

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2703 Martin Luther King Jr. Ave. SE
Stop 7418
Washington, DC 20593-7418
Staff Symbol: CG-NAV-3

16500
17 Jun 2020

MEMORANDUM

From: [REDACTED]
CG-NAV-3

Digitally signed by [REDACTED]

Reply to: CG-NAV-3
Attn of: [REDACTED]

To: CG-NAV

Ref: (a) Aids to Navigation Manual – Administration, COMDTINST M16500.7A
(b) IMO Ships' Routeing 2019 Edition
(c) IALA NAVGUIDE 2018

Subj: NATIONWIDE WATERWAYS ANALYSIS AND MANAGEMENT SYSTEM
STUDY FOR THE PACIFIC SEACOAST SYSTEM

1. PURPOSE. This Nationwide Waterways Analysis and Management System (WAMS) Study on the Pacific Seacoast System (PSS) is the second of six national-level studies being conducted by the Navigation Technology and Risk Management Division, Office of Navigation Systems (CG-NAV-3) to determine navigational requirements and update level of service policies for the U.S. Aids to Navigation System (USATONS). The first study on the Atlantic and Gulf Coast Seacoast System (AGSS) was completed in 2017. Further studies are planned or in progress for the Western Rivers System, the Shallow Water (<12 ft) System, the Deep Water (>12 ft) System, and the Intracoastal Waterway (ICW) System. The USCG has not updated Aids to Navigation (ATON) level of service policies for a significant time. As global shipping continues to increase in size and density, ATON signal options continue to grow, and mariners continue to embrace technology to navigate, this study will inform the optimum mix of emerging ATON technologies and legacy ATON systems for modern mariners. The outcome of this WAMS will not determine which specific aids to add, keep, or remove, but rather shape policy for the next generation waterway system management and design. Additionally, the findings and recommendations included in this study are not intended to be the sole source on future ATON policy changes nor preclude District Commanders' current authorities and discretion to provide the most appropriate ATON system for their relevant areas.

2. METHODOLOGY. The PSS was evaluated based on current common shipping lanes, international considerations from the International Maritime Organization (IMO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), quantitative data on vessel track histories gathered from the Nationwide Automatic Identification System (NAIS), training and carriage requirements, available technology and equipment beyond carriage requirements, environmental conditions, and ATON discrepancies. Analyses of these items were augmented with qualitative data gathered through a survey of relevant mariners.

3. INTERNATIONAL CONSIDERATIONS. The PSS includes multiple traffic separation schemes and zones. Reference (b) provides general design criteria when designing ships' routing measures. Specific guidance applicable to the PSS is provided below:

a. Routes should follow as closely as possible the existing patterns of traffic flow in the areas as determined by traffic surveys.

b. Routes should be designed to allow optimum use of aids to navigation in the area, and of such shipborne navigational aids as are required or recommended to be fitted by international conventions or by IMO resolutions and recommendations.

c. Traffic separation schemes shall be designed so as to enable ships using them to fully comply at all times with the International Regulations for Preventing Collisions at Sea.

d. It should be possible for ships to fix their position anywhere within the limits of and in the immediate approaches to a traffic separation scheme by one or more of the following means, both by day and by night:

i. visual bearing of readily identifiable objects;

ii. radar bearings and ranges of readily identifiable objects;

iii. D/F bearings; and

iv. other radio navigation equipment suitable for use throughout the intended voyage.

e. Reference (c), in examination of the design of an aids to navigation system, states, "The specific aids to navigation system implemented should enable waterway users to transit an area safely and efficiently, avoiding groundings, obstructions to navigation, and collisions with other vessels. In order to satisfy the information requirements of users, a system of aids to navigation must:

i. be available at the time it is needed;

ii. provide timely warnings of channel limits and fixed obstructions to navigation;

iii. enable mariners to determine quickly their location within the channel, relative to fixed obstructions to navigation, and relative to other vessels;

iv. enable a safe course for the vessel."

f. IMO established an Electronic Charting Display Information System (ECDIS) implementation schedule which concluded in July 2018. The ECDIS carriage requirement exceeds all U.S carriage requirements for the U.S. domestic fleet, portrayed in Figure 1 below.

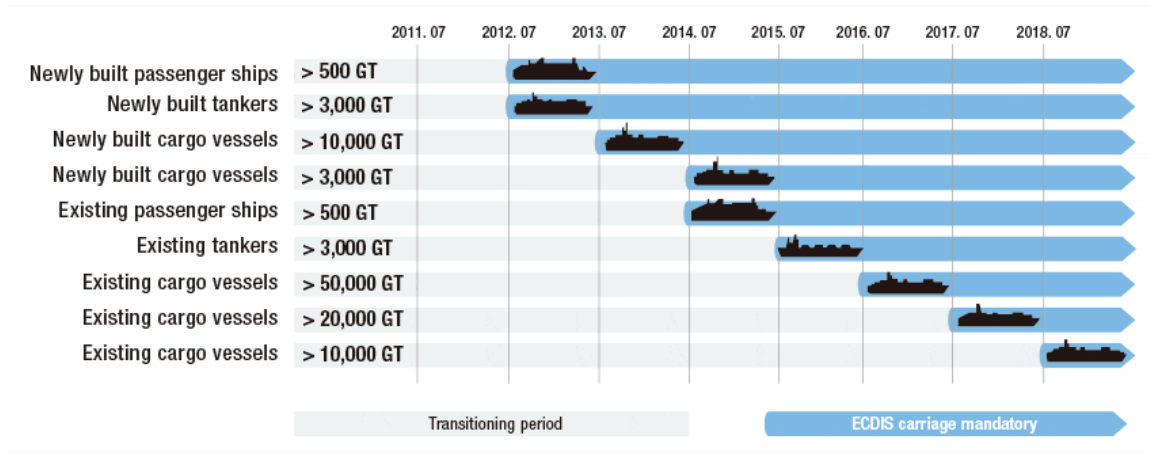


Figure 1 – ECDIS Implementation Schedule

4. WATERWAY DESCRIPTION. This study encompasses the Pacific Seacoast System (PSS), a Short Range Aids to Navigation system that spans the U.S. West Coast from the U.S./Canada border to the U.S./Mexico border, coastal Alaska, and the Pacific Islands, including Hawaii, Saipan, Marshall Islands, Guam, and American Samoa, and will focus solely on U.S. Navigable Waterways seaward of and including major harbor entrances (i.e. sea buoys).

a. This study was conducted to determine the navigation requirements for the Pacific Seacoast System (PSS), which spans across four USCG Districts. The recommendations and conclusions of this study will influence consistent, program-wide policy necessary to support District Commanders’ Aids to Navigation (ATON) authorities within the PSS.

b. This study focused on 214 ATONs located within the area described above and that support safe navigation seaward of the line of demarcation, such as major landfall lights.

i. Per reference (a), the types ATON used throughout the PSS include:

a. *Safe Water*. Safe water marks indicate there is navigable water all around the mark. They mark fairways, mid-channels, and offshore approach points. They can be used by a mariner transiting offshore waters to identify the proximity of landfall.

b. *Lateral*. Lateral marks define the part and starboard sides of a route to be followed. Their most frequent use is to mark the sides of channels. They may be used individually, however, to mark obstructions outside of clearly defined channels.

c. *Isolated Danger*. These marks are erected on, moored over, or placed immediately adjacent to an isolated danger that may be passed on all sides of system users.

d. *Special*. Special marks indicate special areas or features referred to in charts or other nautical publication. Throughout the PSS, special marks are used to mark anchorages, cable or pipeline areas, traffic separations schemes, and military exercise zones.

e. *Coastal or seacoast lights.* These lights assist vessels either during coastal navigation or when making landfall.

f. *AIS-ATON.* Automated Identification System Aids to Navigation, an electronic signal used to augment the physical ATON constellation.

ii. The number of aids by district within the PSS is in Table 1 below, and a full list of the ATON is in enclosure (1):

| District | Seacoast ATON |
|----------|---------------|
| 11 | 114 |
| 13 | 28 |
| 14 | 55 |
| 17 | 45 |

Table 1 – Seacoast ATON by District

iii. Table 2 below shows the characteristics of the different types of floating ATON found in the PSS. Ranges are based on a height of eye of 15 ft.

| Hull Type | Nominal Range (NM) | Radar Range (NM) | Max. Mooring Depth (ft) | Min. Mooring Depth (ft) |
|------------|--------------------|------------------|-------------------------|-------------------------|
| 9x35 LWR | 3.2 | 4.0 | 125 | 35 |
| 9x32 LR | 3.8 | 4.5 | 215 | 30 |
| 9x20 BR/GR | 3.0 | 3.7 | 193 | 15 |
| 8x26 LR | 3.2 | 3.7 | 126 | 25 |
| 8x26 LWR | 3.2 | 3.7 | 119 | 25 |
| 8x21 LR | 3.0 | 3.7 | 94 | 18 |
| 1CR | 3.8 | 3.5 | 121 | 15 |
| 1NR | 3.5 | 3.5 | 126 | 15 |
| 2CR | 2.8 | 2.5 | 78 | 15 |
| 2NR | 2.6 | 2.5 | 81 | 15 |

Table 2 – Floating ATON Characteristics

iv. In addition to the physical ATON marking the PSS, the USCG has augmented the physical system with electronic AIS-ATONs. The list of AIS-ATONs included in the PSS is in enclosure (2). These AIS-ATONs are transmitted from shore via the USCG’s NAIS network and through physical AIS-ATON units. NAIS coverage maps for Districts 11, 13, 14, and 17 are in enclosure (3). Additionally, the USCG is utilizing the Marine Exchange of Alaska to broadcast additional AIS-ATONs in District 17.

c. Users of the PSS consist of regulated vessels on international voyages, regulated vessels on domestic voyages, and unregulated fishing and recreational vessels. The ports these users call on vary in size and commerce, with the largest having as many as 1800 vessel visits per year. Enclosure (4) provides a detailed list of the ports, types and amount of commerce, and number of visits per year.

d. Pilotage is common in several locations throughout the PSS, and many of the ATON marking pilotage embarkation points were reviewed in this study.

e. Through analysis of waterway user data, the primary Design Vessel identified for this study are *regulated vessels on domestic voyages* for the following reasons:

i. As defined above, the purpose of the PSS is to provide ATON services for vessels making landfall from an ocean or sea voyage or by those transiting along the coast. Regulated vessels on domestic voyages encompass the largest user group covered under this purpose.

ii. Regulated vessels on international voyages adhere to specific internationally agreed upon carriage requirements and carry the most navigation equipment. These vessels transit through the PSS with the primary purpose of making port. Because of the required navigation package, and limited use of the PSS, any waterway that is designed to meet the needs of less-regulated users will most likely be sufficient to meet the needs of these vessels.

iii. While understanding the importance of recreational boaters, the purpose of the PSS is not intended specifically for those users.

5. DESIGN VESSEL CARRIAGE REQUIREMENTS: As indicated in paragraph 3.e., the navigation requirements of the PSS should primarily be based on regulated vessels conducting domestic transits. The U.S. Code of Federal Regulations (CFR) provides requirements on what navigation equipment these vessels must carry. The size, horsepower, and subsequent carriage requirements varies throughout this group of vessels. In an effort to codify the carriage requirements of the predominant user, a towing vessel of 12 meters or more in length operating in U.S. Navigable Waters other than the St. Lawrence Seaway was used as a baseline. In accordance with 33 CFR 164, these navigation equipment requirements are:

- a. Marine Radar
- b. Searchlight
- c. VHF-FM Radio
- d. Magnetic Compass
- e. Echo Depth-Sounding Device
- f. Electronic position-fixing device when operating seaward of navigable waters
- g. AIS (Class A)

6. ENVIRONMENTAL CONSIDERATIONS. The PSS spans a large geographic region containing multiple sensitive marine environmental areas and is home to threatened or endangered species. Enclosure (5) highlights these areas in more detail. Due care should be taken to ensure that all work associated with ATON operations in the vicinity of the areas listed below are conducted in accordance with all applicable rules and regulations.

7. DATA COLLECTION.

a. A voluntary user feedback form (OMB Control Number 1601-0014) was available on surveymonkey.com from November 2018 through April 2019 and consisted of 29 questions. The

questions were designed to determine the navigational requirements of waterway users navigating within or through the PSS and not on specific ATONs. Links to the user feedback form were posted on the USCG Navigation Center (NAVCEN) website, and public comments were also solicited through the Local Notice to Mariners. The list of questions and full mariner responses are provided in enclosures (8) and (9).

b. CG-NAV-3 and District Waterways offices from District 11, District 13, District 14, and District 17 conducted public outreach through press releases, blogs, and other relevant means. The public affairs guidance provided to the Districts is included as Enclosure (6).

c. Data from the U.S. Army Corps of Engineers (USACE) was collected from their Waterborne Commerce of the United States reports.

d. Data on vessels transiting the PSS was collected from AIS. Information included in these reports include, but were not limited to, vessel type, draft, and vessel routes. This information was primarily extracted by NAVCEN from NAIS historical data. The same NAIS-based AIS data was also analyzed utilizing the USACE’s Automatic Identification System Analysis Package (AISAP), a web based tool for acquiring, analyzing, and visualizing USCG-provided AIS data. Full results are included as enclosure (7).

8. QUANTITATIVE DATA ANALYSIS.

a. AIS Data. The most heavily used tracks throughout the PSS were identified using AIS heat maps. The majority of the transits through the PSS are vessels engaging in seacoast trade along the west coast of United States, vessels trading utilizing the trans-Pacific great circle routes, fishing vessels, and tug/tow trade, to include service to Hawaii and other Pacific Island territories. This extraordinary amount of data is portrayed in Figure 2 and summarized in Table 3 below:

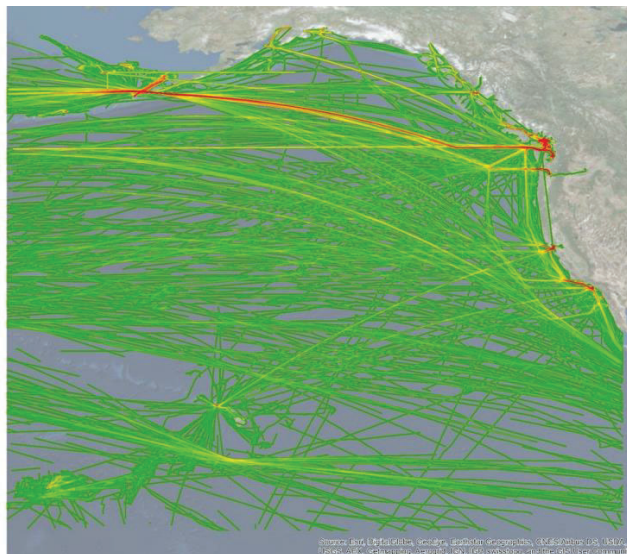


Figure 2 – AIS Heat Map

| Vessel Type | Transits | Percentage of Vessels |
|--------------|-------------|-----------------------|
| Fishing | 860 | 27.7% |
| Towing | 226 | 7.3% |
| Dredging | 20 | 0.6% |
| Military | 45 | 1.4% |
| SAR | 99 | 3.1% |
| Tugs | 278 | 8.9% |
| LE | 29 | 0.9% |
| Passenger | 271 | 8.7% |
| Cargo | 818 | 26.4% |
| Tanker | 211 | 6.8% |
| Other | 238 | 7.6% |
| Total | 3095 | 100% |

Table 3 – Summary of AIS Data, March 2019

b. ATON Data. An Aids to Navigation Information System (ATONIS) query was conducted to identify ATON in the PSS. The initial results identified 1044 ATON. This list was then analyzed line-by-line and compared to the Light List, and 830 of the initial ATON were found to be geographically within the PSS, but performed a primary function not intended for seacoast navigation. For example, Crescent City Lighted Buoy 2 is geographically in the seacoast system but performs a harbor navigation function. ATON such as these will be included in either the Shallow Water System or Deep Water System studies. Tables 4 and 5 below detail the 214 ATONs reviewed within the PSS.

| Aid Type | Number of Aids |
|---------------------------|----------------|
| Coastal or Seacoast Light | 132 |
| Safe Water Mark | 42 |
| Lateral Mark | 40 |

Table 4 – PSS ATON by function

| Buoy Type | Number of Buoys |
|-----------|-----------------|
| 1CR | 1 |
| 1NR | 3 |
| 2CR | 1 |
| 2NFR | 1 |
| 2NR | 1 |
| 3-METER | 1 |
| 5CFR | 1 |
| 6X20LBR | 1 |
| 6X20LR | 3 |
| 8X26LBR | 9 |
| 8X26LGR | 4 |
| 8X26LR | 11 |
| 8X26LWR | 16 |
| 9X20BR | 3 |
| 9X20GR | 1 |
| 9X32LBR | 3 |
| 9X32LGR | 1 |
| 9X35LR | 1 |
| 9X35LWR | 20 |

Table 5 – PSS Floating ATON by type

9. QUALITATIVE DATA ANALYSIS. The user feedback form garnered 440 total responses. Of this total, 255 (57%) respondents identified their vessel type as recreational, while the remaining respondents identified their vessels as military, motor vessel, towing vessel, fishing vessel, or passenger vessel. For the purposes of this study, military, motor, towing, fishing and passenger vessels were grouped together in a single group labeled professional mariner. While feedback from the recreational boaters was deemed valuable, this study was focused on providing a level of service for professional mariners who were navigating specifically regulated, electronic charting system-complaint vessels conducting domestic transits, through or within the PSS. The findings presented below focus on the respondents who identified as operating those vessel types. This reduced the number of responses analyzed to 185 vessels. A summary of findings is below, and a full breakdown of all responses is provided in enclosure (10).

a. *Positioning Source*. “What is your primary means to determine your position?”

| Positioning Source | Primary | Secondary |
|--------------------|---------|-----------|
| GPS | 79% | 20% |
| Visual Fixes | 15% | 39% |
| RADAR | 5% | 35% |
| Fathometer | <1% | 5% |

Table 6 – Positioning Source

Based on the data listed in Table 6, the majority of the respondents use GPS as their primary positioning source over visual fixes, radar, and/or fathometer. Additionally, 99% of the total users are using GPS as either their primary or secondary source of positioning.

b. *Shoal Water*. Four questions were focused on determining navigation requirements near shoal water. Table 7 below provides a grouping of the majority.

| | |
|---|--|
| What depth do you consider shoal water? | Less than 29ft (73%) |
| What depth do you consider shoal water? | Less than 41ft (86%) |
| What is your preferred minimum distance to shoal water? | Less than 2NM (87%) |
| How do you verify your proximity to shoal water? | GPS Position on Chart/ECDIS/ECS (62%) |
| At what distance do you require a visual indication of shoal water? | < 3NM (86%) 3-5 NM (78%) |

Table 7 – Shoal Water

Notably, the next most prominent verification method used to verify proximity to shoal was a Depth Finder (14%).

c. *Landfall Lights*. “At what distance do you require visual indication of landfall?”

| Distance | Percentage |
|----------|------------|
| <1 | 32% |
| 1-2 NM | 24% |
| 2-3 NM | 12% |
| 3-5 NM | 13% |
| 5-7 NM | 7% |
| 7-10 NM | 6% |
| >10 NM | 6% |

Table 8 – Indication of Landfall

When determining a level of service satisfactory to a large majority of respondents, the data in Table 8 shows 81% of the respondents answered that they required a visual indication of landfall at 5 NM or less, while the percentage jumps to 88% at less than 7 NM. Only 12% stated that they needed a visual indication of landfall at greater than 7 NM. The distance offshore during transits as observed by AIS tracks indicates vessels are remaining well offshore. Additionally, the lack of a large extended continental shelf in the PSS allows for deep navigable water depths well within 7 NM of the shoreline.

d. *Shoal Water*. “What depth of water do you consider to be Shoal Water?”

| Depth | Percentage |
|----------|------------|
| <12 | 34% |
| 12-17 ft | 19% |
| 18-29 ft | 20% |
| 30-41 ft | 13% |
| 43-60 ft | 10% |
| >60 ft | 4% |

Table 9 – Depth of Shoal Water

When determining shoal water, 73% of respondents identified shoal water to be less than 30 feet. 86 % of respondents identified shoal water to be less than 41 feet.

e. *Distance to Shoal Water*. “What is yours (or your company’s) preferred minimum distance to shoal water?”

| Distance | Percentage |
|----------|------------|
| <1 | 62% |
| 1-2 NM | 25% |
| 2-3 NM | 7% |
| 3-5 NM | 4% |
| >5 NM | 2% |

Table 10 – Preferred Distance to Shoal Water

Data in Table 10 identified that the large majority of vessel owners and company policies (94%) preferred the minimum distance to shoal water be at least 3 NM.

f. *Visibility of ATON.* “At what distance do you need a visual indication of Shoal Water or Hazard?”

| Distance | Percentage |
|----------|------------|
| <1 | 51% |
| 1-2 NM | 27% |
| 2-3 NM | 8% |
| 3-5 NM | 6% |
| 5-7 NM | 5% |
| 7-10 NM | 2% |
| >10 NM | 1% |

Table 11 – Visual Indication of Shoal Water

Data in Table 11 shows providing a visual indication of shoal water or hazard at 2 NM would satisfy 78% of the respondents. Providing a visual indication of shoal or hazards at 3NM, further satisfies 86% of the respondents.

g. *Sound Signals.* “Do you require an audible (bell, whistle, gong) indication of Shoal Water or Hazard?”

| | |
|-----|-----|
| Yes | 34% |
| No | 66% |

Table 12 – Audible Signals

66% of the mariners answered they do not require an audible indication of shoal water. An additional question was asked, “If you answered yes to requiring an audible indication of shoal, at what distance do you need an audible indication of shoal water or hazard?”

| Distance | Percentage |
|----------|------------|
| <1NM | 66% |
| 1-2 NM | 27% |
| >2NM | 7% |

Table 13 – Range of Audible Signals

Analyzing the remaining 34% that do require an audible indication of shoal water, 93% stated that they required an audible indication of shoal water at 2NM or less.

h. Table 14 summarizes the survey findings and recommended equipment to satisfy the minimal level of service required by the findings of the study:

| ATON Use | Range | Equipment | Sound Signal |
|----------|-------|--|--------------|
| Landfall | 7 NM | Light | N/A |
| Shoal | 3 NM | Lighted Buoy/Beacon (**AIS-ATON Optional**) | N/A |

Table 14 – Summary of ATON Requirements

10. CONCLUSIONS.

a. The requirements for a physical constellation of ATON in the PSS were validated by user feedback and AIS data. A high number of respondents indicated their reliance on GPS as a primary positioning source. However, this reliance on GPS does not diminish the need for physical ATON to provide visual indications of landfall and shoal water. The PSS physical ATON constellation provides crucial resilience in the event of GPS service disruption was also confirmed. (*Analysis 9.a, 9.b, 9.c, 9.e*)

b. Based on the identified Design Vessel, shoal water should be defined as 36 feet or less. This 36 foot shoal water determination was derived from the 78% of respondents who considered shoal water to be 29 feet or less combined with the standardized depth contours on Nautical Charts within the PSS. Specifically, a review of coastal charts in the PSS revealed that the 6-fathom curve was a predominate and easily recognizable feature¹. (*Analysis 9.b*)

c. The USCG may provide indication of landfall between 5- 7 NM . The need for landfall lights or lighthouses and major aids with a visual operational range greater than 7 NM is no longer justified. Survey results indicate 88% support this level of service. (*Analysis 9.c*)

d. For waterway design purposes, the USCG should define shoal water in the PSS as depths of 36 feet or less. Survey results indicate 73% support this definition. (*Analysis 9.d*)

e. The USCG should mark shoal water and hazards in the PSS using physical ATON with an operational range of at least 3 NM. According to the survey results, 94% of respondents prefer a minimum safe distance from shoal water to be 3 NM. Additionally, 86% of all respondents prefer visual indication of shoal water at least 2-3 NM from the hazard. (*Analysis 9.e, 9.f*)

f. Given the majority of respondents do not need an audible indication of shoal water, and the predominant use of GPS as a positioning means, bells, whistles, and gongs are not required on buoys within the PSS. In addition, IALA Guideline 1090 states, “where provided, audible signals for navigation hazards should have a range of at least 2 NM.” Given 93% of respondents require an audible indication of shoal less than 2 NM or less, which is less than the distance required for by IALA guidelines, there is no requirement for sound signals, and they should be discontinued. (*Analysis 9.g*)

¹ Although standardized depth contours will not be relevant once NOAA eliminates raster nautical charts, the study still concludes shoal water should be defined as 36 feet/6 fathoms as most domestic mariners will probably choose to operate their ECDIS/ECS in feet/fathoms.

g. The Design Vessel identified in this study is required to carry AIS, and properly operate the AIS within U.S. Navigable Waters. AIS-ATONs are a reliable and efficient ATON signal which are used to augment the physical ATON constellation. There are several waterway design considerations to be reviewed when using AIS-ATON. For the purposes of the PSS WAMS, use of AIS-ATON should consider operational range to ensure the AIS signal provides an indication of its position at a minimum of 7NM from landfall and 3 NM from shoal water. Pilot embarkation points, safe water marks indicating the beginning of a federal channel, and lateral marks marking shoal water are ideal uses of AIS-ATON throughout the PSS. Additionally, AIS-ATON should be considered as a viable alternative to RACONs. If AIS-ATON is to be used, the District shall determine the type of AIS-ATON – virtual, synthetic, or physical – based on the latest waterway design criteria. (*Analysis 8.a, 9.a, 9.c, 9.f, 9.h*)

11. RECOMMENDATIONS.

a. The USCG should continue to maintain the Pacific Seacoast System. The level of service provided for the system should be primarily based on the requirements of the PSS Design Vessel. The PSS shall be marked using the findings of this study as a base-level foundation, but in a manner at the discretion of the cognizant District Commander and which is justifiable due to the volume of traffic, and the degree of risk in the specific area of the system. (*Conclusions 10.a-g*)

b. The USCG should define shoal water in the PSS as 36 feet, or 6 fathoms. (*Conclusion 10.b*)

c. The USCG may provide ATON for isolated charted hazards of 36 feet (6 fathoms) or less in the PSS. These ATON should have a minimal operational range of 3 NM both day and night. The use of unlit ATON in the PSS should be strongly discouraged. Table 2 of this report contains floating ATON from the current inventory that may meet this requirement. (*Conclusion 10.e*)

d. The USCG may provide landfall lights with an operational range of 5-7 NM. (*Conclusion 10.c*)

e. The USCG should no longer provide bells, gongs, or whistles on ATON within the PSS. (*Conclusion 10.f*)

f. The USCG may replace safe water marks within the PSS with Virtual AIS-ATONs. (*Conclusion 10.g*)

g. The USCG may replace RACONs with synthetic or physical AIS-ATON. (*Conclusion 10.g*)

h. The recommendations of this study should be promulgated through an interim policy letter issued by CG-5PW and subsequently incorporated in the next update to reference (a).

#

Encl: (1) List of ATONs in the PSS
(2) List of AIS-ATON in the PSS

Subj: NATIONWIDE WATERWAYS ANALYSIS AND
MANAGEMENT SYSTEM STUDY FOR THE PACIFIC
SEACOAST SYSTEM

16500
17 Jun 2020

- (3) NAIS coverage maps for Districts 11, 13, 14, and 17
- (4) List ports, cargoes, and traffic density
- (5) Sensitive Marine Environmental Areas
- (6) Public Outreach – Public Affairs Guidance
- (7) AIS Data
- (8) Questionnaire
- (9) Questionnaire Responses
- (10) Questionnaire Response Analysis

Dist: All CGD (dpw)
CG LANTAREA (54)
CG PACAREA (54)
CG-WWM
CG NAVCEN



16500
15 Jul 2021

MEMORANDUM

From: M. D. Emerson, SES
COMDT (CG-5PW)

Reply to: CG-NAV-3
Attn of: [REDACTED]

To: Distribution

Subj: INTERIM GUIDANCE ON AIDS TO NAVIGATION LEVEL OF SERVICE FOR THE
UNITED STATES SEACOAST SYSTEM (ATLANTIC, GULF, AND PACIFIC)

Ref: (a) CG-5PW Memo 16500 of 9 June 2017 – Interim Guidance on Level of Service in
Atlantic and Gulf Seacoast System
(b) CG-5PW Memo 16500 of 9 June 2015 – Level of Service Development Working
Group Charter
(c) CG-NAV-3 Memo 16500 of 31 May 2017 – Waterways Analysis and Management
System Study for the Atlantic and Gulf Seacoast System
(d) CG-NAV-3 Memo 16500 of 17 Jun 2020 – Nationwide Waterways Analysis and
Management System Study for the Pacific Seacoast System
(e) Aids to Navigation Manual – Administration, COMDTINST M16500.7A

1. **PURPOSE:** This document serves to provide interim policy guidance for Aids to Navigation (ATON) Level of Service in the Atlantic, Gulf, and Pacific Seacoast Systems. The guidance provided in reference (a) is superseded.
2. **RESPONSIBILITY:** District Commanders shall incorporate this guidance into their waterway design, planning, and operations.
3. **BACKGROUND:** The Nation's Marine Transportation System (MTS) is changing and evolving. Maritime traffic continues to grow in size and density, and mariners are increasing their reliance on technology and modern navigation methods. However, the USCG has not updated ATON level of service policies in decades. Reference (b) dictated a series of studies to update USCG ATON administration and waterway design policies. Reference (c), the Nationwide Waterways Analysis and Management System Study (WAMS) on the Atlantic and Gulf Coast Seacoast System was the first of these studies and resulted in interim policy promulgated in reference (a). Reference (d), the Nationwide WAMS on the Pacific Seacoast System was recently completed and this memo serves to promulgate a single Seacoast System level of service policy until it can be incorporated into the next update of reference (e).
4. **WATERWAY DESCRIPTION:** The Atlantic, Gulf, and Pacific Seacoasts are a Short Range ATON System designed to support safe navigation within U.S. navigable waters seaward of the line of demarcation.

5. STUDY DESIGN VESSEL: For the purposes of defining the navigation requirements and levels of service, the Design Vessel for the Atlantic, Gulf, and Pacific Seacoast systems is a towing vessel of 12 meters or more in length. Shoal water for the design vessel is defined as 30 feet or less for the Atlantic and Gulf Seacoast systems and 36 feet or less for the Pacific Seacoast system. The difference in definition between the two areas are due to differences in coastal features and hydrography. In accordance with 33 CFR 164, the navigation equipment requirements for the Design Vessel are:

- a. Marine Radar
- b. Searchlight
- c. VHF-FM Radio
- d. Magnetic Compass
- e. Echo Depth-Sounding Device
- f. Electronic position-fixing device when operating seaward of navigable waters
- g. AIS (Class A)

6. LEVEL OF SERVICE:

a. The USCG shall maintain the Atlantic, Gulf, and Pacific Seacoast ATON systems to ensure safe navigation during coastal transits or when making landfall. The level of service provided for these systems shall be based on the navigation capabilities associated with the Design Vessel of the waterway. District Commanders shall make all efforts to mark the system in a manner which is justifiable due to the volume of traffic and the degree of risk in the specific area.

b. The USCG may provide ATON for isolated charted hazards of 30 feet or less in the Atlantic and Gulf Seacoast System. These ATONs shall have a minimum operational range of 3 NM.

c. The USCG may provide ATON for isolated charted hazards of 36 feet or less in the Pacific Seacoast system. These ATONs shall have a minimum operational range of 3 NM.

d. The USCG may provide landfall lights with an operational range of 5-7 NM. Landfall lights are not intended to mark offshore hazards or shoals.

e. The USCG may provide Safe Water Marks at entrances of major channels or pilot embarkation areas with Virtual AIS-ATON where an operational range of 5 NM or greater can be attained. If Virtual AIS-ATON is not feasible, a physical aid may be considered. Existing physical Safe Water Marks may be discontinued and replaced with Virtual AIS-ATON.

f. AIS-ATON (Synthetic or Physical) may be used to replace RACONs. Replacement of a RACON should coincide with scheduled service or if the RACON becomes discrepant.

g. The Coast Guard shall no longer provide bells, gongs, or whistles on ATON within seacoast systems.

Subj: INTERIM GUIDANCE ON AIDS TO NAVIGATION LEVEL OF
SERVICE FOR THE UNITED STATES SEACOAST SYSTEM
(ATLANTIC, GULF, AND PACIFIC)

16500
15 Jul 2021

h. Any ATON changes initiated by this interim policy shall be conducted per reference (e), including procedures for notifying mariners.

7. My point of contact is

[REDACTED]

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Dist: All CGD (dpw)
LANTAREA (54)
PACAREA (54)
CG-WWM
CG NAVCEN