SUPPORTING STATEMENT
Rip Current Visualization Survey and Focus Groups
OMB CONTROL NO. 0648-xxxx

A. JUSTIFICATION

1. Explain the circumstances that make the collection of information necessary.

Coastal beaches provide recreation opportunities to millions of people every year, which is why it is imperative to ensure timely, accurate and accessible information on coastal hazards and safety measures. This project supports efforts of The National Oceanographic and Atmospheric Administration's (NOAA) National Weather Service (NWS) to improve communication of rip current forecasts to the public. The ultimate goal is to increase the likelihood of the public taking appropriate action to protect themselves when faced with rip current dangers and ensure "beach-readiness." The NWS will develop variations of a Google Map-style interface to assess their ability to effectively visualize and communicate the NWS probabilistic rip current forecast model output. The NWS will develop 3-5 variations of a public-friendly interface that is easy to understand and provides necessary information on the risk of rip currents, as well as 3-5 variations of a more detailed interface that includes additional information that will be useful to lifeguards and decision makers. Input on interface variations will be gathered from the public, lifeguards, and local decision-makers (emergency managers, local officials, and broadcast meteorologists) regarding the understanding, ease of use, and utility of the interface as a risk assessment tool via an online survey and focus groups. Results from the public survey will aid the facilitator in navigating focus group responses to the same and modified graphics. The purpose is to determine the most effective means for visualizing probabilistic rip current forecast model output and communicating the associated risks, thereby resulting in the development of products and information to increase public awareness and action to protect lives and prevent injuries due to rip currents.

This information is general authorized under the Weather Service Organic Act, 15 U.S.C 313.

2. 1Explain how, by whom, how frequently, and for what purpose the information will be used. 1If the information collected will be disseminated to the public or used to support information that will be disseminated to the public, then explain how the collection complies with all applicable Information Quality Guidelines.

How will the information be used?
The NWS will use the information collected to develop a visualization tool for the NWS rip current forecast model. Survey data collected on the opinions of the public, lifeguards, and decision makers will provide guidance to the preferences of how best to visualize the risk of rip currents in a specific area, as well as what type of information is most useful to include in a rip current tool for each stakeholder group (public, lifeguards, and decision makers). Specific results will aid NWS in determining which visualization has the greatest impact to convey rip current risk. Specific survey and focus group results will also provide NWS with insight to where stakeholders get their information, how it affects their decisions, and how to best show risk to each set of stakeholders. NWS will use this insight to better target efforts to increase public knowledge and awareness of rip current risk.

By whom will the information be used?
The information will be used by NWS.

How frequently will the information be used?
The information provided by this data collection will be used on an ongoing basis to provide insight and guidance for developing a visualization product for the NWS rip current forecast model, expected to be finalized by 2018. Additionally, the data collected will be used to refine and enhance the final product and to provide insight to NWS when developing future products pertaining to rip current safety over multiple years.

What purpose will the information be used?
The information will provide NWS staff with the guidance needed to develop rip current forecast products to increase public awareness and action to protect lives and prevent injuries due to rip currents. Creating easy to use visualizations and communication products will provide the public and decision-makers accurate information that is understandable and will enhance value for a variety of rip current decision processes. Survey and focus group results will define how to present the rip current risk tool clearly and concisely to best elicit the appropriate response from society.

How does the data collection comply with all applicable Information Quality guidelines?
The NWS will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NWS standards for confidentiality, privacy, and electronic information. See response to Question10 of this Supporting Statement for more information on confidentiality and privacy. The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to Section 515 of Public Law 106 554.

Survey Information
The survey to elicit public perceptions of and reactions to the variations in products will consist of three sets of questions: 1) demographic and locational characteristics of respondents; 2) current use and knowledge of NOAA/NWS products; and 3) understanding of and reactions to the various rip current products. The survey will be web-based and will display each variation of the rip current visualization and its related questions independently on a web page.

For dissemination, the survey will be posted on various websites such as the Rip Current Safety, Weather Forecast Office (WFO) Morehead City, and U.S. Lifesaving Association. In addition, the survey will be promoted widely in North Carolina through other outlets such as local weather channels via broadcast meteorologists and their social media accounts, regional interest groups (e.g. surfer and beach) and their social media accounts, and working with the emergency manager points of contacts to utilize their local contacts and list serves. Surfers/bodysurfers, swimmers, kitesurfers, and paddlers will be sought out on social media (e.g., Facebook and Twitter) using a variety of pages (NC Coastal Atlas, NC Sea Grant, SwellInfo, Surfline, and SurfChex), and a network of beach webcams with sponsored advertising. These sites will be asked to share the web survey on beach user profiles.

For the online survey, collection of demographic and locational characteristics information consists of multiple choice questions about age, gender, place of residence (if not North Carolina), when the respondent last visited North Carolina and for how long (on average), and whether the respondent or their family goes in the water when they visit the beach.

To develop an understanding of current use and knowledge of NOAA/NWS products, the respondents are asked multiple choice questions about where they get information about weather, how often they check the weather forecast, if they have ever checked an ocean wave forecast or tide prediction before going to the beach, if they have ever heard of a rip current, the statement that best describes what a rip current is, if they have ever been caught in a rip current, if they know someone who has been caught in a rip current, and what common advice they have seen/heard about what to do when caught in a rip current.

The last section of the survey presents a series of graphics showing rip current information and asks the respondent multiple choice questions about what the product tells them, what element or elements of this product are most useful in understanding rip current potential, what is their perception with respect to specific qualities (information included, format, understandability, graphics, text, and use of color), what "low risk" on the graphic suggests, how each of three categories/colors (high, moderate, and low) affect what the respondent would do, how likely the product would affect each respondent's decision to go to the beach, which beach to go to, their decision to go in the water, their decision to swim in an area with lifeguards, use of the product in the future, and whether the product would lead them to learn more about rip currents and what to do if caught in one, and if the respondent were to use the product, when they would look at it. These questions are repeated for each graphic. The online survey then asks the respondent, which of the graphics they think is most and least effective, why they think it is most/least effective (multiple choice characteristics), and additional comments about any of the products or other information they would like concerning rip currents.

Focus Group Information

In order to obtain the perspectives of lifeguards with respect to the different variations, the ECS Team will use a mixed methods approach. Early in the season (April 2017), focus groups of lifeguards will be held, one on the Outer Banks of North Carolina and one near the southern beaches, in the vicinity of Wilmington. The first part of the focus group session will use an audience response system, or "clicker" survey, where participants will be presented with questions in a PowerPoint presentation and they will have clicker devices to record their responses to each question. The questions will address years of experience, age, and other demographic characteristics, as well as questions in the same format as in the public survey. Following administration of the survey, responses will be automatically and anonymously shared with the whole group on the screen. At that point, participants will be asked to discuss the results and their reasons for the responses.

The same mixed methods approach used for the lifeguards will be used for local decision maker focus groups, with a focus group to be held near Beaufort or Morehead City and another in Wilmington. The composition of the groups mimics that of Integrated Warning Teams (IWTs) that WFOs throughout the country are developing. IWTs include emergency managers and broadcasters (along with NWS forecasters) in an area, and workshops are held to foster improved communication, strengthen relationships, and share information about past or impending weather events, among other goals. The inclusion of broadcast meteorologists is critical because they

disseminate information about rip currents through their daily broadcasts and through Facebook and Twitter. In addition, they are a regional trusted source of information and are an important source for tourists. The questions used in these focus groups will differ only slightly from the one for the lifeguards, with a few different background questions to account for the different responsibilities. It is anticipated that the discussion that flows following the survey will provide additional and different insights about the various products compared to the lifeguards' discussion.

NWS will reach out to known groups to identify lifeguard and decision-maker focus group participants. We will work with contacts in the NWS WFOs in Newport/Morehead City and Wilmington to identify emergency managers, broadcast meteorologists and other officials who are part of their IWTs. Further, we will contact local government officials and lifeguard certification organizations to identify lifeguards.

A full report of the survey results will be produced, but will not be made publicly available. The results will be presented at a conference.

NOAA will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NOAA standards for confidentiality, privacy, and electronic information. See response to Question 10 of this Supporting Statement for more information on confidentiality and privacy. The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to Section 515 of Public Law 106-554.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological techniques or other forms of information technology.

The information collected via the online survey, will make use of automated, electronic, mechanical and other technological techniques. The online survey will use a "responsive" web-based survey, meaning that its display will adapt to a desktop or mobile device screen allowing the public to take the survey whenever they have internet access, and will be built with a Microsoft SQL database back-end and ASP.net/C-sharp front-end. The web-based survey's "landing" page will have a brief description of the survey, and a "Completely Automated Public Turning test to tell Computers and Humans Apart" (CAPTCHA) component which will be implemented to prevent "robots" from entering multiple copies of the survey. The web-based survey will also include a "completeness meter" to inform users of how close they are to completing the survey. The survey will display an error message when the user tries to navigate to the next web page without answering all the questions on the current page. Data collected through the web survey will be downloaded via Microsoft Excel and will be available in that format for data analysis.

The focus group data will be collected manually and entered directly into a desktop computer. During the focus groups, clicker technology will be used to provide real time responses from the entire group anonymously. Data from the clicker responses will be collected manually and entered directly into a desktop computer.

4. Describe efforts to identify duplication.

Based on discussions with NWS staff and risk assessment social scientists, there is no significant duplication of effort within NWS or with other federal surveys.

5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

The collection of this information does not involve small businesses or other small entities.

6. Describe the consequences to the Federal program or policy activities if the collection is not conducted or is conducted less frequently.

The NWS is tasked with providing weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy. If this data is not collected, NWS will not be able to provide a public and user-friendly rip current forecasting tool that allows beachgoers to assess the dangers and risks of getting caught in a rip current prior to visiting the beach and entering the water. In turn, the public will not be able to receive near real-time data which could result continuing injuries and deaths from rip currents compared to what could otherwise occur if the products conveying rip current information were improved. Survey and focus group results will define how to present the rip current risk tool clearly and concisely to best elicit the appropriate response from society.

7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines.

The collection will be conducted in a manner consistent with OMB Guidelines.

8. Provide information on the PRA Federal Register Notice that solicited public comments on the information collection prior to this submission. Summarize the public comments received in response to that notice and describe the actions taken by the agency in response to those comments. Describe the efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

A Federal Register Notice published on June 7, 2016 (81 FR 36521) solicited public comments. No comments were received.

9. Explain any decisions to provide payments or gifts to respondents, other than remuneration of contractors or grantees.

No payments or gifts are made.

10. Describe any assurance of confidentiality provided to respondents and the basis for assurance in statute, regulation, or agency policy.

As stated on the survey and at the focus groups, the data collected will not be released for public use except in aggregate statistical form.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private.

There are no questions of a sensitive nature.

12. Provide an estimate in hours of the burden of the collection of information.

Survey:
Total responses: 500 completed surveys
Completion time: 30 minutes
Total hours: 250 hours

Focus groups:
Total number: 80 participants and responses
Completion time: 1.5 hours
Total hours: 120 hours

An hourly rate of $45.21 is based on the average for civilians in management occupations from the January 2011 National Compensation Survey (http://www.bls.gov/ncs/ocs/sp/nctb1477.pdf). There are no other costs to respondent. A total of 370 burden hours are anticipated across all parts of the survey, resulting in a cost to respondents of approximately $16,727.70 over 5 months.

13. Provide an estimate of the total annual cost burden to the respondents or record-keepers resulting from the collection (excluding the value of the burden hours in Question 12 above).

There are no start-up, capital, or maintenance costs associated with this collection. No new or specialized equipment is needed to respond to this collection.

14. Provide estimates of annualized cost to the Federal government.

The estimated Cost to the Government is a one-time cost of $55,847.60 for conducting the online survey and focus groups, developing the surveys and prototypes, entering the data from the survey and focus groups, analysis of the data and creation of a final report. Any scientific publications will be developed by NWS staff as part of their regular federal duties.

15. Explain the reasons for any program changes or adjustments.

This is a new submission.

16. For collections whose results will be published, outline the plans for tabulation and publication.

All results from the survey and focus groups will be entered in a database using standard QA/QC procedures in survey research. The data will be analyzed using standard software (e.g. SPSS) and standard statistical procedures that are appropriate for survey data. Results from this collection may be used in scientific, management, technical or general informational publications, and would follow prescribed statistical tabulations and summary table formats.

Data from this survey may support research and analyses to be presented at appropriate professional meetings and may be submitted for publication in appropriate peer-reviewed journals.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.

NA.

18. Explain each exception to the certification statement.

NA.