

Chapter 5 – Appendix N

Book 4: Additional Interventions

Team Number: _____

Book 4: Additional Interventions

Evaluate **ONLY** those risk factors with orange highlighting. That highlighting shows the present level of risk (taking into account existing mitigations) from the group's earlier assessment (*Book 3: Mitigation Effectiveness*) for those risk factors where risk was judged NOT to be at an acceptable level already.

Under each risk factor are abbreviations for categories of possible risk mitigation interventions. The definitions for each of those abbreviations are given below.

Think about what should be done to further reduce the risks associated with each of the risk factors marked in orange. In the space provided next to the appropriate mitigation intervention category, write a brief phrase (3 to 5 words) to indicate what specific action should be taken. [Legibility would be MOST appreciated!]

For each intervention category where you think action should be taken, circle the number on the adjacent 1 to 9 scale which indicates where you think the risk level would end up if that mitigation intervention were implemented.

Abbreviations

Definitions (examples)

Coordination / Planning

Improve long-range and/or contingency planning and better coordinate activities / improve dialogue between port stakeholders

Voluntary Training

Establish / use voluntary programs to educate mariners / boaters in topics related to waterway safety (Rules of the Road, ship/boat handling, etc.)

Rules & Procedures

Establish / refine rules, regulations, policies, or procedures (nav rules, pilot rules, standard operating procedures, RNAs, licensing, require training and education, etc.)

Enforcement

More actively enforce existing rules / policies (navigation rules, vessel inspection regulations, standards of care, etc.)

Nav / Hydro Info

Improve navigation and hydrographic information (PORTS, BNTM, charts, coast pilots, AIS, tides & current tables, etc.)

Radio Communications

Improve the ability to communicate bridge-to-bridge or ship-to-shore (radio reception coverage, signal strength, reduce interference & congestion, etc.)

Active Traffic Mgmt

Establish/improve a Vessel Traffic Service (info, advice & control) or Vessel Traffic Information Service (information & advice only)

Waterway Changes

Widen / deepen / straighten the channel and/or improve the aids to navigation (buoys, ranges, lights, LORAN C, DGPS, etc.)

Other Actions

Risk mitigation measures needed do NOT fall under any of the above strategy categories

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VESSEL CONDITIONS

Deep Draft Vessel Quality

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 Mgmt	_____	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

Shallow Draft Vessel Quality

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 Mgmt	_____	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

Commercial Fishing Vessel Quality

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 Mgmt	_____	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

Small Craft Quality

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 Mgmt	_____	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

Team Number: _____

TRAFFIC CONDITIONS

Volume of Commercial Traffic

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 Mgmt	_____	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

Volume of Small Craft Traffic

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 Mgmt	_____	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

Traffic Mix

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 Mgmt	_____	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

Congestion

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 Mgmt	_____	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

Team Number: _____

NAVIGATIONAL CONDITIONS

Winds

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 Mgmt	_____	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

Water Movement

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 Mgmt	_____	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

Visibility Restrictions

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 Mgmt	_____	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

Obstructions

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 Mgmt	_____	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

Team Number: _____

WATERWAY CONDITIONS

Visibility Impediments

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 Mgmt	_____	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

Dimensions

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 Mgmt	_____	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

Bottom Type

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 Mgmt	_____	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

Configuration

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 Mgmt	_____	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

Team Number: _____

IMMEDIATE CONSEQUENCES

Personnel Injuries

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 Mgmt	_____	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

Petroleum Discharge

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 Mgmt	_____	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

Hazardous Materials Release

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 Mgmt	_____	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

Mobility

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 Mgmt	_____	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

Team Number: _____

SUBSEQUENT CONSEQUENCES

Health and Safety

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 Mgmt	_____	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

Environmental

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 Mgmt	_____	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

Aquatic Resources

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 Mgmt	_____	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

Economic

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 Mgmt	_____	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