



LNG Terminal Waterway Suitability Assessments



Mitigating Risk. Improving Performance.

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ABS Consulting assists proposed LNG terminals in developing a waterway suitability analysis (WSA) as defined by the United States Coast Guard (USCG) in accordance with the navigation and vessel inspection circular NVIC 05-05. A WSA that meets the NVIC guidance is required for onshore LNG terminals (1) as part of the process for the USCG and the Federal Energy Regulatory Commission (FERC) to meet their environmental review responsibilities and (2) to obtain a letter of recommendation from the USCG stating that the waterway is suitable for LNG transportation (required under 33 CFR 127).

An effective WSA requires the following activities:

- Coordination with the USCG personnel responsible for approval of the waterway usage
- Access to USCG area maritime security assessment and security plan information
- Inventory of critical infrastructure along the proposed carrier route
- Involvement of appropriate stakeholders (e.g., local and state law enforcement personnel) in the WSA development
- Identification of credible threats to LNG marine transportation and the risk mitigation measures necessary to address those threats, including the identification of resources required to provide those mitigation measures

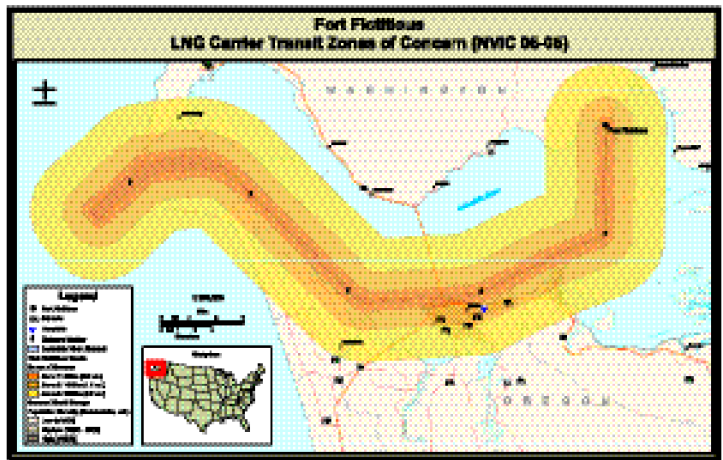
The NVIC guidance outlines a two-phase process for performing a WSA; first providing a “Preliminary WSA” and then working with the USCG and other stakeholders to develop a “Follow-on WSA.” Each of these documents must employ a risk-based assessment approach. ABS Consulting has industry-leading

capabilities in risk-based decision-making studies. WSAs must be conducted by personnel whom meet the qualifications in 33 CFR 103.410. ABS Consulting has such personnel, with experience in maritime security assessment and planning, risk assessment, consequence analyses (including explosion effects and LNG dispersion analyses), and marine and port operations. In fact, ABS Consulting is uniquely qualified to assist LNG terminal developers in developing WSAs because of the following factors:

- WSA projects completed or underway for currently proposed terminals
- Support to the USCG for waterway risk analyses for specific areas of operations
- Assistance to the FERC to provide a review and report on consequence analysis methods for analyzing releases from LNG carriers
- Port security assessment experience, including assessments for ports and port facilities in Baltimore, San Francisco, various ports in Massachusetts, and the Panama Canal (among others)
- Preparation of a facility security assessment and security plan for a proposed East Coast LNG terminal
- Preparation of consequence analyses and risk communications support for an existing onshore terminal
- A risk-based review of a potential site and associated maritime activities for a river location for a West Coast LNG terminal

- Studies for commercial clients related to potential releases from LNG carriers due to operational accidents, including collisions and unloading equipment failures
- Several studies for proposed on- and offshore LNG terminals that examined potential threats to the terminal or associated carriers from external attacks, including aircraft, boats, and explosive devices
- Experience assisting the USCG in examining a variety of port security issues, including:
 - Development of the Port Security Risk Assessment Tool (PSRAT) – 2001 and evaluation of results from the USCG use of that tool – 2003/2004
 - Examination of LNG consequence studies for releases in the Port of Boston – 2001/2002
 - Risk-based decision-making studies for a variety of port and waterway issues (e.g. National Maritime Security Risk Profile project, underwater threats workshop, red flag barges on inland waterways)

has templates based on the security assessment guidance in the various USCG NVICs on port, vessel, and facility security assessment and planning (i.e., NVIC 9-02, 10-02, and 11-02, respectively) in addition to the WSA NVIC. The results of the WSA can be managed long term in *Security LEADER* or exported to Microsoft® Word and Excel. That way the assessment can be updated easily by project or facility personnel since the USCG guidance indicates that the FERC may require annual reviews and updates of a facility's WSA.



ABS Consulting has experience using geographical information systems (GISs) to support WSA activities. The GIS approach allows integration and visualization of marine navigation, population, critical infrastructure, sensitive populations (e.g., schools and hospitals), and other geographic information. This visualization enables the WSA team to identify appropriate safety and security measures for the LNG carrier transit. The interactive maps supported by the GIS application allow the "Zones of Concern," as defined in the Sandia Laboratories LNG carrier report and the U.S. Coast Guard NVIC 05-05, to be viewed by the team while conducting the assessment. Using the population data, the WSA team focuses on the areas where the Zones of Concern potentially could affect large populations by indicating where the Zones of Concern overlap with census blocks representing high and medium population areas.

ABS Consulting also employs a unique software tool to help document a WSA. *Security LEADER – Maritime Edition* provides a structure for the analysis that will be familiar to the USCG. It can support both safety and security analyses and

To discuss ABS Consulting's services in these areas, please contact:

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