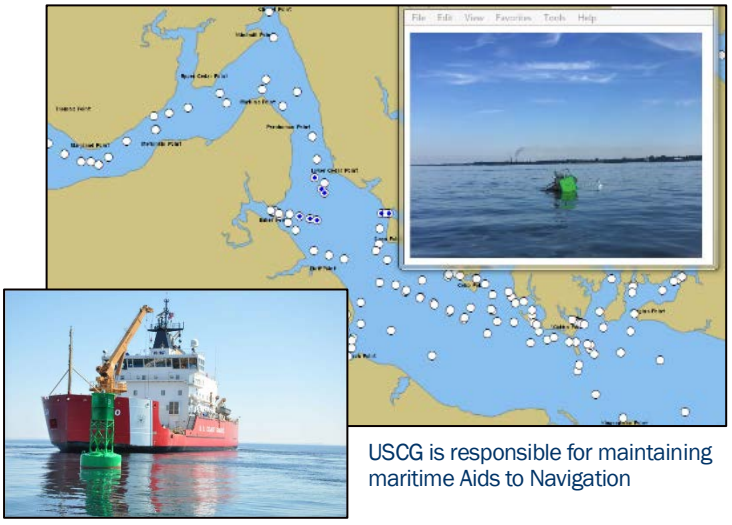
DHS Science and Technology Directorate
Port and Waterway Resiliency

Problem: The United States Coast Guard (USCG) is responsible for the care and maintenance of maritime aids to navigation (ATON). Much like drivers need stoplights, street signs and universally accepted driving rules, boaters also need equivalent nautical navigation rules. This network of signs, symbols, buoys, markers, light houses and regulations must be up to date and functioning properly so commercial, recreational, military and government vessels can safely navigate in the Marine Transportation System (MTS).

Currently the USCG expends considerable time and resources to fulfill their mandate to provide for the safety and economic security of U.S. maritime ports and waterways. Comprehensive ATON surveys take a long time, which can result in outdated situational awareness, inefficient responses to discrepant ATON and potentially hazardous waterways. Modern technologies are needed to monitor the status of ATON, conduct port or waterway health assessments, analyze the condition of ports or waterways after incidents or disasters, and develop risk-based approaches for mitigation, response and recovery.

Solution: The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) is developing port and waterway resiliency analytical visualization tools, data and technologies to provide USCG waterway managers with more effective and user-friendly capabilities. This effort will enhance the USCG's Waterways Analysis and Management System (WAMS) and research other capabilities to address DHS maritime challenges while maintaining fiscal responsibility.

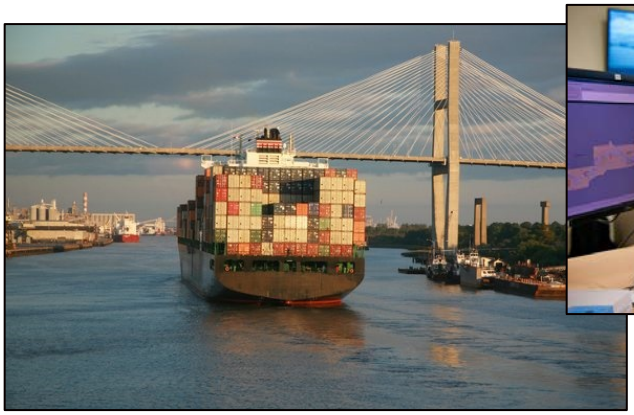
Impact: S&T-developed capabilities such as WAMS will improve the USCG's situational awareness and understanding of waterway criticality. This will help USCG waterway managers make more informed decisions and allocate resources to prepare for, mitigate, respond to and recover from an incident or disaster affecting the MTS. The goal is to reduce the time a port or waterway is closed to traffic and trade due to a natural disaster or terrorist attack, resulting in improved resiliency, safety and economic security of U.S. ports and waterways.



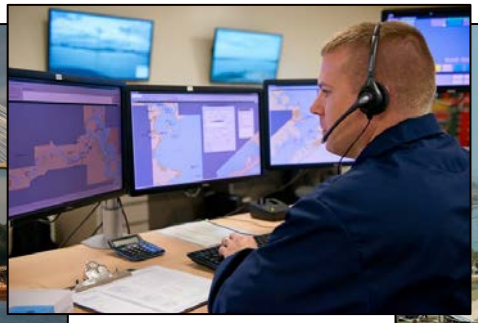
USCG is responsible for maintaining maritime Aids to Navigation

Current and Future Investments

- Develop a more effective and user friendly WAMS to
  - Visualize ATON status and assess criticality
  - Improve the ability to conduct health assessments
  - Analyze the condition of ports and waterways after incidents or disasters
  - Develop risk-based mitigation, response and recovery strategies
- Integrate new and standardized data sources to enhance situational awareness of ports and waterways
- Develop effective delivery methods for timely notices to mariners
- Assess adaptable and robust ATON technologies, such as electronic ATON



U.S. ports and waterways are critical to the nation's economic health



USCG supports management of the Marine Transportation System

Damage in Louisiana following Hurricane Katrina

Homeland Security
Science and Technology

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