any level of specificity after years of prior boating survey experience.

Concerning the issues of "developing a high science project", I believe the best indicators of why the Coast Guard OMB package is so fundamentally flawed (including its research design and instrumentation) is that the responsible person at the funded foundation (FRBSEEA), had virtually no skills in areas relevant to the project's requirements, and he was constantly unavailable due to a heavy travel schedule. Secondly, the Chairman of the COP, a senior academic researcher at Michigan State University, not only has low-level survey research expertise (from designs... through sampling... questionnaire design... and data analysis, and he apparently had neither the skills nor the interest in implementing a rational way for collecting information needs from a his COP members concerning their prioritized data needs. The "accepted" proposal as I wrote it, describe a rigorous "nominal group process" to identify data requirements and in their prioritization.

Not only was I kept away from any COP meeting planning (after redundant begging), the COP Chairman chose to run the meeting as a open dialogue, with people pitching their ideas for data requirements. There was no attempt to rigorous build consensus... no rigorous attempt to score priorities... no attempt to group similar data needs together. The results published by the COP Chair from that meeting (available from the Coast Guard) were frightening from a scientific perspective, and they were framed in ways that did not meet the needs of the SAC and my responsibilities to develop appropriate instrumentation. As noted, I begged for inclusion in the planning of that meeting to ensure that it was both rigorous and would provide the SAC with information required to develop instrumentation that drilled-down to the required data levels, however, the process used never specified such details.

Refinements of the list of topics "called out" by COP members (with typically little discussion) was refined by the COP Chair and his staff, and yet were inadequate for SAC purposes, in particular for questionnaire development purposes, wasting our precious time and resources.

After many complaints to the Coast Guard, to the funded Foundation, and to the COP Chairman, nothing ever changed. Over the course of the first four or five months of the project, in total, I (as the SAC Chair) the COP Chair, and the Foundation Project Director may have met 3 times! We might have had a few brief conference calls beyond that. The Coast Guard project officer Philippe Gwet participated in some of these meetings and calls, however, other than trying to arbitrate contractual problems... he had little to comment about an appropriate planning and development process, and did nothing to ensure that the SAC and COP worked in harmony, as I requested, and was required for the project's ultimate success.

As a result of my complaints about lack of collaboration and coordination, I was branded as a troublemaker by both the foundation and Coast Guard officials, when I had only one single minded purpose… ensuring a high quality project producing high quality "standardized" deliverables for use in the OMB package and in subsequent vendor RFPs.

Concerning this point, in summary, the key individuals who had to be on the same page virtually never communicated in ways to benefit the project, and the direct responsibility for this needs to be laid at the feet of the Coast Guard and the Foundation, which both had leadership responsibilities to make the project work.

Among the different reasons I was terminated from the project, is unquestionably the fact that during the late summer of 2006 after the first COP and SAC meetings were completed, I became aware of the most recently published OMB guidance documents, and I marked-up relevant passages and reporting requirements to our project, and sent them to Dr. Gwet and the Foundation, and the COP Chair.

On my own initiative as Chairman of the SAC, I called OMB to discuss how the current project we were funded to complete was inconsistent with the OMB guidance materials, and what might be done about it. I had approximately a 45 minute conversation with “Brian XXX” at OMB” (who said he was very senior, and would likely be involved in such a large scale survey review during the OMB process) on 10/24 or 25, 2006, which validated my concerns that our funded project itself had elements that were not allowable by OMB (including the likelihood of pretesting instrumentation on groups larger than allowed without OMB approval). Furthermore, Brian made it clear that the deadlines established by the foundation and the Coast Guard for different deliverables would make it impossible to meet the Coast Guard's goal of October 2007 baseline survey launch, due to the many months required in the OMB process, including public commentaries such as I have written here in based on the CG’s announcement in the Federal Register, OMB review time, and a second opportunity for public comments before approval can be granted by OMB.

Brian, might also recall that he was extremely pleased when I described the nationally renowned survey research experts I had included on the SAC, echoing how important experienced academic and government researchers are to the development of such an important (and costly) national survey project, to help overcome the problem I have repeatedly addressed, and which OMB is well aware of, that of different survey vendors interpreting less than fully detailed specifications in ways that reduce or literally destroy comparability of data over time.

When I submitted a marked up copy of the newest OMB guidance documents highlighting areas where details are expected in the submission package, Dr. Gwet representing the Coast Guard convened a meeting in Michigan including himself, me, the Foundation’s Project Director, and the Chairman of the COP.

Dr. Gwet started the meeting with a vicious attack on me for contacting OMB, indicating directly that OMB had no role associated with our project and its subsequent data collections. He literally threatened to fire me if I ever contacted OMB again. That was about the last straw for me (and I was about to walk out of the meeting), however the COP Chair, who obviously took the time to read the highlighted OMB documentation I had sent in advance, actually agreed with me... that the way the project was currently structured and the way the deliverables were specified by the Coast Guard, would neither meet OMB requirements nor be useful in the development of RFPs for subsequent survey vendors.

Dr. Gwet committed to immediately involved the OMB at his end… however, even in my role as Chair of the Scientific Advisory Committee (SAC), he demanded that I have no further contact with any OMB official at any time or for any purpose. From the looks of the Coast Guard OMB submission, which is shocking due to its lack of detail and rigor, it is difficult to understand if OMB guidance and assistance was used in the development of this package, as promised. I

would have expected that with proper OMB assistance during package preparation, the resulting CG OMB submission I am responding to would be a far more “advanced” and detailed document, as OMB guidelines dictate.

If readers take the time to review the submitted and accepted proposal, OMB would find a very different set of outcomes and products were offered then were actually delivered. A most shockingly sad outcome given the substantial USCG project budget to the Foundation!

More importantly, if the majority of what the project ended up producing was consistent with my recommendations based directly on OMB requirements and guidance, the current OMB submission would have been sufficiently detailed to ensure that future survey vendors will implement substantially incomparable research designs and questionnaires.

If OMB approves anything resembling the proposed Coast Guard 10 year program of research as elucidated in their OMB submission to date, failure to collect useful and high quality data in the future is a foregone conclusion, Unless OMB exerts its proper authority to ensure that proposed future Coast Guard surveys meet the highest possible standards of survey research science.

The remaining pages of this document cover the list of data requirements specifically needed by the Coast Guard (not including those suggested by other COP members.

The following “final” USCG data needs list (below) was provided to me via Mr. Petru, the Foundation’s Project Director on 11/1/2006 (which he obtained from Dr. Gwet of the USCG, over 5 months after the project started). I requested such a detailed list from near day 1 of the project, many times. Earlier drafts I received were virtually useless due to their lack of specificity. Once I received the Coast Guard's final data needs listing, I was required to produce a draft questionnaire for a COP meeting 11/20/2006, less than 3 weeks away… and it needed first to be shared with the Foundation, the CG, and the COP Chair in advance.

Simply stated, I believe that the primarily RDD "core" draft questionnaire I prepared under that extraordinarily tight timeline is far superior to the draft instruments in the Coast Guard's OMB submission from virtually every important methodological perspective... including those I addressed above when criticizing the current draft instrumentation.

Even though my draft questionnaire was simply to be briefly overviewed at the COP meeting, Dr. Gwet turned what was to be a short presentation into the Spanish Inquisition. He publicly accused me of not measuring, or not measuring to his naïve satisfaction, the mandatory data elements presented by the Coast Guard below.

Furthermore, he publicly chastised me and embarrassed me for including in my draft, questions concerning accidents and injuries, which I believed (and still believe) are fundamental to the total project (assuming they had been inadvertently left off the Coast Guard's final and tardy data requirements list, below), and which have been central elements in virtually every prior Coast Guard survey available back to the late 70’s. I might note in this context, that draft questionnaire submitted by the Coast Guard written by other authors, do contain measures

related to accidents and injuries!

To be candid, after six months of abusive behavior by the foundation, including lack of a redundantly promised contract, lack of payment for long overdue invoices (still not received), and because of Dr. Gwet's outrageous public humiliation of me, I lost my professionalism and accused Dr. Gwet of being incompetent while standing at the podium alone, quaking from his shocking abuse and failure to adhere to his commitment for a simple and brief presentation of the draft, which he knew I did not intend to review in detail, since it could not be shared with the SAC in time for their suggestions and comments.

Within a few days after that meeting I received my termination letter, with threats that the Foundation will sue me to recover all dollars they did pay for my and my colleagues great work.

From my perspective, from those of my project colleagues including SAC members who keep in touch with me, and from my legal counsel, as noted at the beginning of this document, I am now in the process of bringing a lawsuit against at least the Foundation, although it is worth noting that Coast Guard officials including Hoedt, Gwet and others are potentially going to be identified as defendants for their various and sundry misdeeds... amounting to a concerted effort to drive me from the very project that I initiated, largely designed, and did quality work on.

Final apologies for such a lengthy tome… but somebody has to recognize and proclaim loudly and in detail the many sins and incompetent work products associated with the Coast Guard's current OMB submission.

Although I could write many more pages criticizing the Coast Guard's OMB submission, enough said.

Sincerely,

Bruce

Bruce M. Brock, Ph.D., MPH
Applied Research Services, LLC
707 West Liberty St.
Ann Arbor, Michigan 48103
734-662-1067

P.S. Please excuse any typographical, grammar, spelling, and punctuation errors, and my propensity to detail, which I might have covered more than once.

2007 National Boating Survey

USCG Data Requirements

Data Item *(Description of data requirement)*	**Data Use** *(What the data is used for)*	**Data User** *(Which*

		divisions / agencies will use the data)
1. Demographics a) Zip Code, City, Employment Status, Annual Household Income, Census Geographic Division b) Date of birth, Educational Attainment, Gender c) <u>Race Groups</u> d) American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White e) <u>Ethnic Groups</u> Hispanic or Latino and Not Hispanic or Latino f) English proficiency (written/verbal)	Data allows for the release of statistics with demographic breakdowns. The boating population will be segmented and better targeted by the recreational boating safety programs.	USCG / States / NASBLA / NBSAC and various boating agencies.
How Important is this data? Mandatory **_X_** Important ____ Irrelevant ____	**<u>Comments</u>**	
2. Participation in Recreational Boating Activities a) Participation in boating within past 12 months ♦ Boat ownership (owner, renter, borrower) ♦ Number of boats owned ♦ Boat registration (None, Federal / USCG documented, State numbered, Numbered/Registered) b) If non-boater, then collect date of last participation c) As an operator: type of boat used and state and type of water (off shore, coastal, lake, river (whitewater), river (slow water), etc…) d) As an operator, in what region of the country did you go boating (Pacific Ocean, Atlantic Ocean, Gulf, Great Lakes, Interior) e) As a Passenger: type of boat used and state and type of Water (off shore, coastal, lake, river (whitewater), river (slow water), etc) f) Boating months (Jan, Feb, March, etc …) g) Boat description: ♦ Boat length ♦ Means of propulsion (Propeller, Water jet, Sail, Air thrust,	The overall goal of this Data Item is to collect detailed information which allows analysts to isolate segments of the boating community where interventions can be focused or prioritized and data can be utilized as a measurement in the RBS Program's Strategic Plan. This data a) helps determine membership to the boating population (an important number for comparison within boating safety and also among other industries) b) May be used to obtain an annual boater turnover rate. c) Can be used to prioritize target market segments, so one can create messages that address each segment's specific needs. d) Can be utilized as a measure for the Program's strategic	USCG / State / NASBLA/ NBSAC/ Boating Agencies

[1] See Appendix A for boat type definitions

Manual/oars/paddles, other) ♦ Number and type of Engine (Inboard, Outboard, Inboard/Outboard, other) ♦ Engine Horsepower ♦ Is a diesel/gasoline-powered electricity generator permanently on board: Yes or No ♦ Boat type[1] h) Boating Activities on Each type of Boat used as Operator or Passenger ♦ Cruising/Sailing/Paddling/Swimming/Fishing/Hunting/Racing /Waterskiing/Whitewater sports/wakeboarding/other	plan.	
How Important is this data? Mandatory _**X** _ Important ____ Irrelevant ____	**Comments**	
3. Exposure ♦ Average number of hours per day spent by type of Boat and Boating Activity ♦ Total number days by type of Boat and Boating Activity ♦ Average number of people on a boat	This data is used for (accident/injury) risk assessment and will be utilized as a measure for the Program's strategic plan.	USCG / State / NASBLA/ NBSAC/ Boating Agencies
How Important is this data? Mandatory _**X**_ Important ____ Irrelevant ____	**Comments**	
4. Boater Education ♦ Boater has taken boating safety course or not. ♦ Did boater pass an equivalency exam that exempted them from taking a safety course? ♦ Date, location (city, state), and provider (CG Auxiliary, Power Squadrons, State, etc…) of the last boating safety course taken ("less than a year ago", "1-2 years ago", etc…) ♦ Type of boating safety course *(course objectives should be carefully checked)* o Basic boating safety o Advanced navigation/piloting/weather o On-water-skills program ♦ Was the course NASBLA approved? ♦ Was it a classroom course or distance learning?	The overall goal of this data Item is to establish the number of boaters that have received boating safety education and the level of formality of the course. This will help establish levels of effectiveness that will guide federal and state policy decision-making. This data, ♦ will reveal which courses or programs the public prefers. ♦ Help determine which course works best for which demographic group.	USCG / State / NASBLA/ NBSAC/ Boating Agencies

♦ Was a certificate earned? If yes what is the issuing organization? ♦ Type of license of licensed operators	♦ Will help verify the accuracy of what States report	
How Important is this data? Mandatory _ **X** _ Important ___ Irrelevant ____	**Comments**	
5. Knowledge, Experience, and Awareness (NBSAC Strategic Plan) a) Boat Operator Knowledge and Experience. ♦ Total number of years of lifetime boat operating experience (ranges of values) – 2002 Boating Survey ♦ Membership in Boating Organizations – 2002 Boating Survey ♦ Information Received on Boating Safety (magazines, radio, TV, internet, etc…). If yes, it is affecting people's behavior? ♦ Awareness of national campaign efforts? If yes, does it affect their behavior? b) Awareness of Safe Boating Practices ♦ Use of Navigation Equipment when Boating (chart, GPS, compass, LORAN, radar, etc..) – 2002 Boating Survey ♦ Use of Emergency Equipment (e.g. first aid kit, safety rope, etc …List required equipment first, then ancillary equipment.) ♦ Accident reporting, alcohol use, safety practices, etc.. ♦ Per the Strategic Plan: Include questions to determine what motivates boaters to boat safely. Include questions on the targeted message, and the delivery system as well as what motivated them to take a boating course.	♦ This data will help determine the effectiveness of recreational boating safety programs and will be utilized as a measure for the Program's strategic plan. ♦ The data gathered will allow the program to establish a baseline in an attempt to increase the awareness of safe boating practices. Is the money being spent in the right place	USCG / States / Course Providers.
How Important is this data? Mandatory _**X**_ Important ____ Irrelevant ____	**Comments**	
6. Boating Attitudes and Personal Safety		

Information ♦ Boaters' opinion on certification, knowledge of boating laws, PFD wear, BUI law enforcement, negligent operation, boating traffic restriction in certain areas, operator licensing, mandatory PFD wear by boat length, activity, Age, etc …)	This data will be used to: ♦ Determine if boaters are aware of their responsibilities on the water, which could lead to revising boating safety courses. ♦ Modify the way enforcement personnel present their messages to the public. ♦ Allow for analysis to determine the most effective method for presenting boating safety messages to the public. ♦ Change the manner in which messages are presented to the public.	USCG / States/ USCGAUX / USPS / NASBLA
How Important is this data? Mandatory ___ Important __**X**_ Irrelevant ____	**Comments**	
7. Use of Alcohol (NBSAC Strategic Plan) ♦ Frequency of Alcohol Use in Boating as an Operator o How often (Always, Most of Time, Sometimes, Rarely, Never) ♦ Frequency of Alcohol Use in Boating as a Passenger o How often (Always, Most of Time, Sometimes, Rarely, Never) ♦ Quantity of Alcohol consumed on Average on a Boating Day.	This data is used to evaluate the effectiveness of boating safety programs, boating regulations, and is one of the objectives in the National Boating Safety Advisory Council (NBSAC) strategic plan.	USCG / NBSAC/ NASBLA/States
How Important is this data? Mandatory _**X**_ Important ____ Irrelevant ____	**Comments**	

APPENDIX A: `

Boat Type Definitions:

(1) **Airboat**: BARD
A boat with a solid hull that is propelled using an engine that produces air thrust. This type of boat does not include "ground effect" as a means of propulsion (i.e., hovercraft).
(Flat-bottomed punts powered by a propeller attached to an automobile or aircraft engine)

(2) **Auxiliary Sailboat:** *Sailboat/Powerboat?*
Any boat whose sole source of propulsion is the natural element (i.e., wind) or a boat intended to be

propelled primarily by sail, regardless of size or type. This type of boat can be propelled either by the auxiliary engine alone for close-quarter maneuvering or by both engine and sails simultaneously when cruising.

(3) **Bowrider:** *Powerboats*
Runabout powerboats characterized by an open area forward of the console with seating for passengers.

(4) **Cabin Motorboat**: *Powerboats*
Motorboats with a cabin that can be completely closed by means of doors or hatches. Large motorboats with cabins, even though referred to as yachts, are considered to be cabin motorboats.

(5) **Canoe**: *Small Boats*
A long light narrow boat with both ends sharp and sides curved that is usually propelled by hand-driven oars.

(6) **Center Console Boats**: *Powerboats*
Open powerboat with a central console consisting of steering, engine controls and electronics, popular with anglers and as a runabout.

(7) **Kayak**: *Small Boats*
A very lightly built open boat of narrow beam (width) and shallow draft (depth of water drawn when loaded) designed to be manually propelled by paddles that are normally double-ended.

(8) **Houseboat**: *Powerboats*
A motorized vessel designed primarily with accommodation spaces with little or no foredeck or cockpit, with low freeboard and with a low length to beam ratio.

(9) **Inflatable Boat:** *Small Boats*
It is a light-weight boat constructed with flexible tubes at the gunwale. Often they are designed to be portable by being deflated and packed into a small volume allowing them to be used as liferafts for boats or aircraft or simply so that they can easily be transported to water.

(10) **Jet Boat**: *Powerboats*
A boat with an inboard engine powering a water jet pump as its primary propulsion, and designed to be operated with one or more persons within the confines of the hull.
(Motorboat powered by a jet drive, which uses a high-speed pump rather than a propeller)

(11) **Open Utility Boat:**

It is generally a small, open - with no decking - boat with two (2) or three (3) athawartship seats. The simplest models also have an open bilge - no floor. The vast majority of all registered boats belong to this "utility" class.

(12) **Open Motor Boat:**
Boat of open construction specifically built for operating with a motor, including boats canopied or fitted with temporary partial shelters.

(13) **Personal Watercraft** (also known by the generic term "jet ski" and the acronym "PWC") - *Small Boats*
A boat less than 13 feet in length that is designed to be operated by a person sitting, standing, or

kneeling on the boat rather than by the conventional manner of sitting or standing inside the boat.

(14) **Pontoon Boat** – (also known as a "Party Boat"): *Powerboats*

A boat consisting of a rigid structure connecting at least two parallel fore (front) and aft (back) rigid sealed buoyancy chambers.