U.S. Department of
Homeland Security

**United States
Coast Guard**

Waterways Management (WWM): Navigation Safety Risk Assessments Tactics, Techniques, and Procedures (TTP)

**Force Readiness Command
(FORCECOM)**

**CGTTP 3-71.7
August 2015**

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COAST GUARD TACTICS, TECHNIQUES, AND PROCEDURES 3-71.7

Subj: WATERWAYS MANAGEMENT (WWM): NAVIGATION SAFETY RISK ASSESSMENTS

Ref:
(a) Navigation and Navigable Waters, 33 U.S.C. §§ 320-322
(b) National Environmental Policy Act (NEPA), Title 42 U.S.C. 4231 et. seq.
(c) Rivers and Harbors Act of 1899, Section 10 (33 C.F.R. 403)
(d) Marine Safety Manual, COMDTINST M16000.7 (series)
(e) Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations (OREI), NVIC 02-07

1. PURPOSE. To provide Coast Guard tactics, techniques, and procedures (CGTTP) on the safe, effective, and efficient execution of navigation safety risk assessments for federal permit requests that may impact navigable waterways within a Captain of the Port (COTP) zone, to include fundamental principles, processes, and documentation.

2. ACTION. This CGTTP publication applies to personnel responsible for conducting navigation safety risk assessments in support of waterways management activities and marine safety missions. Internet release is authorized.

3. DIRECTIVES/TTP AFFECTED. None.

4. DISCUSSION. The United States Coast Guard (USCG) is the Federal government's navigation safety expert, and serves as its navigation safety center of excellence. The USCG conducts navigation safety risk assessments at the request of, or in response to, a permitting agency that is considering a project proposal from an applicant that will occur on or near the navigable waters of the United States (U.S.). The scope and breadth of projects associated with these applications range from simple piers at a local marina, to large waterfront facilities such as liquefied natural gas terminals or offshore wind farms. The COTP advises the permitting agency of potential impacts to navigation safety that might result from approval of a proposed project. The COTP's advice might include recommended mitigation to reduce or alleviate hazards to navigation expected because of the proposed project. This CGTTP provides novice users with the foundational and practical knowledge necessary to understand navigation safety risk assessments and how to conduct them. It also provides experienced users with a means of referencing best practices and standardizes common navigation safety risk assessments across the USCG.

5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is itself a rule. It provides guidance for Coast Guard personnel and does not impose legally-binding requirements on any party outside the Coast Guard.

6. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. While developing this publication, integrated process team (IPT) members examined environmental considerations under the National Environmental Policy Act (NEPA) and determined they are not applicable.

7. DISTRIBUTION. FORCECOM TTP Division posts an electronic version of this TTP publication to the CGTTP Library on CGPortal. In CGPortal, navigate to the CGTTP Library by selecting **References > Tactics, Techniques, and Procedures (TTP)**. FORCECOM TTP Division does not provide paper distribution of this publication.

8. RECORDS MANAGEMENT CONSIDERATIONS. Integrated Process Team (IPT) members thoroughly reviewed this publication during the TTP coordinated approval process and determined there are no further records scheduling requirements per Federal Records Act, 44 U.S.C. Chapter 31 § 3101 et seq., NARA requirements, and Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This publication does not have any significant or substantial change to existing records management requirements.

9. FORMS/REPORTS. None.

10. REQUEST FOR CHANGES. Submit recommendations for TTP improvements or corrections via email to FORCECOM-PI@uscg.mil or through the TTP Request form on CGPortal. In CGPortal, navigate to the TTP Request form by selecting **References > Tactics, Techniques, and Procedures (TTP) > TTP Request**.

    Send lessons learned applicable to this TTP publication via command email to FORCECOM TTP Division at CMD-SMB-CG-FORCECOM.

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Chapter 1: Introduction

Introduction

This chapter overviews the contents of this TTP publication. It also defines the use of notes, cautions, and warnings in TTP publications.

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Section A: Introduction

A.1. Introduction

The purpose of this TTP is to guide users on how to conduct navigation safety risk assessments in support of a federal, state, or local permitting agency, who has requested an assessment from the captain of the port (COTP).

The United States Coast Guard (USCG) is the Federal government's navigation safety expert, and serves as its navigation safety center of excellence. The USCG conducts navigation safety risk assessments at the request of, or in response to, a permitting agency that is considering a project proposal from an applicant that will occur on or near the navigable waters of the United States (U.S.). The scope and breadth of projects associated with these applications range from simple piers at a local marina, to large waterfront facilities such as liquefied natural gas terminals or offshore wind farms. The COTP advises the permitting agency of potential impacts to navigation safety that might result from approval of a proposed project. The COTP's advice might include recommended mitigation to reduce or alleviate hazards to navigation expected because of the proposed project.

This TTP publication cannot cover every navigation safety risk assessment scenario that might arise. Circumstances may result in the need to deviate from guidance in this publication. You may deviate from the TTP as necessary to accomplish your goal with greater safety, effectiveness, or efficiency. Ensure any deviation considers a complete understanding of the mission, capabilities of involved members, and available resources. Consult the chain of command prior to deviating. Report deviations and possible TTP revisions per the *Request for Changes* paragraph in the letter of promulgation.

A.2. Audience and Scope

This TTP publication is intended as a job aid for use by personnel conducting waterways management activities and marine safety missions.

The processes described in this TTP publication begin when the USCG (normally a USCG sector) receives a request from a permitting agency (normally the U.S. Army Corps of Engineers (USACE)) asking the USCG to analyze potential impacts to navigation safety relative to a proposal. The process ends when a USCG analysis of the proposal is complete and forwarded to the permitting agency.

Section B: Notes, Cautions, and Warnings

B.1. Overview The following definitions apply to notes, cautions, and warnings found in TTP publications.

NOTE:	**An emphasized statement, procedure, or technique.**
CAUTION:	**A procedure, technique, or action that, if not followed, results in risk to the safety or security of the port, waterways users, marine environment, or the facilitation of commerce.**
WARNING:	***A procedure, technique, or action that, if not followed, carries significant risk to the safety or security of the port, waterways users, marine environment, or the facilitation of commerce, as well as damage to potential or actual prosecutions, defenses, or other litigation involving the USCG.***

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Chapter 2: Fundamental Principles

Introduction

This chapter discusses the fundamental principles of the USCG navigation safety risk assessment process.

In This Chapter

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Section A: USCG Navigation Safety Risk Assessment Fundamentals

A.1. Purpose of a Navigation Safety Risk Assessment

A navigation safety risk assessment is a tool the COTP uses when preparing input for the permitting agency regarding port or waterway safety issues associated with a structure or work project located on or near the navigable waters of the United States. The assessment helps the COTP identify potential navigation risks and determine if a more extensive analysis is necessary, or what recommendations to provide to the permitting agency.

A.2. Navigation Safety Risk Assessment Tools

The following navigation safety risk assessment tools follow a continuum with progressive levels of review:

1. **Initial screenings** are a "first look" at applications for a project, done to identify projects that may have risk and require an assessment.
2. **Basic navigation safety risk assessments** are for when the COTP determines from the initial screening that there may be an adverse affect on safety of navigation, but not enough to require the five-step risk assessment. The basic risk assessment is commonly sufficient for minor projects, but might be appropriate for major projects if the COTP deems it sufficient. The basic risk assessment is discussed further in Chapter 3:Section B: Basic Navigation Safety Risk Assessment Tool of this TTP.
3. **Five-step navigation safety risk assessments** are for when the COTP determines that the initial screening or basic risk assessment suggests a more qualitative risk assessment is warranted, but not enough for a formal navigation safety risk assessment. The five-step risk assessment is commonly sufficient for major projects, and is discussed in Chapter 3:Section C: 5-Step Navigation Safety Risk Assessment Tool of this TTP.
4. **Formal navigation safety risk assessments** are for when the COTP determines that the scope of the project or anticipated level of risk is beyond the capability of the five-step risk assessment. For these projects, the COTP recommends that the permitting agency require a formal risk assessment from the applicant. The formal risk assessment is for major projects of unique or extraordinary nature, and is discussed further in Chapter 3:Section E: Formal Navigation Safety Risk Assessment Tool of this TTP.

NOTE: **Formal navigation safety risk assessments are conducted by the project applicant, not the USCG.**

NOTE: **For the purposes of this TTP, a formal navigation safety risk assessment is not a Port and Waterways Safety Assessment (PAWSA), Waterways Analysis and Management System (WAMS) study, or Waterways Suitability Assessment (WSA).**

A.3. Informal Inquiries

USACE offers pre-application consultations to help a potential applicant assess the viability of some of the more obvious potential alternatives in the application. Effort devoted to this process is commensurate with the likelihood of a permit actually being submitted and approved.

USACE or a potential applicant might approach the USCG seeking consultation regarding the level of potential or actual navigation safety risk associated with a project. Answer all inquiries as accurately as possible with the information available. The goal is to foster submission of viable applications that minimize risk and allow timely processing of requests. Encourage the applicant to seek comment also from potentially affected waterway users.

A.4. Outreach

Collaboration, communication, and transparency are essential elements of the navigation safety risk assessment process. COTPs engage other appropriate USCG units and staffs, port partners (typically through the local HSC or similar body), and the public (typically through the permitting agency's public notice process) to solicit and gauge their collective input. COTPs base navigation safety risk assessments on substantiated facts.

A.5. Identify the Risk

A navigation safety risk assessment identifies risks to waterways users posed by the proposed project under review, as well as risks to the proposed project by waterways users. The assessment conveys understanding of the magnitude, complexity, and dangers (in terms of navigation) associated with the proposed project.

A.6. Mitigations

To reduce risks to navigation to a level acceptable to the COTP, or remove risk altogether, the navigation safety risk assessment recommends mitigation actions as conditions of any permit issued.

NOTE: **The USCG role in conducting a navigation safety risk assessment is usually in support of a permitting agency. The USCG rarely serves as the permitting agency.**

Section B: Roles and Relationships

B.1. Definitions

Reference (a), § 322.2 (b), defines *structure* to "include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other obstacle or obstruction."

Per reference (a), § 322.2 (c), *work* is defined to "include, without limitation, any dredging or disposal of dredged material, excavation, filling, or other modification of a navigable water of the United States."

For this document, *permitting agency* is the agency with primary permit-issuing authority over a proposed project, and the agency with primary responsibility for complying with reference (b) and preparing the environmental impact statement.

B.2. USCG Roles

The USCG provides the permitting agency with an expert assessment of potential impacts to navigation safety that could reasonably result if a proposed project is approved and granted a permit.

B.3. Neutrality

The USCG does not recommend, nor object to, approval of any particular proposal and has no official position regarding a proposal's approval or disapproval.

The permitting agency can attach as little, or as much, weight as it chooses to a USCG assessment.

B.4. USACE Permitting Regulations

Reference (c) prohibits unauthorized obstruction or alteration of navigable waters of the United States. Constructing a structure in or over a navigable water of the United States is unlawful unless recommended by the USACE chief of engineers and authorized by the Secretary of the Army.

Authority to issue a permit for construction of a structure in the navigable waters of the United States belongs to the USACE district engineer. USACE general regulatory policies for implementing reference (c) are contained in reference (a), § 320. This part includes an overview of the public interest review conducted by the USACE district engineer when reviewing a permit application. Specific regulations for constructing structures in the navigable waters of the United States are contained in reference (a), § 322.

The USACE district engineer might add special conditions to a permit in order to satisfy the public interest. Such conditions must be:

- Directly related to the project.
- Appropriate to the scope and degree of the project's impact.
- Reasonably enforceable.

The captain of the port (COTP) can recommend to the USACE district engineer that conditions to maintain navigation safety be included in a permit.

If a district engineer agrees that special conditions are necessary to ensure the proposal is not contrary to the public interest, but those conditions are not reasonably implementable or enforceable, he or she denies the permit.

Permits for a structure or activity of a permanent nature generally do not have an expiration date. Permits for temporary structures or activities are of limited duration or have a fixed expiration date.

B.5. Memorandum of Agreement (MOA)

The Memorandum of Agreement between the USACE and the USCG, dated 2 June 2000 (MOA), provides for increased coordination between the two agencies to enable each to fulfill its respective responsibilities better. The MOA was amended on 25 January 2002 to include USACE permit review policy guidance and the USCG's role in it. Together, they establish the formal process for the COTP to provide input to USACE reviews of new permit applications and periodic re-evaluations of existing permits. These are reproduced in Appendix B: Memorandum of Agreement between the USACE and the USCG dated 2 June 2000, and Appendix C: U.S. Army Corps of Engineers Section 10 Permit Review Policy Guidance dated 25 January 2002.

The Director of the Maritime Transportation System is responsible for coordinating and implementing provisions of the MOA. This includes maintaining liaison with appropriate headquarters staff of the USACE, as well as providing policy guidance for COTPs. COTPs are responsible for coordinating and implementing the MOA within their COTP areas of responsibility.

Successfully implementing the MOA depends on the local COTP and USACE district engineer working together to establish procedures for communicating concerns and resolving differences. Given the relative autonomy of both COTPs and USACE district engineers, local coordination addresses local concerns with the project.

B.6. Harbor Safety Committees	COTPs consult with the local harbor safety committee (HSC) or similar body when assessing risks associated with a proposed structure or work project affecting a principal waterway or channel. If a COTP and the HSC disagree about the risk a structure or work project might pose to port or waterway safety, the COTP performs a risk assessment independently and encourages HSC members to comment directly to the USACE district engineer as part of the standard public interest review process.
B.7. State and Local Agencies	COTPs seek input from state and local agencies to assess risks associated with a project proposal. State and local agencies are unique to each port, and might include emergency responders and law enforcement.

Section C: Considerations

C.1. General

The USCG is the Federal government's navigation safety expert. Typically, the permitting agency requests the USCG respond to a project proposal to determine its impact on navigational safety. The range and scope of projects that affect navigation vary greatly. These include construction and renovation projects within or adjacent to navigable waterways, and larger projects offshore that affect port access routes or shipping lanes.

It is important for WWM professionals to understand the level of scrutiny necessary for each proposal. Some projects may be of very narrow scope, and require very little review, while others may be quite broad in scope and require very intense review.

C.2. Project Classification

Classify proposed projects as either minor or major. The classification of a project is a subjective decision based on a variety of factors, including but not limited to:

- Size, complexity, or cost of the project.
- Potential or actual affect on the safety of navigation, navigable waterways, or waterways users.
- Potential or actual affect of waterway users on the project.
- Significant public support or opposition.
- Significant political support or opposition.

C.2.a. Minor Projects

Minor projects, commonly referred to as standard projects, include USACE construction permits for piers, bulkheads, and shoreline work. Chapter 3:Section A: Navigation Safety Risk Assessment Process provides additional information.

C.2.b. Major Projects

Major projects, commonly referred to as non-standard projects, include new liquefied natural gas waterfront import/export terminals, and offshore renewable energy facilities (wind farms). For additional information, see Chapter 3:Section E: Formal Navigation Safety Risk Assessment Tool.

C.3. USCG Actions

The USCG makes no public interest judgment or recommendation and does not recommend, nor object to, approval of any proposed project. It provides the permitting agency with an expert assessment of potential impacts to navigation safety that could reasonably result if a proposed project is approved and granted a permit.

NOTE:

In conducting a navigation safety risk assessment of a project proposal submitted by an applicant seeking a Federal permit, the USCG is not exercising regulatory authority and generally has no jurisdiction except for issuing permits for private aids to navigation (PATON). The USCG is exercising its responsibility for waterway safety and is serving as the Federal government's navigation safety expert.

Chapter 3:
Navigation Safety Risk Assessment Process

Introduction

A navigation safety risk assessment is a tool used during the COTP review regarding port or waterway safety issues associated with a structure or work project located on or near the navigable waters of the United States.

In This Chapter

This chapter contains the following sections:

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Section A: Navigation Safety Risk Assessment Process

A.1. General

A navigation safety risk assessment, regardless of type, typically applies to project proposals where USACE serves as the permitting agency reviewing a request to issue a "Section 10" permit under reference (c). The assessment follows an initial screening, identifies risks to port or waterway safety, and helps make informed decisions about whether a more extensive analysis is necessary.

NOTE:

The navigation safety risk assessment process described in this TTP publication does not apply to permanently moored craft or to USCG-led waterway suitability assessments for liquefied natural gas (LNG) or liquefied hazardous gas (LHG) proposals. Conduct risk assessments for permanently moored vessels per applicable Commandant guidance in reference (d).

A.2. Initial Screening

Conduct an initial screening when the COTP receives correspondence, or public notice, of a permit application under consideration by a permitting agency. This is a "gut check" to aid in readily identifying potential or actual risk, and determining whether a navigation safety risk assessment is needed.

If the COTP determines that no further assessment is necessary, notify the permitting agency, and monitor as needed.

A.3. Select the Appropriate Risk Assessment Tool

If a navigation safety risk assessment is necessary, the COTP selects one of the following assessment tools, based on the initial screening and recommendation by the WWM staff:

- A basic navigation safety risk assessment.
- A five-step navigation safety risk assessment.
- A formal navigation risk assessment.

A proposed project can fall anywhere along the navigation safety risk assessment continuum. The depth of the assessment depends on project complexity and potential affects it might have on safety of navigation. Chapter 2:Section A: USCG Navigation Safety Risk Assessment Fundamentals outlines a continuum to select the most appropriate tool for the assessment.

A.4. USACE Notification Requirements

The MOA (Appendix B: Memorandum of Agreement between the USACE and the USCG dated 2 June 2000) establishes notification requirements so USACE district engineers provide timely responses to permit applicants. Per the MOA, notify the USACE district engineer, within 10 days of the date of public notice, whether a risk assessment is necessary, and who is to conduct the assessment. (See Appendix E: Sample Letter from COTP to USACE)

A.5. Conduct the Assessment

Complete the navigation safety risk assessment using the appropriate tool, and communicate the results to the USACE district engineer within 30 days of the date of public notice.

A.5.a. Consultations

Consult with knowledgeable bodies or individuals as appropriate while performing risk assessments. Stakeholders include, but are not limited to:

- Harbor safety committees
- State and local agencies (including response organizations)
- Other federal agencies
- Industry

Ensure HSCs are aware of the process for submitting public comments.

A.6. Recommend Permit Action

After completing the risk assessment, advise the USACE district engineer of potential impacts to navigation safety. Include recommended conditions to mitigate anticipated risks. (See Appendix E: Sample Navigation Safety Risk Assessment Using the Model Described in this TTP Publication for a sample navigation safety risk assessment.) The COTP can also recommend that the permitting agency require the permit applicant to conduct a formal risk assessment before receiving a permit.

Criteria for a thorough risk assessment conducted by a permit holder are in reference (e).

A.6.a. Questions to Address

When developing proposed recommendations to the USACE, the COTP considers a number of questions. Some of these questions include:

- Is potential risk to the structure or project acceptable as designed?
- Is increased potential safety risk to waterway traffic and port operations due to the structure or project acceptable?
- Have potential increases in risk deemed unacceptable to specific interests been considered?
- Are interests or concerns of an affected party, or parties, sufficient to override interests or concerns of another affected party, or parties?
- Are there reasonable, cost-effective means available to mitigate unacceptable risk?
- Should the permit applicant bear the cost of mitigation, or should costs be shared? This question is particularly important when proposed mitigation measures might potentially reduce the current level of overall risk to port and waterway safety.
- Are there legal, safety, or environmental considerations that override consideration of benefits and costs of mitigation?

A.7. Periodic Re-evaluation

When conditions warrant, the USACE district engineer modifies, suspends, or revokes a permit. The USACE district engineer, the permit holder, or a third party can initiate this action.

The COTP periodically re-evaluates the risk to navigation safety for any project that has received a Federal permit based in part on USCG input. Re-evaluation helps determine whether to recommend to the USACE district engineer that a permit be modified, suspended, or revoked. Conduct a re-evaluation upon request from the permitting agency, or if there is a change in conditions resulting in potential or actual unacceptable risk to safety of navigation.

A.7.a. After Re-evaluation

After completing a re-evaluation of the risk to navigation safety, inform the USACE district engineer of any actual or anticipated impact to navigation safety. The COTP can recommend that USACE require the permit holder to conduct a more extensive risk assessment before the USACE district engineer decides whether to modify, suspend, or revoke an existing permit.

NOTE: **See 33 CFR 64.31 for other factors to consider when determining whether an obstruction constitutes a hazard to navigation.**

Section B: Basic Navigation Safety Risk Assessment Tool

B.1. Purpose

The basic assessment uses six criteria to explore risk associated with a particular USACE permit application:

- Location.
- Vessel traffic
- Response.
- Anticipated environmental factors.
- Severe and sudden environmental factors.
- Hydrological effects to waterway.

Evaluate each criterion for low or high levels of risk. (see Appendix D: Basic Navigation Safety Risk Assessment)

B.2. Inputs

Data necessary to complete a navigation safety risk assessment is most often contained in the proponent's permit application to the permitting agency, along with nautical charts, local knowledge, and the COTP's WWM staff expertise. For some projects, it might be appropriate to consult with the local HSC or similar body to ensure consideration of all relevant information, which is at minimum:

- Name of permit project.
- Permitting agency.
- Public notice reference number.
- Location.
- Proposed project information.

B.3. Risk Criteria and Ratings

Determine whether the risk is low or high based on each criterion as described below. The preparer makes a determination based on various sources, including, but not limited to:

- Knowledge of the local area.
- An on-scene investigation of the proposed project.
- Marine casualty data.
- Discussions with local stakeholder groups.
- A review of existing documentation for other projects in the area.

B.3.a. Location	Determine risk based on the proposed permit location in terms of risk to which a collision or allision exposes the area.
B.3.b. Vessel Traffic	Determine risk based on the amount/type/activities of vessel traffic adjacent to the proposed permit location. Factors to consider include, but are not limited to: • Amount and frequency of traffic. • Speed of traffic/current. • Maneuvering constraints/limitations. • Locations of facilities that traffic is transiting to/from.
B.3.c. Response	Determine risk based on the ability of the local maritime response community (including federal, state, and local governments) to provide timely, adequate assistance to proposed permit location.
B.3.d. Anticipated Environmental Factors	Determine risk based on a project's susceptibility to environmental factors such as fog, floods, storms, ice., etc.
B.3.e. Severe and Sudden Environmental Factors	Determine risk based on the location's frequency of risk due to sudden and severe environmental factors such as hurricanes, flash floods, or tornados.
B.3.f. Hydrological Effects to Waterway	Determine risk based on probability of hydrological issues having negative effects to proposed permit location and waterway. Consider whether the project will cause problems in this area at certain water stages, and whether the project will impact shoaling, silting, etc.
B.4. Notes	For each criterion, explain your determination and any steps taken based on the assessment outcome. These notes assist personnel drafting responses to the USACE while documenting decisions for future reference.

B.5. Determination

If this basic risk assessment remains sufficient, identify risks and determine what mitigations to recommend as conditions of a permit. Provide those recommendations to the permitting agency.

- If low levels of risk are associated with each of the six criteria, no comments to the lead permitting agency are required. Provide a letter to the permitting agency expressing the COTP's determination.
- If there is a high level of risk associated with any of the six criteria, convey the COTP's concerns documented in this basic risk assessment to the permitting agency. If appropriate, recommend conditions for the permitting agency to include in the Federal permit to reduce risk to an acceptable level.
- If PATON are required to lower the risk level, contact District (dpw) for specific marking requirements.

If a more in-depth risk assessment is necessary, convey that finding to the permitting agency.

Section C: 5-Step Navigation Safety Risk Assessment Tool

C.1. Purpose

If the COTP determines from the initial screening that the project requires a five-step navigation safety risk assessment, use *Risk-Based Decision-Making Guidelines*, on CG-NAV's Web page http://www.uscg.mil/hq/cg5/cg5211/docs/RBDM/V1.pdf, to identify sources of risk and mitigating strategies.

The model highlights how different factors relate to a project's potential affect on navigation safety. The risk model provides an initial assessment of navigation safety risk. It does not replace an extensive risk assessment based on complete analysis of all available data.

Results of the assessment form the basis for recommendations the COTP makes to the USACE district engineer.

Consider using the additional tools described in Risk-Based Decision-Making Guidelines to assess a particular project adequately.

NOTE: **The model maximizes flexibility to accommodate differences among COTP zones, while providing consistency throughout the USCG.**

C.2. Inputs

Data necessary to complete a navigation safety risk assessment is most often contained in the proponent's permit application to the permitting agency, along with nautical charts, local knowledge, and the COTP's WWM staff expertise. For some projects, it might be appropriate to consult with the local HSC or similar body to ensure consideration of all relevant information.

C.3. Areas of Concern

The risk model is in three broad categories related to:

- Location.
- Activity (is this economic as outlined below).
- Environmental conditions associated with the proposed project.

These categories ensure a risk assessment is not too narrowly focused.

C.4. Location, Public Safety Impact

Determine whether the geographic area is appropriate for the type of hazard. Assess how the physical location of a structure might contribute to risk. A structure's physical location includes its proximity to the navigable channel, whether it is located on the inside or outside bank of a bend, its proximity to population centers, and its location relative to other waterfront structures or projects.

Public safety concerns apply to any waterway user who might be affected. Examples of risks to public safety include potential for a vessel allision or collision, structural damage due to environmental factors, or exposure to hazardous materials.

Another factor to include is composition and speed of existing vessel traffic in the adjacent waterway.

C.5. Environmental and Weather Impact

This category includes threats to the marine environment, including potential or actual releases of hazardous materials or physical damage to sensitive or critical habitats. This includes damage to shorelines resulting from the wakes of passing vessels.

Weather factors include prevalent weather conditions for the area such as fog, storms, high winds, etc. It also includes expected severe and sudden weather conditions such as hurricanes, tornadoes, and unusually high or low water levels. Account for factors such as tidal range, currents, seasonal river flood stages, ice, earthquakes, tsunamis, etc.

C.6. Waterway and Port Operations

This category accounts for damage to structures in the immediate vicinity of the project as well as any others affected by the project or vessels, and disruption of port operations, which includes vessel traffic on the waterway or safety fairway. Damage to structures in, on, or adjacent to, a waterway includes damage that results from allisions and wake wash from passing vessels. "Structures" also include submerged pipelines, cables, and water intakes.

Vessel damage can result from mishaps such as collisions and groundings. Incidents potentially involve commercial vessels, recreational vessels, or both. Consider the effect of the project on safety of navigation in the waterway or safety fairway.

C.7. Mishaps

The model allows selection of up to four mishaps for each area of concern. For each area of concern above, identify the most probable mishaps reasonably expected to occur. Mishaps not included in the list can be entered. A type of mishap, e.g. allision or flood damage, can be selected under more than one area of concern.

C.8. Risk Factors

Identify risk factors that could contribute to a particular type of mishap. Consider three broad categories of factors: physical location, effect on waterways and port operations, and weather and other environmental factors. When assessing risk associated with a particular project, identify factors within each category that increase or decrease the level of risk.

C.9. Severity Categories

The model is based on three degrees of severity associated with the outcome of a potential mishap. Categories are defined on the potential safety, environmental and economic impact of a mishap. It is not necessary to meet all criteria in each impact area to assign a category. Similarly, if a significant number of criteria are met, consider assigning the next higher severity category. Table 3-1 provides a description of each category. The model includes a range of potential outcomes, not just the worst case, of a given mishap. However, for some mishaps, such as drowning, it would not be appropriate to consider a category I or II outcome. Although this adds a level of complexity to the analysis, include it to provide the COTP a more complete understanding of risks associated with the proposed project. An additional benefit is that results of the first order assessment are more defensible insofar as they realistically reflect events reasonably expected to occur.

Mishap Severity Category	Safety Impact	Environmental Impact	Economic Impact
category I	Injuries that require more than first aid, i.e., might require hospitalization or result in lost work days	Minor releases that result in reversible environmental damage	Structure sustains some structural damage; vessel seaworthy but requires some temporary repairs; or, port operations delayed
category II	Injuries that result in permanent disability	Medium releases that result in moderate disruption of the ecosystem	Structure cannot be occupied due to structural damage; vessel not seaworthy; port operations disrupted up to 24 hours
category III	One or more deaths	Large releases that result in catastrophic disruption of the ecosystem	Structure must be rebuilt; vessel declared total constructive loss; port operations disrupted for more than 24 hours

Table 3-1: Consequence categories

C.10. Likelihood Score

This score represents the likelihood, relative to the current likelihood, that an event of a given magnitude might reasonably be expected to occur. Enter likelihood scores only for severity categories reasonably expected to occur. Assign likelihood scores using criteria from Table 3-2.

Score	Description
-4	Likely reduction (1 or more less occurrences per year)
-3	Occasional reduction (1 less occurrence every 1 – 10 years)
-2	Probable reduction (1 - 5 less occurrences every 10 – 50 years)
-1	Possible reduction (less occurrences are unlikely)
0	No change from current likelihood
1	Possible increase (additional occurrences are unlikely)
2	Probable increase (1 - 5 more occurrences every 10 – 50 years)
3	Occasional increase (1 more occurrence every 1 – 10 years)
4	Likely increase (1 or more additional occurrence per year)

Table 3-2: Likelihood scores

C.11. Calculation

The model calculates a risk index number (RIN) for each area of concern and each mishap using the formula:

$$RIN = \frac{10^{(1+LS_1)} + 10^{(2+LS_2)} + 10^{(3+LS_3)}}{1110}$$

LS_x is the likelihood score for each consequence category. The likelihood scores for more severe impacts are weighted. To simplify application of the model by field units, the RIN calculates automatically. The model calculates the RIN only upon entry of a mishap. Derivation of equations used to calculate the RIN is in Risk-Based Decision-Making Guidelines.

C.12. Risk Index Number

The RIN provides the COTP an indication of the degree of risk associated with a structure or work project relative to the existing level of risk. A value of 1 reflects no change in the level of risk. Values less than 1 represent a reduced level of risk. Values greater than 1 represent an increased level of risk. The range of values is 0.0001 to 10,000. Insofar as the RIN is a relative term, it is not possible to assign a threshold value above or below where there is an acceptable degree of risk. However, because there is correlation between RIN values and the likelihood of an event occurrence (see Table 3-3), use it to target efforts to mitigate increased risk associated with the structure or project.

RIN Value	Likelihood
-10000	Likely reduction (1 or more less occurrences per year)
-1000	Occasional reduction (1 less occurrence every 1 – 10 years)
-100	Probable reduction (1 - 5 less occurrences every 10 – 50 years)
-10	Possible reduction (less occurrences are unlikely)
1	No change from current likelihood
10	Possible increase (additional occurrences are unlikely)
100	Probable increase (1 - 5 more occurrences every 10 – 50 years)
1000	Occasional increase (1 more occurrence every 1 – 10 years)
10000	Likely increase (1 or more additional occurrence per year)

Table 3-3: RIN values and likelihood

C.13. Percent Cumulative Risk

Provide the percentage of cumulative risk to assist the COTP's analysis of the risk assessment results.

Section D: Using the 5-Step Navigation Safety Risk Assessment Tool

D.1. General

Information required to complete the risk assessment is normally contained in the public notice of the permit application, the appropriate charts, and the WWM staff expertise. For additional necessary information, contact the project officer from the lead Federal agency.

D.2. Step 1, Open the Risk Model

Open the risk model from the following link, and enable macros if necessary to use the spreadsheet:

Navigation Risk Assessment Matrix

After opening, save the spreadsheet locally. When saving, rename the file to include some reference to the structure or project evaluated.

D.3. Step 2, Project Information

Complete the project information, including the COTP zone and the USACE district engineer office. For new structures or projects, enter the permit application number and date the public notice was published. For existing structures or projects, enter the issue date of the original USACE permit. This information maps over to the summary report.

General Project Information

USCG COTP Zone: _____

USACE District Engineer Office: _____

Project: _____

Location: _____

New Structures or Projects

Application Number: _____

Date of Public Notice: _____

Existing Structures or Projects

Date USACE Permit Issued: _____

D.4. Step 3, Complete the Worksheets

Complete the risk assessment worksheets. These worksheets are in the summary report. Complete this worksheet as follows:

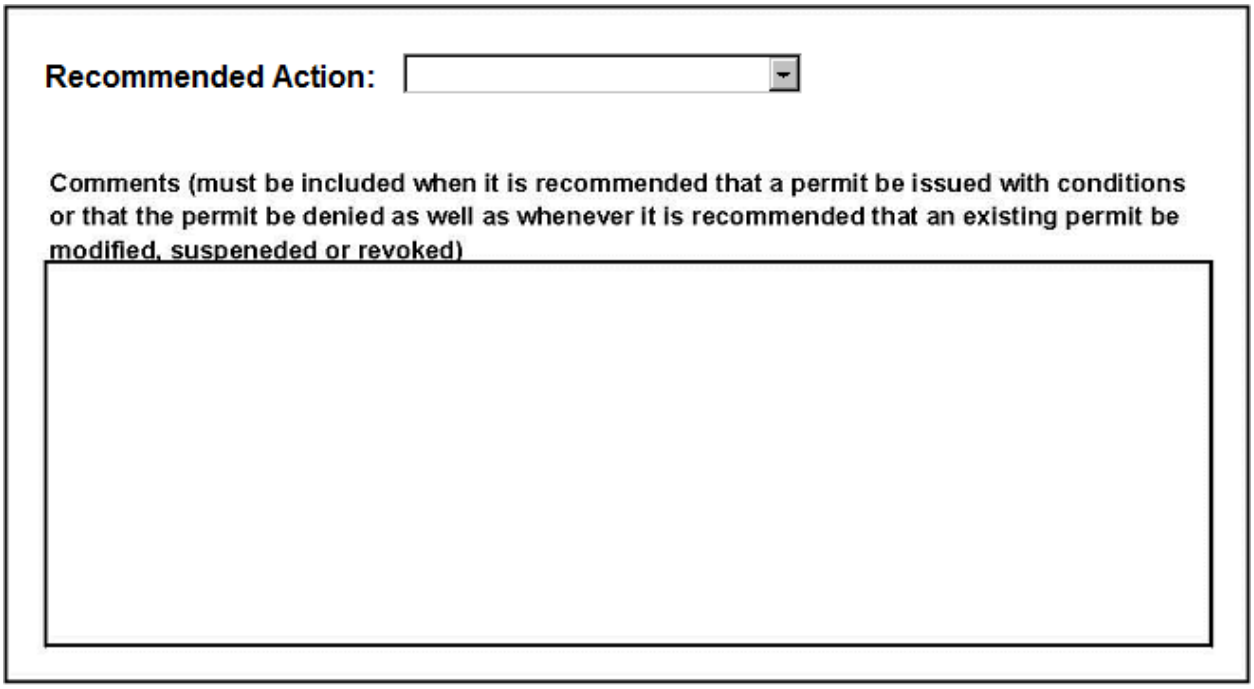
- For each area of concern, identify mishaps that might reasonably be expected to occur.
- Identify risk factors associated with project location, effect on vessel traffic and port operations, as well as weather and other environmental conditions that could either increase or reduce the likelihood of a mishap. Link risk factors to particular mishaps by including the letter identifying a particular mishap in parentheses after the risk factor, e.g., cross-current (A, B), ice (A, C).
- For each mishap, assign a likelihood score from Table 3-2 for each severity category reasonably expected to occur.

For each area of concern, assess the risk to the structure or project based on where it is located on a waterway.

Area of concern	Mishap	Risk Factors	Category related risk estimates				
			Likelihood Score			RIN	Percent Cumulative Risk
			Cat I	Cat II	Cat III		
Public Safety Impact	A.						
	B.						
	C.						
	D.						
Total estimate of risk to public safety associated with project location						0.000	0.00%
Environmental Impact	A.						
	B.						
	C.						
	D.						
Total estimate of risk to the marine environment associated with project location						0.000	0.00%
Economic Impact	A.						
	B.						
	C.						
	D.						
Total estimate of risk to economic loss associated with project location						0.000	0.00%
TOTAL RISK ESTIMATE FOR PROJECT LOCATION						0.000	0.00%

D.5. Step 4, Recommend a Permit Action

Select one of the options in the drop down box to recommend a permit action. Enter comments that support the recommended permit action whenever recommending that a permit be issued with conditions. Ensure recommendations are consistent with guidance contained in paragraph 6.d of reference (f). Also, enter comments when recommending that an existing permit be modified, suspended, or revoked.



D.5.a. Recommendation to the USACE

Ensure the COTP recommendation is:

- Warranted based on the initial risk assessment.
- Related to the effects of the project.
- Appropriate to the scope and degree of those effects.
- Reasonably enforceable.
- Within the scope of COTP public interest factors for reducing the possibility of:
  - Personnel injury or loss of life.
  - Damage or loss of vessels, cargo, or structures in, on, or immediately adjacent to navigable waters of the U.S.
  - Damage to the marine environment.

Address the following questions when developing proposed recommendations:

- Is potential risk to the structure or project as designed acceptable?
- Is the potential increased risk to port or waterway safety due to effects of the structure or project on waterway traffic and port operations acceptable?
- Are their specific interests to whom potential increases in risk are not acceptable, and has the COTP fairly considered their concerns?
- Are interests or concerns of an affected party, or parties, sufficient to override interests or concerns of another affected party, or parties?
- Are there reasonable means available to mitigate unacceptable risk?
- Should the permit applicant bear the cost of mitigation, or share it?
- Do any legal, safety, or environmental considerations override consideration of the benefits and costs of mitigation?

D.6. Step 5, Print

Review information on the "Summary" sheet, save the file, and print the report.

Section E: Formal Navigation Safety Risk Assessment Tool

E.1. Purpose

A formal navigation safety risk assessment is an in depth analysis of a project that is completed by the applicant.

NOTE: **For the purposes of this TTP, a formal navigation safety risk assessment is not a WAMS study, PAWSA, or WSA.**

If the USCG recommends that USACE require the permit applicant to conduct a formal risk assessment, ensure this recommendation is:

- Warranted, based on the initial screening or re-evaluation.
- Related to impacts of the project and appropriate to the scope and degree of those impacts.
- Reasonably enforceable.

In addition, keep recommendations within the scope of public interest factors that the COTP has statutory and regulatory authority to protect. Consider public interest factors that are limited to reducing the possibility of:

- Injury or loss of life.
- Damage or loss of vessels, cargo, or structures in, on, or immediately adjacent to the navigable waters of the United States.
- Damage to the marine environment from navigation incidents reasonably expected to result if the project is approved.

E.2. Socialize the Assessment

Socialize the availability of the navigation safety risk assessment for public review and comment.

The permitting agency announces the availability of the navigation safety risk assessment (normally included as part of the applicant's application, or submitted with NEPA documentation) through the Federal Register and/or another form of public announcement.

The COTP forwards announcements to port partners, maritime community, HSCs, area committees, etc. Accomplish this through marine safety information bulletins, email distribution systems, announcements as HSC, and other meetings, etc.

E.3. Attend Public Meetings

Attend public hearings and other outreach efforts sponsored by the permitting agency. COTP attendance at public hearings and other outreach efforts sponsored by the permitting agency is advisable, though not mandatory. Attendance helps ensure that unfiltered feedback provides the COTP with a clearer, more comprehensive sense of public concerns.

It is important, however, that the COTP remain aligned with the permitting agency and not sponsor its own public hearings or outreach efforts absent a clear and compelling requirement that the permitting agency cannot or will not meet.

If a sector is considering sponsoring a public hearing or outreach effort to address navigation safety issues, it first consults with the permitting agency and both the applicable program manager and servicing legal representative.

E.4. Review Public Comments

Evaluate all public comments, and all comments and feedback submitted by Federal, state, and local agencies.

Systematically review comments. The review process normally begins by cataloging comments. See Appendix G: Sample Comment Catalog.

Address comments in the analysis provided to the permitting agency individually, or collectively grouped in appropriate categories. Include a synopsis of comments, along with the COTP analysis of those comments and any conditions recommended to the permitting agency.

E.5. Prepare the Formal Navigation Safety Risk Assessment

To prepare a navigation safety risk assessment submitted by an applicant to a permitting agency, the applicant addresses the following:

- A marine traffic survey near the proposed location that includes:
  - Types, sizes, and drafts of vessels.
  - Typical routes.
  - Traffic density.
  - Seasonal traffic variances.
  - Marine events in the area.
- Analysis of expected weather conditions, water current directions and velocities, water depths, and sea states that might aggravate or mitigate the likelihood of collision with the project and navigational safety in general.
- Evaluation of the risk of collision between vessels and the project that includes:
  - Likely frequency of collision.
  - Likely consequence for collision ("what if" analysis).
  - The ability of a tower to withstand collision damage without toppling for a range of vessel speeds and vessel sizes.
- Analysis of likely changes in vessel movements resulting from the project.
- Analysis of constraints imposed by the installation upon local navigation and anchoring.
- Analysis of any increased danger of vessels colliding with each other or grounding due to the installations.
- Analysis of the likelihood of floating ice build-up around and between the towers and its possible effect on vessel navigation.
- Analysis and discussion of the effect on the ability of all classes of vessels to anchor within the vicinity of the tower field.
- Analysis of the potential impact on radar aboard vessels that typically frequent the area.
- Analysis of the potential impact on marine communications between vessels that typically frequent the area.
- Analysis of the potential impact to create acoustic noise that could mask navigational sound signals.

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Appendix A: Acronyms

CFR	Code of Federal Regulations.
COTP	Captain of the port.
HSC	Harbor safety committee.
LS	Likelihood score.
MOA	Memorandum of agreement.
NEPA	National Environmental Policy Act.
PATON	Private aid to navigation.
PAWSA	Ports and Waterways Safety Assessment.
PWA	Port Waterways Assessment.
RIN	Risk index number.
TTP	Tactics, techniques, and procedures.
USACE	United States Army Corps of Engineers.
USC	United States Code.
USCG	United States Coast Guard.
WAMS	Waterways Analysis and Management System.
WWM	Waterways Management.

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Appendix B: Memorandum of Agreement between the USACE and the USCG dated 2 June 2000

I. PARTIES.

This Memorandum of Agreement (MOA) is an agreement between the United States Coast Guard (USCG) and the United States Army Corps of Engineers (Corps).

II. AUTHORITY.

Under 14 U.S.C. § 141 the Coast Guard may utilize its personnel and facilities to assist any Federal agency to perform any activity for which such personnel and facilities are especially qualified.

The Corps of Engineers must provide notice and opportunity to comment on permit applications pursuant to Section 404(a) of the Clean Water Act and Corps of Engineers' regulations at 33 C.F.R. §§ 320 – 331.

III. PURPOSE.

The purpose of this agreement is to establish a formal process whereby the USCG will provide input into the Corps' evaluation process for issuing permits related to fixed or floating structures, including but not limited to permanently moored vessels and facilities, on the navigable waters, harbors, and rivers of the United States. This agreement is not applicable to the siting of bridges, which is subject to U.S. Coast Guard regulations in accordance with 33 U.S.C. §§ 401, 491, to 507, and 525 to 534. See 33 CFR Subchapter J.

IV. REFERENCES.

1. 33 U.S.C. § 403 Protection of navigable waters and of harbor and river improvements generally subchapter I--in general Sec. 403.
2. 33 C.F.R. Part 320 General regulatory policies.
3. 33 C.F.R. Part 322 Permits for structures or work in or affecting navigable waters of the United States.
4. 33 C.F.R. Part 325 Processing of Department of the Army permits.
5. 33 C.F.R. Part 327 Public hearings.
6. 33 C.F.R. Part 330 Nationwide permit program.

7. 33 U.S.C. §§ 1221 *et. seq.* Port and Waterways Safety Program.
8. 33 C.F.R. Part 160 Port and Waterways Safety.
9. Permanently Moored Vessels (PMV), Quality Action Team (QAT) Final Report dated December 7, 1999.

V. BACKGROUND.

1. In the prior decade a series of incidents occurred on the western rivers of the United States which posed a serious risk to passengers embarked on vessels moored on the waterway. These incidents also posed a risk to the safety of persons occupying structures located immediately adjacent to or over the waterway. This provided the impetus to the Coast Guard to review and evaluate its involvement in the permit process related to the siting of fixed or floating structures, including permanently moored vessels and other facilities (hereafter collectively referred to as "structures") and to institute measures for reducing the risk of casualty.

2. One of the key variables contributing to risk is the location of a structure on the waterway. The best time and place to impact that variable is during the permitting process. With the exception of the siting of bridges, which is subject to Coast Guard regulations at 33 C.F.R. Subchapter J, only the Corps has the authority to issue permits related to the siting of structures on the navigable waters of the United States. Further, though Corps permits can be revised or rescinded for cause after issuance, they are generally not subject to regular review or renewal. This MOA lays out a formalized and consistent procedure for USCG involvement in the Corps' new permit evaluation and any re-evaluation review process.

VI. RESPONSIBILITIES.

1. In keeping with current practice, the Corps will continue to forward the public notice of all permit applications related to the construction of structures to local Captains of the Port (COTP) for comment as part of the Corps' permit process. The method for forwarding the public notice will be agreed to by the cognizant district engineer and COTP and may include mail, e-mail or posting on the Corps' homepage.

2. Upon receipt of the public notice of the permit application, the COTP will determine whether to conduct a risk assessment of the site in terms of its safety on the waterway. If conducted, the assessment will use established and documented procedures (see ref. 9) and be completed in cooperation with affected stakeholders, as appropriate. The COTP will notify the Corps within 10 days of the date of the public notice if a risk assessment will be conducted. Subsequently, the COTP will provide the Corps with a recommendation within 30 days of the date of the public notice.

3. The COTP may periodically re-evaluate the risk to structures because of changes in traffic

patterns or after a significant marine casualty or incident in the vicinity. The re-evaluation will be conducted using established and documented procedures (see ref. 9) and in cooperation with affected stakeholders and the public, as appropriate.

4. The COTP will keep the Corps informed of any re-evaluation of the risk to structures at these sites at all times.

5. The Corps will fully consider the COTP's recommendations and proposals in issuing new permits and in considering the need to modify existing permits.

VII. IMPLEMENTING THE MOA

1. Each agency will review its internal procedures and, where appropriate, will revise them to accommodate the provisions of this MOA. Each agency will also designate in writing one senior official who will be responsible for coordinating and implementing the provisions of this MOA.

2. Each agency will designate regional officials to be responsible for coordinating and implementing the provisions of this MOA in their respective regions.

VIII. SAVINGS PROVISION.

Nothing in this MOA alters, amends, or affects in any way the statutory or regulatory authority of the Corps or the USCG.

IX. EFFECTIVE DATE.

This MOA is effective upon signature and shall remain in effect until terminated. Both parties may amend it by mutual agreement and either agency may terminate it with a 30-day written notice.

Signed at Washington, D.C., this 2 June 2000

R. C. NORTH
Rear Admiral, USCG
Assistant Commandant for Marine Safety
and Environmental Protection

HANS A. VAN WINKLE
Major General, USA
Deputy Commander for Civil Works

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Appendix C: U.S. Army Corps of Engineers Section 10 Permit Review Policy Guidance dated 25 January 2002

U.S. Army Corps of Engineers Section 10 Permit Review Policy Guidance

1. Introduction. With the exception of bridges, all structures located in, on, or over the navigable waters of the United States require a permit issued by the USACE under the authority of 33 C.F.R. § 403. The decision to issue, modify or revoke a permit is based on a public interest review conducted by the USACE's district engineer. Among the factors addressed during the public interest review are some for which the Coast Guard has particular expertise, including navigability and protection of the marine environment. *See* 33 C.F.R. § 320.4(a).

2. Authority.

   a. Coast Guard. PWSA (33 U.S.C. §§ 1221 *et seq.*) provides the statutory basis for the Coast Guard's management of risk on the nation's waterways. PWSA specifically provides that the Coast Guard "may take such action as is necessary to prevent damage to, or the destruction of, any bridge or other structure on or in the navigable waters of the United States, or any land structure or shore area immediately adjacent to such waters." 33 U.S.C. § 1225 (emphasis added).

   b. USACE. Section 10 of the Rivers and Harbors Act of 1899 (33 C.F.R. § 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States is unlawful unless recommended by the Chief of Engineers and authorized by the Secretary of the Army. Authority to issue a permit for the construction of a structure in the navigable waters of the United States has been delegated to the district engineer.

3. Memorandum of Agreement (MOA).

   a. Purpose and Approach. The MOA between the Coast Guard and the USACE of 2 June 2000 provides a mechanism for increased coordination between the two agencies that enables each to more fully fulfill its respective statutory obligations. This is accomplished by establishing a formal process for the Coast Guard COTP to provide input to the USACE district engineer's review of new permit applications as well as any periodic re-evaluation of existing permits based upon a risk assessment.

   b. Designation of Responsibility.

      (1) Commandant (G-MWV). Commandant (G-MWV) is responsible for coordinating and implementing the provisions of the MOA. This includes maintaining a liaison with the appropriate headquarters staff of the USACE as well as providing policy guidance for the COTPs.

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(2) COTP. Each COTP shall be responsible for coordinating and implementing the MOA within individual COTP zones designated in accordance with 33 C.F.R. Part 3.

c. Local Coordination. Successful implementation of the MOA is dependent upon the local COTP and district engineer working together to establish procedures for communicating concerns and resolving differences. Local coordination is necessary given the relative autonomy of both COTP and district engineers and to ensure that local concerns are adequately addressed.

4. Definitions.

a. Structure. Structure is defined by USACE regulations to "include without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other obstacle to navigation." 33 C.F.R. § 322.2 (b).

b. Work. Work is defined to "include, without limitation, any dredging or disposal of dredged material, excavation, filling, or other modification of a navigable water of the United States." 33 C.F.R. § 322.2(c).

5. USACE Regulations.

a. General Regulatory Policies. The USACE's general regulatory policies for implementing 33 U.S.C. § 403 are contained in 33 C.F.R. Part 320. This part includes an overview of the public interest review conducted by the district engineer when reviewing a permit application.

b. Structures in Navigable Waters. Specific regulations for constructing structures in the navigable waters of the United States are contained in 33 C.F.R. Part 322.

c. Permit Conditions. The district engineer can add special conditions to a permit in order to satisfy the public interest. Such conditions must be directly related to the project, appropriate to the scope and degree of the project's impact, and reasonably enforceable. In the event that any special conditions cannot be reasonably implemented or enforced, the permit will be denied. *See* 33 C.F.R. § 325.4.

d. Permit Duration. Permits for structures or an activity of a permanent nature generally do not have an expiration date. Permits for temporary structures or activities of limited duration will be issued with a fixed expiration date. *See* 33 C.F.R. § 325.6.

e. Construction Start Date. Generally, construction must start within one year from the date when the permit is issued. *See* 33 C.F.R. § 325.6(c).

f. Permit Modification, Suspension, or Revocation. USACE regulations do not provide for periodic re-evaluation of permits. However, the district engineer may initiate action to modify, suspend or revoke a permit when warranted by public trust considerations. Such action can be initiated based on the initiative of the district engineer, the permit holder or a third party. *See* 33 C.F.R. § 325.7.

g. Administrative Review. The decision of the district engineer regarding a permit application is final and cannot be administratively appealed. *See* 33 C.F.R. § 320.1(a).

6. COTP Risk Assessment.

a. Risk Assessment. A risk assessment is the basis for COTP input to the district engineer regarding port or waterway safety issues associated with a structure or work project located in or on the navigable waters of the United States. This assessment is intended to identify primary threats to port or waterway safety as well as to determine if a more extensive, technical risk analysis is necessary.

(1) Structures other than Permanently Moored Vessels. Risk assessments for structures other than permanently moored vessels shall be conducted in accordance with the guidance in this section.

(2) Permanently Moored Vessels. Risk assessments for permanently moored vessels shall be conducted in accordance with the guidance provided in the MSM, Vol. II, Section B, Chap. 4.I (http://www.uscg.mil/hq/g-m/nmc/pubs/msm/v2/bch4.pdf). OCMIs shall comply with the guidance in the MSM, Vol. II, Section B, Chap. 4.I when establishing inspection requirements for permanently moored vessels.

b. New Permit Applications.

(1) Initial Risk Assessment. An initial risk assessment should be conducted when the COTP receives the public notice of a permit application for a structure or work project from the district engineer. The purpose of this assessment is to identify risks to the safety of the structure or work as well as the risks of the structure or work to port or waterway safety. A risk assessment does not have to be conducted when it is evident to the COTP that there is not any apparent risk to the safety of the proposed structure or work project and that it will have little or no impact on port or waterway safety. However, the decision not to conduct a risk assessment must be made with complete awareness that the best time to address threats to port or waterway safety that are related to the location or design of a structure or location of a work project is during the permitting process.

(2) Time Requirements. Within 10 days of the date of public notice the COTP will notify the district engineer whether a risk assessment will be

conducted. In the event a risk assessment is conducted it shall be completed and the results communicated to the district engineer within 30 days of the date of public notice. The MOA established these time requirements so the district engineer may provide a timely response to the permit applicant.

(3) Recommended Permit Action. Upon completion of the initial risk assessment for a new permit application the COTP shall make a recommendation to the district engineer whether a permit should be issued with or without conditions. The COTP might also recommend that the permit applicant should be required to conduct a more extensive risk assessment before the district engineer decides whether to issue a permit. See paragraph 6.d for guidance regarding recommendations to the district engineer.

c. Existing Structures.

(1) Periodic Risk Assessment. The COTP should periodically re-evaluate the risk to the safety of a structure or work project as well as the risk the structure or work project poses to port or waterway safety. Re-evaluation is necessary to determine whether a recommendation should be made to the district engineer whether a permit should potentially be modified, suspended, revoked. A re-evaluation should be conducted whenever there is a change of waterway traffic (either volume or composition), local conditions, etc., or following a significant marine casualty or incident in the vicinity of a structure or activity.

(2) Recommendations to the USACE. Upon completion of a risk assessment for an existing structure or activity, the COTP shall make a recommendation to the district engineer whether the existing permit should potentially be modified, suspended, or revoked. As an alternative, the COTP could recommend that the permit holder be required to conduct a extensive risk assessment before the district engineer decides whether an existing permit should be modified, suspended, or revoked. See paragraph 6.d for guidance regarding recommendations to the district engineer.

d. Recommendations to the USACE.

(1) General. Any recommendation the COTP makes to the district engineer must: be warranted based on the initial risk assessment; be related to the impacts of the project as well as appropriate to the scope and degree of those impacts; and be reasonably enforceable. *See* 33 C.F.R. § 325.4(a). In addition, the recommendations must be within the scope of the public interest factors for which the COTP has statutory authority to protect.

(2) Scope. The USACE district engineer is charged by regulation to consider all public interest factors when making a determination whether to approve a permit. *See* 33 C.F.R. § 320.4(a). In contrast, the public interest factors that must be considered by the COTP are limited to reducing the possibility of: personnel injury or loss of life; damage or loss of vessels, cargo, or structures in, on, or immediately adjacent to the navigable waters of the United States; and, damage to the marine environment. *See* 33 U.S.C. § 1221(c).

(3) Questions to Address. When developing proposed recommendations, there are a number of questions the COTP must consider. Some of these questions include:

(a) Is the potential risk to the structure or project as designed acceptable?

(b) Is the potential increased risk to port or waterway safety due to the impact of the structure or project on waterway traffic and port operations acceptable?

(c) Are their specific interests to whom any potential increases in risk are not acceptable and have their concerns been fairly considered?

(d) Are the interests or concerns of an affected party, or parties, sufficient to override the interests or concerns of another affected party, or parties?

(e) Are there reasonable, cost-effective means available to mitigate unacceptable risk?

(f) Should the permit applicant bear the cost of mitigation, or should it be shared? This question is particularly important when proposed mitigation measures may potentially reduce the current level of overall risk to port and waterway safety.

(g) Are there any legal, safety, or environmental considerations that override any consideration of the benefits and costs of mitigation?

e. Intra Coast Guard Coordination.

(1) Non-Aids to Navigation. With the exception of issues related to compliance with the aid to navigation (ATON) regulations, the COTP is responsible for communicating Coast Guard concerns regarding risks to safety to the district engineer. The COTP shall seek input regarding potential risks to the safety of navigation due to a structure or activity from the district office of aids to navigation, the cognizant Coast Guard Group Commander and the commanding officer / officer in charge of any aids to navigation units responsible for the area.

(2) Aids to Navigation. The district commander is responsible for communicating with the permit applicant and the district engineer regarding compliance with structure marking requirements. *See* 33 C.F.R. § 64.21. The COTP shall communicate to the district commander any concerns that are ATON related.

f. Harbor Safety Committees. The COTP should consider consulting with the local Harbor Safety Committee when assessing the risk associated with a proposed structure or work project that could impact a principle waterway or channel. This could potentially be accomplished through a subcommittee on risk or permits. There may be instances when the COTP and the members of a Harbor Safety Committee disagree with regard to the risk a structure or work project may pose to port or waterway safety. In such instances, the COTP should complete the risk assessment without Harbor Safety Committee input and comment separately. The COTP should ensure that the Harbor Safety Committee is aware that its members may comment to the district engineer as part of the standard public interest review process.

g. State and Local Agencies. The COTP should seek input from state and local agencies, such as emergency response organizations, as necessary to fully assess the risks associated with a structure or work project.

7. Risk Model.

a. General. The risk assessment should be conducted using the risk model discussed in this section. The risk model was designed to provide a first order assessment of risk in order to identify the primary threats to safety, both to the structure as well as to the port and waterway. It is not intended to replace a more extensive, technical risk assessment based upon a complete analysis of all available data. The results of the assessment should form the basis for any recommendations the COTP may make to the district engineer. One of the recommendations the COTP may make is that the permit applicant should conduct a more extensive risk assessment before the district engineer decides whether to issue a permit. The model was designed to maximize flexibility in order that differences between COTP zones could be accommodated while also providing some degree of uniformity. Such uniformity is particularly important insofar as there is overlap between COTP zones and Corps' districts. There may be instances when it may be necessary to use other tools described in the Risk Based Decision-Making Guidelines, which is available at http://www.uscg.mil/hq/g-m/risk/, in order to adequately assess a particular project.

b. Model Description.

(1) General. The model is designed to highlight how different factors related to both the project's physical location and its impact on vessel traffic and port operations may contribute to or reduce the likelihood of endangering

public safety, damaging the marine environment, damaging structures or vessels, or disrupting port operations.

(2) Required Inputs. In most instances, it should be possible to complete the assessment using information contained in the public notice, nautical charts and local knowledge. For some projects, it may be appropriate to consult with the local Harbor Safety Committee to ensure that all appropriate information is considered.

(3) Areas of Concern. Potential mishaps that are related to the location of a structure or work project, activities associated with the structure or project, or local environmental conditions are grouped into three broad categories. These categories are intended to ensure the risk assessment does not become too narrowly focused.

(a) Public Safety Impact. Public safety concerns apply to occupants of waterfront structures as well as vessel passengers and crew. Public safety can be put at risk any number of ways including a vessel alliding with a structure, a vessel collision, structural damage due to environmental factors, or exposure to hazardous materials, e.g. LNG, explosives, chemicals, etc. The area considered in the assessment must be appropriate for the type of hazard being considered.

(b) Environmental Impact. This category includes threats to the marine environment, including releases of oil or hazardous materials or physical damage to sensitive or critical habitats associated with where a structure is located. This can include damage to shorelines resulting from the wakes of passing vessels.

(c) Economic Impact. This category is intended to account for damage to structures or vessels as well as disruption of port operations, which includes vessel traffic on the waterway or safety fairway. Damage to structures in, on or adjacent to a waterway can include damage that results from allisions as well as wake wash from passing vessels. This can also involve compromising footings during dredging or other construction related activity, such as blasting or pile driving. Structures can also be damaged by environmental factors such as earthquakes, flooding, ice flows, etc. Structures considered should include those that are in the immediate vicinity of the project as well as those that could reasonably be impacted by the project. For the purpose of this model, structures also include submerged pipelines, cables, and water intakes. Vessel damage can result from mishaps such as collisions and groundings. Incidents can potentially involve commercial vessels, recreational vessels as well as a combination of commercial and recreational vessels. Consideration should be given to the impact of the project on the safety of navigation in the immediate

vicinity of the project was well as other portions of the waterway or safety fairway that may reasonably be impacted by the project.

(4) Mishaps. For each of the three areas of concern it is necessary to identify the most probable mishaps that could reasonably be expected to occur. Mishaps not included in the list can be entered. The model is configured so that up to four mishaps can be selected for each area of concern. A type of mishap, e.g. allision or flood damage, may be selected under more than one area of concern.

(5) Risk Factors. The risk factors that could contribute to a particular type of mishap must be identified. There are three broad categories of factors that should be considered. These categories include physical location, activities related to the project, and weather and other environmental factors. When assessing the risk associated with a particular project, it is necessary to identify the factors within each of the categories that either increase or decrease the level of risk.

(a) Physical Location. This category is intended to assess how the physical location of a structure may contribute to risk. Factors to be considered when considering the impact of a structure's physical location include its proximity to the navigable channel, whether it is located on the inside or outside bank of a bend, its proximity to population centers, as well as its location relative to other water front structures or projects. Another factor that may be included is the composition and speed of existing vessel traffic in the adjacent waterway. It is necessary to consider how these factors may hazard the structure as well as how the structure itself may create a new or additional hazard to the port and its environs.

(b) Impact on the Waterway and Port Operations. This category is intended to determine how activities related to the structure may impact the risk associated with a project. This can include how the intended use of the structure might impact the existing volume and type of vessel traffic as well as whether the activity is compatible / similar to existing activities in the immediate area. It can also include the impact the project might have on the types and quantity of cargo moving through the port. Other factors that should be considered include how land and waterside activities related to the structure might impact activities at other facilities within the port or vessel movement. It would also be appropriate to consider the potential impact of any changes to ATON that are associated with the structure or project.

(c) Weather and Environmental Conditions. This category is intended to account for how weather and other environmental factors may contribute to risk associated with a structure. Weather factors

include prevalent weather conditions for the area such as fog, storms, high winds, etc. It should also include severe and sudden weather conditions that can be expected, such as hurricanes, tornadoes, and unusually high or low water levels. Environmental factors that should be accounted for include tidal range, currents, seasonal river flood stages, ice, earthquakes, tsunamis, etc.

(6) Severity Categories. The model is based on three degrees of severity associated with the outcome of a potential mishap. Each category is defined based on the potential safety, environmental and economic impact of a mishap. It is not necessary for all of the criteria in each impact area to be met in order to assign a category. Similarly, if a significant number of criteria are met, consideration can be given to assigning the next higher severity category. A description of each category is contained in Table 1. The model is designed to include a full range of potential outcomes, not just the worst case, of a given mishap. However, for some mishaps, such as drowning, it would not be appropriate to consider the possibility of a Category I or II outcome. Although this adds a level of complexity to the analysis, it is included in order to provide the COTP a more complete understanding of the risk associated with a structure or associated activities. An additional benefit is that the results of the first order assessment are more defensible insofar as they realistically reflect events that reasonably may be expected to occur.

(7) Likelihood Score. This score represents the likelihood relative to the current likelihood that an event of a given magnitude may reasonably be expected to occur. Likelihood scores should be entered only for those severity categories that can reasonably be expected to occur. Likelihood scores should be assigned using the criteria in Table 2.

(8) Risk Index Number (RIN).

(a) Description. The risk index number (RIN) provides the COTP an indication of the degree of risk associated with a structure or work project relative to the existing level of risk. A value of 1 reflects no change in the level of risk. Values less than 1 represent a reduced level of risk. Values greater than 1 represents an increased level of risk. The range of values is 0.0001 to 10,000. Insofar as the RIN is a relative term, it is not possible to assign a threshold value above or below which there is an acceptable degree of risk. However, because there is some correspondence between RIN values and the likelihood that an event will occur (see Table 3), they can be used to target efforts to mitigate increased risk associated with the structure or work project.

(b) Calculation. The model calculates a RIN for each area of concern and each mishap using the formula:

$$RIN = \frac{10^{(1+LS_1)} + 10^{(2+LS_2)} + 10^{(3+LS_3)}}{1110}$$, where LS_x is the likelihood score for each consequence category. The likelihood scores for the more severe impacts are weighted. To simplify the application of the model by field units, the RIN is calculated automatically. The model is configured to calculate a RIN only if a mishap is entered. The derivation of the equations used to calculate the RIN is discussed in Risk Based Decision-Making Guidelines, which is available at http://www.uscg.mil/hq/g-m/risk/.

(9) Percent Cumulative Risk. The percentage of cumulative risk is provided to assist the COTP's analysis of the results of the risk assessment.

c. Model Availability. The risk model is available on Commandant (G-MWV)'s CG Web page http://cgweb.comdt.uscg.mil/g-mw/docs.htm.

d. Maintenance. Commandant (G-MWV) will maintain the risk model. The model will be revised to incorporate COTP input.

8. Conducting the Risk Assessment.

a. Overview. The risk assessment is conducted using the risk model described in paragraph 7. In general, the information required to complete the risk assessment is the public notice of the permit application, the appropriate charts, and local knowledge.

b. Step 1. Open the risk model from Commandant (G-MWV)'s CG Web page http://cgweb.comdt.uscg.mil/g-mw/docs.htm. It is necessary to enable the macros to use the spreadsheet. After opening, the spreadsheet should be saved locally. When saving, the file should be renamed to include some reference to the structure or project being evaluated.

c. Step 2. Complete the project information, including the COTP Zone and the USACE District Engineer Office (see Fig. 1). For new structures or projects the permit application number and date the public notice was published should also be entered. For existing structures or projects the date the original USACE permit was issued should be entered. This information will map over to the summary report.

d. Step 3. Complete the risk assessment worksheets (see Fig. 2). These worksheets are included in the summary report. This worksheet should be completed as follows:

(1) For each area of concern, identify the potential mishaps that might reasonably be expected to occur.

(2) Identify the risk factors associated with the project location, impact on vessel traffic and port operations, as well as weather and other environmental conditions that could either contribute to or reduce the likelihood of a mishap occurring. Risk factors should be linked to particular mishaps by including the letter identifying a particular mishap in parentheses after the risk factor, e.g., cross current (A, B), ice (A, C).

(3) For each mishap assign a likelihood score from Table 2 for each severity category that could reasonably be expected to occur.

e. Step 4. Complete the recommended permit action by selecting one of the seven options in the drop down box (see Fig 3). Comments to support the recommended permit action must be entered whenever it is recommended that a permit be issued with conditions or that a permit be denied. All recommendations should be consistent with the guidance contained in paragraph 6.d. Comments must also be entered whenever it is recommended that an existing permit be modified, suspended or revoked.

f. Step 5. Review the information on the "Summary" sheet and print the report. The report can be printed by following these steps:

(1) On the **View** menu, click **Report Manager**;

(2) The report "Report of Risk Assessment" will be highlighted;

(3) Click **Print**;

(4) In the Copies box, type the number of copies you want to print;

(5) Click **Ok**.

Table 1: Consequence Categories

Mishap Severity Category	Safety Impact	Environmental Impact	Economic Impact
Category I	Injuries that requires more than first aid, i.e. may require hospitalization or result in lost work days	Minor releases that result in reversible environmental damage	Structure sustains some structural damage; vessel seaworthy but requires some temporary repairs; or, port operations delayed
Category II	Injuries that may result in permanent disability	Medium releases that result in moderate disruption of the ecosystem	Structure cannot be occupied due to structural damage; vessel not seaworthy; port operations disrupted up to 24 hours
Category III	One or more deaths	Large releases that result in catastrophic disruption of the ecosystem	Structure must be rebuilt; vessel declared total constructive loss; port operations disrupted for more than 24 hours

Table 2: Likelihood Scores

Score	Description
-4	Likely reduction (1 or more less occurrences per year)
-3	Occasional reduction (1 less occurrence every 1 – 10 years)
-2	Probable reduction (1 - 5 less occurrences every 10 – 50 years)
-1	Possible reduction (less occurrences are unlikely)
0	No change from current likelihood
1	Possible increase (additional occurrences are unlikely)
2	Probable increase (1 - 5 more occurrences every 10 – 50 years)
3	Occasional increase (1 more occurrence every 1 – 10 years)
4	Likely increase (1 or more additional occurrence per year)

Table 3: RIN Values and Likelihood

RIN Value	Likelihood
-10000	Likely reduction (1 or more less occurrences per year)
-1000	Occasional reduction (1 less occurrence every 1 – 10 years)
-100	Probable reduction (1 - 5 less occurrences every 10 – 50 years)
-10	Possible reduction (less occurrences are unlikely)
1	No change from current likelihood
10	Possible increase (additional occurrences are unlikely)
100	Probable increase (1 - 5 more occurrences every 10 – 50 years)
1000	Occasional increase (1 more occurrence every 1 – 10 years)
10000	Likely increase (1 or more additional occurrence per year)

Figure 1: Project Information

General Project Information

USCG COTP Zone: _____

USACE District Engineer Office: _____

Project: _____

Location: _____

New Structures or Projects

Application Number: _____

Date of Public Notice: _____

Existing Structures or Projects

Date USACE Permit Issued: _____

Figure 2: Risk Assessment Worksheet – Project Location

For each area of concern, assess the risk to the structure or project based on where it is located on a waterway.

Area of concern		Mishap	Risk Factors	Category related risk estimates				
				Likelihood Score			RIN	Percent Cumulative Risk
				Cat I	Cat II	Cat III		
Public Safety Impact	A.							
	B.							
	C.							
	D.							
Total estimate of risk to public safety associated with project location							0.000	0.00%
Environmental Impact	A.							
	B.							
	C.							
	D.							
Total estimate of risk to the marine environment associated with project location							0.000	0.00%
Economic Impact	A.							
	B.							
	C.							
	D.							
Total estimate of risk to economic loss associated with project location							0.000	0.00%
TOTAL RISK ESTIMATE FOR PROJECT LOCATION							**0.000**	**0.00%**

Revised: 25 Jan 2002 14

Figure 3: Recommended Permit Action

Recommended Action:

Comments (must be included when it is recommended that a permit be issued with conditions or that the permit be denied as well as whenever it is recommended that an existing permit be modified, suspeneded or revoked)

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Appendix D:
Basic Navigation Safety Risk Assessment

Basic Navigation Safety Risk Assessment for (*name of permit project*) _____

Lead permitting agency: _____

Public Notice reference number: _____

Location: _____

Criteria	Low Risk
Location	
Traffic	
Response	
Anticipated environmental factors	

Criteria	Low Risk	High Risk	Notes (discuss reason for risk determination)
Severe and sudden environmental factors			Determine risk based on the location's frequency of risk due to sudden and severe environmental factors such as hurricanes, flash floods, or tornados.
Hydrological effects to waterway			Determine risk based on probability of hydrological issues having negative effects to proposed permit location and waterway. Consider whether the project will cause problems in this area at certain water stages, and whether the project will impact shoaling, silting, etc.
Outcomes/ Determination	If low levels of risk are associated with each of the six criteria, no comments to the lead permitting agency are required, though a letter expressing the COTP's finding would be appropriate. If there is a high level of risk associated with any of the six criteria, consider a more extensive risk assessment, or convey the COTP's concerns documented in this basic risk assessment to the permitting agency. If appropriate, recommend conditions for the permitting agency to include in the Federal permit that may reduce risk to an acceptable level. Is a more in-depth (formal) risk assessment warranted? If so, convey that finding to the permitting agency. If this basic risk assessment remains sufficient, what mitigations if any should be required as conditions of a permit issued by the lead permitting agency? If PATON is required to lower the risk level, notify District (dpw) for its comments on specific marking requirements.		

Basic Navigation Safety Risk Assessment for (*name of permit project*)

Lead permitting agency: _____

Public Notice reference number: _____

Location: _____

Criteria	Low Risk	High Risk	Notes (discuss reason for risk determination)
Location			Determine risk based on the proposed permit location in terms of risk to which a collision or allision exposes the area.
Traffic			Determine risk based on the amount/type/activities of vessel traffic adjacent to the proposed permit location. Factors to consider include, but are not limited to amount and frequency of traffic, speed of traffic and current, maneuvering constraints/limitations, and locations of facilities that traffic is transiting to/from.
Response			Determine risk based on the ability of the local maritime response community (including federal, state, and local governments) to provide timely, adequate assistance to proposed permit location.
Anticipated environmental factors			Determine risk based on a project's susceptibility to environmental factors such as fog, floods, storms, ice., etc.

Criteria	Low Risk	High Risk	Notes (discuss reason for risk determination)
Severe and sudden environmental factors			Determine risk based on the location's frequency of risk due to sudden and severe environmental factors such as hurricanes, flash floods, or tornados.
Hydrological effects to waterway			Determine risk based on probability of hydrological issues having negative effects to proposed permit location and waterway. Consider whether the project will cause problems in this area at certain water stages, and whether the project will impact shoaling, silting, etc.
Determination	If this basic risk assessment remains sufficient, identify risks and determine what mitigations to recommend as conditions of a permit. Provide those recommendations to the permitting agency. If low levels of risk are associated with each of the six criteria, no comments to the lead permitting agency are required. Provide a letter to the permitting agency expressing the COTP's determination. If there is a high level of risk associated with any of the six criteria, convey the COTP's concerns documented in this basic risk assessment to the permitting agency. If appropriate, recommend conditions for the permitting agency to include in the Federal permit to reduce risk to an acceptable level. If PATON are required to lower the risk level, contact District (dpw) for specific marking requirements. If a more in-depth risk assessment is necessary, convey that finding to the permitting agency		

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Appendix E:
Sample Letter from COTP to USACE

U.S. Department of Homeland Security
United States Coast Guard

Commander
U. S. Coast Guard
Sector Baltimore

2401 Hawkins Point Road
Baltimore, MD 21226-1791
Staff Symbol: Spw
Phone: (410) 576-2519
Fax: (410) 576-2553

16601
AUG - 1 2014

MEMORANDUM

S A Morrison CDR

From: S. A. Morrison, CDR
Chief, Waterways Management Division
CG SECTOR Baltimore

Reply to Waterways Management Division
Attn of: Mr. Ron Houck
(410) 576-2674

To: Commander, U.S. Army Corps of Engineers Baltimore District (CENAB-OP-RMN)

Subj: REVIEW OF U.S. ARMY CORPS OF ENGINEERS PERMIT APPLICATION

1. I am writing concerning the enclosed USACE Baltimore District's Joint Evaluation Comment Form, received on July 25, 2014, with a comment period from July 17, 2014 to August 15, 2014. In accordance with the USCG/USACE Memorandum of Agreement dated June 2, 2000, we have reviewed the comment form and public notice (PN 14-42). As a result of the review, *we intend to conduct a risk assessment* for the permit application listed as *CENAB-OP-RMN (Seacoast Management Advisors, LLC / Annapolis Sailing School/Marina) 2014-60032-M18)*, located in Back Creek, at Annapolis, Anne Arundel County, Maryland. The results of the risk assessment will be sent in a separate memorandum within 30 days of the date of public notice, so the district engineer may provide a timely response to the permit applicant. In addition, the application for these proposed structures has been sent to the Fifth Coast Guard District, Waterways Management Section, for further consideration and coordination.

2. If you have any questions concerning this matter, please feel free to contact Mr. Ron Houck at 410-576-2674 or Ronald.L.Houck@uscg.mil.

#

Enclosure

Copy: CGD FIVE (dpw)

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Appendix F: Sample Navigation Safety Risk Assessment Using the Model Described in this TTP Publication

U.S. Department of Homeland Security
United States Coast Guard

Commander
U. S. Coast Guard
Sector Baltimore

2401 Hawkins Point Road
Baltimore, MD 21226-1791
Staff Symbol: Spw
Phone: (410) 576-2519
Fax: (410) 576-2553

16600
SEP 12 2014

MEMORANDUM

S A Morrison, CDR

From: S. A. Morrison, CDR
Chief, Waterways Management Division
CG SECTOR Baltimore

Reply to: Waterways Management Division
Attn of: Mr. Ron Houck
(410) 576-2674

To: Commander, U.S. Army Corps of Engineers Baltimore District (CENAB-OP-RMN)

Subj: REVIEW OF U.S. ARMY CORPS OF ENGINEERS PERMIT APPLICATION

1. I am writing concerning a Department of the Army permit application listed as **CENAB-OP-RMN (Seacoast Management Advisors, LLC / Annapolis Sailing School/Marina) 2014-60032-M18**) in Back Creek, at Annapolis, Anne Arundel County, Maryland. In accordance with the USCG/USACE Memorandum of Agreement dated June 2, 2000, I have reviewed the applicant's plans to construct structures, which include: *(i)* installing an 8-foot wide by 149-foot long wave attenuating style pier, with an 8-foot wide by 412-foot long floating "L" pier, six 3-foot wide by 45-foot long finger piers, five 3-foot wide by 35-foot long finger piers, three 3-foot wide by 30-foot long finger piers, one 3-foot wide by 26-foot long finger pier, 22 mooring piles, 10 boat lifts, 9 boat lift piles, and a 10-foot wide by 53-foot long "L" head, with the pier structures extending a maximum distance of 149 feet channelward of the approximate mean high water shoreline; *(ii)* installing an 8-foot wide by 404-foot long floating wave attenuating style pier parallel to the shore and extending a maximum distance of 30 feet from the approximate mean high water shoreline, with an 8-foot wide by 156-foot long floating "L" pier, four 3-foot wide by 50-foot long finger piers, six 3-foot wide by 40-foot long finger piers, and 23 mooring piles, with the pier structures extending a maximum distance of 186 feet channelward of the approximate mean high water shoreline, *(iii)* relocating an 8-foot wide by 152-foot long floating pier with an 8-foot wide by 48-foot long "L", and a 32-foot by 32-foot platform, with the floating pier structure extending a maximum distance of 152 feet channelward of the approximate mean high water shoreline (this structure will be removed during winter months); and *(iv)* removing and reconstructing an existing 275-foot stone jetty with an attached 150-foot long stone jetty, with the stone jetty structures extending a maximum distance of 275 feet channelward of the approximate mean high water shoreline at an elevation of 6.0 feet above mean low water. A preliminary risk assessment (risk screening) for the proposed project, which is enclosed, was conducted by this office and has revealed important issues.

2. On the enclosed preliminary risk assessment report, two Risk Index Numbers (RIN) are provided. This index helps to highlight where the greatest potential risk exists. A RIN of 1 indicates that there is no change in risk as a result of the project, while a RIN Value of .0001 and 10,000 represents the respective minimum and maximum levels of risk that could be identified using this system. The RINs from this report, **27.6** and **21.9**, indicate the possible increase in risk to the structure or project and the port or waterway, respectively, as a result of approving this project.

Subj: REVIEW OF U.S. ARMY CORPS OF ENGINEERS PERMIT APPLICATION

16600
SEP 12 2014

3. As a result of the preliminary risk assessment, the most likely mishaps to occur were identified and are the following: *allision, collision, and grounding*. For all of these potential mishaps, the following mitigating factors are recommended as conditions for a USACE permit:

a. If permitted, the Coast Guard will require the applicant to mark the channelward ends of the proposed 8-foot wide by 412-foot long floating "L" pier and 8-foot wide by 156-foot long floating "L" pier, as prescribed by the Commander, Fifth Coast Guard District. With this requirement, the applicant will be required to prepare and provide for Coast Guard approval, a Private Aids to Navigation Application (form CG-2554).

b. If permitted, the Coast Guard will require the applicant to mark the channelward ends of the proposed reconstructed existing 275-foot stone jetty and attached 150-foot long stone jetty, as prescribed by the Commander, Fifth Coast Guard District. With this requirement, the applicant will be required to prepare and provide for Coast Guard approval, a form CG-2554.

The Commander, Fifth Coast Guard District, Aids to Navigation and Waterways Management Section, is the best office to assist with such coordination. The point of contact for this issue is Mr. Albert Grimes, who can be reached using the following information:

Commander (dpw)
Fifth Coast Guard District
431 Crawford Street
Portsmouth, VA 23704-5004
Attn: Mr. Albert Grimes

Email: Albert.L.Grimes@uscg.mil
Phone: 757-398-6360
Fax: 757-398-6303

4. Due to the proximity of the proposed project to federal aids to navigation, the Coast Guard's ability to service these existing aids would likely be affected.

5. During a visit to the proposed project site on August 6, 2014, three existing Private Aids to Navigation (PATON), one floating and two fixed, were observed (photos enclosed). Since the existing piling marked "Mooring field B" has a green daymark attached, this structure is being used as an aid to navigation. In accordance with 33 CFR 66, the Coast Guard requires the owner to obtain Coast Guard authorization for these three existing PATON.

6. The location of the proposed project appears to increase the risk to the structure or project. As a result of the preliminary risk assessment, my recommendation is: **Issue permit with conditions**. The customary presence of both commercial and recreational vessels in the area year-round, as well as the proximity of additional sailing school vessels and other nearby smaller watercraft, may require that further study be necessary in preventing such mishaps.

7. If you have any questions concerning my recommendations, please feel free to contact Mr. Ron Houck at 410-576-2674 or Ronald.L.Houck@uscg.mil.

#

Enclosures

Copy: CGD FIVE (dpw)
CG STA Annapolis
CG ANT Baltimore

Report of USACE Permit Application Risk Assessment

USCG COTP Zone: Baltimore, Maryland
USACE District Engineer Office: Baltimore, Maryland

Structure or Project: Seacoast Management Advisors, LLC/Annapolis Sailing School/Marina
Location: Back Creek (Anne Arundel Co.), Annapolis, MD

New Structure or Project
Application Number: CENAB-OP-RMN 2014-60032-M18
Date of Public Notice: 17 Jul 2014

Existing Structure or Project
Date USACE Permit Issued: Unknown

Recommended Action: Issue permit with conditions

Comments (must be included when it is recommended that a permit be issued with conditions or that the permit be denied as well as whenever it is recommended that an existing permit be modified, suspeneded or revoked)

For each of the possible risks, the following mitigating factors are recommended and should be considered as conditions for a USACE permit:
1. If permitted, the Coast Guard will require the applicant to mark the channelward ends of the 8-ft wide by 412-ft long floating "L" pier and 8-ft wide by 156-ft long floating "L" pier, each with a slow flashing amber (yellow) light of sufficient intensity to have the operational range of one NM.
2. If permitted, the Coast Guard will require the applicant to mark the channelward ends of the reconstructed existing 275-ft stone jetty and attached 150-ft long stone jetty, each with a flashing green (laterally-significant) light, on a pile with green square daymarks, and with a minimum effective intensity of that prescribed by the Commander (dpw), Fifth Coast Guard District.
For the above, the applicant will be required to prepare and provide for Coast Guard approval, a Private Aids to Navigation Application (form CG-2554). The Fifth Coast Guard District, Aids to Navigation and Waterways Management Section, will coordinate such action. The point of contact for this issue is Mr. Albert Grimes, at 757-398-6360 or Albert.L.Grimes@uscg.mil.
Additionally, during a site visit to the proposed project on August 6, 2014, two existing Private Aids to Navigation (PATON), one a fixed structure, were observed at the project site (see enclosed photo). In accordance with 33 CFR 66, the Coast Guard requires the owner (applicant) to prepare and provide for Coast Guard approval a Private Aids to Navigation Application (form CG-2554) for these two PATON.

Summary of Completed Risk Assessment

	RIN	Percent Cumulative Risk
Project Location	**27.6**	**56%**
Public Safety Impact	20.0	40%
Environmental Impact	2.2	4%
Economic Impact	5.4	11%
Vessel Traffic / Port Operations	**21.9**	**44%**
Public Safety Impact	14.6	30%
Environmental Impact	4.1	8%
Economic Impact	3.2	7%

1 of 3

For each area of concern, assess the risk to the structure or project based on where it is located on a waterway.

Area of concern	Mishap		Risk Factors	Category related risk estimates: Likelihood Score Cat I	Cat II	Cat III	RIN	Percent Cumulative Risk
Public Safety Impact	A.	Allision	Scores reflect a possible increase in risk of injuries or death to persons located on the piers or on board vessels berthed at the piers, resulting from an allision with the project or a collision with vessels located at or near it, due to proximity of the project to existing navigation channel. Change to risk is the result of the location of the floating piers and jetties, the location of the Back Creek Channel, and the amount and types of vessel traffic operating at Eastport Harbor Entrance (vessels approaching, departing or berthed at) and associated with the project.	1	1	1	10.0000	20.22%
	B.	Collision		1	1	1	10.0000	20.22%
	C.							
	D.							
Total estimate of risk to public safety associated with project location							*20.000*	*40.44%*
Environmental Impact	A.	Allision	Scores reflect a possible increase in risk to marine environment/sensitive areas, including oil/hazmat spill or other physical damage, as related to the project's physical location, due to a vessel allision with the project or collision with vessels berthed there. Change to risk is the result of the locations of the pierheads and jetties, the channel limit, the amount/types of oil/hazmat transported, the expected types of vessels approaching/departing or operating near the pierheads/jetties, and the size/maneuverability of vessels transiting Back Creek.	1	0	0	1.0811	2.19%
	B.	Collision		1	0	0	1.0811	2.19%
	C.							
	D.							
Total estimate of risk to the marine environment associated with project location							*2.162*	*4.37%*
Economic Impact	A.	Allision	Scores reflect a possible increase in risk to piers and jetties, and the vessels at berth, resulting from an allision or a collision, where the project (piers/jetties) and/or its associated vessels (at berth or underway) are destroyed, damaged or unsafe, to be used as intended. Loss includes property damage caused by vessel wake, storm surge and the formation or movement of ice due to project location.	2	1	0	2.7027	5.46%
	B.	Collision		2	1	0	2.7027	5.46%
	C.							
	D.							
Total estimate of risk to economic loss associated with project location							*5.405*	*10.93%*
TOTAL RISK ESTIMATE FOR PROJECT LOCATION							**27.568**	**55.74%**

Worksheet

Page 2

For each area of concern, assess the risk to the port or waterway based on the structure or project's impact on vessel traffic or port operations.

Area of concern	Mishap	Risk Factors	Category related risk estimates: Likelihood Score Cat I	Cat II	Cat III	RIN	Percent Cumulative Risk
Public Safety Impact	A. Allision	Scores reflect possible increase in risk to vessels crews and/or passengers resulting from an allision with the project, a collision with vessels berthed at or located near the piers/jetties, or groundings related to an allision/collision incident. Change to risk is result of vessel transits to/from waterfront areas located at Annapolis (Eastport area), MD. Additionally, the current Back Creek/Eastport Harbor aids to navigation system, including the Coast Guard's ability to access for servicing and maintenance, may become adversely affected by the project location.	1	1	0	1.8919	3.83%
	B. Collision		2	1	1	10.8108	21.86%
	C. Grounding		1	1	0	1.8919	3.83%
	D.						
Estimate of risk to public safety associated with impact on vessel traffic / port operations						*14.595*	*29.51%*
Environmental Impact	A. Allision	Scores reflect a possible increase in risk of environmental impact on the waterway and surrounding shorelines that would occur as a result of collision, allision and/or grounding. Any material releases, due to the location of the project, that includes oil/hazmat spilled from a vessel transiting the waterway or from a vessel berthed at the project. May introduce additional vessels and marine equipment into the project environment during product recovery operations and affect waterborne commerce.	1	1	0	1.8919	3.83%
	B. Collision		1	0	0	1.0811	2.19%
	C. Grounding		1	0	0	1.0811	2.19%
	D.						
Estimate of risk to marine environment associated with impact on vessel traffic / port operations						*4.054*	*8.20%*
Economic Impact	A. Allision	Scores reflect possible increase in risk to existing waterway users and waterfront activities at Annapolis (Eastport area), MD resulting from an allision, collision or grounding due to project scope and location. Includes risk estimate for commercial vessel transits in Back Creek during project construction and maintenance. Additionally, the Bert Jabin Yacht Yard, a key commercial travel lift provider for private vessel repairs in the mid-Chesapeake Bay area, is located in this waterway upriver from the project.	1	0	0	1.0811	2.19%
	B. Collision		1	0	0	1.0811	2.19%
	C. Grounding		1	0	0	1.0811	2.19%
	D.						
Estimate of risk to economic loss associated with impact on vessel traffic / port operations						*3.243*	*6.56%*
TOTAL RISK ESTIMATE FOR PROJECT IMPACT ON VESSEL TRAFFIC / PORT OPERATIONS						**21.892**	**44.26%**

Worksheet

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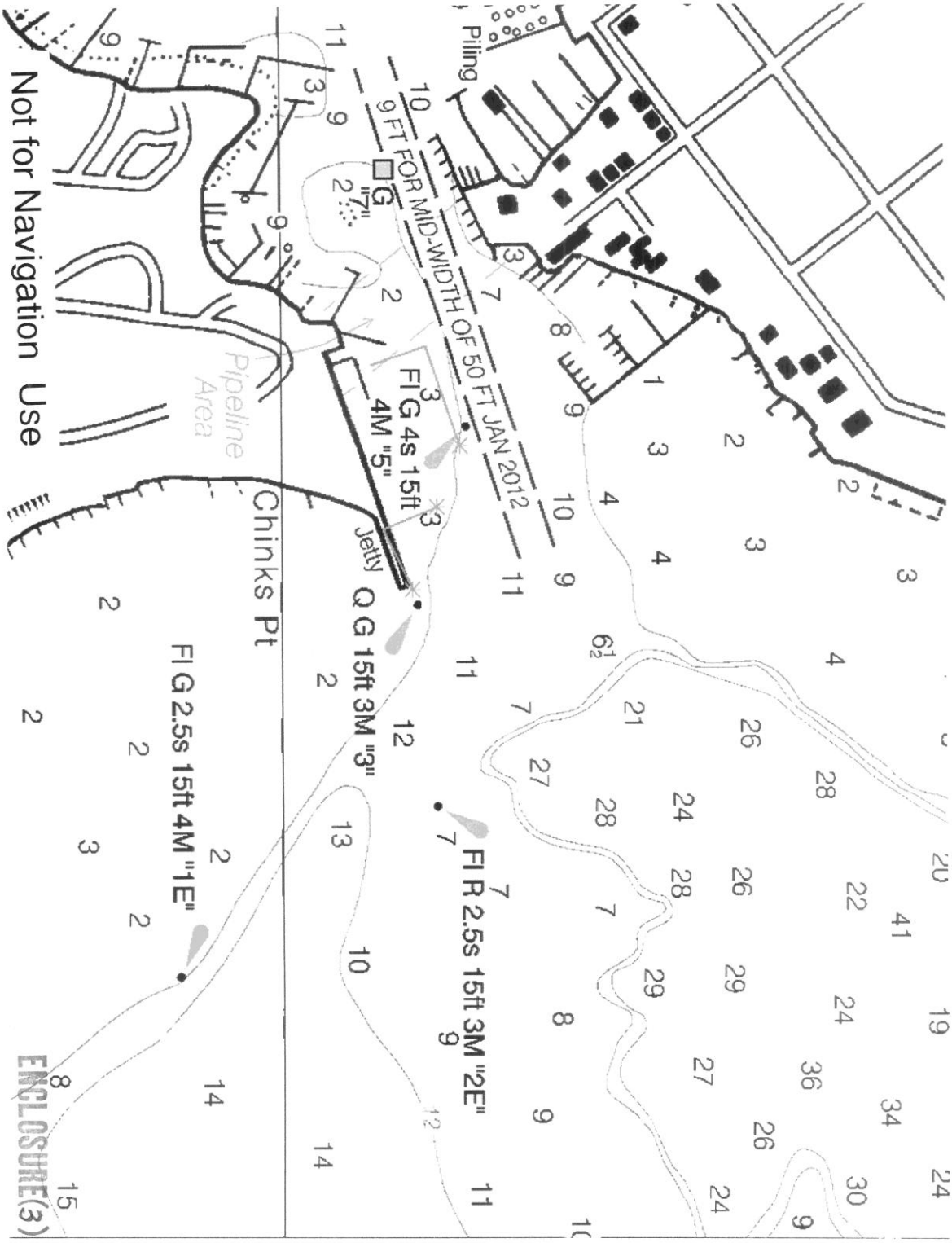
Piling
9 FT FOR MID-WIDTH OF 50 FT JAN 2012
G "7"
Fl G 4s 15ft 4M "5"
Jetty
Q G 15ft 3M "3"
Fl R 2.5s 15ft 3M "2E"
Fl G 2.5s 15ft 4M "1E"
Chinks Pt
Pipeline Area
Not for Navigation Use
ENCLOSURE(3)

Appendix G:
Sample Comment Catalog

	A	B	C	D	E	F	G
1	PROJECT TITLE:	CAPE WIND					
2	date of document, or date received Date	Document Type	Electronic Copy Available?	Primary Author	Organization	Subject	Comments
3	13-Jan-02	Letter	Yes	Osterndorf, Colonel Brian	District Engineer, New England District, Corps of Engineers	Request Coast Guard participation as a Cooperating Agency in	
4	11-Jun-02	Letter	Yes	Horrocks, Captain Blaine	U.S. Coast Guard First District	USCG as a Cooperating Agency	
5	10-Feb-03	Letter	Yes	Landry, Captain Mary	Captain of the Port, Providence	Requirements for navigation safety analysis	This is the Coast Guard's initial letter outlining the
6	18-Apr-03	Study	Yes	N/A	ESS Group	Navigational Risk Assessment, Cape Wind	
7	26-Apr-04	Report	Yes	McGowan, RADM John	The McGowan Group	Cape Wind Offshore Wind Farm - Horseshoe Shoal, Nantucket Sound,	
8	29-Jun-04	Letter	Yes	Gifford, Captain Charles, & O'Brian, Robert, Chairman	Steamship Authority	Opposition to the wind farm proposal	
9	12-Jul-04	Letter	Yes	Landry, Captain Mary	Captain of the Port, Providence	Comments on navigational risk assessment	Asked the Corps for further review of the McGowan Group
10	2-Aug-04	Letter	Yes	Nickerson, Susan	Executive Director, Alliance to Protect Nantucket Sound	Cape Wind Application for Offshore Wind Farm, Nantucket Sound	
11	14-Dec-04	Letter	Yes	Molloy, Kenneth	Private citizen	"Army COE DEIS Cape Wind Energy Project	
12	14-Feb-05	Letter	Yes	Landry, Captain Mary	Captain of the Port, Providence	Comments on navigational risk assessment	Asked the Corps for further review of radar, impact analysis,
13	24-Feb-05	Letter	Yes	Rasmussen, Mark	Executive Director, The Coalition for Buzzards Bay	Comments on Cape Wind proposal	Letter was sent to Corps of Engineers and Mass Secretary of Environmental
14	27-Jun-05	Guidance	?	N/A	Journal of Navigation	Draft WINDFARM "SHIPPING ROUTE"	
15	27-Jun-05	Powerpoint presentation	Yes	N/A	Powerpoint presentation	"Interference to Radar Imagery from Offshore Wind Farms; Experience from the Kentish Flats	
16	1-Aug-05	Article	Yes	Brown, Colin		"Offshore wind farms, navigation in UK waters"	
17	20-Feb-06	Report	Yes	McGowan, RADM John	The McGowan Group	Impact of UK Offshore Renewable Energy	
18	30-May-06	Notice	Yes	n/a	MMS	Notice to Prepare EIS for Cape Wind Project	

Sheet1 Sheet2 Sheet3

Ready 100%

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