



# NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

UNITED STATES DEPARTMENT OF COMMERCE

## Best practices for creating and maintaining ENC-derived paper nautical charts

*New technical memorandum details best practices for creating paper nautical charts from electronic navigational chart data*

Today, NOAA completes the five-year process to sunset all traditional paper nautical chart production. The final paper nautical chart was removed from the chart locator and archived on December 5, 2024. Over these past five years, NOAA worked to ease the transition to NOAA electronic navigational charts while continuing to support safe navigation. This includes the development of the online [NOAA Custom Chart](#) application, enabling users to create their own charts from the latest NOAA electronic navigational chart data.

While the majority of our users access our navigation data digitally through [NOAA electronic navigational charts](#), large-format paper charts are still useful for planning, situational awareness, and as a backup in the event of device malfunctions. Users will still be able to generate these large-format paper charts through the NOAA Custom Chart application. This application pulls directly from our most up-to-date electronic navigational chart data and allows the user to choose the exact scale, area, paper size, and other dimensions to fit their needs, generating a portable document format file for printing.

To help users in creating nautical charts using the NOAA Custom Chart application, NOAA developed and published a technical memorandum, [Best practices for creation and maintenance of ENC-derived paper nautical charts](#). The memorandum details best practices to maintain, issues to consider, and chart characteristics to obtain when creating ENC-derived paper nautical charts including information on:

- Customizing your chart — ENC data formats, projection, trans-boundary data, symbols, colors, portrayal rules, scale, compass roses
- Reading your chart — aids to navigation labels, depths, heights, topographic data and transportation infrastructure, chart notes, automation notes, anchorages and other areas with additional encoded information, chart creation date, chart note placement examples
- Updating your charts — updating ENC-derived charts, saving chart design parameters, geoJSON catalog file
- Getting your chart print-ready — graphic scale, digital file format, paper chart media, chart carriage regulations, graticule, baseline color palette, display and compilation scales

Nautical charts that follow this guidance [are more likely to meet\\*](#) U.S. Coast Guard requirements for chart carriage. ENC-derived paper nautical chart production methods that do not consider these matters will not support safe marine navigation.

NOAA is interested in hearing about users' experiences and getting suggestions for additional enhancements. You can provide your input through Coast Survey's online [ASSIST customer feedback form](#).

\* Link added by Starpath

NOAA Office of Coast Survey is the nation's nautical chartmaker. Originally formed by President Thomas Jefferson in 1807, Coast Survey updates charts, surveys the coastal seafloor, responds to maritime emergencies, and searches for underwater obstructions that pose a danger to navigation.