



# **National Recreational Boating Safety (RBS) Program**

## **2017-2021 Strategic Plan**

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

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## FOREWORD

Every year, more than 70 million Americans participate in recreational boating. Recreational boating has significant economic impacts 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 recreational boating safety community are pleased to report that boating is becoming safer over time. Since 1971, the year the United States Congress authorized creation of the National Recreational Boating Safety (RBS) Program, the estimated number of recreational boats has more than doubled, while the number of reported boating casualties (the sum of deaths and injuries) has decreased by more than 50%. While this trend is impressive, more can be done. No one expects that someone in their family or community will be injured or killed in a boating accident. Yet each year, lives are still lost, adults and children are injured, and property is damaged. The good news is that by increasing boaters' preparedness, safety education, and awareness, we can continue to decrease risk and evolve a culture of safety.

This plan is the third in a series of 5-year strategic plans. The first plan covered 2007-2011; the second covered 2012-2016. A broad coalition of recreational boating leaders including private citizens, national nonprofit public service organizations, and the boating industry developed and implemented them. Many of these leaders volunteer their organizations' as well as their personal time to these ambitious, forward-looking, and coordinated efforts. While this current iteration of the plan uses a format, approach, and even some terms that differ from previous versions, it builds upon that earlier work.

This 2017-2021 plan continues or updates initiatives and progress measurements that have proven successful over time, while closing gaps identified in the most recent review of strategic opportunities.

In carrying out this plan, we, the recreational boating safety community, will strive to create a safety culture where boaters value and demonstrate safer boating practices and behaviors. We will strive to achieve better boat operator preparedness through on-water boating courses and a greater understanding of and compliance with navigation rules. We will also inform the public of the availability and voluntary use of evolving safety equipment such as engine cutoff switches, inflatable life jackets and personal locator beacons.

We need your support and assistance to raise public consciousness and reduce recreational boating casualties. Think strategically about the influence you have on boat operator behavior. You not only have the opportunity to be a force for change, you have the opportunity to be a force for good.



## EXECUTIVE SUMMARY

The 2017-2021 Strategic Plan supports the mission of the National RBS Program. The plan was designed by a team of subject matter experts. Like the previous 5-year plans, it will be implemented by the community of recreational boating safety professionals and volunteers across the country that share a belief in the importance of ensuring safe and enjoyable recreational boating experiences for everyone using our Nation's waterways.

Despite historic reductions in fatality rates over the past 45 years, there are still significant opportunities for improvement. While most members of the boating public practice safe boating behaviors, gaps in individual preparedness and situational awareness remain. To advance the culture shift toward even safer recreational boat operator behavior, this plan includes three major priorities:



- 1) Cultivate a boating public that is better prepared to engage in safer boating behaviors,
- 2) Make better informed policy decisions by building and using highly-integrated systems to gather and evaluate data from many sources, and
- 3) Nurture collaborative efforts among the stakeholders that benefit the boating public within the recreational boating safety community.

### *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) mandated that the Secretary of the Department in which the USCG is operating establish the National Boating Safety Advisory Council (NBSAC) and consult with it on regulations and other major boating safety matters. NBSAC's 21 members are drawn from the states, industry, national recreational boating organizations, and the public. This Coast Guard plan was developed collaboratively with the members of NBSAC



and additional stakeholders of the National Recreational Boating Safety Program. All who want to decrease deaths and injuries of recreational boaters are invited to support this plan.

### *Grant 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% 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 (C&O)

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

1. **Behaviors: Gaps in safer boating behaviors and practices exist.**

Many boaters have already adopted safer behaviors as evidenced by a significant reduction in recreational boating casualties over the years. However, segments of the recreational boating community have yet to adopt those safer behaviors. Through an approach that uses objective evidence, the goal is to identify and influence behavioral change among boat operators and passengers. Awareness, education, and other interventions can result in increased boat operator awareness of surroundings (situational awareness) and safer recreational boating practices.

2. **Technologies: New and emerging technologies in recreational boating safety are outpacing assimilation into the boating community.**

Technology has outpaced awareness and use of new and emerging products, (e.g., engine cutoff switches, personal locator beacons, and light emitting diode (LED) rescue lights) that can reduce recreational boating casualties.

3. **Trends: Changes in recreational boating preferences represent a cultural shift.**

The demographics of recreational boating are evolving. Generational changes and new boating products are driving these trends. These changes occur within the three areas of recreational boating; i.e., sailing, powerboating, and human-propelled boating.

Historically, powerboats have been the focus of most safety education. Today, human-propelled boats are growing in popularity as are some other types of vessels, such as pontoon boats. Educators and law enforcement must be made aware of this shift to better protect the recreational boating public.

Risk-based evidence can identify boating participants at highest risk, and guide the allocation of limited resources to deliver coordinated programs that meet criteria for knowledge and skills under the National System of Standards for Recreational Boat Operation.

4. **Management: RBS program management activities need clear direction for the next wave of effective implementation.**

Improved management of programs, processes, and productivity within the RBS Program can lead to a significant and positive impact on the public's perception of desirable safety behaviors in recreational boating.

a. **Some policy and regulatory interventions and requirements are outdated.**

Laws and policies must be continuously reviewed and if necessary, revised to accommodate advances in safety (e.g., technology). These advances must be communicated to the public and other stakeholders in the National RBS Program in a manner that fosters understanding and more importantly, compliance.



**b. Current data collection efforts do not sufficiently address opportunities for efficient decision making and allocation of limited resources that could result from a more comprehensive data collection plan.**

Recreational boating management through data collection has matured during recent decades. This has occurred through research conducted by relevant agencies and organizations, and the implementation of various methods (technologies, processes such as ‘data fusion’), and analytics (both statistical and spatial).

Although the USCG has worked on manufacturing safety standards (technology) and safety defects, the primary focus of recreational boating accident risk management continues to be human factors. This focus is too restrictive to capture the complexity of human, technological, environmental, and temporal factors that can help us better understand recreational boating accidents, casualties, and associated trends. Sound decisions must focus on the availability and use of sound data.

**c. Non-Governmental organization (NGO) programs that receive grants should ensure their focus is on measurable goals (evidence-based model approach).**

NGOs implement various approaches to reduce recreational boating accidents and casualties. Applying evidence-based models can ensure focus on innovative approaches to problems that are both controllable and preventable. To ensure award accountability of limited fiscal resources, grant proposals should be reviewed to determine if they can be effectively measured and evaluated.

The term ‘evidence-based model’ generally refers to the conscientious, explicit, and judicious use of the best available scientific and qualitative evidence in making decisions. Long used in public health, it is a problem solving approach that has achieved tremendous successes in preventing or reducing disease worldwide. Adapted to injury prevention, a field within public health, it is now used by the World Health Organization, federal agencies such as the Centers for Disease Control and Prevention, non-profit organizations, state health departments and many others. The field of injury prevention uses evidence to identify and define public health problems, at risk populations, and causal factors that could be influenced (i.e., surveillance).

Evidence-based models develop and test potential interventions to find out what works, then replicate promising interventions, ideally at the community grass-roots level, and carefully evaluate and monitor results throughout the process. The adoption of evidence-based approaches to injury prevention can positively affect recreational boating safety programs.

## PERFORMANCE INITIATIVES

This plan includes three performance initiatives designed to take advantage of the opportunities while addressing the challenges just described. They are:

- a) Improve and expand recreational boating education, training, and outreach;*
- b) Update, leverage, and enforce policies, regulations, and standards; and*
- c) Improve upon and expand recreational boating data collection.*

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 describes the reasons for the initiative;*
- b) Courses of Action (CoA) that include key milestones and targeted timeframes for completing the actions; and*
- c) Milestones that provide 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 segments of the population are involved in boating accidents that result in property damage, injury, or even death. While efforts to eliminate preventable boating casualties continue, boating professionals recognize there is a need to enhance education, training and targeted awareness efforts in ways that create systemic shifts toward safer behaviors. This shift produces a population that values safety and is motivated to seek more recreational boating education and training. They will be more likely to make sound, risk-based decisions that lead to safer waterway experiences for themselves and their passengers.

Although boater education mandates vary widely among the states, the USCG Office of Auxiliary and Boating Safety estimated in 2015 that 28.4% of the U.S. recreational motorboat operator population was impacted by a state-mandated education requirement. To advance boater education initiatives that continue the systemic shift toward safer recreational boating behaviors, key areas have to be analyzed and addressed. These include: the impact of current state-mandated boating education; the value of a heightened focus on on-water skill-based training in power, sail, and human-propelled boating; and the effectiveness of promoting coordinated adoption National System of Standards for Recreational Boat Operation.

There are two primary objectives to improve and expand recreational boating education, training, and outreach. They are:

1. Increase boater knowledge and skills to meet federal regulatory requirements and work toward universal adoption by the states of national best practices and standards; and
2. Develop and support coordinated/integrated national awareness campaigns that target a positive culture shift towards safer boating behavior. While operator education seems fundamental to increasing boating safety, building a safety culture for all boaters, including passengers, will most effectively reduce casualties.

The following CoAs are designed to address the needs and objectives outlined in this initiative:

CoA 1 focuses on increasing the number of boaters who have the boating education, skills, and training needed to meet federal regulatory requirements and work toward universal adoption of national best practices and standards. We will do so through data collection and the development and implementation of boating education programs for adults, youth, and targeted populations as determined by an evidence-based model of policy development. It also addresses basic and advanced boater competency recognition programs.

CoA 2 focuses on advancing campaigns designed to promote positive boater behaviors including life jacket wear by individuals on smaller boats. Boating statistics indicate that approximately 83% of boaters who drowned were aboard boats under 21 feet in length (6.4 meters). To better connect across generations, boating safety messages will be conveyed through multiple forms of media. For example, digital communication can be used to reach today’s tech-savvy boating population more effectively.

CoA 3 focuses on taking a systemic approach to aligning and maintaining national recreational boating standards and best practices. 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 alignment process will be implemented to advance recreational boating best practices and standards and to foster a recreational boating constituency that systemically “grows safer boating.”

*Courses of Action (CoA):*

**CoA 1 Increase the number of boaters that meet national best practices for knowledge and skills standards**

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

#	Milestones	Target Completion Date	C&O Link
1	Incorporate questions regarding completion of a boating education course that meets nation-wide best practices and standards into the National Recreational Boating Safety Survey.	2017	1, 3, 4
2	Implement evidence-based/effective boating safety programs for youth and other high-risk groups.	2018	1, 3, 4
3	Implement a plan to recognize basic and advanced boater knowledge and skills training earned from courses meeting national standards, and employs best practices to foster wide-spread training to national standards adoption.	2021	1, 3, 4

4	Identify and strive to implement a new model that satisfies Operator of Uninspected Passenger Vessel (OUPV) licensing requirements for on-water instructors receiving compensation.	2019	1, 3, 4
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**CoA 2 Advance campaigns that target adoption of positive boater behaviors**

This CoA targets highest risk populations by implementing media campaigns designed to increase safe boating behaviors.

#	Milestones	Target Completion Date	C&O Link
5	Design a targeted life jacket campaign for boaters in high risk populations.	2018	1, 3, 4
6	Implement an evidence-based/effective campaign(s) targeting the highest risk casualties and the highest risk group(s) for each desired behavioral change.	2019	1, 3, 4

**CoA 3 Systemic approach to align and maintain federal regulatory requirements with national best practices and standards**

This CoA formalizes a standards alignment process to facilitate national boating standards work to benefit course providers, instructors, and the boating public.

#	Milestones	Target Completion Date	C&O Link
7	Publish and distribute American National Standards Institute (ANSI) accredited standards for boating knowledge and skills for all recreational boating domains.	2017	1, 3, 4
8	Align and implement the (ANSI) standards and other nation-wide standards for boating knowledge and skills within the National System of Standards for Recreational Boat Operation.	2018	1, 3, 4

## *Initiative 2: Update, leverage, and enforce policies, regulations, and standards*

### *Overview:*

Recreational boating has become safer over the last 45 years. This trend follows the enactment and enforcement of laws, regulations, standards, and policies such as equipment carriage requirements, boater education promotion, manufacturer safety regulations, and strengthened boating under the influence laws. However, current boating accident data identify areas for improvement where targeted interventions could positively impact 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 manufacturer safety regulations and manufacturing compliance. There is also a need to improve law enforcement training, particularly in the areas of operator impairment and navigation rules.

In 2014, navigation rules (NAVRULES) violations were cited as the primary contributing factor in 1,482 accidents, 1,116 injuries, and 102 deaths. These NAVRULES violations of excessive speed, improper lookout, inadequate onboard navigation lights, and operator inattention were the primary contributing factors in accidents and fatalities. Operator inattention and improper lookout combined to account for 24% of total accidents for the year. 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. Current boat accident data provides answers to the question of “what” happened in these incidents, but does not tell us enough of the “why” these incidents occurred. Capturing data that can be interpreted and applied in the field will better target public adoption of safer boating behaviors. Program effectiveness will improve as we employ proven and evidence-based prevention models.

There are three primary objectives for this initiative:

1. Identify ways to improve regulations, laws, or standards,
2. Clearly communicate those regulations, laws and standards to the boating public and other stakeholders in the National RBS Program, and
3. Develop partnerships in enforcing or carrying out those regulations aimed at increasing boating safety behaviors.

The following four CoAs address the objectives in this initiative:

CoA 4 seeks to use 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 that are developed.

CoA 5 focuses on regulatory actions. These actions will: improve the visibility of sidelights on boats smaller than 12 meters (39.37 feet), update boat accident reporting criteria, revise carriage requirements to reflect improved or newly available technology, and promote life jacket wear for high risk boating.

CoA 6 seeks to unify and strengthen the relationship between Driving under the Influence (DUI), Boating under the Influence of Alcohol (BUI) and Boating under the Influence-Drug (BUI-D) 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). To support implementation, they will need to share research and technical information, broaden acceptance of seated field sobriety testing instruments, and communicate a unified message to the enforcement, prosecutorial and judicial community. 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 manufacturer compliance with the requirements outlined in 33 CFR 181 & 183 based on "real world" data feedback of safety discrepancies and inspection and testing of products offered into the stream of commerce. It will also evaluate tools to maintain regulations that match pace with the current state of technology and create a structured safety information outreach program to manufacturers.

*Courses of Action:*

**CoA 4 Increase operator compliance with NAVRULES**

This CoA will reduce accidents related to NAVRULES violations as a result of recreational boat operator actions. This CoA involves coordination with key stakeholders to identify causal factors most correlated with recreational boating accidents.

#	Milestones	Target Completion Date	C&O Link
9	Develop, test and report interventions (education, outreach, and enforcement actions) at high risk location(s).	2018	1, 2
10	Implement most effective or adjusted interventions at same high-risk locations.	2019	1, 2
11	Implement interventions on a large scale and community level.	2021	1, 2, 3

### CoA 5 Adopt comprehensive regulatory reform

This CoA addresses opportunities in new technologies that can benefit safer boating and updated regulatory and policy criteria that can improve decision making.

#	Milestones	Target Completion Date	C&O Link
12	Expand navigation light requirements for boats under 12m (39.4 ft) to 2 nm (XX ft) to improve navigation light recognition while on the water, if accident data or technological improvements in current navigation lights warrant it.	2021	1, 2
13	Evaluate boat accident reporting laws and policies. Revise as necessary to improve accuracy and applicability of the data acquired.	2021	1, 2
14	Review and revise current carriage requirements to allow options to adopt improved technology.	2021	1, 2
15	Promote jacket wear for high risk boaters.	2021	1, 2

### CoA 6 Improve enforcement of BUI and BUI-D 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 need to recognize BUI and BUI-D programs (seated field sobriety testing) and increase States' implementation. This strengthens alignment between highway and marine law enforcement agencies.

#	Milestones	Target Completion Date	C&O Link
16	Align national BUI and BUI-D policy with DUI.	2021	1, 3
17	Enhance the national model for marine law enforcement officer BUI and BUI-D training.	2021	1, 3



**CoA 7 Ensure that boats and associated equipment are manufactured in compliance with USCG regulations**

Modifications of current factory inspection programs offer an opportunity for the USCG to gather information on manufacturer compliance to set targets for safety improvements. This CoA targets outreach opportunities for the USCG aimed at existing Manufacturer Identification Code (MIC) holders.

#	Milestones	Target Completion Date	C&O Link
18	Re-establish, at a minimum, semi-annual outreach to manufacturers.	2017	2
19	Research the potential to broaden the manufacturing inspection program to utilize other available certification entities and implement such in future years if a viable option is warranted.	2017	2
20	Produce a report of manufacturer non-compliance and safety discrepancies. Set targets for improvement.	2018	2
21	Incorporate by reference applicable American National Standards in place of Title 33 CFR part 183.	2021	2

### *Initiative 3: Improve upon and expand recreational boating data collection and research*

#### *Overview:*

Research suggests that most recreational boating accidents occur close to the boat operator's homeport. This indicates that boating risk factors depend on operator behavior patterns specific to those trips. Gathering data about and analyzing these behaviors as combinations of integrated factors can collectively reveal risk patterns over space and time. Such organized data can help professionals develop interventions to increase safe behaviors.

Since there are gaps in available recreational boating data and analyses, we need to both improve upon critical, existing collections and employ advanced models that can capture additional, consistent, accurate, and relevant information about operator behaviors and the corresponding linkages to accident risks.

Since 1959, the USCG has collected data on recreational boating accidents and casualties from multiple sources. Accident reports submitted by the States and boating surveys are just two of these sources. USCG statisticians also take steps to standardize or "normalize" the data in order to make valid comparisons of risk between States or between recreational boating and other kinds of activities. This includes combining accident and non-accident data, such as boating exposure hours (collected through the National Recreational Boating Safety Survey, NRBSS) or numbers of registered boats (collected from the States) to develop measures of boating risk and improve accident risk research.

The USCG collects and shares boating accident report data using the Boating Accident Report Database (BARD) System. While BARD data is a complete record of reported recreational boating accidents, it currently has limitations, such as:

- BARD does not contain non-accident recreational boating data to which recreational boating accidents can be compared. Collecting non-accident boating data that is on-water based and location specific would take us beyond this limitation. For example, data from Federal (e.g., NOAA, USACE, NASA), State (e.g., citations, warnings, VSCs, satellite), and corporate (e.g., manufacturing, insurance) sources could be acquired and assimilated into a central system repository through a process known as "Data Fusion." Data Fusion indicates the intent to pursue the collection and analysis of recreational boating and accident data on a much larger scale than has been assembled.
- 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 risk, BARD data are typically normalized and combined with recreational boating registration data or boating exposure hours collected through the National Recreational Boating Safety Survey (NRBSS). However, there are data limitations stemming from inconsistent NRBSS data collection, specifically as related to exposure hours.

New technology offers the potential to more effectively develop recreational boat accident models. Data Fusion opens the opportunity for us to ask questions with greater specificity, enable greater understanding, and make new discoveries that can further reduce recreational boating casualties. The approach can:

- Close current data gaps caused by missing or unreliable BARD data,
- Enable advanced levels of research and discovery,
- Accommodate a more complete collection and representation of recreational boating variables and more fully achieve BARD data normalization,
- For risk-management purposes, use non-accident-based, on-water boating data to allow direct comparisons between multiple causal factors and sites, and permit broader comparisons between recreational boater accidents and non-accidents, and
- Permit Federal, State, regional recreational boating researchers, and other stakeholders to examine available data and risk patterns at a local level rather than just at the State or National level.

This initiative has three primary objectives:

1. Expand research and data collection of meaningful recreational boating safety information,
2. 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 implement a comprehensive, meaningful data collection program.

The following three CoAs 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 to increase the public’s safe boating behaviors.

CoA 9 provides centralized portal access to the newly expanded database of recreational boating information so that stakeholders can make informed decisions.

CoA 10 adopts an evidence-based approach to include a process for continuous improvement. This would help the USCG Office of Auxiliary and Boating Safety implement programs that advance safe boating messages and cultivate safer boating behaviors.

*Courses of Action:*

**CoA 8 Develop a central recreational boating database**

Recreational boating data (beyond accident report 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 sources to fill this gap.

#	Milestones	Target Completion Date	C&O Link
22	Develop an expanded database aggregating available recreational boating data into a central database system (Data Fusion).	2018	1, 2, 3, 4

**CoA 9 Develop a central recreational boating database portal**

Current recreational boating research focuses on BARD, select State data and estimates generated by the NRBSS. This CoA provides a central recreational boating database to enable stakeholders to expand recreational boating research and analysis.

#	Milestones	Target Completion Date	C&O Link
23	Develop a portal to extract recreational boating data for analysis from a new central database system.	2019	1, 2, 3, 4

**CoA 10 Develop an evidence-based model, such as the Public Health Approach, that can be applied to the RBS program**

This CoA establishes a process to increase the level of effectiveness of injury prevention programs by using a widely-accepted evidence-based model.

#	Milestones	Target Completion Date	C&O Link
24	Develop and evaluate an evidence-based model of policy development with one non-profit organization grant program award during the FY 2017-2018 funding cycle.	2017	3, 4
25	Implement the evidence-based model in future non-profit organization grants.	2019	3, 4

## PERFORMANCE INITIATIVE MEASURES

### *RBS Performance Goals*

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 reported recreational boating casualties (the sum of deaths and injuries) for FY 2017 through FY 2022:

3-Year Average Goals			
Fiscal Year	Number of Deaths	Number of Injuries	Total Casualties (Deaths & Injuries)
2017	608	2729	3337
2018	605	2701	3306
2019	602	2674	3276
2020	599	2648	3247
2021	596	2621	3217
2022	593	2595	3188

FY 2017 goals were based on the latest, validated 3-year average data (FY 2012-2014). Starting with the FY 2017 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 2017 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 mathematical extrapolation of prior time-series data and judgment. 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*

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

*Initiative 2: Update, leverage, and enforce policies, regulations, and standards*

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

*Initiative 3: Improve upon and expand recreational boating data collection and research*

Measures	Targets
Not applicable to this section.	

## **APPENDICES**

*A. Acronyms and Definitions*

*B. Operational Characteristics*

## *A: Acronyms and Definitions*

1. ANS	American National Standard
2. ANSI	American National Standards Institute
3. BARD	Boating Accident Report Database
4. BUI	Boating Under the Influence of Alcohol [also Operating Under the Influence (OUI) and Boating While Intoxicated (BWI)]
5. BUI-D	Boating Under the Influence-Drugs
6. CFR	Code of Federal Regulations
7. CoA	Course of Action
8. CSR	Central System Repository
9. 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
10. DUI	Driving Under the Influence
11. 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
12. HCD	Human Centered Design
13. Human-Propelled	Human energy is the source of propulsion
14. IACP	International Association of Chiefs of Police
15. LED	Light Emitting Diode
16. MIC	Manufacturer Identification Code
17. Milestone	A date by which a task is complete
18. MISLE	Marine Information for Safety and Law Enforcement
19. NAVRULES	Navigation rules of the USCG
20. NASA	National Aeronautics and Space Administration
21. National System	National System of Standards for Recreational Boat Operation is high-level framework that organizes <i>standards</i> associated with <i>learning</i> safe recreational boat operation into a comprehensive and integrated system of learning that applies across the nation
22. NBSAC	National Boating Safety Advisory Council
23. NGO	Non-Governmental Organization
24. NHTSA	National Highway Traffic Safety Administration
25. NOAA	National Oceanic and Atmospheric Administration
26. NRBSS	National Recreational Boating Safety Survey
27. OUPV	Operator of Uninspected Passenger Vessel

28. PHA

PHA refers to “The Public Health Approach” is the science and art of preventing disease, prolonging life, and promoting health through organized efforts of society.

Adapted for the field of Injury Prevention, PHA is a four-step process:

- a. Collection and analysis of evidence to define and prioritize a problem, define the target population, and determine any risk and protective factors that could be addressed.
- b. Following a written set of goals and objectives, develop potential interventions in one or more of the areas of Engineering/Environment, Enactment/Enforcement of public policy, and Education. Build in performance measurements, and test on the target population(s).
- c. Implement promising interventions and widely replicate them at the community “grass roots” level.
- d. Evaluate activities, outcomes, and any public health impacts against goals and objectives and then replace, modify, or continue interventions, and continue to monitor over time.

Within the context of this document, PHA exemplifies what is implied by an “evidence-based approach”.

29. PI

Performance Initiative

30. PRP II

Performance Report Part II

31. RBS

Recreational Boating Safety

32. USCG

United States Coast Guard

33. USACE

United States Army Corps of Engineers

34. 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. They will remain operational measurements.

The numbers in parentheses after each measurement refer to the Strategic Plan 2012-2016. We updated the dates and made technical amendments 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.
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 boats 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 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/BUI-D) (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/BUI-D 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 Auxiliary/U.S. Power Squadrons 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 Recreational Boating Safety Survey (Strategy 10.1 and Strategy 10.3)
    - Conduct a National Recreational Boating Safety 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.