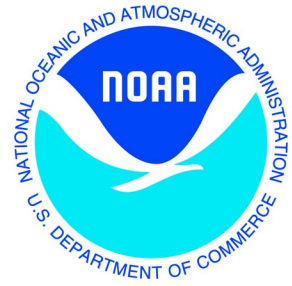


# NOAA's QR Code Enabled Charts

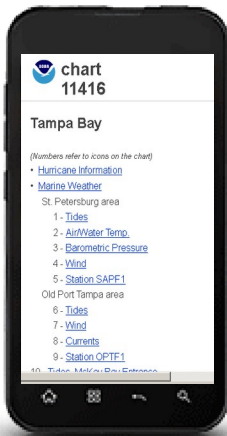
## Testing a new concept



Quick Response codes (QR codes) are 2-dimensional bar codes. When you scan or read a QR code with an iPhone, Android or other camera-enabled Smartphone, you can automatically link to digital content on the Internet; activate a number of phone functions, or connect the mobile device to a Web browser<sup>1</sup>.



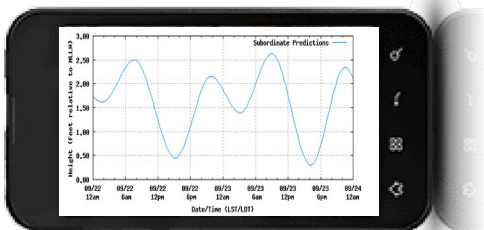
NOAA is evaluating QR codes as a way to enhance its static, printed paper charts by linking them to real-time information. Each Print-on-Demand NOAA nautical chart would have a QR code printed in the margin. When scanned with a SmartPhone, the code opens a chart-specific Web page on the phone. This Web page contains a menu of real-time and predictive data sites such as tides, currents, and marine weather. Simply tapping on a menu item then causes the selected data to be displayed.



Scan QR code with SmartPhone camera

SmartPhone APP automatically goes to a URL encoded in QR code

Select a menu item from the touch screen.



SmartPhone connects to real-time data over the Internet.

The nautical chart shows 'SOUNDINGS IN FEET' and 'TAMPA BAY'. A callout box points to numbered icons on the chart, stating: "Numbered icons on the chart match numbered items on the SmartPhone menu".

The QR code in the margin links to the chart's home page: <https://www.noaa.gov/charts/11416/>

**INSTRUCTIONS:** Tap the home page address in any browser, or instead of the QR code, enter the URL in your mobile device and tap the QR code. Then select an information link from the displayed list.

**What if I am ASOT? (Ashore Observer?)** Each NOAA chart has its own internet home page. Links to support information such as real-time tides, winds, currents, weather, waves and tide/gauge information are available from this home page. Icons on the chart show where the instrumented sites are located.

**Reporting Boating Accidents & Rendering Assistance**

All boating accidents or incidents which meet the criteria below must be reported to the appropriate authority of the jurisdiction in which the accident occurred.

**Fatal Accidents**

Reportable incidents in required for fatal accidents. If a person dies or disappears as a result of a recreational boating accident, the nearest state boating authority must be notified for that state. The following information must be provided:

- Date, time and location of the accident.
- Name of each person involved or disappeared.
- Boat's name and home port.
- Boat's registration number.
- Boat's make and model.
- Boat's age and address of the owner and operator.

If a person dies, or those are injuries requiring more than first aid, a formal report must be filed with the state.

A boating accident report must be filed with the state boating authority within 30 days of the accident. If you are unable to file a report, you must file a report with the nearest State Boating Authority or contact the nearest Coast Guard office.

If you need further information regarding accidents reporting, please call the Boating Safety Hotline, 800-368-5647.

**Rendering Assistance**

If a boating accident or incident results in a vessel or person in jeopardy, you are required to render assistance to the best of your ability.

The master or person in charge is subject to a fine and/or imprisonment for failure to do so.

**Emergency Position Indicating Radio Beacon (EPIRB)**

The EPIRB is a 406 MHz satellite system and is used to alert rescue forces, and is not an emergency communication system. It is used to alert rescue forces when all other communication fails.

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**EMERGENCY INFORMATION**

**VHF Marine Radio Channels for use on the waterways**

Channel 4 - For use in safety, emergency and other important communications.

Channel 13 - Navigation purposes at bridges, locks, harbors.

Channel 22 - Call between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.

Channel 66, 67, 72, 73 - Recreational boat channels.

**Distress Call Procedures**

- Sound the horn 3 times.
- Press the distress button.
- Call the "MAYDAY, MAYDAY, MAYDAY."
- Give your "Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board."
- Repeat "MAYDAY" twice.
- Wait for 30 seconds. If no response, repeat the message.

**HELP: ALL PERIODS: TIDE LIFE JACKETS**

**Mobile Phones** - Call 911 for safety issues.

Coast Guard Auxiliary - 800-441-4622 / 441-6222  
 Coast Guard Cutter - 721-331-2000, Millard Haven - 800-721-2121 / 3332  
 Coast Guard Paramedic - 757-787-9526 / 9527  
 Virginia Marine Police - 800-543-4660  
 NOAA Weather Radio - 167-460 MHz; 167-275 MHz; 167-350 MHz; 167-475 MHz

<sup>1</sup> You may need to download a free QR code reader application (APP) to your SmartPhone first.

QR code enabled charts are being explored as a tool for recreational boaters who do not have an electronic charting system or a computer on board. It offers them:

- **Access** to real-time navigation information using their mobile device of choice – SmartPhones and tablet computers are becoming the preferred means of Internet access and national charting authorities like NOAA need to move with their users.
- **Convenience** by aggregating real-time information specific to a chart and mariner's location rather than having mariners go to thematic sites (first tides, then weather, then currents, then waves...) and search each for relevant information.

Access to the QR sites would not be limited to SmartPhones and tablet computers. The URL for each chart can be printed on the chart along with the QR code. Mariners could then type the URL or make a desktop icon and access the real-time information like any other Internet site.

The QR code service would be free from NOAA. Print-on-Demand charts containing the codes would be available from NOAA's partner OceanGrafix and their retailers ([OceanGrafix.com](http://OceanGrafix.com)). So, in addition to Print-on-Demand charts being updated for Notices to Mariners each week, QR codes could be included thus offering another advantage over traditional charts.

### NOAA's Experiment

NOAA's test of QR codes uses 8 charts around Tampa Bay, Florida. With this suite NOAA is evaluating the desirability, utility, and usability of the QR Code real-time data service. In particular, NOAA is evaluating:

- Usability of the mobile interface, particularly at sea
- The mix of information that should be provided
- Benefits to mariners of the information
- Utility of the icons on the chart at the information stations
- Appropriate improvements
- Mobile connectivity in recreational boating areas
- The costs to build and maintain a mobile information service
- Whether NOAA should offer this as a service

This information will help NOAA evaluate how to best serve mariners in the emerging mobile environment.

### Try the Service Yourself

Scan the QR codes at the right or buy one of the 8 QR-enabled PoD charts. You can also type a URL in your Internet browser or click on a link at the right. URL's for the 8 test charts are of the form [http://nauticalcharts.noaa.gov/qr/QR\\_11425m.php](http://nauticalcharts.noaa.gov/qr/QR_11425m.php). Substitute the chart number you want in place of that in the example. Explore the two formats of [Chart 11416](#) and [Chart 11424](#).

Collaborate with NOAA in designing improved navigation services. Contribute your comments on the evaluation topics to NOAA at [QRcodeCharts@noaa.gov](mailto:QRcodeCharts@noaa.gov) or leave a voicemail at 888-990-NOAA (888-990-6622).

  
John Lowell, Captain (NOAA)  
Director, Office of Coast Survey, NOAA

OMB Control No. 0690-0030  
Expiration Date: 04/30/2014



[Chart 11013](#)



[Chart 11400](#)



[Chart 11411](#)



[Chart 11412](#)



[Chart 11415](#)



[Chart 11416](#)



[Chart 11424](#)



[Chart 11425](#)