



**National  
Transportation  
Safety Board**

# Safety Risk Management in VTS Areas

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# Safety Risk Management

- Procedures to identify hazards, assess risks, create risk controls, and monitor results
- International Maritime Organization requires ship owners and operators to maintain safety management systems

# Coast Guard Operational Risk Management Program



# Coast Guard Operational Risk Management Program

- Three levels of management
  - Time-critical
  - Deliberate
  - Strategic

# Ports and Waterways Safety Assessment (PAWSA)

- VTS centers work with local waterway users and stakeholders
- Formal process for collecting expert input to identify risks and evaluate potential mitigations
- Waterway Risk Model developed from qualitative assessments

## PAWSA (cont.)

- Established in response to perceived lack of stakeholder input to VTS development during the 1990s
- Used to assess candidate VTS center locations rather than for continuous risk management

# Continuous Risk Assessment

- Accident investigations are one method for identifying hazards
- Investigating unexpected events and close calls can identify new hazards

# VTS Center Data

- Each VTS center is required to record operational data
- Intended for resource allocation, policy effectiveness, and risk assessment
- Vessel movements, incidents, special handling, interventions, and near-misses

## VTS Center Data (cont.)

- Data collection is inconsistent
- Consensus that data are not being used by the VTS program
- Do not support assessments of risk or VTS effectiveness

# Geographic Analyses

- Each VTS area has locations of recognized higher risk
- VTS system is not routinely collecting or analyzing geographic information
- Common part of risk assessment in other industries
- Traffic, accident, and waterway data could be compared with population and infrastructure



# Houston Ship Channel Upper Galveston Bay, Texas



# Proactive Traffic Management

- Directing vessel movements is a last resort to an unsafe situation
- Opportunity for prevention may have been exhausted
- Coast Guard has proactive options that do not rely on VTS watchstander interventions

# VTS *Special Areas*

- Coast Guard can establish specific operating requirements for areas of a waterway to reduce risk
- VTS *special area* is a regulatory option for additional requirements
- Can be tailored to address unique hazards and demands of a particular location

## *VTS Special Areas (cont.)*

- *VTS special areas* provide clear and unambiguous procedures for managing traffic in high risk locations
- Continuous risk management program would identify locations for additional measures such as *VTS special areas*



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