The United States Coast Guard Office of Marine Transportation Systems Management develops and implements policies and procedures that facilitate commerce, improve safety and efficiency, and inspire dialogue within the maritime community to make our waterways safe, efficient, and commercially viable. One way we do this is by establishing risk baselines that guide our decisions. Three tools that guide these efforts:

- ports and waterways safety assessments,
- waterways analysis and management system studies,
- port access route studies.

Ports and Waterways Safety Assessments

The Coast Guard established the ports and waterways safety assessment (or PAWSA) process to address waterway user needs and place a greater emphasis on partnerships with industry. The process involves convening a group of waterway users and stakeholders and conducting a structured workshop to elicit their opinions.

The primary objectives:

- improve coordination and cooperation between government and the private sector by involving stakeholders in decisions affecting them;
- develop and strengthen harbor safety committees;
- support Coast Guard responsibilities in waterways management and environmental stewardship;
- provide input for projects related to aids to navigation, regulations, or other risk mitigation measures, including potential vessel traffic management projects.

PAWSA workshops can establish a baseline of waterways for vessel traffic system consideration and allow the local host—typically a sector commander or marine safety unit commanding officer—to interact with the local waterway community to evaluate risk and work toward long-term solutions tailored to local circumstances.

The USCG has conducted dozens of formal PAWSA workshops, and the process represents a significant part of joint public-private sector risk mitigation planning. The Coast Guard uses this input to establish or relocate aids to navigation, adjust VTS reporting requirements, and implement regulatory changes.

Waterway Analysis and Management System Study

Our nation’s waterways contain more than 100,000 aids to navigation—the buoys and beacons that provide visual, electronic, and audible signals to maritime transportation system users. A waterway analysis and management system study helps Coast Guard water-
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Electronic charting system. In 2009 PAWSA workshops for Houston-Galveston and Honolulu, Hawaii featured an electronic charting system that replaced paper navigational charts used during previous workshops. This allowed workshop facilitators to more effectively communicate statistical information, including plotting the locations of vessels involved in marine casualties (collisions, allisions, and groundings), providing a clear depiction of “trouble spots” in a waterway. This system is now in effect for all PAWSA workshops.

Electronic charting system images allow PAWSA workshop facilitators to more effectively communicate statistical information. USCG graphic.

ATON awareness. In 2010, a Savannah, Ga., PAWSA workshop focused on assessing the aids to navigation (ATON) infrastructure in the Savannah River and its approaches. Workshop participants reviewed individual segments of the waterway in detail as they answered a series of questions about the usefulness, location, and functionality of the ATON system. Their input will form the basis of future aids to navigation configuration in the waterway.
way managers review and improve the ATON system in a particular waterway.

The system study evaluates the aids to determine their effectiveness, which can lead to altering technical aspects of an aid, establishing new aids, or removing ineffective aids. Most important: The study incorporates the perspectives of major and/or frequent waterway users to identify the most effective aid mix while anticipating needs for the future demands of a particular waterway.

**Port Access Route Studies**

Our ports support a tremendous amount of activity. Cargo vessels arrive each day in American ports and may travel from port to port; commercial and recreational fishermen transit ports on their way to and from fishing grounds; other recreational and commercial vessels add to the traffic. Permanent structures such as oil rigs and offshore renewable energy installations may affect port traffic, and areas like designated marine sanctuaries also must fit into this mix.

To manage this, the Coast Guard may designate or adjust necessary fairways and create traffic separation schemes to provide safe access routes. Through the port access route study process, the Coast Guard consults with affected Native American tribes as well as federal, state, and foreign state agencies (as appropriate) and considers the views of maritime community representatives, environmental groups, and other interested stakeholders.

The objectives:

- determine present and potential traffic densities,
- evaluate existing vessel routing measures,
- justify new vessel routing measures and their type,
- determine any mandatory vessel routing measures for specific classes of vessels.

This process helps to ensure, to the extent practicable, that the need for safe access routes is reconciled with other reasonable waterway uses. In addition to aiding the Coast Guard to establish new fairways or adjust existing ones, the process may be used to determine and justify safety zones, security zones, recommended routes and other routing measures, and to create regulated navigation areas.

Port access route studies continue to identify critical changes in maritime traffic volumes or routes, and allow the Coast Guard to implement sound vessel routing measures to ensure safe passage in the off-shore approaches to our nation’s ports and harbors.

**About the authors:**

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