National Recreational Boating Safety (RBS) Program

2017-2021 Strategic Plan

DRAFT Distribution: March 2, 2016
Anticipated Publication: January 1, 2017

United States Coast Guard
Office of Auxiliary & Boating Safety (CG-BSX)

Contact info: StrategicPlan2017-2021@uscg.mil
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FOREWORD

Every year, more than 70 million Americans participate in recreational boating. Recreational boating has significant economic impacts on the economy and is an important part of the American heritage and culture.

The United States Coast Guard (USCG), the states, industry, organizations, and other members of the boating safety community are pleased to report that boating has and is becoming safer over time. Since 1971, the year the United States Congress authorized the creation of the National Recreational Boating Safety (RBS) Program, the estimated number of recreational vessels has more than doubled, while the number of boating casualties (the sum of deaths and injuries) has decreased by more than 50%. While this trend is impressive, more can be done. Each year, lives are lost, adults and children are injured, and property is damaged. No one expects that today may be the day that someone in their family/community will be injured or killed in a boating accident. The good news is, these casualties are PREVENTABLE. By increasing preparedness, boat operator education, and boater awareness, we can decrease casualties and evolve our safety culture.

Since the inception of the first Strategic Plan of the National RBS Program in 2006, a broad coalition of recreational boating leaders including private citizens, national nonprofit public service organizations, and the boating industry, have continued to collaborate with state and federal agencies and assist in the measurement of progress. Many of these leaders volunteer their organizations’ as well as their personal time to develop and implement an ambitious, forward-looking, and coordinated Strategic Plan. This 2017-2021 Strategic Plan builds upon earlier successes while closing those gaps identified in our most recent review of strategic opportunities.

This iteration of the Plan is different from previous versions as it follows an updated format and utilizes approaches/terms as directed by federal oversight; however, there is continuity within this approach. Many of the initiatives and measurements that have proven successful in prior years will continue as long as they prove effective moving forward.

We will create a boating safety culture where boaters value safe boating practices and want to exhibit safe boating behaviors. We will achieve better boat operator preparedness through on-water boating courses, a greater understanding of and compliance with navigation rules, and inform the public of the voluntary use of evolving safety equipment such as inflatable life jackets and personal locator beacons.

YOUR support and assistance are required to raise public consciousness to reduce recreational boating casualties. By strategically thinking through the influence you have on boat operator
behavior and continuing recreational boating accident reductions, you not only have the opportunity to be a force for change, you have the opportunity to be a force for good.

EXECUTIVE SUMMARY

This Strategic Plan has been developed to support the mission of the USCG’s National RBS Program. It was designed by a team of subject matter experts mandated by the United States Congress and the Administration to provide input and guidance to the USCG on matters of recreational boating safety. However, the Plan is implemented by a community of recreational boating safety professionals and volunteers across the country who share a belief in the importance of ensuring safe and enjoyable recreational boating experiences for everyone using our nation’s waterways.

While most members of the boating public practice safe boating behaviors, gaps in individual preparedness, and situational awareness remain. Despite the historic reductions in fatality rates, there are significant opportunities for improvement. To facilitate a comprehensive culture shift towards safe recreational boat operator behavior, this Plan includes three major strategic functions that provide clear, efficient, and effective program direction: cultivate a better-prepared boating public that seeks engagement in safe boating behaviors, gather enhanced data by building, and using highly integrated data systems (data fusion) to make better-informed policy decisions, and coordinate the efforts of the boating safety community through stakeholder partnerships and constituency building activities that benefit the American public.

Mission Statement

The mission of the National RBS Program is to ensure the public has a safe, secure, and enjoyable recreational boating experience by implementing programs designed to minimize the loss of life, personal injury, and property damage while cooperating with environmental and national security efforts.
STRATEGIC OVERVIEW

Ownership of this Plan

Federal law (46 U.S.C. 13110) mandates that the Secretary of the Department in which the USCG is operating shall establish and consult with its Federal Advisory Committee (FACA), the National Boating Safety Advisory Council (NBSAC), on regulations and other major boating safety matters. The USCG utilizes the assistance of the NBSAC, comprised of twenty-one state, industry, national recreational boating organization members and the public, to develop and implement a National RBS Program Strategic Plan aimed at improving recreational boating safety and promoting a culture of safe recreational boating behavior. Through concentrated, continuous, and coordinated efforts, the USCG enlists National RBS Program "implementing organizations" and empowers them as vested stakeholders; i.e., organizations willing to take partial ownership and support the National RBS Program.

 Authorities

In addition to establishing the NBSAC (46 U.S.C. 13110), Congress also established the National Recreational Boating Safety (RBS) Program in the Federal Boat Safety Act of 1971. In 1983, Congress revised, reorganized, and codified Title 46 U.S.C. as follows:

Section 13102(a): "To encourage greater State participation and uniformity in boating safety efforts, and particularly to permit the States to assume the greater share of boating safety education, assistance, and enforcement activities, the Secretary shall carry out a national recreational boating safety program. Under this program, the Secretary shall make contracts with, and allocate and distribute amounts to, eligible States to assist them in developing, carrying out, and financing State recreational boating safety programs".

Section 13104(c): "The Secretary may allocate not more than 5 percent of the amounts available for allocation and distribution in a fiscal year for national boating safety activities of national nonprofit public service organizations".

In December 2015, Congress updated and amended 46 U.S.C. Chapter 131 and other related sections, reaffirming the authorization and value of this Program.
CHALLENGES & OPPORTUNITIES

The following key challenges and opportunities are addressed by this Plan.

1. **Behaviors:** On-going and persistent gaps in safe boating behaviors and practices exist. While the majority of boaters have adopted safer behaviors as evidenced by a significant reduction in recreational boating fatalities and injuries, some segments of the recreational boating community have yet to adopt such behaviors. The goal is to influence and cause real boat operator and passenger behavioral change utilizing an evidence-based model, such as the Public Health Approach, through awareness, education, and other interventions that will result in increased situational awareness and safer recreational boating practices while underway.

2. **Technologies:** New and emerging technologies in recreational boating safety are outpacing assimilation. Technology has outpaced awareness and appreciation of new and emerging products, within the engineering realm (e.g., engine cutoff switches, personal locator beacons, LED (light emitting diode) rescue lights), that have the potential to reduce recreational boating accidents and fatalities.

3. **Trends:** Numerous trends in recreational boating preferences represent a cultural shift. The demographics of recreational boating are evolving as new recreational boating products are introduced into the market. Generational and demographic changes include changes in boating participation in the three domains of recreational boating—sailing, powerboating, and human-propelled boating. A shift from powerboats to pontoon and smaller boats (standup paddleboards, kayaks, and other human-propelled boats), requires awareness of change by educators and law enforcement in order to better serve and protect the recreational boating public. A better understanding of these ongoing transformational changes is required.

Historically, powerboat operation has been at the center of safety education efforts. Recognizing the need for “competent” recreational boaters in all areas of boating participation will aid in promoting safe on-water practices by all types of current and potential recreational boating participants (sail, power, and human-propelled) including future generations and under-represented populations. In addition, this approach will more effectively allocate limited resources that focus on community level participation that in turn assist in the delivery of coordinated programs within the National System of Standards inclusive of both recreational boating knowledge and skills.

4. **Management:** RBS program management activities need clear direction for the next wave of effective implementation. Improving programs, processes, and productivity within the RBS Program can result in significant, positive impact on the public’s perceptions of recreational boating safety behaviors.
a. To a degree, policy and regulatory interventions and requirements are outdated. Laws and policies must be regularly reviewed and if necessary, revised with respect to the current state of technology and communicated to the public in a manner that fosters understanding and compliance.

b. Recreational boating management through data collection and research (all relevant agencies and organizations), methods (technology), processes (data fusion), and analytics (statistical and spatial) have matured during recent decades. Current data collection efforts do not sufficiently address the opportunities resulting from a more comprehensive data collection plan. Although the USCG has put forth a great deal of effort with regard to manufacturing safety standards (technology) and safety defects, the primary focus of recreational boating accident risk management continues to focus on human factors. This narrow focus is too restrictive to capture the complete recreational boating accident domain. A combined consideration of human, technological, environmental, and temporal factors is needed to fully understand the highly integrated and complex influences on recreational boating accidents, fatalities, and associated trends. In other words, sound decisions must be based upon the availability and use of sound data. This opportunity fills the gap of efficient decision making and the allocation of limited resources.

c. Non-Government Organization (NGO) and other Program Implementer involvement continues to be an effective way to implement innovative approaches to reducing recreational boating accidents and fatalities. Applying evidence-based models to these approaches will ensure that future and continuing programmatic focus is defined according to magnitude, scope, characteristics, and consequences to ensure focus on problems that are controllable and preventable. The evidence-based models will adopt research or other evidence to determine if NGO grant proposal submissions (during the proposal review process) and awards can be effectively measured and evaluated in terms of merit and broader impact. This opportunity fills decision making gaps by enabling measured accountability as it involves the allocation of limited fiscal resource.
PERFORMANCE INITIATIVES

This plan includes three performance initiatives designed to take advantage of the opportunities while addressing the challenges associated with recreational boating. They are: a) improve and expand recreational boating education, training, and outreach; b) leverage, enforce, and update policies, regulations, and standards; and c) expand recreational boating data collection and research. There is no order, priority, or sequence associated with these three initiatives. They are inter-related and intended to be implemented in conjunction with each other. Each initiative in the following section contains:

a) An Overview that sets the context for the initiative;

b) Courses of Action that include key milestones and targeted timeframes for completion; and

c) A strategic link to the challenges and opportunities being addressed.
**Initiative 1: Improve and expand recreational boating education, training, and outreach**

**Overview:**
Recreational boating is an enjoyable and accident-free activity for millions of Americans. However, every year a segment of the recreational boating population is involved in boating accidents that result in property damage, injury, or even death. While efforts to eliminate preventable boating casualties (the sum of deaths and injuries) continue, boating professionals recognize the need to enhance education and targeted awareness efforts aimed at creating a systemic shift toward safe recreational boating safety behaviors. This shift produces a boating population that values safety, is incentivized to seek more recreational boating education and training, and as a result will be more likely to make sound, risk-based decisions that ensure safe waterway experiences for themselves and their passengers.

Although education mandates vary widely, the USCG Office of Auxiliary and Boating Safety reported in 2014 that 27.5% of the US population was potentially impacted by a state-mandated recreational boating education requirement. To advance boater education initiatives that enable a systemic shift toward safe recreational boating behaviors, key areas must be analyzed and addressed including: the impact of current state-mandated boating education, the value of a heightened focus on on-water skill-based education in the power, sail, and human-propelled domains of recreational boating, and the effectiveness of implementing a coordinated National System of Standards for Recreational Boat Operation.

There are two primary objectives to improving and expanding recreational boating education, training, and outreach: a) increasing boater knowledge and skills pertaining to national standards and b) developing and supporting coordinated/integrated national awareness campaigns targeting a positive culture shift towards safe boating behavior. While operator education seems fundamental to increasing boating safety, building a safety culture for all boaters, including passengers, will most effectively impact a reduction in casualties.

The following Courses of Action (CoA) are designed to address the needs and objectives outlined in this initiative:

CoA 1 targets increased boater knowledge education and skills training that meet national standards through thoughtful data collection and the development and implementation of boating education programs for adults, as well as, youth and under-represented demographics. It also addresses basic and advanced boater competency recognition programs.

Current boating statistics indicate that approximately eighty-three percent (83.7%) of boaters who drown were aboard boats under 21 feet in length. CoA 2 focuses on advancing campaigns designed to promote positive boater behaviors including life jacket usage for individuals on smaller boats. To better connect across generations, boating safety messages will be conveyed through multiple mediums (e.g., digital communication to reach today’s youth).
Taking a systemic approach to aligning and maintaining national recreational boating standards is the focus of CoA 3. This National System will offer a complete menu of knowledge and on-water boating skills-based standards to benefit course providers, instructors, and the boating public. A Standards Collaboration Leadership Team will help guide the advancement of recreational boating standards and foster a recreational boating constituency to systemically “grow boating”.

**Courses of Action:**

**CoA 1 Increase boating knowledge and skills meeting national standards**

This CoA captures needed data, promotes boating education, addresses instructor qualifications, and promotes programs for youth under 18 years of age and other underrepresented groups.

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<td>1</td>
<td>Incorporate into the national boating survey, questions regarding who has completed a boating education course meeting national standards.</td>
<td>2017</td>
<td>1, 3, 4</td>
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<tr>
<td>2</td>
<td>Implement evidence-based/effective boating safety programs for youth and underrepresented groups.</td>
<td>2018</td>
<td>1, 3, 4</td>
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<tr>
<td>3</td>
<td>Implement a plan to recognize basic and advanced boater education “competency” earned from courses meeting national boating standards.</td>
<td>2021</td>
<td>1, 3, 4</td>
</tr>
<tr>
<td>4</td>
<td>Implement a new model that satisfies Operator of Uninspected Passenger Vessel (OUPV) licensing requirements for on-water instructors receiving compensation.</td>
<td>2021</td>
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**CoA 2 Advance campaigns which target adoption of positive boater behaviors**

This CoA targets highest risk populations by implementing a variety of media campaign(s) designed to increase safe boating behaviors.

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<td>5</td>
<td>Design a targeted life jacket campaign for boaters in high risk populations.</td>
<td>2018</td>
<td>1, 3, 4</td>
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<tr>
<td>6</td>
<td>Implement an evidence-based/effective campaign(s) targeting the highest causality risks and the highest risk group(s) for each desired behavioral change.</td>
<td>2019</td>
<td>1, 3, 4</td>
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CoA 3 Systemic approach to align and maintain national recreational boating standards
This CoA formalizes a National Standards Collaboration Team to facilitate national boating standards work to benefit course providers, instructors, and the boating public.

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<td>7</td>
<td>Publish and distribute ANSI accredited standards for boating knowledge and skills for all domains.</td>
<td>2017</td>
<td>1, 3, 4</td>
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<tr>
<td>8</td>
<td>Empanel a National Standards Collaboration Team to assist in developing a configuration management program for the National System of Standards for Recreational Boat Operation.</td>
<td>2018</td>
<td>1, 3, 4</td>
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Initiative 2: Leverage, enforce, and update policies, regulations, and standards

Overview:
Recreational boating safety has been enhanced substantially during the last 45 years through interventions in the enactment and enforcement of laws, regulations, standards, and policies such as equipment carriage requirements, boater education promotion, construction standards, and strengthened boating under the influence laws. However, current boating accident report data continues to identify areas where targeted interventions could positively impact the public’s boating safety behaviors. The boating safety community recognizes the need to improve boater awareness of and compliance with laws pertaining to alcohol and drug use and the navigation rules, address gaps in current safety equipment regulations (e.g., lighting, life jacket wear in certain high risk circumstances), adopt newer technologies (e.g., emergency locator beacons, inflatable life jackets, electronic visual distress signals), and improve boat construction regulations and manufacturing compliance. There is also a need for stronger emphasis on law enforcement instructor and officer training, particularly in the areas of operator impairment and navigation rules.

In 2014, Navigation Rules (NAVRULES) related violations were cited as the primary contributing factor in 1,482 accidents, 1,116 injuries, and 102 deaths. Excessive speed, improper lookout, inadequate onboard navigation lights, and operator inattention, represented primary contributing factors in accidents and fatalities. NAVRULES related violations as a primary contributing factor accounted for 16.6% of deaths in 2012, 19.6% of deaths in 2013, and 16.7% in 2014. While current boat accident data provides answers to the question of “what” happened in these incidents, there is little illumination as to “why”. Capturing meaningful data that can be interpreted and applied in the field will better target public adoption of safe boating behaviors. Employing proven and evidence-based prevention models in recreational boating safety such as the Public Health Approach will increase the effectiveness of such programs over time.

There are three primary objectives for this initiative: a) identify ways to improve regulations, laws, or standards, b) communicate those regulations to the boating public, and 3) develop partnerships in enforcing or carrying out those regulations aimed at increasing boating safety behaviors.

The following four Courses of Action (CoA) are designed to address the needs and objectives outlined in this initiative:

CoA 4 seeks to utilize an evidence-based approach to identify human factors, design interventions to address them, and evaluate the results. Follow on programs will be modified to incorporate the insights and best practices developed through these experiences.

CoA 5 focuses on regulatory action aimed at improving the visibility of sidelights on vessels smaller than 12 meters, updating boat accident reporting criteria, revising carriage requirements to reflect improved or newly available technology, and promoting lifejacket wear for high risk boating.
CoA 6 seeks to unify and strengthen the relationship between Driving under the Influence (DUI) and Boating under the Influence (BUI) initiatives and improve officer training. This includes improved cooperation with existing and potential partners such as the National Highway Transportation Safety Administration (NHTSA) and the International Association of Chiefs of Police (IACP) through sharing of research and technical information, broadening acceptance of field sobriety testing instruments, and communicating a unified message to the enforcement, prosecutorial and judicial community to support implementation. Similarly, a comprehensive and expanded training program for officers will promote consistent enforcement and uniformity between the states.

CoA 7 addresses the need to better quantify the compliance of manufacturers to the requirements outlined in 33 CFR 181 & 183 indicated by "real world" data feedback of safety discrepancies and inspection and/or testing of products offered into the stream of commerce. Additionally, it evaluates tools to maintain regulations to match pace with the current state of technology and creates a structured safety information outreach program to manufacturers in the industry.

**Courses of Action:**

**CoA 4 Increase operator compliance with navigation rules (NAVRULES)**
Reduce accidents related to NAVRULES violations as a result of causal factors that lead to inappropriate recreational boat operator actions. This CoA involves coordination with key stakeholders to identify those causal factors most correlated with recreational boating accidents.

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<tr>
<td>9</td>
<td>Develop, test and report interventions at high risk location(s).</td>
<td>2018</td>
<td>1, 2</td>
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<td>10</td>
<td>Implement most effective or adjusted interventions at same high-risk locations.</td>
<td>2019</td>
<td>1, 2</td>
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<tr>
<td>11</td>
<td>Implement interventions on a large scale and community level.</td>
<td>2021</td>
<td>1, 2, 3</td>
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**CoA 5 Adopt comprehensive regulatory reform**
This CoA addresses opportunities in new technologies and new or revised regulations that can benefit safe boating.

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<tr>
<td>12</td>
<td>Change the 1 nm side light requirement for vessels under 12m to 2 nm to improve navigation light recognition while on the water, if accident data or</td>
<td>2021</td>
<td>1, 2</td>
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technological improvements in current navigation lights warrant it.

13  Require LED or non-filament type navigation lights (or devices that exceed such specifications) for all new vessels replacement lights.  2021  1, 2

14  Evaluate boat accident reporting laws and policies and revise as necessary to improve accuracy and applicability of the data acquired.  2021  1, 2

15  Review and revise current carriage requirements to allow options to adopt improved technology.  2021  1, 2

16  Promote lifejacket wear for high risk boaters.  2021  1, 2

**CoA 6 Improve enforcement of BUI laws**
From 2010-2015, alcohol use was listed as the leading causal factor in fatal boating accidents in 21% of recreational boating accidents. This CoA addresses the lack of national recognition of BUI programs (seated battery) and corresponding impact on state implementation. This disconnect leads to misunderstanding and communication challenges between highway and marine law enforcement agencies.

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<td>17</td>
<td>Align national BUI policy with DUI.</td>
<td>2021</td>
<td>1, 3</td>
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<tr>
<td>18</td>
<td>Enhance the national model for marine law enforcement officer and instructor BUI training.</td>
<td>2021</td>
<td>1, 3</td>
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**CoA 7 Ensure boat and associated equipment “Manufacturing in Compliance” (MIC) is consistent with USCG standards**
Modifications of current factory inspection programs can provide an opportunity for the USCG to gather more information on manufacturer compliance to set targets for safety improvements. This CoA targets outreach opportunities for the USCG aimed at existing MIC holders.

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<td>19</td>
<td>Re-establish, at a minimum, a semi-annual outreach to manufacturers.</td>
<td>2017</td>
<td>2</td>
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<tr>
<td>20</td>
<td>Broaden the manufacturing inspection program to utilize other available certification entities.</td>
<td>2017</td>
<td>2</td>
</tr>
<tr>
<td>21</td>
<td>Produce a report of manufacturer non-compliance and safety discrepancies and set targets for improvement.</td>
<td>2018</td>
<td>2</td>
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<tr>
<td>22</td>
<td>Incorporate by reference applicable American National Standards in place of Title 33 CFR part 183.</td>
<td>2021</td>
<td>2</td>
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**Initiative 3: Expand recreational boating data collection and research**

**Overview:**
Research suggests that most recreational boating accidents occur in close proximity to the boat operator’s homeport indicating that boating risk factors depend on recreational boat operator behavior patterns specific to those trips. Gathering and analyzing these boating behaviors as combinations of integrated risk factors that “collectively” reveal recreational boating accident risk patterns over space and time will produce meaningful information for professionals to develop interventions designed to increase safe boater behaviors. Since gaps in available recreational boating data and analyses exist, there is a need for an expanded data collection model employing advanced measures to capture more consistent, accurate, and relevant information about recreational boat operator behaviors and the corresponding linkages to recreational boating accident risks.

Since 1959, the USCG Office of Auxiliary and Boating Safety has employed a number of methods to collect data on recreational boating accidents and casualties from multiple sources (e.g. boating surveys, state accident reporting, etc.). A wide variety of data (i.e., data collection) is available in various forms; however, USCG statisticians also take steps to normalize (i.e., combine accident and non-accident data) to effectively use the information for statistical purposes. Combining data from multiple sources provides greater opportunity to produce meaningful data. For example, combining accident data with non-accident data, such as boater exposure hours, develops improved measures of boating risk and accident risk research.

Currently, the USCG collects and shares boating accident data using the secure, web-enabled Boating Accident Report Database (BARD) System. While BARD data is a complete record of reported recreational boating accidents, it has limitations including:

- **BARD does not contain non-accident recreational boating data to which recreational boating accidents can be compared.** Collecting non-accident recreational boating data that is on-water based and location specific must be used to advance beyond this limitation. For example, federal (e.g., NOAA, USACE, NASA), state (e.g., citation, warning, VSC, satellite), and corporate (e.g., manufacturing, insurance) data could be acquired and assimilated into a central system repository (CSR) through a process known as Data Fusion.

- **BARD has only limited capability to capture human factors data believed to correlate with a majority of the causes, risks, or contributing factors to boating accidents.**

To investigate boating accidents, BARD data is typically normalized and combined with recreational boating registration data or boating exposure hours data collected through the National Recreational Boating Safety Survey (NRBSS). However, there are limitations to the quality of this data output stemming from the lack of consistent collection of NRBSS data and the inconsistent collection of exposure hours data.
New technology offers the potential to more effectively develop recreational boat accident models, as well as, recreational boat operator on-water behavior. Such data will also help efficiently capture data that can be used to normalize BARD data. Data Fusion offers the opportunity to enhance our ability to ask questions with greater specificity, enable greater understanding, and open the door to new discoveries further reducing recreational boating causalities.

Using a Data Fusion approach offers several investigative (research and analysis) strengths:

- Facilitates the closure of current data gaps, enables advanced levels of research and discovery, and closes current gaps caused by missing or unreliable BARD data;
- Permits a more complete collection and representation of recreational boating variables ensuring that BARD data normalization can be fully achieved;
- Permits the use of non-accident based on-water recreational boating data to enable a direct comparison of the similarities and differences between multiple causal factors, sites, etc. permitting broader recreational boater accident/non-accident comparisons; and
- Permits federal, state, regional recreational boating researchers, and others with a vested interest to examine recreational boating and accident data and risks patterns at a local rather than just the state or national level.

This initiative targets three primary objectives: a) expand research and data collection of meaningful recreational boating safety information, b) develop a common portal to provide recreational boating professionals and the public access to actionable data, and 3) engage the recreational boating community to participate in an evidence-based approach to implementing a comprehensive, meaningful data collection program.

The following three Courses of Action (CoA) are designed to address the needs and objectives outlined in this initiative:

CoA 8 focuses on building an expanded database of recreational boating information that professionals can use to develop interventions aimed at increasing the public’s safe boating behaviors.

CoA 9 provides centralized portal access to the newly expanded database of recreational boating information so that stakeholders (and other interested parties seeking actionable data) can make informed decisions to address recreational boating safety programs.

CoA 10 develops a grant framework that adopts an evidence-based, problem solving approach to grant funded projects structured to include a process for continuous improvement. The USCG Office of Auxiliary Boating Safety grant program enhances the ability of non-profit organizations to implement programs that advance safe boating messages and cultivate safe boating behaviors.
Courses of Action:

CoA 8 Develop a central recreational boating database
Currently available recreational boating data is limited, not readily accessible, or not centrally captured. This CoA addresses building a central database system to include recreational boating data from stakeholders and other applicable sources to fill this gap.

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<td>23</td>
<td>Develop an expanded database aggregating available recreational boating data into a central database system (Data Fusion).</td>
<td>2018</td>
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CoA 9 Develop a central recreational boating database portal
Current recreational boating research is focused on the National Recreational Boating Survey, BARO, and selected state data. This CoA provides for data availability through the central recreational boating database to enable stakeholders and other users to expand their range of recreational boating research and analysis.

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<tr>
<td>24</td>
<td>Develop a portal through which recreational boating data obtained from the new central database system could be extracted for analysis.</td>
<td>2019</td>
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</tbody>
</table>

CoA 10 Develop an evidence-based model, such as the Public Health Approach, that can be applied to the recreational boating safety program
This CoA addresses adoption of a process approach that has the potential to increase the level of effectiveness of injury prevention programs by using a widely-accepted evidence-based model.

<table>
<thead>
<tr>
<th>#</th>
<th>Milestones</th>
<th>Target Completion Date</th>
<th>C&amp;O Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Evaluate an evidence based model that is applied to one non-profit organization grant program award during the FY 2017-2018 funding cycle.</td>
<td>2017</td>
<td>3, 4</td>
</tr>
<tr>
<td>26</td>
<td>Develop an evidence-based model that can be evaluated.</td>
<td>2018</td>
<td>3, 4</td>
</tr>
</tbody>
</table>
PERFORMANCE INITIATIVE MEASURES

RBS Performance Goals

Please note that the numbers in the table below are DRAFT performance goals. Once FY 2015 data have been confirmed and the initiatives in this plan are final, the Work Group will analyze these performance goals and update them to reflect the most recent data.

The performance goal of the Strategic Plan of the National RBS Program is to reduce recreational boating deaths and injuries. The following numbers have been established for recreational boating casualties (the sum of deaths and injuries) for FY 2017 through FY 2021:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Number of Deaths</th>
<th>Number of Injuries</th>
<th>Total Casualties (Deaths &amp; Injuries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>611</td>
<td>2756</td>
<td>3367</td>
</tr>
<tr>
<td>2017</td>
<td>608</td>
<td>2729</td>
<td>3337</td>
</tr>
<tr>
<td>2018</td>
<td>605</td>
<td>2701</td>
<td>3306</td>
</tr>
<tr>
<td>2019</td>
<td>602</td>
<td>2674</td>
<td>3276</td>
</tr>
<tr>
<td>2020</td>
<td>599</td>
<td>2648</td>
<td>3247</td>
</tr>
<tr>
<td>2021</td>
<td>596</td>
<td>2621</td>
<td>3217</td>
</tr>
</tbody>
</table>

FY 2016 goals were based on the latest, validated 3-year average data (FY 2012-2014). Starting with the FY 2016 goals:

- Deaths were calculated by subtracting 3 from the previous year.
- Injuries were calculated by subtracting 1% from the previous year.

Notes
1. Injuries, deaths, and casualties vary from year to year. To smooth out random variations, 3-year moving averages were used. For example, the goal for injuries in FY 2016 was calculated by summing the number of injuries recorded in the years FY 2012 through FY 2014 and dividing by 3.
2. These goals were determined by a combination of expert judgment and mathematical extrapolation of prior time-series data. Substantial improvements would require new laws or regulations (e.g., life jacket wear for a broader segment of the boating public, promote boating safety education, and/or innovations that significantly prevent boating casualties).
3. Historically, estimates of injuries are believed to have been understated because not all recreational boating accidents (particularly those involving injuries not requiring hospital admission) are reported. No specific allowance for increased reporting is reflected in the injury goals given in these tables. Therefore, periodic revisions may need to be made.
**Initiatives**

**Initiative 1: Improve and expand recreational boating education, training, and outreach**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of certificates for knowledge education.</td>
<td>% or #</td>
</tr>
<tr>
<td>Number of certificates for on-water training.</td>
<td>% or #</td>
</tr>
<tr>
<td>Accidents in the targeted age groups.</td>
<td>% or #</td>
</tr>
<tr>
<td>Life jacket wear by high risk boaters.</td>
<td>% or #</td>
</tr>
<tr>
<td>Boaters who have completed boating education courses (for each domain)</td>
<td>% or #</td>
</tr>
<tr>
<td>meeting American National Standards.</td>
<td></td>
</tr>
</tbody>
</table>

**Initiative 2: Leverage, enforce, and update policies, regulations, and standards**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer non-compliance rates.</td>
<td>% or #</td>
</tr>
<tr>
<td>Navigation Rules violations as a causal factor for accidents per 100,000 exposure hours.</td>
<td>% or #</td>
</tr>
<tr>
<td>BUI related accidents per 100,000 exposure hours.</td>
<td>#</td>
</tr>
<tr>
<td>Number of officers and instructors trained in BUI.</td>
<td>#</td>
</tr>
<tr>
<td>Number of active MIC codes.</td>
<td>#</td>
</tr>
</tbody>
</table>

**Initiative 3: Expand recreational boating data collection and research**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable to this section.</td>
<td></td>
</tr>
</tbody>
</table>
APPENDICES

A. Acronyms and Definitions
B. Operational Characteristics
### A: Acronyms and Definitions

1. **ANS**
   - American National Standard

2. **ANSI**
   - American National Standards Institute

3. **BUI**
   - Boating Under the Influence

4. **BARD**
   - Boating Accident Report Database System

5. **CFR**
   - Congressional Federal Register

6. **CoA**
   - Course of Action

7. **CSR**
   - Central System Repository

8. **Data Fusion**
   - The process of synthesizing raw data from several sources to generate more meaningful information that can be of greater value than single source data.

9. **DUI**
   - Driving Under the Influence

10. **Evidence-based Approach**
    - Refers to any concept, strategy, or approach derived from or informed by “objective evidence” resulting from metrics, research, performance, or any combination thereof.

11. **FACA**
    - Federal Advisory Committee

12. **HCD**
    - Human Centered Design

13. **Human-Propelled**
    - Human energy is the source of propulsion

14. **IACP**
    - International Association of Chiefs of Police (IACP)

15. **LED**
    - Light Emitting Diode

16. **MIC**
    - Manufacturer Identification Code

17. **Milestone**
    - A date by which a task is complete

18. **NAV RULES**
    - Navigation rules of the USCG

19. **NASA**
    - National Aeronautics and Space Administration

20. **NBSAC**
    - National Boating Safety Advisory Council

21. **NGO**
    - Non-Governmental Organization

22. **NHTSA**
    - National Highway Traffic Safety Administration

23. **NOAA**
    - National Oceanic and Atmospheric Administration

24. **NRBSS**
    - National Recreational Boating Safety Survey

25. **NSS**
    - National System of Standards for Recreational Boat Operation

26. **OUPV**
    - Operator of Uninspected Passenger Vessel

27. **PI**
    - Performance Initiative

28. **RBS**
    - Recreational Boating Safety

29. **SUP**
    - Stand Up Paddleboard

30. **USCG**
    - United States Coast Guard

31. **USACE**
    - United States Army Corps of Engineers

32. **VSC**
    - Vessel Safety Check
B: Operational Measurements

While this Strategic Plan is designed to establish NEW initiatives to prevent deaths and injuries and ways to measure our progress, many initiatives are already underway and are critical to continue and to be measured. This section contains such measurements from prior strategic plans. Pending the final draft of this Plan, some measurements may be integrated into the new initiatives under development, though if not, they will remain operational measurements.

The numbers in parentheses after each measurement refer to the Strategic Plan 2012-2016. Dates were updated and technical amendments were made to reflect the time horizon and vocabulary of the new Plan.

1. Safety Education Certificates and Successful Course Completions (Objective 1)
   Increase the number of persons who complete a boating safety course or test that conforms to the National Boating Education Standards as recognized by the USCG by 3% annually.

2. Track the Number of Certificates – States (Strategy 1.1)
   Approved boating safety course providers who provide boating safety courses or tests that conform to the National Boating Education Standards as recognized by the USCG, will report both the number of boating safety education certificates issued and the number of successful course completions for each federal fiscal year to the Boating Law Administrator of that State.

3. Track the Number of Certificates – USCG (Strategy 1.2)
   States will report to the USCG, on a federal fiscal year basis, the total number of boating safety education certificates issued as well as the number of successful course completions, as part of the Performance Report Part II reporting requirements.

4. Develop a system for measuring the effectiveness of all media outreach efforts utilized (Strategy 2.1)

5. Advanced and/or On-Water, Skills-Based Boating Education (Objective 3)
   Increase the number of boaters who have completed advanced and/or on-water, skills-based boating education.

   For the purposes of this Plan, the following definitions apply:
   - Advanced Education means a course of instruction that meets and exceeds the National Boating Education Standards as recognized by the USCG.
   - On-Water Education means a course of instruction that is boat-based and on the water for skill development, regardless of the level of the course content.

6. Track Participation in and Effectiveness of Advanced Education and On-Water, Skills-Based Boating Education Courses (Strategy 3.1)
   Identify providers of advanced and on-water, skills-based training programs. Survey these providers to estimate the number of instructors, students and student-instructors (e.g.
instructor candidates) involved in these courses by tracking the following minimum participation information:

1. Type and number of courses taught
2. Number of students trained
3. Number of instructors involved in training
4. Number of certificates awarded for student course completion
5. Number of instructor-level courses taught
6. Number of certificates awarded to student-instructors

7. Life Jacket Wear (Objective 4)
Increase adult life jacket wear rates nationwide. Targets: 1. Increase the observed adult life jacket wear rate in open motorboats by 3% from the previous year’s wear rate. 2. Increase the observed adult life jacket wear rate on non-motorized vessels by 3% from the previous year’s wear rate.

8. Operator Compliance, Navigation Rules (Objective 5)
Reduce fatalities associated with Navigation Rules (NAVRULES) violations by 2% per year from the previous year.

9. Expand the Number of States with Boating Safety Classes for NAVRULES Violators (Strategy 5.1)
Encourage states to adopt the NASBLA model act that requires NAVRULES violators to take a NASBLA-approved boating safety course or any boating safety course that conforms to the National Boating Education standards as recognized by the USCG. By 2021 have 10% of the states and territories adopt the NASBLA model act for Boating Safety Course for Certain Violations. Develop an optional (condensed) national course for navigation rule violators based on the current NASBLA model act for certain violations of navigation rules.

Certain violations for this strategy include, but are not limited to, careless/reckless operation, excessive speed, no proper lookout, operator inattention, rules of the road infraction, and lack of proper boat lights.

10. Implement and Revise Curriculum for Officer Training to help ensure Strict Enforcement of NAVRULES (Strategy 5.2)
• Modify PRPII to include collection of information regarding number of officers trained in NAVRULES.
• Target: 80% of state marine officers will complete formal training in NAVRULES enforcement by 2021. Ask the states to provide via PRPII the number of marine officers who completed training.

11. Boating Under the Influence (BUI) (Objective 6)
Achieve a 5% overall decrease in the number of deaths by CY 2021 (using a five-year moving average) where the use of alcohol or other drugs by a boat’s operator and/or occupants was either a direct or indirect cause of the accident. The five-year average for the
2010 to 2014 time period was 135. (The target for the average number of deaths for the five year period 2017 to 2021 is 128 or less.)

12. Measure Alcohol and/or Drug Use in Recreational Boating (Strategy 6.1)
   Measure and document trends in alcohol and/or drug use while boating using the following data sources:
   1. BARD alcohol and/or drug “caused” accidents.
   2. BUI violations from USCG Form 4100.
   3. Performance Report Part II reports from the states.

13. Manufacturer Compliance (Objective 7)
   Decrease the recreational boat manufacturer ratio of discrepancies per factory inspection annually by 5% and keep boats with insufficient flotation off the market.

14. Evaluate Incidents of Non-Compliance with specific USCG Required Safety Equipment (Strategy 8.1)
   1. Identify the number of incidents of non-compliance with safety equipment carriage requirements to determine trends from PRP II and MISLE data.
   2. Ascertain when USCG Required Safety Equipment is carried, whether the additional requirements of accessibility, condition, and appropriate size are met.
   3. Use NASBLA’s Engineering, Reporting and Analysis Committee (ERAC) 2009 analysis and other available sources to pinpoint realistic means to gather and use non-compliance data.
   4. Consider technological solutions and social media to gather and quickly analyze specific compliance data. (Note: For example, vendors of cartographic software are using smart phone applications to collect chart errors from their customer base and greatly reducing the costs of data surveys.)
   5. Recognize that data gathering may require a variety of innovative means, including altering PRP II, using data from USCG courtesy exams, enhancing Operation Drywater, and other sources.

15. Boating Accident Reporting (Objective 9)
   Using the baseline BARD data from 2015, work towards a goal of 100% by 2021, for boat accident report completeness, accuracy and timely submission pursuant to 33 CFR 173 and 174.

16. Conduct a National Boating Survey (Strategy 10.1 and Strategy 10.3)
   - Conduct a National Boating Survey at regular intervals to gather reliable data on exposure.
   - Develop exposure estimates for various types and lengths of boats. Monitor available data on the size and demographics of the potentially exposed population.