

Sunsetting Traditional NOAA Paper Charts

End of Paper and Raster Nautical Chart Production

Introduction of NOAA Custom Charts

**This document has been superseded by a
new Nautical Charting Plan, available at:**

<https://www.nauticalcharts.noaa.gov/publications/docs/nautical-charting-plan.pdf>



Office of Coast Survey
National Oceanic and Atmospheric Administration

November 14, 2019

Cover photo: Commander John Bortniak, NOAA Corps (retired)

<https://photolib.noaa.gov/Collections/National-Weather-Service/Other/emodule/627/eitem/18183>

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Introduction

As was noted in the [National Charting Plan](#), released in November 2017, NOAA has been reviewing different approaches for making paper nautical charts more efficiently¹. This *Sunsetting Traditional NOAA Paper Charts* document or "Sunset Plan" describes NOAA's decision to sunset – that is, gradually and completely end – production of the traditional NOAA paper² nautical charts and related raster products by January 2025. This is part of a strategy to improve the availability of the most up-to-date data for marine navigation in other NOAA products.



This strategy includes the development of an alternative paper product called the NOAA Custom Chart (NCC), which as the National Charting Plan predicted will be, "a slightly different looking nautical chart product."

This document provides an overview of activities that NOAA is undertaking to facilitate the transition.

Three parts of the sunset

The sunset effort will wind down and ultimately stop production of all traditional NOAA paper nautical charts within five years. To facilitate the transition of paper and raster chart users, and other stakeholders to Electronic Navigational Chart (NOAA ENC[®]) based products, NOAA is soliciting feedback from chart users and commercial entities that provide navigational products and services based on NOAA raster chart and ENC products. Information gathered from these discussions will inform and shape the manner and timing in which the sunset process will proceed. Comments and suggestions about improving the paper chart sunset process may be submitted through the ASSIST feedback form at <https://nauticalcharts.noaa.gov/customer-service/assist>.

There are three major components of the sunset effort that will facilitate a successful transition while continuing to support safe navigation.

- Improve the consistency and level of detail provided by NOAA's primary chart product, the Electronic Navigational Chart.
- Promote use of paper chart products based on ENC data, either through the NOAA Custom Chart web app being developed by NOAA or through third-party commercial providers selling ENC-based chart products.
- The orderly shutdown of all traditional NOAA paper and other raster nautical chart production.

Efforts to improve ENCs and develop the NOAA Custom Chart web application have been ongoing for several years now. The shutdown of paper and raster chart production may start as early as mid to late 2020.

Affected products

Vector

NOAA maintains over 1,200 individual ENC charts (also called cells). These range from small scale "overview" charts used for voyage planning to large scale "berthing" charts. NOAA is undertaking a multi-year program to rescheme all ENCs into a standard, rectangular, gridded layout. This will ultimately result in an ENC product suite of over 9,000 ENCs. Many of these will be compiled at larger scales than the ENCs they replace, providing more detailed coverage than ever before. More information about ENC rescheming is available in the "Advantages of

¹ See pages 29 and 30 of the *National Charting Plan: A Strategy to Transform Nautical Charting* at URL: <https://nauticalcharts.noaa.gov/publications/docs/national-charting-plan.pdf>

² NOAA ended Federal Government printing of paper nautical charts in April 2014, but continued partnering with commercial, NOAA certified, Print-on-Demand (POD) vendors to continue providing traditional paper nautical charts to the public. The availability of POD traditional paper nautical charts will end by January 2025.

focusing on ENC production” section in this document and in the separate *Transforming the NOAA ENC®* document.

Raster

NOAA also maintains a suite of over 1,000 paper nautical charts, which are printed and distributed through NOAA's certified print-on-demand (POD) chart agents. Other NOAA products, based on the paper chart images created for POD, consist of Raster Navigational Charts (NOAA RNC®), full-size nautical chart images in Portable Document Format (PDF), and reduced scale 8.5" x 11" size BookletCharts™. The RNC Tile Service and online RNC Viewer are also part of NOAA's raster chart production.

All paper and raster chart production, as well as the RNC Tile Service and the online RNC Viewer, will be shut down by the end of the sunset period.

Raster and Vector Charts

Raster charts are digital or paper images of traditional nautical charts. The image comprises rows of color pixels – or dots of ink on paper charts – which form the text and symbols that make up the chart.

Vector charts, such as ENCs, are digital data that store features as pairs of latitude and longitude coordinates (as opposed to a matrix of pixels). Records associated with each feature provide detailed information, such as the feature's color, shape, purpose, quality of position, and other attributes.

Although the base data used by NOAA to create raster and vector chart products is the same, a significant amount of product "finishing" is needed to output a paper or raster chart that is not required for ENCs.

NOAA Custom Chart (NCC)

The online NOAA Custom Chart application enables users to create their own charts from the latest NOAA ENC data. Users may define the scale and paper size of custom-made nautical charts centered on a position of their choosing. NCC then creates a geospatially referenced Portable Document Format (GeoPDF) image of a nautical chart. Chart notes and other marginalia are placed on a separate PDF page. Users may then download, view, and print the output. NCC is an easy way to create a paper or digital backup for electronic chart systems or other Global Positioning System (GPS) enabled chart displays.

A comparison of NOAA Chart 11412 and the corresponding NOAA Custom Chart is shown in Figures 2 and 3 on the following pages. Although it looks a bit different from a traditional NOAA chart, NCCs show the latest data as compiled in the NOAA ENCs. NOAA's existing paper charts can be months behind the corresponding ENC chart.

The prototype is in the early phases of development and many improvements are needed to make NCC a viable replacement for traditional paper nautical charts. Some ideas that we are working on are shown in Figure 1. The sunset of traditional NOAA paper nautical charts makes optimizing NCC more important than ever. We hope you will try out the NCC prototype at <https://devgis.charttools.noaa.gov/pod> and tell us what you think through the ASSIST feedback form at <https://nauticalcharts.noaa.gov/customer-service/assist>.

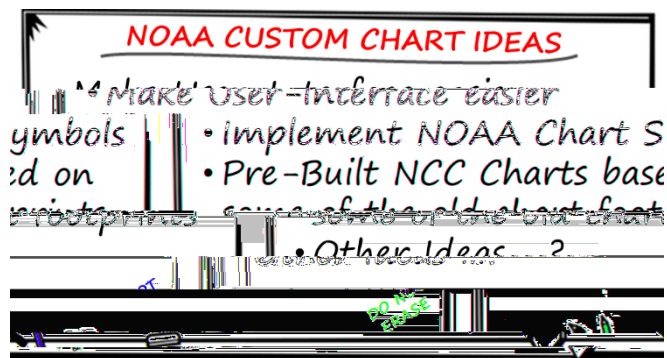


Figure 1. Some NOAA Custom Chart Improvement Ideas

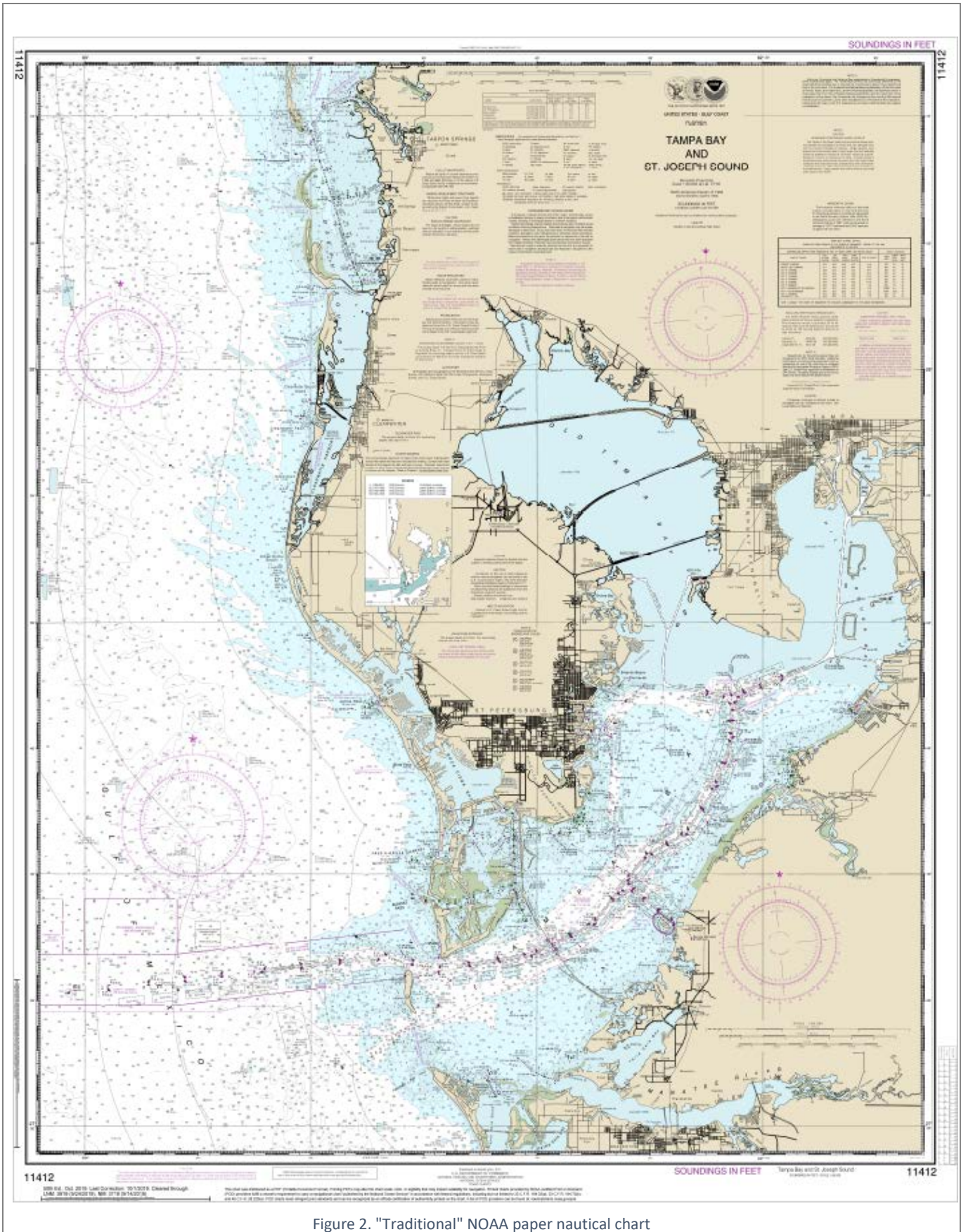


Figure 2. "Traditional" NOAA paper nautical chart

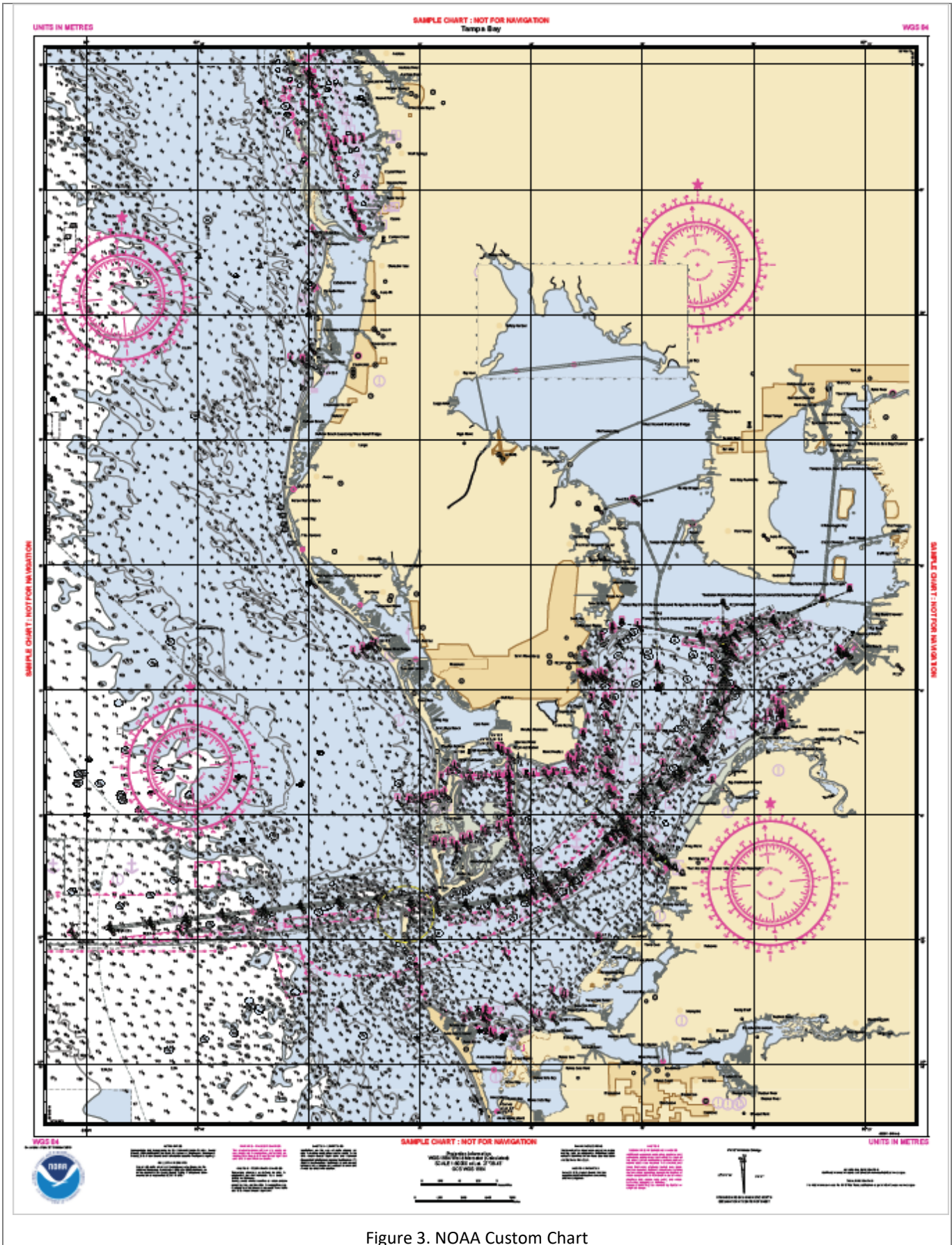


Figure 3. NOAA Custom Chart

Third-party data providers

In addition to the NOAA Custom Chart web app providing users with PDF nautical charts that can be printed, existing NOAA print-on-demand (POD) paper chart agents may also be able to print and ship NCC style charts to customers. Some other commercial vendors also sell paper charts derived from ENC data.

Schedule

Ultimately, NOAA will cancel all traditional paper nautical charts and their corresponding raster chart products, but this will not occur all at once. The early part of the transition will include time for coordinating with customers and partners, as well as planning the many details of how the raster sunsetting process will proceed. The later part of the transition will include making the final modifications to websites, brochures, and other product promotional materials; updates to chart production specifications and databases; and other actions needed to reflect the commitment to enhancing and maintaining the NOAA ENC product. Table 1 provides a general overview of the timeline.

2019 - 2020	<ul style="list-style-type: none">• Consult and coordinate with nautical chart data providers, users, POD agents, and other stakeholders.• Complete development of policies and procedures for the orderly cessation of raster chart production.
2020 - 2023	<ul style="list-style-type: none">• Systematically cancel NOAA paper and raster nautical charts.
2024	<ul style="list-style-type: none">• Cancel remaining NOAA paper and raster nautical charts.• Make final modifications to the chart production system and documentation for ENC-only production.• Make final modifications to NOAA websites and other chart related informational and education materials.

Table 1. General five-year timeline for cancellation of NOAA raster chart products.

Criteria for cancelling individual charts

The criteria for canceling individual charts are still being developed and may change as the paper and raster sunsetting proceeds. No comprehensive schedule, list, or prioritization of pending chart cancellations will be published. However, when a chart is identified for cancellation, the print-on-demand version of the chart will be updated with a note stating that it is the last edition of the chart and it will be cancelled 6 to 12 months later. Final notification of a chart's cancellation will be posted on the NOAA [List of Latest Editions](#) webpage and in the Local Notice to Mariners.

The following criteria will likely be the basis for the order in which most chart cancellations take place. A chart may be canceled when any of the following conditions exist:

- New, larger-scale, reschemed ENC coverage is available.
- Compilation of a large amount of new depth or shoreline data is applied to the corresponding ENC.
- Volume of chart sales indicate a low rate of use for a particular chart.
- Some cancellations may be regionally based, especially if all or most of a particular chart's adjoining, similar-scale chart coverage is cancelled.

Sunset rationale

Rather than continue producing two nautical chart products (ENCs and paper/raster charts) that serve essentially the same purpose, NOAA is now focusing efforts on keeping up with the demand for more detailed ENC coverage for ever larger commercial vessels and other users. ENCs provide the most efficient means of delivering updated navigational information to the public, while paper and raster chart products have become out of sync with their

corresponding ENC. Ending paper and raster chart production will enable NOAA to improve and expand ENC coverage beyond what would be possible otherwise.

Changing chart formats and regulations

Coast Survey³ created and published the first paper charts more than 180 years ago. Over the years the techniques and equipment employed to produce nautical charts has changed, but the means by which paper

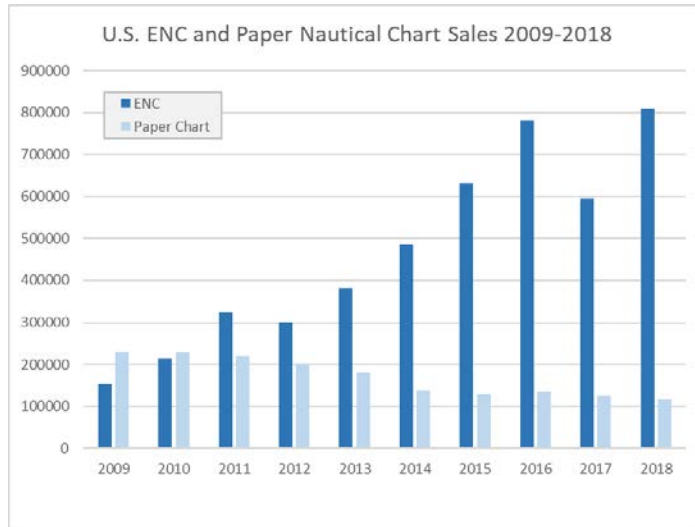


Figure 4. NOAA paper nautical chart and ENC sales 2009-2018.

charts are used on the bridge is quite similar today. However, voyage planning and route monitoring changed significantly with the advent of the Global Positioning System, development of Electronic Chart Display and Information Systems (ECDIS), and the digitization of paper nautical charts to create electronic navigational charts.

In 2018, the International Maritime Organization (IMO) requirement for most commercial ships on international voyages to use ECDIS and ENCs came into full effect.⁴ In 2016, the U.S. Coast Guard allowed commercial ships on domestic voyages in U.S. waters to use ENCs in lieu of paper nautical charts.⁵ Both of these factors have contributed to significant decline in paper nautical chart use and rise in ENC use, as shown in Figure 4.

Advantages of focusing on ENC production

The legacy of the paper charts from which ENC data were first digitized, starting in the early 1990s, lives on in the current suite of ENCs. The footprints and scales of NOAA ENCs were inherited directly from corresponding paper charts and the resulting ENC product suite now consists of over 1,200 irregularly shaped cells compiled at 131 different scales.

Adjoining paper charts, even with the same navigational purpose (harbor, approach, coastal, etc.) are often compiled at slightly different scales to accommodate different chart orientations, paper sizes, or a desire to extend a chart's coverage to include harbors or other key features at opposite sides of a chart. Different depth contour intervals are often used on different scale charts and the process of "edge matching" adjoining ENC cells of different scales can be challenging.

The new NOAA ENC re-scheming program is replacing the current irregular layout of ENCs with a regular grid of rectangular shaped ENCs. This multi-year effort will increase the size of the ENC product suite to about 9,000 ENC cells. Many of these will be compiled at larger scales than the ENCs they replace and some of the new coverage in larger ports will be "High Definition charts" or HD charts. HD charts provide more detailed 1:5,000 scale coverage with depth contour intervals as dense as half a meter.

The new ENC scheme reduces the set of compilation scales to just 12. This reduction makes reviewing and resolving discontinuities much easier, because new adjoining ENCs with the same navigational purpose are likely

³ Established by Pres. Thomas Jefferson in 1807, the organization was originally called the "Survey of the Coast."

⁴ As specified in the International Convention for the Safety of Life at Sea (SOLAS), Chapter V, Regulation 19, "Carriage requirements for shipborne navigational systems and equipment."

⁵ USCG Navigation and Vessel Inspection Circular No. 01-16 (NVIC 01-16), "Use of Electronic Charts and Publications in Lieu of Paper Charts, Maps and Publications," [COMDTCHANGE NOTE 16700.4](#), July 10, 2017.

to be of the same scale. Alignment errors among features on adjoining ENC cells will be fixed as new ENC cells are created and a standard set of depth contours in integer meter units will be recompiled.

No corresponding raster charts will be created for the new larger scale ENC coverage. In fact, NOAA will depend on the reduction in NOAA raster and paper chart coverage as rescheming progresses. This will free resources needed to create and maintain improvements to the ENC product. More information about ENC rescheming is in *Transforming the NOAA ENC*[®] at <https://nauticalcharts.noaa.gov/publications/docs/ENC-Transformation.pdf>.

USCG chart carriage requirements and other regulations

There are currently two NOAA products that meet U.S. Coast Guard (USCG) chart carriage requirements for regulated vessels, electronic navigational charts and standard "traditional" paper nautical charts. NOAA and the USCG are currently discussing if and what paper chart carriage the USCG may have in the future.

Transition of LNM and NM

The Local Notice to Mariners (LNM), published weekly by the USCG, is the primary means for disseminating information concerning aids to navigation, hazards to navigation, dangers, obstructions, channel condition reports, anchorages, restricted areas, construction and modifications of bridges, and other information of interest to mariners on U.S. waters. These notices enable mariners to make hand corrections on paper nautical charts, light lists, coast pilots, and other nautical publications to keep them up-to-date. The National Geospatial-Intelligence Agency (NGA) publishes a similar weekly Notice to Mariners (NM) that primarily addresses changes to charts covering foreign waters, but also includes notices for some domestic charts.

LNMs typically consist of eight sections. Although any section may reference a nautical chart number, sections II, III, and IV are the ones that typically key changes to specific charts. A summary of each section's content is shown in Table 2.⁶

LNM Section	Refers to Charts	General Description of Section Content.
I Special Notices	No	Information of special concern to the Mariner.
II Discrepancies	Yes	Lists all reported and corrected discrepancies related to aids to navigation. A discrepancy is a change in the status of an aid to navigation that differs from what is published or charted.
III Temporary Changes and Temporary Changes Corrected	Yes	Temporary changes and corrections to aids to navigation. When charted aids are temporarily relocated for dredging, testing, evaluation, or marking an obstruction, a temporary correction shall be listed in Section IV giving the new position.
IV Chart Corrections	Yes	Corrections to federally and privately maintained aids to navigation, as well as NOAA corrections. Corrective actions affecting charts appear by chart number, and pertain to that chart only.
V Advance Notices	No	Advance notice of approved projects, changes to aids to navigation, or upcoming temporary changes such as dredging, etc. Mariners are advised to use caution while transiting these areas.
VI Proposed Changes	No	Notices of proposed projects open for comment. Periodically, the Coast Guard evaluates its system of aids to navigation to determine whether the conditions for which the aids to navigation were established have changed. When changes occur, the feasibility of improving, relocating, replacing, or discontinuing aids are considered.
VII General	No	Information of general concern to the Mariners, who are advised to use caution while transiting these areas.
VIII Light List Corrections	No	Changes to aids to navigation in the USCG Light Lists, keyed to the aid's light list number

Table 2. Description of USCG Local Notice to Mariners sections.

⁶ Excerpts of a typical USCG Local Notice to Mariners (USCG District 1, LNM 30/19, issued on July 24, 2019) are shown in Annex C.

After NOAA paper nautical chart production ends there will likely no longer be a need for LNM Section IV, "Chart Corrections." There may ultimately be a means to relate changes to NOAA Custom Charts, but that has yet to be determined. Other sections that use chart numbers to help identify the general location of features will have to use other means, because traditional charts and chart numbers will no longer exist. Defining a standard set of references, such as the extents of inlets, bays, harbors, etc., that are associated with the physical environment in lieu of chart numbers might be one way to order the listings of notifications in the other remaining sections. NOAA will work with the USCG and NGA to help define an appropriate method.

ANNEX A - Description of NOAA raster chart products

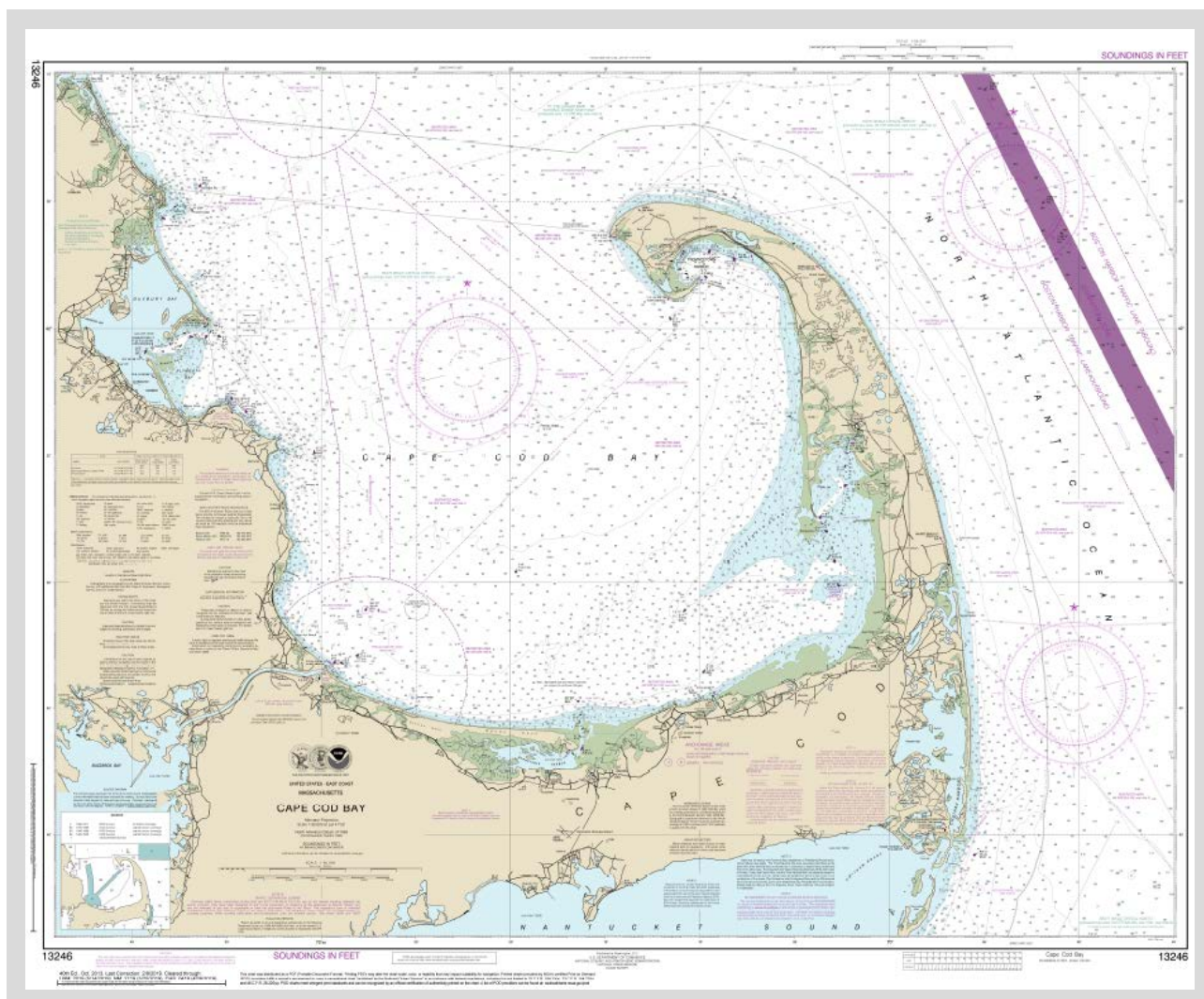


Figure A-1. NOAA Chart 13246 of Cape Cod Bay, Massachusetts.

NOAA paper nautical chart

NOAA paper nautical charts are the only NOAA raster chart product that meet USCG chart carriage requirements for commercial vessels. Figure A-1 shows an image of NOAA Chart 13246 of Cape Cod Bay, Massachusetts.

NOAA provides digital images of each of its raster charts to several NOAA certified chart agents. Charts purchased from any NOAA chart agent are assured to be printed at the proper scale and quality to meet USCG carriage requirements for commercial vessels. These print-on-demand (POD) charts include all critical corrections and other routine data compilations that have been made since the last new edition was released, up to the week that the chart is purchased.

Other raster chart products and services

NOAA produces four other raster nautical chart products that are derived from the same chart image used to produce the files provided to NOAA certified chart agents. However, these other raster products do not meet USCG carriage requirements.

Full-size nautical chart PDF files

Full-size nautical charts can be downloaded in PDF format. Each is a single, large chart image identical to the official NOAA paper nautical chart. Most, but not all, charts may be printed at true chart scale on plotters that accommodate 36" wide paper.

Paper plots of full-size nautical chart PDFs do not meet USCG chart carriage requirements for commercial vessels. Only NOAA paper nautical charts printed by a NOAA certified chart agent, who will ensure that the charts are printed at the proper scale and quality, meet USCG chart carriage requirements.

Booklet Chart™ PDF files

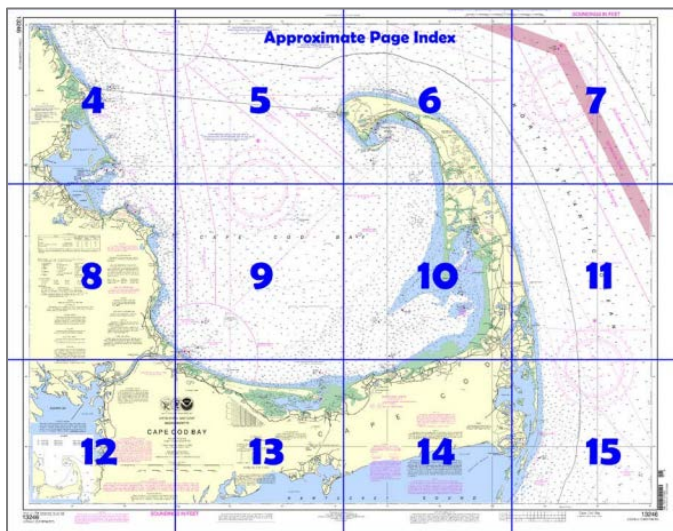


Figure A-2. Index of the chart content pages of Booklet Chart 13246 of Cape Cod Bay.

Booklet Charts are reduced scale copies of NOAA paper nautical charts divided into a set of a dozen or more 8.5" x 11" pages, each of which shows a different portion of a chart. Figure A-2 shows the index of the chart content pages of Booklet Chart 13246 of Cape Cod Bay. Figure A-3 shows page 6 of the Booklet Chart. The extent of each page extends past the boundaries shown in the index, so that the coverage of each page overlaps a bit with adjoining pages.

Other pages in the booklet include excerpts from the U.S. Coast Pilot® and other information such as descriptions of navigational aids and hazards in the area. Emergency information for the charted area appears on the last page.

Booklet Charts can be downloaded from the chart locator in the Coast Survey website in PDF format and can be printed on an ordinary office or home color printer and assembled into a booklet.

NOAA raster navigational chart (NOAA RNC®)

The same digital raster chart images used to print paper charts are used to produce the georeferenced NOAA raster navigational chart or NOAA RNC® product. RNCs can be used with GPS-enabled electronic chart systems (ECS) and other chart plotter systems to provide real-time vessel positioning.

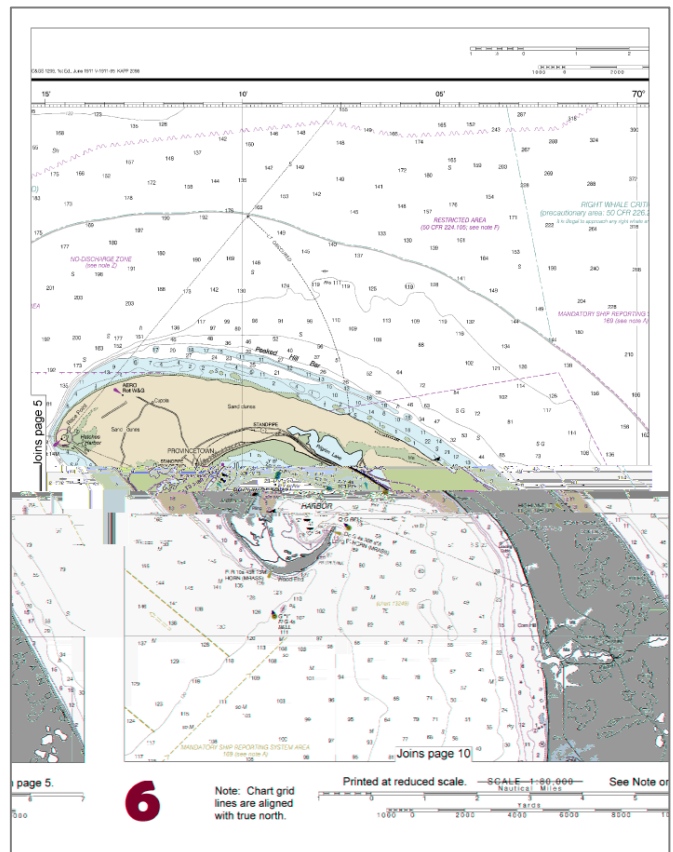


Figure A-3. Page 6 of the Booklet Chart displayed in Figure A-2.

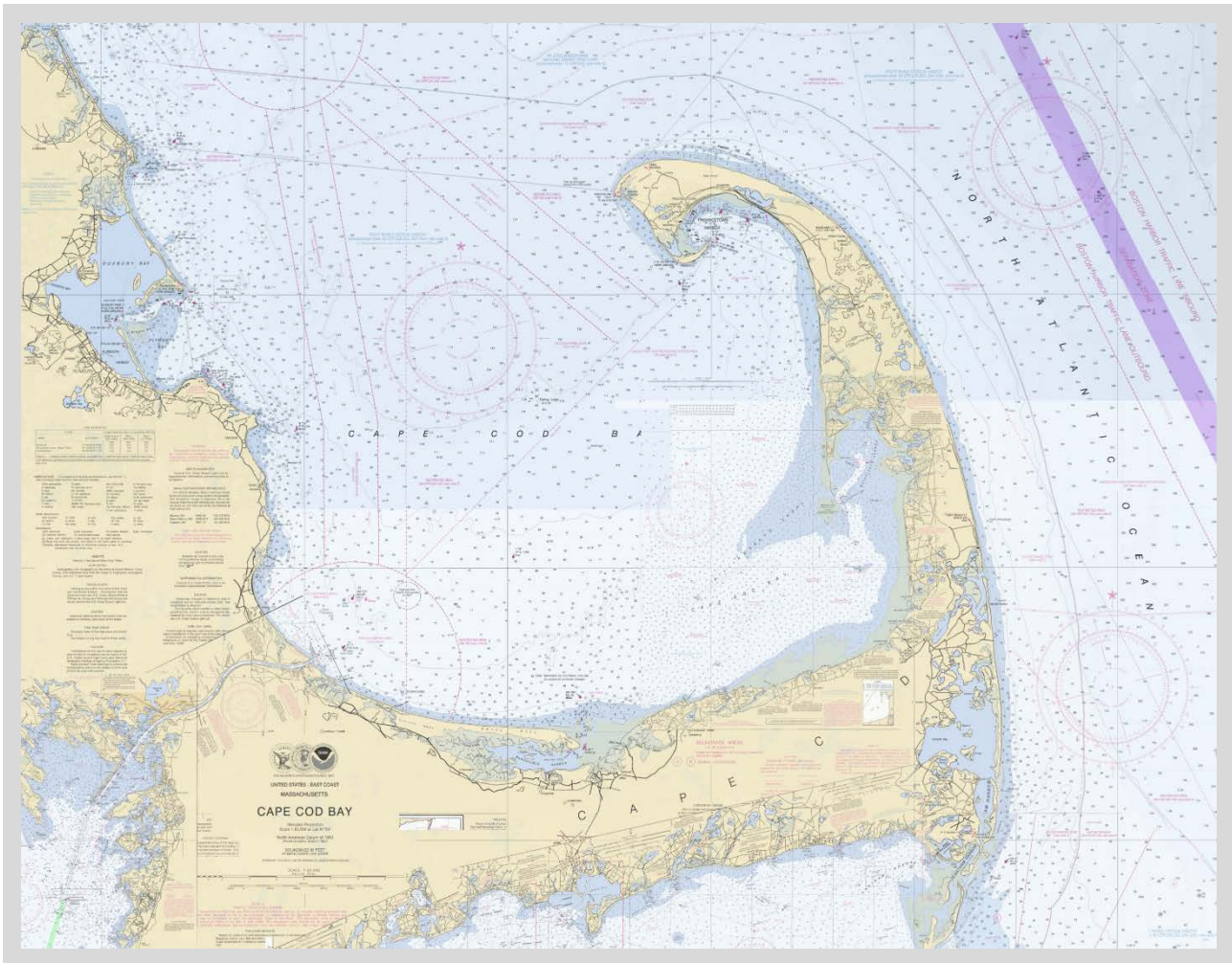


Figure A-4. Chart image from the NOAA RNC[®] Viewer, which displays quilted RNC tiles.

The **NOAA RNC tile service** comprises 15 million individual chart tile images. Each full RNC is cut into thousands of smaller “tiles” that display on a computer much faster than full RNC images. The tile service provides geo-referenced, nautical chart tilesets for the public that comply with several web map and map tile standards. These tilesets may be ingested directly into several commercial electronic chart systems, mobile apps, and third party nautical data integration websites. NOAA also provides a "quilted tileset" version of the tile service that provides a unified display of multiple charts compiled at similar scales. The charts are quilted together to provide a seamless view. Figure A-4 shows an image from the NOAA RNC[®] Viewer, which displays quilted RNC tiles.

ANNEX B - Glossary⁷

ECDIS (Electronic Chart Display and Information System) A navigation information system which with adequate back-up arrangements can be accepted as complying with the up-to-date chart required by regulations V/19 and V/27 of the 1974 SOLAS Convention, as amended. Use of ECDIS is now mandatory by most SOLAS vessels on international voyages.

ECS (Electronic Chart System) A navigation information system that electronically displays vessel position and relevant nautical chart data and information from the ECS data base on a display screen, but does not meet all IMO requirements for ECDIS, and does not satisfy SOLAS Chapter V requirement to carry a navigational chart.

ENC (Electronic Navigational Chart) The database, standardized as to content, structure and format, issued for use with ECDIS on the authority of government authorized hydrographic offices. The ENC contains all the chart information necessary for safe navigation and may contain supplementary information in addition to that contained in the paper chart (e.g. sailing directions) which may be considered necessary for safe navigation. The format and encoding of ENC data is specified by the *S-57 IHO Transfer Standard for Digital Hydrographic Data*. The recently developed *S-101 ENC Product Specification* will eventually be phased in to replace S-57 based ENCs.

LNM (Local Notices to Mariners) are published weekly by the U.S. Coast Guard (USCG) to provide marine information affecting the safety of navigation. Notices include changes in aids to navigation, depths in channels, bridge and overhead cable and pipeline clearances, reported dangers and other useful marine information. Specific corrective changes are identified for the current edition of each NOAA paper nautical chart, as necessary. Mariners must apply the changes by hand to their paper charts to keep them up to date. LNMs may be downloaded from the USCG Navigation Center website at: <https://www.navcen.uscg.gov/?pageName=lnmMain>.

NM (Notice to Mariners) are published weekly by the National Geospatial-Intelligence Agency (NGA). They are prepared jointly by NGA, NOAA, and USCG. These notices contain selected items from the LNM and other reported marine information required by oceangoing vessels operating in both foreign and domestic waters.

Paper nautical chart or paper chart A printed chart specifically designed to meet the requirements of marine navigation, showing the depth of water, nature of bottom, elevations, configuration and characteristics of coast, dangers and aids to navigation, and other features.

POD (Print-on-Demand) The means of duplicating and distributing paper charts (or other hardcopy materials) in which a single copy or small quantities of charts are printed as an order for a particular chart is received. Distribution is either directly from a retail nautical supply store or chart agent facility in which a customer walks in to buy a chart; or by mail to satisfy orders placed online.


Raster chart A printed paper nautical chart, a scanned image of a paper chart, the digital image from which a paper chart is made, or other digital representations of a "traditional" nautical chart stored as rows and columns of color pixels. Raster charts include both paper charts and digital charts that use a raster format, such as raster navigational charts.

Sunsetting The intentional phase out or termination of an outdated or obsolete product or service.

⁷ Definitions are adapted from the International Hydrographic Organization (IHO) Hydrographic Dictionary (S-32) at <http://iho-ohi.net/S32/index.php>, accessed May 7, 2019 and the IHO Nautical Cartography Working Group, "Preliminary Report on Future of the Paper Nautical Chart," at http://www.iho.int/mtg_docs/com_wg/HSSC/HSSC11/HSSC11_2019_05.4B_EN_Future%20of%20the%20Paper%20Nautical%20Chart_v1.pdf, accessed May 7, 2019.

ANNEX C – Sample USCG Local Notice to Mariners Entries

The heading and some sample entries from each of the eight sections of a typical USCG local notice to mariners were extracted from the USCG District 1, LNM 30/19, issued on July 24, 2019. It covers the waters from Eastport Maine to Shrewsbury, New Jersey.



U.S. Department
of Homeland Security
**United States
Coast Guard**

LOCAL NOTICE TO MARINERS

District: 1 **Week: 30/19**

COASTAL WATERS FROM EASTPORT, MAINE TO SHREWSBURY, NEW JERSEY

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SECTION I - SPECIAL NOTICES

This section contains information of special concern to the Mariner.

MA-NANTUCKET

NOAA Fisheries announces that a voluntary vessel speed restriction zone (Dynamic Management Area - DMA) has been established 3 nautical miles south of Nantucket to protect an aggregation of right whales sighted in this area on July 15, 2019. This DMA is in effect through July 29, 2019. Mariners are requested to route around this area or transit through it at 10 knots or less.

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SECTION II - DISCREPANCIES

This section lists all reported and corrected discrepancies related to Aids to Navigation in this edition. A discrepancy is a change in the status of an aid to navigation that differs from what is published or charted.

DISCREPANCIES (FEDERAL AIDS)

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
35	Seguin Light	LT EXT	13295	SNNE-0104-19	27/19	
60	Cape Elizabeth Light	LT EXT	13292	SNNE-0126-19	30/19	
410	Boston Lighted Whistle Buoy B	RAC INOP	13270	SBOS-0198-18	49/18	

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SECTION III - TEMPORARY CHANGES and TEMPORARY CHANGES CORRECTED

This section contains temporary changes and corrections to Aids to Navigation for this edition. When charted aids are temporarily relocated for dredging, testing, evaluation, or marking an obstruction, a temporary correction shall be listed in Section IV giving the new position.

TEMPORARY CHANGES

LLNR	Aid Name	Status	Chart No.	BNM Ref.	LNM St	LNM End
640	Block Island Southeast Light	Reduced Intensity	13217	SENE-0393-18	42/18	
7985	Saco River Buoy 5A	DISCONTINUED FOR DREDGING	13287	NONE	06/19	
8000	Saco River Middle Bar Buoy 6B	DISCONTINUED FOR DREDGING	13287	NONE	06/19	
8005	Saco River Buoy 7	DISCONTINUED FOR DREDGING	13287	NONE	06/19	
9223	Merrimack River Buoy 52	DISCONTINUED	13274	NONE	20/19	
9227	Rocks Village Hazard Buoy	DISCONTINUED	13274	SBOS-0054-19	20/19	
10685	Boston North Channel Lighted Bell Buoy 2	RELOCATED FOR DREDGING	13270	SBOS-0048-19	19/19	

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SECTION IV - CHART CORRECTIONS

This section contains corrections to federally and privately maintained Aids to Navigation, as well as NOS corrections.

This section contains corrective actions affecting chart(s). Corrections appear numerically by chart number, and pertain to that chart only.

It is up to the mariner to decide which chart(s) are to be corrected. The following example explains individual elements of a typical chart correction.

12358	23rd Ed.	01-APR-19	Last LNM: 13/19	NAD 83	30/19
<i>ChartTitle: New York Long Island, Shelter Island Sound and Peconic Bays;Mattituck Inlet</i>					
Main Panel 2219 NY LI SHELTER ISLAND SOUND AND PECONIC BAYS - -. Page/Side: -					
RELOCATE	Schellinger Fish Trap Light FN38			CGD01 from 41-00-56.960N to 41-00-57.420N	072-22-12.170W 072-22-17.160W
RELOCATE	Schellinger Fish Trap Light FN4			CGD01 from 41-00-27.010N to 41-00-26.220N	072-19-12.690W 072-19-06.780W
RELOCATE	Schellinger Fish Trap Light FN63			CGD01 from 41-00-14.070N to 41-00-09.240N	072-21-54.400W 072-21-54.360W
RELOCATE	Semlear Aquaculture East Bunker Light			CGD01 from 41-00-32.820N to 41-00-33.600N	072-21-50.370W 072-22-08.040W

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SECTION V - ADVANCE NOTICES

This section contains advance notice of approved projects, changes to aids to navigation, or upcoming temporary changes such as dredging, etc.

Mariners are advised to use caution while transiting these areas.

SUMMARY OF ADVANCED APPROVED PROJECTS

Approved Project(s)
None

Project Date **Ref. LNM**

Advance Notice(s)

MA, RI, CT, NY-SEACOAST Revised

The U.S. Coast Guard will be making the following changes on the below listed Aids to Navigation (See LNM 09/17 for the full proposal) weather and operations permitting:

MARINER RADIO ACTIVATED SOUND SIGNAL (MRASS) Mariners requiring the use of sound signals during periods of reduced visibility will be able to activate them on demand. In order to turn them on, mariners will be required to momentarily turn their VHF-FM radio to channel 83A/157.175Mhz and key their microphone 5 times consecutively. This will activate the fog signal for 45 minutes.

Connecticut;
(LLNR 21340) Greens Ledge Light

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SECTION VI - PROPOSED CHANGES

Periodically, the Coast Guard evaluates its system of aids to navigation to determine whether the conditions for which the aids to navigation were established have changed. When changes occur, the feasibility of improving, relocating, replacing, or discontinuing aids are considered. This section contains notice(s) of non-approved, proposed projects open for comment. SPECIAL NOTE: Mariners are requested to respond in writing to the District Office unless otherwise noted (see banner page for address).

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PROPOSED WATERWAY PROJECTS OPEN FOR PUBLIC COMMENT

Proposed Project(s)
None

Closing **Docket No.** **Ref. LNM**

Proposed Change Notice(s)

MA-BOSTON INNER HARBOR (Chart 13272)-PRESIDENT ROADS

The U.S. Coast Guard is considering making the following changes to Aids to Navigation to this waterway :

CHANGE Boston Main Channel Buoy 5A (LLNR 10897) to Boston Main Channel Lighted Buoy 5A (LLNR 10897) Fl G 4s (1s on 3 s off) and add "Replaced by can when endangered by ice." To the Light List.

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SECTION VII – GENERAL

This section contains information of general concern to the Mariners. Mariners are advised to use caution while transiting these areas.

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SUMMARY OF GENERAL PROJECTS STILL IN EFFECT

MA-OFFSHORE MARTHA'S VINYARD AND NANTUCKET

Geophysical surveys will be done in the BOEM OCS Lease Area for Renewable Energy from July 31 - September 30, 2019. The hours of operation will be 7 days a week, 24 hours a day. On scene will be the MV GEOSEA. Vessel will be performing geophysical operations, with towed equipment in the water up to 500 meters aft of the stern. During towing operations, the vessel will have limited maneuverability.

LNM: 30/19

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SECTION VIII - LIGHT LIST CORRECTIONS

An Asterisk *, indicates the column in which a correction has been made to new information

(1) No.	(2) Name and Location	(3) Position	(4) Characteristic	(5) Height	(6) Range	(7) Structure	(8) Remarks	
297.1	<i>NEMAC/Salem State University Aquaculture Lighted Buoy B</i>	42-40-59.998N 070-26-54.499W	Fl Y 2s			Yellow.	Property of Salem State University. Private Aid.	30/19
*	*	*	*	*	*	*	*	
297.2	<i>NEMAC/Salem State University Aquaculture Lighted Buoy C</i>	42-40-57.000N 070-26-56.004W	Fl Y 2s			Yellow.	Property of Salem State University. Private Aid.	30/19
*	*	*	*	*	*	*	*	
297.3	<i>NEMAC/Salem State University Aquaculture Lighted Buoy D</i>	42-40-54.192N 070-27-00.201W	Fl Y 2s			Yellow.	Property of Salem State University. Private Aid.	30/19