[WATERWAY NAME]

WATERWAY RISK ASSESSMENT

WATERWAYS MANAGEMENT
PLANNING TODAY
TO BE READY FOR TOMORROW

SPONSOR INTRODUCTION

- Welcome
- Workshop objectives
- Why you were selected

AGENDA

Day One AM

Workshop Overview

PAWSA Background

Risk Model Definitions

Day One PM

Discuss and Evaluate Waterway Risks

Evaluate Team Expertise

Day Two AM

Discuss and Evaluate Existing Mitigations

Day Two PM

Discuss and Evaluate New Risk Mitigations

Workshop Critique

PAWSA BACKGROUND

- Congressional Mandate to USCG
  - Identify minimum user requirements in consultation with local stakeholders before proposing new VTS's
  - Review private / public partnerships

- USCG Convenes National Dialog Group
  - Major maritime interests

NATIONAL DIALOG GROUP

- Identify mariner information needs
- Define a VTS baseline
- Develop a process for determining where vessel traffic management needs to be improved

NDG REPORT

1. Involve users & stakeholders
2. Tailor specific actions
3. Address risks

Solution → Waterway Risk Model

PAWSA

- Consistent methodical analytical approach to risk management
  - Understand local issues through local input
    - Identify & quantify risks
    - Evaluate the effectiveness of existing measures
  - Develop future mitigation strategies
- Credible / defensible
- Gather info for investment decisions

PAWSAs COMPLETED

PAWSA RESULTS

- **Waterway Risk Model and PAWSA process refined**
- **Implementation Guide & workshop reports**
- **http://www.navcen.uscg.gov/?pageName=pawsaMain**

WATERWAY RISK MODEL

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
Deep Draft Vessel Quality	Volume of Commercial Traffic	Winds	Visibility Impediments	Personnel Injuries	Health and Safety
Shallow Draft Vessel Quality	Volume of Small Craft Traffic	Water Movement	Dimensions	Petroleum Discharge	Environmental
Commerical Fishing Vessel Quality	Traffic Mix	Visibility Restrictions	Bottom Type	Hazardous Materials Release	Aquatic Resources
Small Craft Quality	Congestion	Obstructions	Configuration	Mobility	Economic

Book 1:
BASELINE RISK LEVELS

Check the block that best describes the condition in this waterway

Vessel Conditions

Deep Draft Vessel Quality

- ☐ Nearly 100% of the deep draft commercial vessels using the waterway are materially sound and are operated proficiently
- ☐ 90% of the deep draft commercial vessels using the waterway are materially sound and are operated proficiently
- ☐ 80% of the deep draft commercial vessels using the waterway are materially sound and are operated proficiently
- ☐ 70% or less of the deep draft commercial vessels using the waterway are materially sound and are operated proficiently

Book 2:
TEAM EXPERTISE

Compare each team's knowledge (level of expertise) about the factors that affect the probability and consequences of marine accidents with that of the other participant teams in this workshop. Please enter in each block the number which best describes each team, where:

–1 = The team is probably in the UPPER THIRD of all the teams.
–2 = The team is probably in the MIDDLE THIRD of all the teams.
–3 = The team is probably in the LOWER THIRD of all the teams.

Team / Risk Category	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Vessel Conditions															
Traffic Conditions															
Navigational Conditions															
Waterway Conditions															
Immediate Consequences															
Subsequent Consequences															

Book 3:
MITIGATION EFFECTIVENESS

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Risks / Mitigations Balanced?

VESSEL CONDITIONS

Deep Draft Vessel Quality	1	2	3	4	5	6	7	8	9	Yes	No
Shallow Draft Vessel Quality	1	2	3	4	5	6	7	8	9	Yes	No
Commercial Fishing Vessel Quality	1	2	3	4	5	6	7	8	9	Yes	No
Small Craft Quality	1	2	3	4	5	6	7	8	9	Yes	No

TRAFFIC CONDITIONS

Volume of Commercial Traffic	1	2	3	4	5	6	7	8	9	Yes	No
Volume of Small Craft Traffic	1	2	3	4	5	6	7	8	9	Yes	No
Traffic Mix	1	2	3	4	5	6	7	8	9	Yes	No
Congestion	1	2	3	4	5	6	7	8	9	Yes	No

Book 4: ADDITIONAL INTERVENTIONS

RISK CATEGORY

Risk Factor

Coordination / Planning	_____	1	2	3	4	5	6	7	8	9
Voluntary Training	_____	1	2	3	4	5	6	7	8	9
Rules & Procedures	_____	1	2	3	4	5	6	7	8	9
Enforcement	_____	1	2	3	4	5	6	7	8	9
Nav / Hydro Info	_____	1	2	3	4	5	6	7	8	9
Radio Communications	_____	1	2	3	4	5	6	7	8	9
Active Traffic Management	_____	1	2	3	4	5	6	7	8	9
Waterway Changes	_____	1	2	3	4	5	6	7	8	9
Other Actions	_____	1	2	3	4	5	6	7	8	9

WATERWAY RISK MODEL

RISK

PROBABILITY

IMPACT

WATERWAY RISK MODEL

RISK

PROBABILITY

- Vessel Conditions
- Traffic Conditions
- Navigational Conditions
- Waterway Conditions

IMPACT

- Immediate Consequences
- Subsequent Consequences

RISK IDENTIFICATION

- Define geographic scope of waterway
- Discuss risk factors in each category
  - Give examples
  - Explain why risk is high or low
  - Offer insights about future trends
- Evaluate risk levels for each factor

GEOGRAPHIC SCOPE OF WATERWAY

- Landmarks
- Area boundaries

VESSEL CONDITIONS

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Deep Draft Vessel Quality

- Age / maintenance
- Flag / class society / owner
- Casualty history
- Crew nationality(ies)

VESSEL CONDITIONS

Shallow Draft Vessel Quality

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- Vessel operations knowledge
- Local area experience
- Language barriers
- Crew fatigue
- Maintenance

VESSEL CONDITIONS

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Commercial Fishing Vessel Quality

- Vessel operations knowledge
- Local area experience
- Chronic fatigue syndrome
- Language issues

VESSEL CONDITIONS

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Small Craft Quality

- Knowledge of Rules of the Road
- Awareness of other traffic
- Inebriation

TRAFFIC CONDITIONS

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Volume of Commercial Traffic

- Deep draft
- Shallow draft
- Commercial Fishing
- Infrastructure capabilities

TRAFFIC CONDITIONS

Volume of Small Craft Traffic

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- Volume
- Seasonality
- Marine events

TRAFFIC CONDITIONS

Traffic Mix

- Single use waterway
- Multiple use waterway
- Conflicts

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TRAFFIC CONDITIONS

Congestion

- Density
- Times / locations

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LUNCH!

NAVIGATIONAL CONDITIONS

Winds

- Speed
- Predictability

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NAVIGATIONAL CONDITIONS

Water Movement

- River, tidal, & ocean
- Maximum strength
- Predictability
- Seasonality
- Cross-channel

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NAVIGATIONAL CONDITIONS

Visibility Restrictions

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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Small Craft Quality	Congestion	Obstructions	Configuration	Mobility	Economic

- Ability to see
  - aids to navigation
  - other vessels
- Fog, rain, snow, smoke, etc.

NAVIGATIONAL CONDITIONS

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Obstructions

- Affect safe navigation
- Ice, floating debris, fishing nets, etc.

WATERWAY CONDITIONS

Visibility Impediments

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- Moored vessels
- Structures
- Background lighting
- Vegetation

WATERWAY CONDITIONS

Dimensions

- Passing arrangements
- Channel width & depth
- Air drafts

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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WATERWAY CONDITIONS

Bottom Type

- What do you hit if you touch bottom or run out of the channel?

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WATERWAY CONDITIONS

Configuration

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- Bends
- Intersections / convergences
- Crossing traffic

IMMEDIATE CONSEQUENCES

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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Personnel Injuries

- Cruise ships
- Ferries
- Dinner cruises
- Large charter fishing vessels

IMMEDIATE CONSEQUENCES

Petroleum Discharge

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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- Petroleum products
- Bulk shipments

IMMEDIATE CONSEQUENCES

Hazardous Materials Release

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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Shallow Draft Vessel Quality	Volume of Small Craft Traffic	Water Movement	Dimensions	Petroleum Discharge	Environmental
Commercial Fishing Vessel Quality	Traffic Mix	Visibility Restrictions	Bottom Type	Hazardous Materials Release	Aquatic Resources
Small Craft Quality	Congestion	Obstructions	Configuration	Mobility	Economic

- Chemical products
- Bulk shipments

IMMEDIATE CONSEQUENCES

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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Mobility

- Waterway closure
- Effects on shoreside marine transportation system (MTS)

SUBSEQUENT CONSEQUENCES

Health and Safety

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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- Hazardous cargos
- Population near waterway
  - rural area
  - town / small city
  - large metropolitan area
- Water supplies

SUBSEQUENT CONSEQUENCES

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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Environmental

- Wetlands / aquatic habitats
- Protected / endangered species
- Water quality sensitivity

SUBSEQUENT CONSEQUENCES

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Aquatic Resources

- Harvesting for:
  - Recreation
  - Subsistence
  - Commercial
- Amount:
  - Light = 1 species / short season
  - Moderate = 2 - 3 species / long season
  - Heavy = >3 species / year-round

SUBSEQUENT CONSEQUENCES

Economic

– Effects if waterway is closed

Vessel Conditions	Traffic Conditions	Navigational Conditions	Waterway Conditions	Immediate Consequences	Subsequent Consequences
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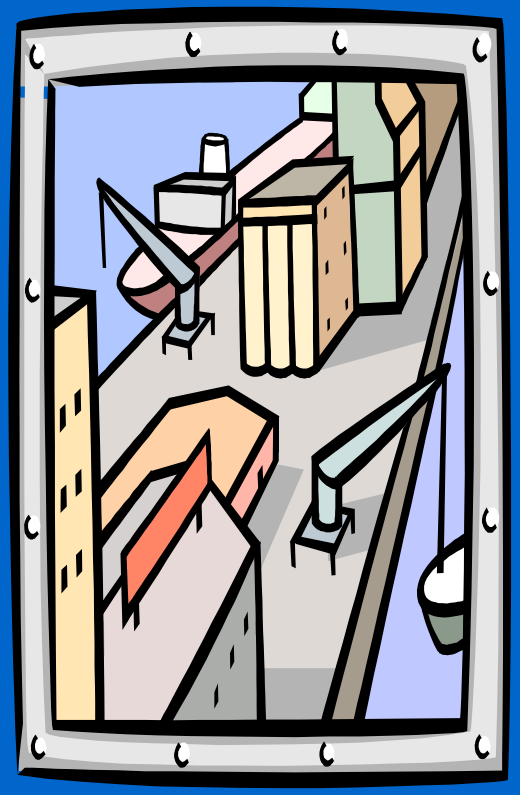
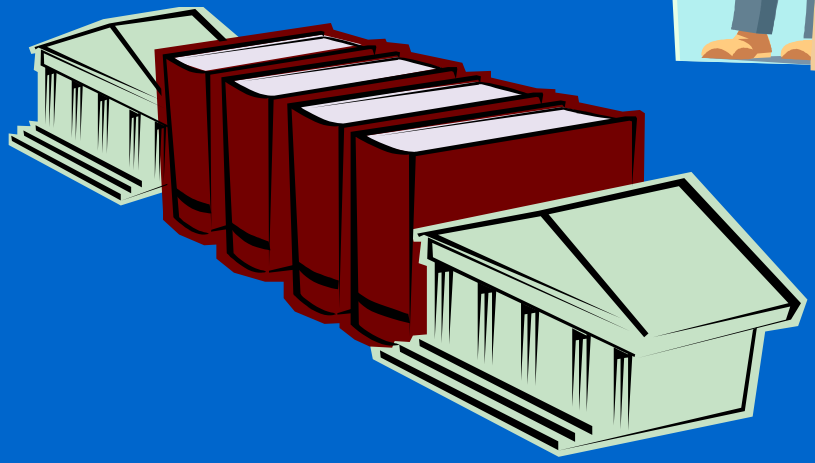
TEAM EXPERTISE



- Waterway User
- Stakeholder
- Regulator



Book 2:
TEAM EXPERTISE

Compared to the other participants, each team is:

…probably in the UPPER THIRD of all the participants

…probably in the MIDDLE THIRD of all the participants

…probably in the LOWER THIRD of all the participants

with respect to knowledge about:

- Vessel Conditions
- Traffic Conditions
- Navigational Conditions
- Waterway Conditions
- Immediate Consequences
- Subsequent Consequences

DAY TWO – MORNING

8:30 a.m. – 8:45 a.m.	Baseline Risk Levels Results
8:45 a.m. – 11:30 a.m.	Existing Risk Mitigations Discussion / Evaluation
11:30 a.m. - 12:30 p.m.	Lunch

DAY TWO – AFTERNOON

12:30 p.m. - 1:00 p.m.	Action Planning / Book 3 results
1:00 p.m. - 3:30 p.m.	Additional Interventions Discussion / Evaluation
3:30 p.m. - 3:45 p.m.	Workshop Critique Book 4 Results
3:45 p.m. - 4:00 p.m.	Workshop Conclusion