US-Canada Maritime Commerce Resilience Initiative

U.S.-Canada Beyond the Border - Perimeter Security and Economic Competitiveness Action Plan

December 2012

Transport Canada Transports Canada

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

Pacific NorthWest Economic Region

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Executive Summary

INTRODUCTION

In 2011, President Barack Obama and Prime Minister Stephen Harper announced The Beyond the Border declaration to ensure that the vital economic partnership that joins our two countries continues to be the cornerstone of our economic competitiveness and security as we jointly face the challenges of the 21st century. Both countries released the Beyond the Border Action Plan to address specific issues to make our two nations more secure and economic competitive.

Prime Minister Stephen Harper and President Barack Obama announce the Beyond the Border Declaration (Photo: White House)

This initiative is part of the *U.S.-Canada Beyond the Border Action Plan, Part IV: Critical Infrastructure and Cyber Security - Rapidly Respond to and Recover from Disasters and Emergencies on Either Side of the Border - Mitigate the impacts of disruptions on communities and the economy by managing traffic in the event of an emergency at affected border crossings*."

The action plan outlines specific next steps in the area of maritime commerce as:

> *"We commit to collaborate at the regional level between countries to facilitate maritime commerce recovery following an emergency. This is being achieved by exploring longstanding existing U.S., Canada Bi-national info sharing plans, strategies and processes and when gaps are determined developing joint strategies, processes, or plans to facilitate the sharing of information and resources during emergencies, the dissemination of best practices, and the development of clear lines of communication consistent with agreed information elements."*

The U.S.-Canada Maritime Resilience project begins the implementation phase of the U.S.-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan, working to develop information-sharing protocols and communication mechanisms to swiftly recover from any maritime disruption. Project deliverables and lessons learned will be transferred to the next phase of this initiative in the Great Lakes and Atlantic regions.

PROJECT OVERVIEW

A great deal of work on the topic of maritime resilience has been accomplished in the Pacific Northwest and Western Canada over the past several years. For this reason,

Transport Canada and the U.S. Coast Guard chose Washington State and British Columbia to serve as the first phase of this multi-year project. The project kicked off in early 2012 with two workshops in the Vancouver, BC area to begin to develop specific cross border maritime guidelines for communication and information sharing. The result of these early meetings was the development of an initial draft of "Guidelines for Communication and Information-sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster." The Pacific Northwest Economic Region (PNWER), through its Center for Regional Disaster Resilience (CRDR), was designated the lead coordinator for the project. PNWER is a cross-border, state/provincial statutory, public/private, non-profit with a mission to address issues impacting the cross-border economy of the Pacific Northwest region. PNWER has worked for over 10 years on developing projects addressing regional disaster resilience issues across the region. PNWER led the overall project and conducted a cross border workshop to validate the Guidelines and planned and executed a tabletop exercise, followed by a joint US-Canada action planning meeting to finalize the path forward.

The project was conducted in four phases. Each phase is summarized below.

1. **Project Coordination and Stakeholder engagement:** A core planning group consisting of representatives from PNWER, USCG District 13, USCG Sector Seattle, USCG Headquarters in Washington DC, Transport Canada in Ottawa and Transport Canada in BC provided overall guidance to the project. This group met over 20 times in person and via conference calls over the course of the project.

   Although Canadian stakeholders had been engaged in the initial development of the "Guidelines," United States stakeholders had not been as involved. PNWER recognized early on it was important to the project to develop a comprehensive list of all stakeholder organizations related to intermodal maritime commerce, especially from the private sector on both sides of the border. Likewise, it was equally important to develop a list of other critical infrastructures and service providers that could ultimately impact maritime commerce. This included energy, telecommunication, IT, water and sewer and other lifelines not normally directly associated with the maritime sector. PNWER had many of the necessary contacts and relationships already developed to engage a broad cross-section of stakeholders from both the U.S. and Canada, however it took individual meetings and phone calls to augment the initial list. Stakeholders also included national and federal government, state and provincial government, local government, port authorities, shippers, rail and trucking, private sector importers and exporters, tug and barge operators, and other commercial enterprise engaged in maritime commerce. *The lesson learned is stakeholders must be engaged early on to successfully begin the work necessary to accomplish this complex task. Also, a systems of systems approach must be taken to ensure cross sector interdependencies are explored and addressed throughout the project.*

2. **Protocols workshop:** A workshop to engage stakeholders in validating the "Guidelines" as the broad project development protocols was held in Seattle, WA on

July 10, 2012. A pre-workshop webinar was held to introduce the guidelines to stakeholders that had not been engaged in the original development. The webinar helped reduce the questions and addressed concerns to keep the workshop time productive. The workshop engaged experts to challenge the stakeholders to think about how disruptions in maritime commerce would impact the region as a whole. A private sector panel consisting of U.S. and Canadian private interests from rail, fuel, chemical and terminal operators addressed specific concerns related to several catastrophic scenarios. The interdependent nature of maritime commerce to the Puget Sound and Prince William Sound region has immense economic implications for the states and provinces. The workshop validated the "Guidelines" as the planning guide for the development of the protocol framework for communication and information sharing to frame the tabletop exercise phase. *The lesson learned from the workshop was to provide information up front and hold a webinar for those unfamiliar with the development to speed the workshop and results.*

3. **Protocol framework tabletop exercise:** The third phase of the project was a tabletop exercise held in Everett, WA on October 2, 2012. The tabletop exercise used a stakeholder design team consisting of over 20 U.S.-Canada public and private stakeholders to develop and review exercise documents. The design team held several meetings to plan the exercise. The exercise was used to test and validate the communication and information sharing protocol framework. The framework was designed around an existing bi-national agreement under the *Pacific Northwest Emergency Management Arrangement* (PNEMA). The stakeholders preferred the PNEMA approach allowing for a localized state/province approach to this complex problem. We continue explore implementation of a regional PNEMA Annex to address the maritime communication and information sharing. The exercise also had participants review the action plan roadmap that prioritized the actions necessary to fully implement the "Guidelines" recommendations. Stakeholders prioritized the roadmap recommendations into short, medium and long term priorities. The results of the exercise was a path forward to implement the communication and information sharing protocols in the form of a milestone action plan. *The key lesson learned from the tabletop exercise was to engage a committed design team to help validate approaches, help facilitate tabletop discussion and act as evaluators for the final report.*
4. **After-Action Conference:** The final phase was an after action conference held in Vancouver BC in November, 2012. The after-action conference was designed to review the project activities and engage stakeholders in discussion about the path forward and strategies to achieve full implementation. The engagement also included an executive session to discuss the commitment to the process and the future development including funding. A core group of stakeholders expressed commitment to begin to develop a cross border Task Force charter, and implementation process of the Action Plan over the next year. The challenge will be

to find necessary resources to execute the next phase. PNWER remains committed to stay engaged to oversee the execution of this important initiative. The after-action conference report outlines the next steps.

SUMMARY

One key project deliverable was to develop a process and documentation exportable to other regions of the US and Canada with maritime commerce infrastructure. This executive summary and the hard copy and electronic versions of all the documentation provides a framework to engage maritime commerce stakeholders and design a process to reach consensus on bi-national information sharing, and the importance of coordinating maritime commerce resumption following any type of disruption.

The importance of bi-national communication and information sharing cannot be overstated. The private maritime commerce business community will not wait to make decisions. Communication must be instantaneous to insure economic vitality.

KEY LESSONS LEARNED

- Establishing an executive planning group consisting of leadership from USCG and Transport Canada has been useful throughout the project. Keeping this group up to date regarding progress and hosting regular ongoing calls is critical to the success of a complex cross border project of this magnitude. State and provincial leaders should be considered to be included as part of this group as well.
- Engaging a neutral third party to oversee the planning and stakeholder engagement was very successful. Stakeholders recognized that PNWER would continue to serve as a leader on this topic after the conclusion of the formal project and will continue to assist in implementing the recommendations. Likewise, PNWER already had established relationships on both sides of the border, which allowed for a more rapid execution of the project milestones.
- All sectors must be engaged, including many not normally associated with maritime commerce. These include critical service providers such as energy, water, IT and telecom. Likewise, it is important to ensure local and state/provincial emergency management is engaged in the process as well.
- Relationships must be established early on in the process. This takes individual meetings and phone calls to ensure the right stakeholders are participating.
- Key sector champions will help drive participation in the process. Leadership from key private sector companies and USCG and Transport Canada helped communicate the importance of this project.

- The recruitment of an engaged exercise design team is critical to ensure a successful and useful event is planned and executed.
- The Area Maritime Security Committee, Port Metro's Maritime Commerce Resumption Committee, and the Maritime Transportation System Recovery Unit members should be engaged and included in all phases of the project.

SPONSOR CONTACTS

Dr. Allan Bartley
Director, Marine Security Policy
Transport Canada
allan.bartley@tc.gc.ca

Captain Drew Tucci
Chief, Office of Ports and Facilities, CG-FAC
U.S. Coast Guard
Andrew.E.Tucci@uscg.mil

Captain Michael Gardiner
Chief, Prevention Division
U.S. Coast Guard, 13th Division
michael.s.gardiner@uscg.mil

Brandon Hardenbrook
Deputy Director
Pacific Northwest Economic Region
brandon@pnwer.org

ANNEX C

PACIFIC NORTHWEST EMERGENCY MANAGEMENT ARRANGEMENT

CANADA-UNITED STATES PROTOCOL FRAMEWORK FOR COMMUNICATION AND INFORMATION-SHARING BEFORE, DURING AND FOLLOWING AN EMERGENCY DISRUPTING MARITIME COMMERCE OR PORT OPERATIONS

Article I - Purpose and Authorities

(1) The governments of the State of Alaska, the State of Idaho, the State of Oregon, the State of Washington and the Province of British Columbia and the Yukon Government are signatories to the Pacific Northwest Emergency Management Arrangement, hereinafter referred to as PNEMA. Article VI of PNEMA provides: "This Arrangement and the Annex may be amended (and additional Annexes may be added) by arrangement of the signatories." Pursuant to Article VI of PNEMA, the undersigned signatories hereby enter into this arrangement annex, which may be designated as the Pacific Northwest Emergency Management Arrangement Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce and Port Operations or Annex C to PNEMA.

(2) This arrangement annex is made and entered into by and among the signatories that enact or adopt this arrangement annex. For the purpose of this arrangement annex, the term "signatories" may include any or all of:

(a) The States of Alaska, Idaho, Oregon and Washington, the Province of British Columbia and the Yukon Government, all of which entered into PNEMA in 1996-1997; and

(b) Other states, provinces and territories as may hereafter become signatories to PNEMA and this arrangement annex.

(3) The purpose of this arrangement annex is to provide a general protocol framework

for communication and information-sharing before, during and following any event that may disrupt maritime commerce at any port of the signatory states, provinces and territories.

(4) Information-sharing as defined in this protocol framework is recognized by the signatories to include federal/national government agencies (specifically including the United States Coast Guard and Transport Canada, port authorities, private-sector, non-governmental organizations and other maritime commerce stakeholders as partners in this process. The roles and responsibilities of these partners will be further identified in subsequent adopted procedures.

Article II - General Implementation

(1) Each signatory entered into this arrangement annex recognizes that maritime emergencies may exceed the capability of a signatory and that intergovernmental cooperation is essential in those circumstances. Each signatory further recognizes that there may be maritime emergencies that require immediate access to outside resources and that procedures need to be in place to share critical information to make a prompt and effective response to maritime emergencies and swift, efficient commerce recovery.

(2) The prompt, full and effective sharing of information of the signatories and maritime stakeholders is essential to the safety and welfare of the people and businesses in the event of any maritime emergency or disaster and is the underlying principle on which the articles of this arrangement annex are understood.

(3) With a shared maritime economy the signatories have a vested interest in maritime commerce recovery following any disruption at one or more of the maritime area ports, and intend to ensure:

(a) Any disruption impacting maritime commerce including the movement of goods overland is of vital importance;

(b) Commerce recovery through a disrupted port should be reestablished at the earliest opportunity;

(c) Movement of maritime traffic to a non-disrupted port shall be temporary until the disrupted port operations have been restored; and

(d) Cooperation of the maritime commerce stakeholders under this protocol is voluntary as good stewards of the regional maritime economy.

(4) On behalf of the signatories, the legally designated official who is assigned responsibility for emergency management is administratively responsible for maintaining this annex as part of the PNEMA portfolio and for establishing a maritime commerce recovery stakeholder taskforce who is responsible for formulation of the appropriate intersignatory communication and information-sharing plans and/or procedures necessary to implement this arrangement annex and for recommendations to the signatories concerned with respect to the amendment of statutes, regulations or ordinances for that purpose.

Article III - Signatory Responsibilities

(1) Each signatory shall participate in developing procedural plans and procedures for each intersignatory cooperation area listed in this section. In formulating and implementing the plans and procedures the signatories, to the extent practical, shall:

(a) Review individual signatory hazards analyses that are available and, to the extent reasonably possible, determine all the potential maritime emergencies the signatories might jointly suffer, whether due to a natural disaster, an accidental or intentional event;

(b) Initiate a process to review the signatories' existing individual emergency communication and information-sharing plans and procedures that may determine the mechanism for intersignatory cooperation;

(c) Develop intersignatory procedures to fill identified gaps and to resolve identified inconsistencies or overlaps in existing or developed plans or procedures;

(d) Assist in warning communities adjacent to or crossing signatory boundaries; and

(e) Provide, to the extent authorized by law, for temporary suspension of statutes or ordinances that impede the implementation of the responsibilities described in this subsection.

(2) The signatories and stakeholders intend this protocol framework annex to apply before, during and following an event or incident that affects the maritime commerce of one or more of the ports in the Pacific maritime area. This protocol may require national level assistance and provides the mechanism to elevate as necessary.

(a) Systems shall be developed to support the information-sharing and situational awareness for the stakeholders; and

(b) Procedures shall be developed to outline the types and kinds of information shared and information safeguards.

(3) This communication and information-sharing protocol is established to ensure that:

(a) Regular communication is established among stakeholders to share pre-emergency/pre-disaster information to build resilience in the Pacific maritime area and to enhance the ability to quickly recover from a disaster or emergency;

(b) Immediate post-emergency/post-disaster information-sharing shall be a priority to aid in rapid assessment and recovery;

(c) Maritime infrastructure restoration priorities shall be shared as soon as practical;

(d) A situational awareness capability shall be established for all stakeholders to allow updates and two-way information sharing;

(e) Public and private sensitive information shall be given equal protection as the providing organization;

(f) Provisions of Annex B, Article V - Licenses and Permits applies equally to this annex; and

(g) Regularly scheduled training and exercises to evaluate the protocol and subsequent adopted plans or procedures are conducted.

(4) There shall be frequent consultation among the signatories' officials and identified stakeholders who have assigned maritime emergency communication responsibilities, the officials collectively known hereinafter as the International Information-Sharing Coordination Group, and other appropriate representatives of the signatory or stakeholders identified by subsequent procedures, with free exchange of information, plans and resource records relating to emergency communication and information-sharing capabilities to the extent authorized by law.

Article IV - Limitation

(1) A signatory requested to share information or conduct exercises and training for information-sharing shall respond as soon as possible, except that it is understood that the signatory sharing information may withhold or simulate information during training or exercises, as protected by law.

(2) There is an implied understanding to share information to quickly recover and resume maritime commerce.

(3) Shared information of some proprietary or sensitive nature shall be so identified and protected with the same controls as if remaining with the sharing entity.

(4) This protocol framework shall be consistent with the policies in place in each country, and other joint plans outlined in the reference appendix.

Article V - Liability

A person or entity of a signatory sharing information with another signatory pursuant to this arrangement annex is considered an agent of the requesting signatory for tort liability and immunity purposes. A person or entity of a signatory sharing information with another signatory pursuant to this arrangement annex is not liable on account of an act or omission of good faith while so engaged. “Good faith” in this article does not include willful misconduct, gross negligence or recklessness.

Article VI - Supplementary Agreements

Because it is probable that the pattern and detail of the provision for communication and information-sharing among two or more signatories may differ from that among the signatories that are party to this arrangement annex, this annex contains elements of a broad base common to all signatories, and nothing in this arrangement annex precludes a signatory from entering into supplementary agreements with another signatory or affects any other agreements already in force among signatories.

Article VII - Implementation

(1) This arrangement annex is effective upon its execution or adoption by any two signatories, and is effective as to any other signatory upon its execution or adoption by that signatory, subject to approval or authorization by the United States Congress, if required, and subject to enactment of national, state, provincial or territorial legislation that may be required for the effectiveness of this arrangement annex.

(2) A signatory may withdraw from this arrangement annex, but the withdrawal does not take effect until 30 days after the governor or premier of the withdrawing signatory has given notice in writing of the withdrawal to the governors or premiers

of all other signatories. The action does not relieve the withdrawing signatory from obligations assumed under this arrangement annex prior to the effective date of withdrawal.

(3) Duly authenticated copies of this arrangement annex in the French and English languages and of supplementary agreements as may be entered into shall, at the time of their approval, be deposited with each of the signatories.

Article VIII - Severability

This arrangement annex is construed so as to effectuate the purposes stated in Article I of this arrangement annex. If a provision of this arrangement annex is declared unconstitutional or invalid or inapplicable to any person or circumstances, the validity of the remainder of this arrangement annex to that person or circumstances and the applicability of this arrangement annex to other persons and circumstances are not affected.

Article IX - Inconsistency of Language

The validity of this arrangement annex and agreements consented to in this arrangement annex shall not be affected by insubstantial difference in form or language as may be adopted by the various states, provinces and territories.

APPENDIX 1

REFERENCES

This protocol framework is intended to be consistent with the following documents and plans. Plan dates are as of completion of this arrangement annex and do not have to change to remain in effect. Subsequent plan changes shall be reviewed for consistency with this arrangement annex.

1. *Pacific Northwest Emergency Management Arrangement* (with Annexes), 1998.
2. *Agreement between the Government of Canada and the Government of the United States of America on Emergency Management Cooperation*, December 12, 2008.
3. *US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan,* February 2011.
4. *Guidelines on Measures Toward Enhancing Maritime Trade Recovery Related to the Global Supply Chain System and Maritime Conveyances*, International Maritime Organization, 2011
5. *Guidelines for Communication and Information-sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster*, August 2012.
6. *The Canada-United States Framework For the Movement Of Goods And People Across the Border During And Following An Emergency*, May 27, 2009.
7. *Maritime Annex To The Canada-United States Framework For the Movement Of Goods And People Across the Border During And Following An Emergency*, November 10, 2011.
8. *US Department of Homeland Security (DHS) Northern Border Strategy*, June 2012.
9. *US Department of Homeland Security (DHS) International Strategic Framework*, 2010.
10. *National Strategy for Global Supply Chain Security*, January 2012.
11. *Canada-United States Action Plan for Critical Infrastructure*, 2010.
12. *Canada-US Civil Assistance Plan*, February 14, 2008.
13. *Regional Maritime Commerce Resumption Plan*, Pacific Region (Vancouver), Maritime Commerce Resumption Committee, April 2010.
14. *U.S. National Response Framework's (NRF) International Coordination Support Annex (ICSA),* January 2008.
15. *U.S. National Disaster Recovery Framework (NDRF)*, September 2011.

16. *Joint Canada Border Services Agency (CBSA)/U.S. Customs and Border Protection (CBP) Business Resumption Communication & Coordination Plan (BR CCP),* July 2007.

17. *Memorandum of Cooperation between Public Safety Canada and the United States Department of Homeland Security (to promote joint efforts by the respective public affairs organizations) and Canada-US Incident Management Framework for Public Communications,* June 2008.

18. *Transport Canada's Cross-Border Emergency Response Guide, 3rd Edition,* July 2007.

19. *U.N. International Strategy for Disaster Reduction, Hyogo Framework for Action 2005-2015, Building the Resilience of Nations and Communities to Disasters*, January 2005

BRIEFING NOTES ON PROPOSED ANNEX C

PACIFIC NORTHWEST EMERGENCY MANAGEMENT ARRANGEMENT

ANNEX C - CANADA-UNITED STATES PROTOCOL FRAMEWORK FOR COMMUNICATION AND INFORMATION-SHARING BEFORE, DURING AND FOLLOWING AN EMERGENCY DISRUPTING MARITIME COMMERCE OR PORT OPERATIONS

Brief Description: Proposed Annex to the Pacific Northwest Emergency Management Arrangement to aid in rapidly recovering the regional maritime commerce and economy.

PNEMA Background Summary

- The Pacific Northwest Emergency Management Arrangement (PNEMA) was adopted in 1998 by the States of Alaska, Idaho, Oregon and Washington and the Province of British Columbia and the Yukon Territory. PNEMA allows additional annexes
- Annex A - Establish the Western Regional Emergency Management Advisory Committee
- Annex B - Implementing procedures for the emergency and disaster assistance
- Proposed Annex C - Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce and Port Operations

Background: The Prime Minister of Canada and the President of the United States issued *Beyond the Border (BTB): A Shared Vision for Perimeter Security and Economic Competitiveness Action Plan on December 7th, 2011*. The Action Plan established guidelines for a perimeter approach to security and economic competitiveness. This means working together, not just at the border, but beyond the border to enhance our security and accelerate the legitimate flow of people, goods and services. The Beyond the Border initiative includes the action plan to *Rapidly Respond to and Recover from Disasters and Emergencies on Either Side of the Border: swiftly restoring maritime traffic in an emergency*. In March, 2012 a project was initiated by the US Coast Guard and Transport Canada with assistance from Pacific Northwest Economic Region to establish a US-Canada communication and information-sharing framework. The project to implement the maritime commerce recovery elements of the Beyond the Border Action Plan engaged Washington State and British Columbia public and private stakeholders in several workshops and a tabletop exercise over the past year. These activities have led to the development of the proposed annex C of PNEMA. Stakeholders involved in this process, validated Annex C as the most effective vehicle to establish a bi-national communication and information-sharing protocol framework.

Fiscal Impact

- Negligible agency impact (Emergency Management Agency's, would maintain Annex C with other PNEMA documentation)
- No Capital budget impact
- No rule making impact

Recommendation: The Governor of the State of Washington and the Premier of the Province of British Columbia sign Annex C, Canada-United States Protocol Framework for Communication and

Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce and Port Operations, at the next joint cabinet meeting.

Detailed Overview

Why Does This Matter: The interdependent economy of the Pacific Northwest rests on the assurance of our ports and related supply chain infrastructure. Over one million jobs in our region are directly tied to WA and BC ports import/export activity. Likewise, the gross domestic product of the region hinges on the operations of regional ports. Any disruption will have cascading impacts on local, state and national economies. Maintaining maritime traffic in our region is crucial to our cross border economy, and improved communications and information sharing is a key step in building a more resilient regional economy.

Project Overview: The US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan, included working to develop information-sharing protocols and communication mechanisms to swiftly recover from any maritime disruption. The United States Coast Guard and Transport Canada engaged the Pacific Northwest Economic Region to conduct a workshop and exercise to review and validate the concepts outlined in the draft "Guidelines for Communication and Information-sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster."

The key finding and direction was to develop a bi-national protocol framework agreement for communicating and sharing information before, during and following an emergency or disaster that disrupts maritime commerce and the regional economy. The primary objective of the framework was to establish a process to cooperatively speed commerce resumption and rapidly restore port operations. There were three criteria the protocol must accomplish: 1) It must be an international agreement, using an existing agreement if possible; 2) It must include all stakeholders in the maritime commerce environment; and 3) It must be exportable to other regions of the US and Canada. There was recognition that although both federal governments have a major role and responsibility, in the case of a disruption like an earthquake, the infrastructures that support the maritime system are largly controlled by the private sector, state and province. For this reason, stakeholders felt the PNEMA annex was the best approach.

After researching existing international agreements, the Pacific Northwest Emergency Management Arrangement (PNEMA) provided the content and structure necessary to address communication and information-sharing for maritime commerce recovery. The structure allows for procedures and plans to address the full spectrum of stakeholders. Finally, it is easily exportable as there are existing emergency management agreements nearly identical to PNEMA in the east and drafted agreements for the plains and Great Lakes.

Annex C to PNEMA addresses the strategic communication and information-sharing protocol framework and creates a working structure for the further development of procedures to fully implement the recommendations in the Guidelines.

Summary of Draft Annex C

- **Draft Annex C Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce and Port Operations:**

- PNEMA allows for additional annexes be adopted. Annex C is designed as a strategic framework for information-sharing to expedite maritime commerce recovery. This annex is of critical importance to the regional economy. The annex introduces a structure to further develop implementing procedures utilizing the existing PNEMA structure. It allows maritime stakeholder involvement including Federal or National government entities (US Coast Guard and Transport Canada in particular), private sector, non-profit and other stakeholders identified by procedure. Additional procedures may be developed to address the recommendations of the Guidelines for Communication and Information Sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster, which were produced through this stakeholder led process.
- The PNEMA connection allows integration with emergency management agency's of the signatory states, provinces and territories along with the benefits of the basic arrangement and its annexes. The draft annex has been shared with the PNEMA leads of Washington Emergency Management Division and Emergency Management British Columbia.

Background on PNEMA Annexes A and B

The following provides an overview of PNEMA, its current annexes and a synopsis of the draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce and Port Operations.

- **Basic Document and Annex A:**
  - The Pacific Northwest Emergency Management Arrangement (PNEMA) was adopted in 1998 by the States of Alaska, Idaho, Oregon and Washington and the Province of British Columbia and the Yukon Territory.
  - The PNEMA primary purpose is to:
    - Coordinate emergency preparedness, response, and recovery through a regional approach.
    - Establish the Western Regional Emergency Management Advisory Committee (Annex A).
    - Set eight cooperative principles.
    - Replace a “hodge-podge” of mutual aid agreements and MOUs (memorandum of understanding).
    - Allow for additional annexes.
  - The PNEMA commitment includes:
    - Coordinate and maintain supporting plans.
    - Participate in and/or observe regional exercises.
    - Emergency and/or disaster support.
  - The benefits of PNEMA include:
    - Maximize use of available regional resources.

        - Expedite timely and flexible cross-border emergency preparedness, response, and recovery deployment.
        - Enhance Pacific Northwest regional relationships.
    - The eight cooperative principles:
        - Each signatory may seek the assistance of another.
        - May request exemption of others' laws that impede emergency measures.
        - Will use best efforts to facilitate movement.
        - Will use efforts to provide others' citizens health and social services.
        - Avoid levying taxes and/or fees on mutual aid activities.
        - Costs for assistance will not exceed what the provider normally pays.
        - Exchange of lists and plans.
        - Invite others to observe or participate in exercises.
- **<u>Annex B PNEMA Implementing Procedures:</u>**
    - Annex B was introduced in 2002 and was signed in 2006/2007. Its primary purpose was to include the include the language and articles of the Emergency Management Assistance Compact for use internationally with the Canadian signatories to PNEMA.
    - Annex B Select Provisions:
        - Article I defines "Emergency Forces" but is not exclusive of any cross-border assistance.
        - Article III "(g) Provide, to the extent authorized by law, for temporary suspension of statutes or ordinances that impede implementation of the responsibilities described in this subsection."
        - Article IV ". . . the signatory rendering aid may withhold or recall resources to the extent necessary to provide reasonable protection for itself."
        - Article V ". . . license, certificate, or other permit . . . such person is deemed to be licensed, certified, or permitted by the signatory requesting assistance . . ."
        - Article VIII ". . . signatory shall provide . . . for the payment of worker's compensation and death benefits to injured members of the emergency forces of that signatory . . . in the same manner and on the same terms as if the injury were sustained within their own signatories."
        - Article IX ". . . any signatory rendering aid . . . be reimbursed by the signatory receiving such aid for any loss or damage to or expense incurred . . ."

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Maritime Annex To The Canada-United States Framework For The Movement Of Goods And People Across The Border During And Following An Emergency

The Canadian Department of Public Safety (Public Safety Canada), the Canadian Department of Transport (Transport Canada), and the U.S. Department of Homeland Security, including the United States Coast Guard, hereinafter referred to as the Participants," have resolved to:

In the event of an incident affecting our shared maritime transportation systems, facilitate coordinated, cooperative, and timely decision-making to mitigate impacts on our citizens and our economies; and

Work together in the context of incidents to manage the reasonable movement of vessels carrying goods and people between Canada and the United States during and following emergencies.

1. Application:

The Participants intend this annex to the Framework to apply in the event of an incident that affects the shared maritime transportation systems, requires national level engagement, and meets one or more of the following scenarios:

(i) An attack or threat of attack to the United States or Canada by terrorists;

(ii) A natural or man-made incident, including a pandemic or other health incident, that impacts large numbers of citizens and/or affects Critical Infrastructure and Key Resources of national interest to one or both countries; or

(iii) State, Local, Provincial, Territorial, U.S. Tribal Governments or other entities, (e.g. port authorities) request national-level assistance through existing procedures;

2. Communications:

Consistent with existing coordination and information sharing protocols, the Participants intend to ensure that:

(i) The Deputy Minister of Transport Canada and the Commandant of the United States Coast Guard communicate with each other as soon as practicable, and have their officials communicate until operations at affected ports or marine areas are reestablished and security is restored to their mutual satisfaction.

(ii) The Deputy Minister of Transport Canada and the Commandant of the United States Coast Guard share information on the nature of the incident, communicate about those goods and people considered to be a national priority of one or both countries, and

facilitate common messaging to critical infrastructure sectors, health officials, industry, and the general public.

(iii) Transport Canada and the United States Coast Guard, in all cases, liaise with the Department of Foreign Affairs and International Trade of Canada and the United States Department of State, respectively.

(iv) Appropriate authorities from each country establish processes for regular and effective communications during a disruption of maritime commerce.

3. Shared Maritime Transportation Systems Management

Consistent with the Canada-United States Framework for the Movement of Goods and People Across the Border During and Following an Emergency, in the event of an incident that affects maritime operations, as defined above, the Participants intend to ensure:

(a) Transport Canada and the Department of Homeland Security components, specifically the United States Coast Guard and others, work with Public Safety Canada to take steps to ensure that Canada and the United States have activated their respective decision-making processes to manage the movement of vessels carrying goods and people through shared maritime transportation systems.

(b)The Deputy Ministers of Public Safety Canada and Transport Canada and the Deputy Secretary of the U.S. Department of Homeland Security, as well as the Commandant of the United States Coast Guard, facilitate:

(i) Measures needed to respond to and recover from an incident affecting maritime operations; and

(ii) Movement of goods and people through shared Canada-U.S. maritime transportation systems, as determined by each country.

This Annex to the Canada-United States Framework for the Movement of Goods and People Across the Border During and Following an Emergency does not supersede any statutory authorities or create any binding obligations under domestic or international law. It is not intended, and should not be construed, as creating any right or benefit, substantive or procedural, enforceable at law or otherwise, by any third party against the Participants, or the officers, employees, agents or other associated personnel thereof.

The Participants intend for this Maritime Annex to be consistent with the policies in place in each country, and other joint plans including the Agreement between the *Government of Canada and the Government of the United States of America on Emergency Management Cooperation* done at Washington on December 12, 2008.

The Participants may amend this Maritime Annex in writing upon their mutual consent.

Maritime Commerce Recovery Action Plan Milestones

Phase 1	
Priority	Task Deliverable Milestones
1	Conduct a workshop and exercise to identify issues of national or regional concern, including resilience and recovery priorities, gaps and weaknesses and complete reports for each.
2	Add the PNEMA emergency management agency's and a task force as the responsible parties to implement the action steps to the protocol framework Annex C or alternative.
3	Finalize Pacific Northwest Emergency Management Arrangement Annex C or alternative.
Phase 2	
Priority	Task Deliverable Milestones
4	Create charter for implementing task force and private sector equivalent, if required.
5	Develop a procedure to identify specific Community of Interest members and method to "sign on" to participate.
6	Develop procedures to outline specific committee, network and forum details and process.
7	Engage a third party to help identify and mitigate significant resilience and recovery gaps, provide leadership and facilitate action deliverables.
8	Review and develop procedures recommending regulatory, statutory and ordinance changes, suspensions or waivers necessary post disaster.
9	Conduct a workshop to identify or create a tool to identify products, services, critical infrastructure and other assets which may be vital to the maritime economy.
10	Develop procedures to identify critical information elements and adopt standard alerting protocols.
11	Develop a procedure to identify triggering criteria to implement the protocol and to help mitigate likely incidents.
12	Develop a procedure to identify key priorities and the method to update status.
13	Conduct a workshop to evaluate tools to report and disseminate critical information.
14	Develop a procedure for how maritime commerce recovery is organizationally structured and operated.
15	Review and develop public disclosure exemptions to facilitate the sharing of information.
16	Develop a procedure to share and control sensitive or classified information.
17	Develop a joint information system procedure.
18	Develop a procedure to share skilled personnel across the border and between trade unions and organizations outlining a process in PNEMA Annex B or emergency operations directives for maritime specific requirements.
19	Develop a procedure to specifically limit liability during recovery (may require legislation).
20	Conduct a workshop to identify or create a tool to conduct organization-level risk, resilience, consequence-of-loss and critical infrastructure assessments.
21	Conduct a workshop to develop and share tools to facilitate resilience and recovery planning at the organization and regional levels.
22	Develop a procedure to create a protocol, plan and procedure review schedule.

24	Develop a procedure to outline a comprehensive training and exercise schedule.

Phase 3	
Task Deliverable	Proposed Timing Cycle
Engage a third party to help identify and mitigate significant resilience and recovery gaps, provide leadership and facilitate action deliverables.	Annual
Conduct protocol, plans and procedural training.	Semi-Annual
Conduct exercise to test protocol, plans and procedures	Annual
Review protocol, plans and procedures and make corrections and updates	Quarterly
Conduct a lessons learned and best practice workshop	Annual

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

Transport Canada
Transports Canada

Pacific NorthWest Economic Region

GUIDELINES FOR COMMUNICATION AND INFORMATION SHARING BETWEEN STAKEHOLDERS IN CANADA AND THE UNITED STATES TO ENHANCE MARITIME COMMERCE RECOVERY AFTER AN EMERGENCY OR DISASTER

Transport Canada
United States Coast Guard
Pacific NorthWest Economic Region

September 2012

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FOREWORD

The *GUIDELINES FOR COMMUNICATION AND INFORMATION SHARING BETWEEN STAKEHOLDERS IN CANADA AND THE UNITED STATES TO ENHANCE MARITIME COMMERCE RECOVERY AFTER AN EMERGENCY OR DISASTER* (hereafter referred to as the guidelines) are the result of extensive consultations undertaken in Canada and the United States in 2012 with both government organizations and industry representatives under the auspices of the Pacific Northwest Economic Region (PNWER), an existing bi-national Canada-United States Pacific Region committee. As part of the Beyond the Border Action Plan and with the specific aim of rapid response to and recovery from disasters on either side of the border, the guidelines are based on best practices and lessons learned from both countries as well as a review of current international resilience frameworks and tools.

These guidelines are still in the draft stage and are subject to further refinement through additional consultation and a table-top validation exercise that will occur in the Pacific Region. These guidelines may be used as the basis for the expansion of this initiative to the Atlantic and Great Lakes regions in 2013.

DRAFT 5: GUIDELINES FOR COMMUNICATION AND INFORMATION SHARING BETWEEN STAKEHOLDERS IN CANADA AND THE UNITED STATES TO ENHANCE MARITIME COMMERCE RECOVERY AFTER AN EMERGENCY OR DISASTER

CONTEXT

The world is increasingly dependent on international trade, with the global maritime transportation system accounting for the movement of over 90% of the world's commerce. An emergency or disaster disrupting maritime commerce in Canada and/or the U.S. is likely to impact the social and economic wellbeing of both countries regardless of where the incident occurs. In order to facilitate the swift recovery of the maritime supply chain, it is important to leverage critical resources from both sides of the border.

Previous major disasters affecting maritime trade such as 9/11, the 2011 earthquakes and tsunami in Japan, Hurricane Katrina, and the earlier 1995 Kobe, Japan earthquake highlight the significant importance of communication and information sharing among all stakeholders for an expedited and effective recovery. Enabling the flow of vital information between countries and among organizations of different sectors, jurisdictions and priorities is a complex and difficult challenge.

To be successful, this challenge must be taken up by government and non-government organizations big and small, on both sides of the border. Organizations that engage in this effort can expect to reap the rewards of a faster recovery with less expense, and to possess the knowledge and means to effectively communicate their needs and concerns to decision makers charged with the responsibility of recovery planning and resource prioritization and allocation. With the benefits of accurate, timely information about the response and recovery activities, participants will be in a better position to adapt their own recovery efforts and communicate effectively with their owners, shareholders, employees, clients and suppliers.

Some non-government organizations in both countries have implemented effective business continuity and disaster resilience plans that can be leveraged and modeled by others. The ability of the supply chain to be resilient and recover quickly may be hampered by organizations that are currently ill equipped to participate in resilience activities. For example, after the 2011 disaster in Japan, several organizations experienced recovery delays because critical suppliers did not have the means to organize or execute their own recovery. Therefore, better prepared organizations and those with more capacity should be willing to assist smaller organizations to ensure they are involved in communication and information sharing plans and activities.

While these guidelines focus on the maritime sector of commerce, the marine transportation system is one segment of an overall transportation and energy system that enables trade and commerce. Truck, rail, air, highway, marine, and energy systems all must plan and coordinate their resilience related activities, before and after an event, to speed recovery for the region as a whole. Accordingly, when identifying the community of interest, planners should include and coordinate planning and recovery actions with appropriate representatives from those segments.

Strengthening resilience and the ability of bi-national maritime commerce to recover effectively and efficiently will benefit greatly from the long-standing cooperative relationship and many joint ventures between Canada and the U.S.; government and non-government.

BACKGROUND

1. 'On February 4, 2011, the Prime Minister of Canada and the President of the United States issued *Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness*. The Declaration established a new long-term partnership built upon a perimeter approach to security and economic competitiveness. This means working together, not just at the border, but beyond the border to enhance our security and accelerate the legitimate flow of people, goods and services.'[1] The Beyond the Border Action Plan includes an initiative to *Rapidly Respond to and Recover from Disasters and Emergencies on Either Side of the Border: Mitigate the impacts of disruptions on communities and the economy by managing traffic in the event of an emergency at affected border crossings – Maritime Commerce*.

2. *GUIDELINES FOR COMMUNICATION AND INFORMATION-SHARING BETWEEN STAKEHOLDERS IN CANADA AND THE UNITED STATES TO ENHANCE MARITIME COMMERCE RECOVERY AFTER AN EMERGENCY OR DISASTER* (the guidelines) is an important outcome of this initiative. Effective communication and information sharing between COI members in Canada and the United States before, during, and after a major emergency or disaster affecting maritime trade, to the extent permitted legally, will be essential to the economic and social recovery of both countries. Communication (information, procedures and mechanisms) must be timely and of high quality, enable two-way information sharing, be easily understood, and utilize minimum points of contact.

3. The guidelines are consistent with best practices, existing protocols and recommendations from industry and government stakeholders and the International Maritime Organization's Facilitation Committee draft *GUILDELINES ON MEASURES TOWARD ENHANCING MARITIME TRADE RECOVERY RELATED TO THE GLOBAL SUPPLY CHAIN SYSTEM AND MARITIME CONVEYANCES*.

4. The guidelines are divided into three parts. Part A contains information and recommendations on how to create a solid foundation upon which to create a strong culture for maritime resiliency and recovery. Part B contains a listing of information requirements critical to improving maritime commerce resilience and maritime trade recovery. Part C contains information relating to the development of communication and information-sharing mechanisms between parties. Recommendations are included in Parts A, B and C, and a list of all recommendations is included as Appendix 1.

5. The guidelines are intended to provide information and best practice guidance to stakeholders in Canada and the U.S. with the responsibility for ensuring and/or facilitating maritime trade recovery after an emergency or disaster. They are not intended to supersede existing or future agreements, protocols, policies or instruments.

[1] **'BEYOND THE BORDER: A SHARED VISION FOR PERIMETER SECURITY AND ECONOMIC COMPETITIVENESS', Government of Canada, www.borderactionplan.gc.ca.**

6. Any information shared between stakeholders, both government and non-government, is not to be used for competitive purposes. Care must be taken to ensure that the sharing, use, storage and handling of information follow legal, privacy and security protocols.

TERMS AND DEFINITIONS

For the purpose of this document, the following terms and definitions apply:

Asset[2]
Any person, personal capability, facility, material, information, or activity that contributes to the accomplishment of an objective.

Community of Interest (COI)
A select group of government and non-government stakeholders with specialized interest in a certain geographical location, system, or process.

Community of Interest Region (for Maritime Commerce)
A Community of Interest that is linked by a shared body of water.

Contingency Plan (within the context of maritime commerce)
A plan to manage circumstances or events that could impact operations or otherwise interrupt the flow of maritime commerce.

Critical Infrastructure[3]
Processes, systems, facilities, technologies, networks, assets and services essential to the public health, safety, security or economic well-being and the effective functioning of government.

Dark Site
A pre-made, non-public website, that can be activated online in the event of a crisis.

Dependencies[4]
- Physical: dependency on products, services and resources for continued operation.
- Informational: dependency on information for continued operation.
- Geographic: dependency due to the geographic proximity of critical infrastructure.
- Logical: dependency due to economic, political, or management factors (i.e., effects of markets and prices of inputs, command and control of large organizations, border effects on flow of goods and people, and others.)

Disaster
An incident (natural or man-made) that causes great social, human or economic loss and that requires a response.

Emergency
An incident that poses an *immediate* risk to public safety, property or the environment and that requires a response.

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2 '*Risk Management Guide for Critical Infrastructure Sectors*', Public Safety Canada website, www.publicsafety.gc.ca.

3 Ibid.

4 Ibid.

Government
Local, regional, provincial/state, federal authorities in Canada and the United States.

Guidelines (for purposes of this document)
The *GUIDELINES FOR COMMUNICATION AND INFORMATION SHARING BETWEEN STAKEHOLDERS IN CANADA AND THE UNITED STATES TO ENHANCE MARITIME COMMERCE RECOVERY AFTER AN EMERGENCY OR DISASTER.*

Impact
The effects of a particular action, decision, event or circumstance.

Incident[5]
Occurrence caused by either human action or natural phenomena which may cause harm (either physical or monetary) and that may require action.

Memorandum of Understanding (MOU)
A formal document that sets out the terms of a mutual agreement on an issue between two or more parties.

Mitigation
Limitation of a negative consequence.

Mutual aid agreement
Pre-arranged agreement between two or more parties to render assistance.

Non-government (within the context of maritime commerce recovery)
Port authorities, industry and its associations, labour and its associations, supply chain operators, service providers, marine transportation system end-users, other modes.

Point of Contact
The individual or area of an organization designated to receive from, or give information to, others.

Preparedness
Any activities, programs or systems developed and implemented to support and enhance prevention, and mitigate and recover from disasters and emergencies.

Prevention
Any activities, programs or systems that enable an organization to avoid or limit the consequences of a disruption.

Resilience
Ability to respond to and recover from a disaster, disruption or emergency.

Risk
The uncertainty that surrounds future incidents and outcomes. It is a function of the likelihood and consequences of an incident – the higher the likelihood and/or the greater the consequences, the greater the risk.[6]

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[5] Ibid.

Sensitive Information*

a. Personal information about an individual;
b. Proprietary information of an organization; and,
c. Information about an organization that if improperly handled may risk a breach of trust with its clients and customers, may damage its brand or reputation, or could otherwise harm its ability to do business or remain competitive.

*Any definition of 'sensitive information' provided through privacy laws, agreements or other formal documents will supersede the definition given here.

Sponsoring Organization(s)

The Sponsoring Organization(s) will lead or coordinate the development of the communication and information sharing mechanisms recommended or related to the guidelines. It will establish and provide oversight and guidance to the committees and networks conducting or coordinating this and related work to improve the resilience and recovery of the Community of Interest (COI) Region. The Sponsoring Organization(s) should be a prominent bi-national organization, or an influential organization(s) from each country working together. This organization(s) should be positioned to represent the interests of government and non-government and to engage a representative group of COI members in these activities.

Stakeholder

A person or organization that can be affected by a decision or activity, or that has a vested interest in the outcome.

Supply Chain (for maritime commerce)

Linked set of organizations, resources and processes with inputs or outputs into the marine transportation system.

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[6] Ibid.

Part A: Building a foundation for maritime commerce resilience and recovery activities

1. Introduction

1.1 Strengthening resilience and enhancing the ability to recover quickly from a major disruption of maritime commerce is dependent on good communication and the willingness of government and non-government stakeholders on both sides of the border to share essential information before, during and after an incident. Quality, timely information enables the development and implementation of effective strategies, plans and decisions and ultimately a quicker resumption of the flow of maritime commerce.

2. Building the Foundation

2.1 To facilitate the sharing of essential information, government and non-government stakeholders are encouraged to form a Community of Interest (COI). A COI for maritime commerce can extend beyond the marine sector to include all organizations with a vested interest in protecting the flow of maritime commerce: governments; industry; labour; service providers; supply chain operators; energy companies; rail; trucking; aviation; marine transportation system end users; and, others on both sides of the Canada-U.S. border. Membership in a COI should usually be limited to stakeholders, which operate, or are based, in a geographic region that is linked by a shared body of water. For example, stakeholders in the province of British Columbia and the states of Alaska, Washington and Oregon could form one COI. The geographic area in which the COI stakeholders operate would be considered a COI Region.

2.2 The identification of a Sponsoring Organization(s) that will support the adoption and implementation of the guidelines within the COI is also encouraged. Building and maintaining momentum and buy-in among the diverse Canada-U.S. stakeholders and sectors most likely to be involved in restoring cross-border maritime commerce could require significant leadership and coordination: some COI members lack the capacity, capability, or understanding of the concept to become meaningfully engaged without assistance. The Sponsoring Organization(s) can monitor and help organize the follow through on guideline recommendations and other activities identified by the COI networks and committees. This leadership will facilitate region-wide implementation of effective maritime commerce resilience and recovery plans, strategies, protocols and agreements, and help them become accepted best practices.

2.3 The establishment of networks and committees by the COI can greatly improve the capacity of the COI Region to recover quickly from an emergency or disaster. They provide for a where COI members can pool their expertise, knowledge, insights and information on resilience and recovery planning on recovery issues. Networks and committees can also help build the pre-need relationships that are required in order to take fast, effective action during and after an emergency or disaster. Participants and organizations new to the networks and committees can also benefit from the expertise and insights of more seasoned members, and bring new perspectives and ideas to the table.

2.4 The COI networks and committees can also help identify and address systemic resilience and recovery gaps and weaknesses, and single points of failure. These groups may provide the information and feedback necessary to develop and effectively implement the communication and information-sharing systems and protocols identified elsewhere in the guidelines. A regional information-sharing framework can enable the transparent exchange of information by COI stakeholders (within legislative boundaries) before, during and after an emergency or disaster and reduce uncertainty about when and what information may be shared with whom. If sharing some information directly between COI members is not possible and/or desirable, then it may become necessary to engage a third party to help identify and mitigate significant resilience and recovery gaps and vulnerabilities that cross organizational, jurisdictional, sectorial, and/or national boundaries.

2.5 Canada and the U.S. have a long history of bi-national cooperation and coordination within shared waterways and across borders. Some existing bi-national, national and regional frameworks, plans, procedures and mechanisms to share information and communicate within and between sectors may be used or leveraged to build resilience and expedite cross-border maritime commerce recovery. An international agreement referencing relevant documents can increase awareness and improve the ability of COI members to access important tools already in place.

2.6 Mutual aid agreements, memoranda of understanding, and other formal and informal agreements that currently exist between organizations on both sides of the border can be used or leveraged to support cross-border maritime commerce resilience and recovery. Additional agreements between ports, terminals, and other organizations to assist their counterparts and to accept diverted business, without attempting to retain the new business once its original destination regains capacity, can strengthen the resilience of the COI Region and build trust.

2.7 The skills, expertise and other resources of COI Members and specialized workers such as engineers, inspectors, equipment and supplies may be needed quickly during and immediately after an emergency or disaster to limit damage and expedite recovery. However, organizations and individuals may hesitate to take action for fear of subsequent legal and other repercussions. Good Samaritan laws already exist in certain Canadian provinces[7] and U.S. states[8] to provide liability protection to volunteers rendering aid under certain circumstances. Similar legal or other means of protection for individuals and organizations taking speedy, prudent action to aid disaster recovery may provide the assurances necessary to minimize delays in providing assistance.

2.8 An effective, structured recovery may require the movement of skilled labour between organizations and across the border. Barriers to this movement may come from immigration laws, union contracts, and accreditation equivalencies. Removing these barriers will be complex, as some may require legal or policy changes, but the benefits to recovery can be significant and warrant the effort.

2.9 A Regional Bi-National Disaster Alerting Protocol and/or agreement can trigger pre-determined measures and mechanisms for communication and information sharing by COI

[7] "Good Samaritan Law/Doctrine", Canadian Law website, http://www.canadianlawsite.ca/goodsamaritan.htm, accessed August 2012.
[8] "FAQ: Good Samaritan Law",HeartSafe America website, http://www.heartsafeam.com/pages/faq_good_samaritan, accessed August 2012.

members, commensurate with the disaster environment and maritime commerce recovery needs. The Regional Bi-National Alerting Protocol and/or agreement can also provide Alerting Levels that trigger the organization- and regional-level recovery plans and actions of COI members and their supply chains in Canada and the U.S. It may also be used to help coordinate and access existing and future emergency communication channels as part of a larger Bi-national Alerting system.

2.10 The maritime community will have a major role to play in regional response and recovery from a land based disaster. Maritime commerce can be significantly impacted in these events, due to disruption of the supply chain. The maritime community should be engaged in landside disaster recovery planning, emergency management, emergency management operations centres and business continuity planning.

Recommendations:

Recommendation #1: Identify a Community of Interest (COI) from both government and non-government maritime commerce stakeholders within the COI Region.
Identifying which stakeholders, including non-marine transportation providers and energy companies, could be involved in the recovery of maritime commerce on both sides of the border will help ensure the COI is well prepared to expedite the recovery of marine trade. To help ensure that the engagement of stakeholders is manageable, representative participation rather than comprehensive representation should be considered. These representative participants should be expected to keep their organization and their key contacts within their sector and supply chain informed of the work and outputs of the groups. The Sponsoring Organization(s) identified below should engage existing local networks and committees where possible and may help establish the membership of new groups and sub-groups for the COI. Collectively, there should be sufficient expertise and authority available to focus on the strategic, operational and constitutional activities and issues identified.

Recommendation #2: Identify a Sponsoring Organization(s) to oversee and provide leadership in the establishment and work of COI networks and committees, and to encourage wide-scale adoption and implementation of the guidelines and related strategies in the COI Region.
A prominent bi-national organization, or one influential organization from each country working together, can lead the promotion of the guidelines and best practices, help establish, strategize and coordinate the collective work of the committees and networks, and persuade COI members to participate. The Sponsoring Organization(s) may act as a single point of contact and conduit of information for government and non-government. The Sponsoring Organization(s) should be positioned to represent government and non-government interests in maritime commerce recovery pre-planning on both sides of the border, and to access expertise and assistance from others.

Recommendation #3: Establish a committee, network, or other forum through which to plan and coordinate resilience and recovery strategies for the COI.
The COI members represent a diverse group of organizations situated in two countries, within multiple jurisdictions, and various sectors. A representative group of these diverse stakeholders may best address common strategic and operational issues thus contributing to a more effective maritime commerce recovery. Wherever possible existing groups and protocols should be used as the forum for this work, or be otherwise engaged.

Recommendation #4: Require COI organizations to each designate a Point of Contact (POC), including alternates, who may be called upon to participate or work with the networks and committees, and who commits to promoting and sharing relevant information from the networks or committees with their organization and other stakeholders.

Wherever possible, the flow of information should be to and from a single source using a simple, centralized method of collecting and sharing information. Having one individual (or their alternate) speak for an organization can help reduce conflicting information and decisions; some organizations may request another organization to assume this role on their behalf. Each POC should have access to updated information from all parts of their organization, and agree to share key decisions and outcomes of the networks, committees or other forums within their organization, and with key contacts of other organizations within its sector and supply chain. The POC should be authorized to make decisions on behalf of their organization, or be able to obtain such decisions quickly so as not to hold up the work of the group.

Recommendation #5: Draft a Regional Information Sharing Protocol framework for COI members.

A cooperative effort to share critical information will improve disaster resilience. COI members may be uncertain of what information they can provide to others and unaware of how to share such information securely, especially when interacting with organizations outside of their usual circle of contacts. A formal and clearly written information sharing protocol for COI members can help achieve this by facilitating the timely and secure transmissions of information needed to plan and expedite recovery. Wherever possible existing groups and protocols should be used as the forum for this work, or be otherwise engaged.

Recommendation #6: Develop a bi-national accord that references existing frameworks, protocols, agreements, plans, procedures, communication and information-sharing mechanisms, and other tools that can be used or leveraged to build cross-border maritime commerce resilience and expedite recovery.

Over the years, bi-national government and industry groups have developed and implemented several important agreements, mechanisms and other tools to facilitate cross-border cooperation and coordination. Often targeted to specific sectors and shared concerns, these tools may not be widely known among COI members. The COI networks are encouraged to identify and determine the relevance of these existing resources and seek opportunities to use and leverage this substantial body of work when working with the guidelines. A bi-national accord referencing key agreements, mechanisms and other tools will educate COI members and raise awareness; enable and promote the use of endorsed processes and procedures; and provide a valuable single source of reference. The organizations and groups involved in creation of the referenced resources should be engaged.

Recommendation #7: Promote the development of pre-incident agreements, accreditation equivalencies and mechanisms to share skilled labour personnel across the border and between trade unions and organizations.

Governments, bi-national organizations, and unions and professional associations may be willing to be among the first to develop the necessary agreements, accreditation equivalencies and mechanisms to ease the movement of skilled labour after a disaster.

Recommendation #8: If required, engage a third party to help identify and mitigate significant resilience and recovery gaps and vulnerabilities that cross organizational, jurisdictional, sectorial, and/or national boundaries.
In some cases jurisdictional and authority concerns may prevent organizations from addressing a shared concern on their own or from passing on critical information to others. For some organizations, the barrier may be a lack of capacity or capability. In situations where it is not possible and/or desirable to share information with other stakeholders directly, there may be a need for a trusted or influential third party to receive, protect and review sensitive information on behalf of COI members, and make recommendations on significant resilience and recovery gaps and vulnerabilities, as appropriate.

Recommendation #9: Encourage and facilitate the exchange of lessons learned and best practices relevant to resilience and recovery planning.
This exchange of information before and after an emergency or disaster can strengthen resilience, improve recovery and contingency plans, expedite the resumption of maritime commerce, and build trust and understanding among the COI members.

Recommendation #10: Develop provisions that limit the liability of and repercussions to those taking reasonable and prudent action for the purposes of minimizing damage and expediting maritime commerce recovery during and immediately after an emergency or disaster.
These provisions will enable COI Members and others, such as engineers and inspectors, to take swift, appropriate and decisive actions during and immediately after an emergency or disaster without fear of repercussions provided there is no gross negligence. Organizations likely to be sharing equipment and resources or representing skilled workers making critical decisions during the chaos of an emergency or disaster and its immediate aftermath with incomplete information should be invited to assist in the development and communication of these provisions.

Recommendation #11: Develop a Regional Bi-National Disaster Alerting Protocol and/or agreement.
This protocol and/or agreement should provide Alerting Levels to trigger associated pre-determined measures and mechanisms, at each level, to guide a progressive and timely increase in communication and information sharing among COI members. It can also provide triggers signaling regions, organizations and their supply chains to take pre-determined action to carryout and coordinate recovery activities. Existing emergency alerting protocols and procedures should be integrated into this protocol and/or agreement. Once cross border disaster alerting protocols and/or agreements are established in several regions, a higher level one to coordinate all of them should be considered. Emergency management authorities and services, and bi-national groups working on sector-specific disaster response and recovery plans should be engaged in the development of each regional disaster alerting protocol and/or agreement.

Recommendation #12: Integrate the maritime community and interests in local, regional and cross-border emergency management, and region-wide business continuity planning.
The COI Networks and Groups can seek opportunities to become engaged in existing work groups and committees where maritime expertise and interests should be represented, and vise versa.

Part B: Information elements critical to maritime commerce resilience and recovery

1. Introduction

1.1 Shared access and a common understanding of critical information, authority delegations, authority priorities, powers and mandates among the COI members empowers them to strengthen their own resilience, communicate their needs and key information effectively to decision makers, and act as participants to the recovery rather than observers for the expedited recovery of maritime commerce throughout the COI Region after an emergency or disaster.

1.2 Clearly identified criteria for triggering the use of various plans, strategies, agreements, and authority delegations will enable government and non-government COI members to develop, align and adapt their plans to the situation and be prepared to effectively participate in the recovery.

1.3 The sharing of information in support of maritime commerce resilience and recovery may require the collection, reporting, storage and dissemination of information by COI members and others. All formal and informal information-sharing processes and protocols should be easily understood by a wide range of stakeholders, be readily accessible, avoid redundancy, economize resources and be consistent with the respective domestic laws of Canada and the U.S.

1.4 Non-government participants should advise government of their emergency and disaster resilience and recovery needs and concerns, and act as a resource to government agencies involved in emergency management and critical infrastructure protection. Government and other key organization participants can inform non-government about their mandates, priorities, authorities and powers during and after an emergency or disaster. This sharing of information can enable better contingency and recovery planning.

2. Information elements *before* a disruption of maritime commerce

Between Governments and Key Organizations

2.1 Information on the mandates, authorities, and priorities of government, existing bi-national committees, and others with a major role in maritime commerce resilience and recovery planning and leadership
A clear understanding of the mandates, authorities and priorities of key government and private sector entities will help mitigate inaccurate assumptions about the type, timing and level of assistance available before, during and after an emergency or disaster. This information includes government powers that may be invoked to protect or restore essential services, the criteria used to invoke these powers, and the potential impact on organizations. These information elements will help inform organization recovery and contingency plans.

Identifying and sharing information on relevant Canada-U.S. groups working on areas relevant to maritime commerce and resilience can also provide opportunities to consolidate, support and leverage their efforts towards the common goal of expedited trade recovery.

2.2 Information on which government or non-government organization(s) will lead the response and recovery efforts in Canada and the U.S. for potential natural and man-made disasters and emergency scenarios impacting maritime commerce. Information on how and when the Canadian and American lead organizations will engage each other and coordinate cross-border recovery activities.
The Canadian and American organizations leading emergency and disaster recovery can differ depending on the incident and its cause; non-government may take the lead in some scenarios with or without support from government. The leadership in these situations may also change as recovery progresses over time. This information will help inform response and recovery plans and exercises, and improve the ability of government and non-government to take decisive action to quickly coordinate and commence recovery activities.

2.3 Information on the similarities and differences between Canada and the U.S. government and non-government approaches and governance structures for marine safety and security, emergency preparedness and response, and disaster recovery.
An understanding of this information can help inform joint Canada-U.S. networks and committees working on cross-border maritime commerce resilience plans, strategies, protocols and agreements.

2.4 Information on labour regulations, protocols, agreements and practices on both sides of the border.
This information can help ensure that labour assisting in recovery across the border, or employers accepting foreign workers to aid in recovery, will understand and comply with each jurisdiction's standards and requirements.

2.5 Information about mechanisms and tools available to leaders (government and non-government), COI Members and other stakeholders for communicating within and across jurisdictions, sectors and countries after an emergency or disaster, and the criteria for triggering their use.
This information can enable effective two-way communication between stakeholders, and provide quick and easy access to essential information needed for recovery planning and other activities.

2.6 Information on standard data requirements and methods of obtaining, sharing and integrating data for use by government and non-government decision makers and other COI Members.
An understanding of this information can enable organizations to create appropriate systems and mechanisms to provide essential data. Gaps and barriers to effective data collection and reporting may be identified and addressed in advance of an emergency or disaster.

About Cross-Border Plans, Strategies, Protocols, Agreements and Priorities and Triggering Criteria

2.7 Information regarding existing bi-national communication and information sharing agreements, protocols, plans and strategies (government and non-government).
This information can help government and non-government organizations identify and mitigate likely gaps and weaknesses in communication and information protocols, strategies, systems and plans; establish clear criteria for their use; and integrate or align them as appropriate. This information may also inform decisions regarding the need to amend current frameworks to address impediments to cooperation within and between countries to ensure that the terms of applicable laws, agreements and treaties provide the widest measure of cooperation possible.

2.8 Information regarding agreements, processes, and plans to obtain and to expedite the cross-border movement of labour, expertise, equipment and supplies for recovery activities.
This information can be compared to the foreseeable needs of the COI Region to help identify gaps and barriers that may be addressed to obtain and expedite the cross-border movement of resources essential to recovery, and to clearly identify when these tools may be used. Streamlining the processes for importing and exporting essential equipment and goods, obtaining cross-border recognition of credentials, and establishing processes to give priority clearance for these resources at the border may be areas to review.

2.9 Information on the cross-border agreements, protocols, strategies and plans (including criteria for their use) to identify, prioritize and coordinate the movement of cargo by truck, rail and air across the border.
With a good understanding of this information, the supply chain can better self-manage and coordinate the movement of priority cargo and make contingency plans for the rest. This should facilitate the movement of priority goods and traffic through the border, and help lessen the amount of traffic turned back or delayed.

2.10 Information on plans, agreements and protocols in place to coordinate and enable changes to supply chains in the event of diversions of ships and cargo to new destinations.
This information will enable ports, terminals and the supply chain to plan for and exercise various scenarios. Increased awareness of mitigation strategies and criteria for their use may minimize confusion and reduce delays in rerouting and handling ships and cargo.

2.11 Information on the navigational recovery plans and priorities of both Canada and the U.S.
This information will enable government and non-government to plan and coordinate the diversion of ships and cargo affecting the supply chain, and to develop recovery plans for the navigational channels.

About Domestic Maritime Commerce Plans, Strategies and Priorities and Triggering Criteria

2.12 Information regarding transportation logistics and plans.
The impairment or loss of marine, rail or road transportation corridors or diversions of cargo will require changes to the supply chain. Governments may restrict access to the remaining available

transportation corridors after an emergency or disaster to facilitate the movement of designated persons and equipment, enable debris removal and for other purposes. Pre-event information regarding existing plans, agreements and contingencies to re-route, coordinate and prioritize access to transportation systems, and the triggers for their use, can help non-government organizations with contingency planning and mitigation strategies. This information can also enable organizations that qualify for access to restricted transportation corridors to do so quickly.

2.13 Information on how resources and aid are allocated and coordinated, the type of information needed by decision makers, how this will be communicated, and the criteria for implementing these processes and procedures.
This information enables non-government organizations to better determine and plan within the context of recovery efforts of the COI Region as a whole, and to effectively provide the information needed by decision makers to allocate resources to expedite the recovery of maritime commerce. Decision makers can receive needed information quickly and use resources more effectively.

2.14 Information on what cannot be diverted cross-border. Information on restrictions and protocols affecting the use and availability of resources cross-border.
This information will allow for the development of contingency plans for the cross-border diversion of ships, cargo, and resources in the event of an emergency or disaster.

About Capacity, Capability and Resilience

2.15 Information on the physical location, key dependencies, inter-dependencies, owners, managers, vulnerabilities and backups or alternatives for critical infrastructure and key assets. Information on interdependencies and the consequence of loss or impairment of critical infrastructure and key assets on the local, regional, and national reputation and economic and public wellbeing.
Both public and private sectors may provide this information to COI members as appropriate. This information is considered sensitive, and must be handled using security protocols. It should be shared only on a need to know basis when it is likely to significantly improve situational awareness, mitigation and contingency strategies, resilience, plans for response and recovery activities, and decisions on post-disaster prioritization of resource and aid distribution.

2.16 Information on the capacity and capability of the COI Region and individual organizations.
Government and non-government organizations can use this information to improve situational awareness, predict and plan for conflicting demands and shortages, prioritize and develop processes to allocate and access scarce resources, develop viable contingencies and alternatives, and harmonize the priorities of emergency response management with those of commerce recovery. Some of this information may be sensitive and may be subject to security classifications. It should be shared on a need to know basis in accordance with security protocols and requirements. Such information could include, but is not limited to:

a. Lists and information (compliant with privacy laws and other legal restrictions) on the availability of individuals qualified to do: damage assessments; infrastructure, engineering, safety, security, insurance claim and other inspections; marine salvage; engineering; and, other general and skilled work necessary to resume operations and maritime trade;

b. Inventories of key infrastructure and equipment, and assessments of the capacity and capability of ports, industries and supply chains to accept and meet the needs of diverted commerce and to assist in overall COI Region recovery efforts;
c. Inventories of critical resources: non-government and government within the COI Region;
d. General information on the supply and accessibility of common critical dependencies such as water, fuel, power, and telecommunications; and,
e. Anticipated labour and supply chain issues.

Other

2.17 Tools and guidance documents for maritime commerce recovery planning, risk identification and assessments, and critical infrastructure resilience and consequence of loss assessments.
Such instruments enable government and non-government organizations to identify and mitigate organization and regional resilience gaps and threats, and develop organization and integrated regional maritime commerce resumption plans. Identification and prioritization of critical infrastructure and risks before a disaster strikes will allow government and non-government organizations to modify risk assessments; an assessment of threats, risks and vulnerabilities will facilitate contingency planning. Organizations with assets, products or services with a high consequence of loss to the economic or social well-being of the region or country can make government and other key stakeholders aware of their criticality, thus helping to ensure an appropriate priority is assigned to this organization for pre-planning purposes, and for resources, services and other aid dispersal following an emergency or disaster.

Recommendations:

Recommendation #13: Identify or create a tool to conduct organization-level risk, resilience, consequence-of-loss and critical infrastructure assessments. This should include a review of key threats and risks, dependencies, interdependencies, back-up strategies and contingencies. Encourage all COI members to conduct this type of assessment.
The loss of a critical infrastructure or asset of an organization, or the products or services it produces can be devastating to that organization or others dependent on it. An assessment and contingency plan can enable organizations to become aware of their threats, risks and vulnerabilities, and to strengthen contingency strategies. Sharing information with other organizations that may also be impacted can help strengthen supply chain resilience. In some situations, government or service providers may also accept this information to help inform their recovery and prioritization strategies.

Recommendation #14: Identify or create a tool for individual organizations and others to identify products, services, critical infrastructure and other assets which may be vital to local, regional or national economic and social well-being and/or reputations. Develop and implement a process to gather and securely transfer this information among COI members as appropriate.
Some work in this area may already be underway and existing tools and protocols should be identified, adopted or built upon wherever possible. Because of the complex nature of the maritime commerce supply chain and the number of sectors and jurisdictions involved, information gathered may help identify gaps and vulnerabilities previously undetected. Some

identified vulnerabilities may require a joint effort by multiple agencies or jurisdictions in Canada and the U.S. to mitigate or develop contingency plans. Organizations with acknowledged vital services, products, critical infrastructure may receive a higher level of priority for government-directed recovery aid and resources after an event.

Recommendation #15: Develop and share tools to facilitate resilience and recovery planning at the organization and regional levels.
Tools will assist organizations and the COI Region to systematically develop quality resilience and recovery plans. Integrated plans help ensure the alignment of plans and strategies, and can draw upon the insights, knowledge and resources of the region as a whole. Integrated plans can also address shared risks and interdependencies.

Recommendation #16: Identify issues of national, sectorial or regional concern, including resilience and recovery priorities, gaps and weaknesses to the COI Region.
Information on the priorities of government and non-government organizations can help inform the resilience and recovery plans of others. Forums to identify gaps and weaknesses which may be outside the jurisdiction or authority of the COI members impacted can allow the COI members to work together on mitigation strategies.

Recommendation #17: Develop bi-national or joint strategies, plans and agreements (and triggering criteria) to help mitigate likely scenarios.
Diverted ships and cargo will result in significant changes to supply chains and labour demands. Contingency plans prepared in advance of a disaster can be shared with affected COI members to increase preparedness.

Recommendation #18: Develop and share standard data requirements and basic, simple reporting templates, systems and protocols tailored to the organizations participating.
Information and basic, simple tools to collect, communicate and integrate essential and standardized data will increase the integrity and speed of data collection, and improve the ability of organizations to participate. Flexibility in the method and amount of data collection will help reduce the burden placed on smaller or less complex organizations. Collection, storage and dissemination of data methods and mechanisms must be compliant with privacy and other such laws and agreements.

Recommendation #19: Consider the information elements listed above in Part B 2.1 – 2.17 of the guidelines. Develop and implement a plan to gather, communicate and create an understanding of this information among COI members as it becomes available.
The information elements listed in Part B 2.1 – 2.17 originate from best practices and stakeholder input. Some information elements are readily available while others may require additional effort or the development of information sharing protocols and agreements to obtain. This information may be shared (when legally permitted) with COI members and organizations likely to be involved in allocating resources, or coordinating or assisting with recovery efforts.

Recommendation #20: Periodically review the information elements listed above in Part 2.1 – 2.17 of the guidelines to ensure they are comprehensive, reflect best practices and lessons learned and remain relevant.
The information elements listed above should be reviewed periodically to ensure that any changes are captured and incorporated into regional resilience plans and strategies. An up-to-date understanding of these information elements is critical for ensuring that organizations and governments are properly prepared in the event of an incident or disaster.

3. Information elements *after* a disruption of maritime commerce

About Government Leadership

3.1 Information on which government agencies, if any, are leading the response and recovery activities in Canada and the U.S., and how they will work together. Information on governments' planned actions, including the intent to declare a State of Emergency, and the likely implications for stakeholders.
This information can include the confirmed, potential or anticipated assistance and resources required by lead authorities from other levels of government or non-government organizations, and how the Canadian and American governments will coordinate their efforts. Government and non-government organizations can use this information to take direction from those in charge, to better assist lead authorities in the response and recovery of essential services, to gauge the overall scope of the event, and to modify their own recovery strategies.

3.2 Information on government contingencies put in place to facilitate security and safety compliance.
This information can help expedite maritime commerce recovery while maintaining regulatory compliance within the constraints of emergency or disaster recovery.

3.3 Advice and guidance regarding mitigation and recovery strategies to minimize the impacts of the emergency or disaster.
The consequences of maritime commerce disruption can spread and increase exponentially the longer the disruption occurs, potentially impacting the economic and social well being of others far outside the disaster area. This element of information can help organizations make more informed operational and strategic decisions to better manage and achieve a faster response and recovery.

About Non-Government Leadership

3.4 Information about which non-government organizations, if any, are leading the response and recovery activities in Canada and the U.S., and how they will work together and with government.
This information can include the confirmed, potential or anticipated assistance and resources required by lead authorities from non-government organizations and government, and how their efforts will be coordinated with others. Non-government organizations can use this information to take direction from those in charge, understand the roles (if any) of government, and better participate in recovery plans and activities.

Situational Awareness and Recovery Progress

3.5 Information regarding the cause of the disruption, the affected geographical area, the actual and potential impact of the disaster, and the estimated recovery time; to be updated at regular intervals or as significant new information becomes available.
This information can help government and non-government organizations to develop more effective recovery plans and help inform future mitigation strategies.

3.6 Information on the post-disaster capacity and capability of relevant departments and agencies and their critical infrastructure at the border. Information on the prioritization, coordination and expediting of diverted maritime cargo by truck, rail and air traffic through the border.
With a good understanding of this information, the supply chain can better self-manage and coordinate the movement of priority cargo and modify its recovery plans accordingly. This should help expedite priority goods and traffic through the border, reduce congestion, and lessen the amount of traffic turned back or delayed.

3.7 Information on impacted essential supply chains, key dependency providers, infrastructure, critical organizations, essential personnel, and information and technology systems.
This information will help inform the recovery actions taken by government and non-government organizations.

3.8 Identification of affected cargo and ships, and priorities for the movement of cargo and supplies domestically.
With a good understanding of this information, the supply chain can better self-manage and coordinate the movement of priority cargo and modify its recovery plans accordingly. This should facilitate the movement of priority goods and traffic accessing domestic transportation corridors, lessen congestion, and reduce the amount of cargo and supplies turned back or delayed. This information will also help decision-makers coordinate the allocation of resources and the activities of insurance and other inspectors, service providers, labour, and others essential to the functioning of the relevant supply chain and critical infrastructure.

3.9 Information regarding restrictions and priorities for access to labour, expertise, inspectors, equipment, key services and supplies, transportation corridors and other resources and aid needed for recovery.
This information will help inform decisions and actions taken by government and non-government organizations.

3.10 Information on the ability of non-government organizations to take effective action to assist in the recovery efforts of themselves and others.
This information can help government effectively utilize scarce resources and aid to provide help to those priority organizations without sufficient means to recover quickly. Information elements may include information on: the ability of individual organizations to function or recover on their own; formal and informal agreements or willingness to aid others; available equipment, supplies, capacity and personnel to aid others, and, actions already taken or planned since the emergency or disaster.

3.11 Information regarding the extent to which non-government organizations have or expect to have assistance from other organizations, including cross-border organizations.
This information can help governments manage and better coordinate recovery efforts they are leading, and help them ensure critically important organizations receive needed assistance.

3.12 Timely information and updates from government and non-government organizations on decisions and activities to restore the domestic and cross-border flow of maritime commerce.

Important information can be disseminated at established intervals, and/or as the situation changes. Gathering and sharing information among COI members will benefit from simple, easy to access communication processes. Timely, updated information will enable government and non-government organizations, including key service providers, to make informed decisions to better prioritize, implement, coordinate, and adapt response and recovery efforts. It also enables the provision of accurate, consistent key messages and information to key stakeholders, the media and others with a vested interest in marine trade recovery.

3.13 Information on the safety, security and operational concerns of government and non-government organizations

This information can inform decisions such as the prioritization and coordination of resources and aid. It can also enable government and non-government organizations to develop and adapt their recovery plans and activities. Information on actual or potential barriers to the flow of products and services within an organization, its supply chain, or between inter-dependent organizations can enable government to take appropriate and timely action to assist.

Recommendations:

Recommendation #21: Relevant government and non-government organizations should develop a method or system to advise COI members of key information in the event of an emergency or disaster. This method or system should include a mechanism to keep COI members informed of any changes or new developments during the recovery, and of any safety, security or operational concerns.

In the event of an emergency or disaster, it will be important for relevant government and non-government organizations to keep the COI informed of important developments and government decisions that could impact their operations. In order to facilitate this transfer of information, a method or system for distributing information should be developed that allows for the creation of relationships between key stakeholders and government.

Recommendation #22: COI members should develop a method or system to advise relevant government and non-government organizations of information that could be important for recovery efforts. This method or system should include a mechanism to provide updates as required.

In the event of an emergency or disaster, it will be important for COI members to inform relevant government and non-government organizations of how the incident has impacted their organizations. This type of information will help inform decision-makers and help guide recovery efforts. In order to facilitate this transfer of information, special emphasis should be placed on building relationships between key stakeholders.

Recommendation #23: Information and status updates should be communicated positively.

COI Members may be more willing to share and disclose timely information if it is presented to others positively: percentage of roads open versus roads closed, percentage of dock capacity available.

Recommendation #24: Develop a framework or process for COI members to identify and manage priorities and conflicting priorities within the COI in the event of an incident.

Prioritization frameworks should take into account factors such as emergency response and management priorities; criticality of products, services, critical infrastructure and other assets;

available alternatives and contingencies; economic impacts; supply chain obligations; critical schedules; and, regulatory requirements. Existing frameworks and protocols should be shared and also used as a basis for any additional pre-event work necessary. Several frameworks that may be considered are for the prioritization of: the movement of ships and their cargo; access to labour within a port or terminal; the movement of cargo by rail, road, or air; the movement of people and goods across the border; access to transportation routes; access to scarce resources; and, others.

PART C: Communication and information-sharing mechanisms among government and non-government Community Of Interest members

1. Introduction

1.1 Effective and efficient communication and information-sharing protocols and processes can significantly increase the likelihood of a structured, well-coordinated and expedited resumption of the flow of maritime commerce after an emergency or disaster.

1.2 To protect the security of sensitive and proprietary information and maintain the trust of those sharing this information, protocols, agreements, and mechanisms to protect the information and distribute it on a need-to-know basis should be implemented. Adherence to privacy and other laws to protect and secure sensitive information is essential.

1.3 To reduce the potential burden for non-government organizations, governments should: access existing sources of data where possible to avoid duplication of effort and minimize the demands on stakeholders; streamline and simplify data reporting mechanisms; and, where possible standardize the format for data and reports submitted to government organizations or their delegates on both sides of the border. Requests for data and information should be scalable to be commensurate with the criticality and complexity of the organization to help minimize the effort needed to comply.

1.4 For government, implementing easy to apply communication and information-sharing protocols and providing consistent data collection formats to stakeholders can help ensure it quickly has the information and industry expertise necessary to make good decisions and provide timely, accurate information to others. This can enable consistent, quality messaging, and more effective prioritization and coordination of: recovery efforts; the movement of people and goods domestically and cross-border; access to restricted transportation corridors; and, the receipt and dispersal of scarce resources.

1.5 For non-government organizations, straightforward and easily understood communication and information-sharing protocols using consistent formats can reduce resources and time needed to provide information; facilitate effective communication of its damage assessments, recovery needs and concerns; improve its ability to recover or aid in the recovery of others; and, contribute situational information, industry expertise and advice to government and other decision makers before, during, and after an emergency or disaster. Non-government organizations are better positioned to contribute to a quick resumption of maritime commerce as a participant in recovery planning and execution rather than as an observer.

1.6 Simple, centralized and easy to use systems for providing and receiving information are essential. Minimizing the effort and time needed to provide and obtain information will encourage the sharing of critical information.

2. Communication and Information-Sharing

2.1 Communication and information-sharing protocols and agreements should be established between all stakeholder groups within the COI Region. These protocols and agreements should provide single points of access and facilitate the sharing and use of informed, consistent key messages during and after an emergency or disaster to avoid preventable confusion, reduced public and shareholder confidence, and other undesirable consequences.

2.2 Communication and information sharing between stakeholders in two countries will require careful planning and the establishment of clear protocols, agreements and mechanisms. There may be opportunities to build upon or leverage those currently in place, or used in the past.

2.3 Communication and information sharing should be timely and recur as often as required to keep COI Region members well informed. Government and non-government organizations can use these updates to modify recovery activities and keep owners, the media, the public and other key stakeholders informed. Information reported out should be stated in positive terms. For example, percentage of roads open versus closed, and percentage of dock capacity available.

2.4 Redundancies should be built into the communication and information-sharing systems and mechanisms. These could include, but are not limited to, implementing multiple means of sharing information, creating a dark site accessible by COI members, establishing an out-of-area conference bridge to mitigate the failure of telecommunications infrastructure within the region, and developing ways to overcome interoperability challenges.

3. Sensitive and Classified Information

3.1 Concerns about the security of proprietary or sensitive information can create barriers to communication and information sharing. Non-disclosure agreements; security clearances; training; protocols, standards and measures for the classification, communication, storage and destruction of information; physical and technological equipment, and other requirements can be put in place prior to an emergency or disaster to instill confidence that sensitive information will be properly handled. Adherence to privacy laws, agreements and other requirements to protect and secure information is essential.

Recommendations

Recommendation #25: Establish a common lexicon and language among COI members.
This information will reduce the potential for misunderstandings, poor decisions, and delayed or inappropriate response and recovery activities by government and non-government COI members.

Recommendation #26: Coordinate the development of a communication protocol(s) or model(s) for use within the COI Region by strategic, operations, and communication areas of COI member organizations.
Government and some sectors have well-established communication protocols for use before, during and after an emergency or disaster. Because maritime commerce recovery will involve many organizations, jurisdictions and sectors in Canada and the U.S., an integrated communication protocol(s) or model(s) should be developed to streamline the barrier-free flow of communication necessary to expedite commerce recovery.

Recommendation #27: Develop a system and mechanisms to gather, report and disseminate critical information to decision-makers, the COI members, and others. Establish agreed-upon formats, forums and communication channels. Establish criteria to activate the system and mechanisms.
An integrated system and agreed-upon formats to communicate and share information within the COI should build upon existing systems, protocols, and data reporting procedures. Simple and easy to implement methods of collecting, sharing, and securely storing critical information will help ensure that critical information is available in the right place at the right time and in a form immediately useable by the recipient. This can minimize the burden and delays of obtaining vital information, and help expedite decisions and recovery activities.

Recommendation #28: Develop protocols, agreements and mechanisms to enable collection, communication and the sharing of sensitive and classified information between government and non-government organizations, and COI members, networks, committees and others as appropriate.
Unauthorized collection, disclosure or improper storage and destruction of sensitive personal, business or security information could cause serious damage to the reputation and ability of government and non-government entities to function, harm the economy, and severely impact public safety and security. Establishing systems to properly share and protect sensitive information as agreed to in advance of an emergency or disaster can help facilitate the sharing of information without delays or concerns; COI members may be reassured that their information will be handled in a secure manner. Identifying which COI members should have access to varying degrees of sensitive information will enable the requisite security clearances to be obtained in advance; therefore, removing potential barriers and delays in sharing critical information. All privacy laws and agreements must be adhered to.

Recommendation #29: Develop an integrated alerting system to alert and provide consistent information to affected COI members throughout the COI Region.
Simultaneous alerts and consistent information to affected COI members on both sides of the Canada-U.S. border can enable them to take appropriate, coordinated and immediate action. This can expedite the response to and recovery from the emergency or disaster. The alerting system should integrate existing systems on both sides of the border, and be consistent with the bi-national alerting protocol and agreement recommended earlier.

Recommendation #30: Select and help facilitate the implementation of a shared or compatible incident command system(s) to help manage recovery activities in a bi-national, multi-jurisdictional, multi-sector environment.
An important early task for networks or committees should be the identification, selection and promotion of a system, or compatible systems, for effectively coordinating recovery

activities within the complex, cross-border maritime commerce environment; examples include the Incident Command System and Unified Command. Care should be exercised to ensure the selected system(s) is the same as, or compatible with, systems currently used by emergency responders and others responsible for response and recovery.

Recommendation #31: Require COI members to designate a Point of Contact (POC), including alternates, to give or receive maritime commerce resilience and recovery information to others within their organization and to other COI Region stakeholders.
An organization often has more than one POC with other organizations during the course of its regular operations. Establishing a single POC (and alternate) per organization for the purposes of planning and executing resilience and recovery activities will help mitigate the potential for confusion and conflicting information within and between organizations. One POC (and alternate) per organization can streamline and speed up planning, decision-making and recovery activities. Processes to enable timely communication with an organization's POC after an emergency or disaster should be developed, recognizing that frequent changes to organizations and staff may preclude the maintenance of a current, accurate list of POCs.

Recommendation #32: Identify a lead organization, or implement a process to identify a lead organization after an emergency or disaster, that will contact and coordinate the other POCs in the COI Region.
A significant disruption to maritime commerce will likely generate an urgent demand for information and status updates. Identifying, or implementing a process to identify, a lead organization to centralize and coordinate the collection and dissemination of information will help ensure its quality and timeliness. Government and non-government organizations will know where to provide and receive essential, accurate information for prioritizing and planning recovery efforts.

Recommendation #33: Require COI members to each designate one media or public relations spokesperson, including alternates, for their organization to manage external crisis communications. Establish a network of spokespersons within the COI and encourage them to share training, best practices and expertise, develop integrated crisis management plans and strategies, and collaborate on key message templates and other tools in advance of an emergency or disaster.
Spokespersons who are well qualified and capable of handling communications during and after a crisis can assist in the recovery of maritime commerce by calmly conveying accurate, timely, and consistent messages. They should be well informed of the situation and status of the recovery efforts, and familiar with the needs and concerns of their organizations and those of other key COI members. The spokespersons should form their own network or committee to develop integrated communication plans, information sharing protocols and strategies, key message templates and lines, and tools that should be exercised periodically. Predicted (insufficient capacity and/or capability of some organizations) or unforeseen circumstances may require a spokesperson to represent more than one organization, and to assist in the development and dissemination of consistent key messages for the COI Region; plans should consider this possibility.

Recommendation #34: Identify a lead organization(s) or implement a process to identify a lead organization(s) to contact and coordinate the other spokespersons in the COI Region after an emergency or disaster.

The lead organization(s) can be a point of contact for government and industry, and oversee the development and dissemination of consistent key messages. The lead organization may provide communications advice and coaching to others

Recommendation #35: Develop systems and protocols for COI spokespersons to address and coordinate public messaging.
Draft message templates, scripts, key generic messages crafted in advance, and the identification of key spokespersons/organizations authorized to represent the COI can help minimize delays in communications. Establishing quality control mechanisms, and how they will be implemented, can ensure that public messaging is accurate, consistent, and better reflects the needs and concerns of the COI members.

Recommendation #36: Regularly exercise and evaluate communication and information-sharing systems, protocols, processes and procedures, and the common Alerting Protocols.
COI Region members encompass a wide range of government and non-government maritime commerce stakeholders on both sides of the Canada – U. S. border with different capacities and capabilities. Exercising and evaluating communication and information-sharing mechanisms periodically can enable improvements and build understanding, trust, relationships, and confidence among the COI members. Previous global disasters have highlighted the importance of government – non-government partnerships, cooperation and collaboration to achieving a fast and efficient recovery.

APPENDIX 1: CHECKLIST FOR USE IN IMPLEMENTING COMMUNICATION AND INFORMATION-SHARING GUIDELINES

NOTE: This section should assist in establishing and organizing the Community of Interest Region leadership, networks, committees and activities. With the exception of the sub-section entitled '*Building a foundation for maritime resiliency and recovery activities' below,* the recommendations **are not in order of priority**. The items may be modified, deleted or added to as determined by the Sponsoring Organization, networks, committees, or other decision makers.

Building a foundation for maritime commerce resiliency and recovery activities

- ☐ Identify a bi-national Community of Interest (COI) from both government and non-government maritime commerce stakeholders within the COI Region
- ☐ Identify a bi-national Sponsoring Organization(s) to oversee and provide leadership in the establishment and work of COI networks and committees, and to encourage wide-scale adoption and implementation of the guidelines and related strategies in the COI Region
- ☐ Establish a bi-national committee, network, or other forum through which to plan and coordinate resilience and recovery strategies for the COI Region
- ☐ Participating COI members designate Points of Contact (POCs), including alternates, who may be called upon to participate or work with the networks and committees, and who commits to promoting and sharing relevant information from the networks or committees with their organization and other stakeholders. Some organizations may ask others to represent them
- ☐ Draft a Regional Information Sharing Protocol framework for COI members
- ☐ Develop an international agreement that references existing frameworks, protocols, agreements, plans, procedures, communication and information-sharing mechanisms, and other tools that can be used or leveraged to build cross-border maritime commerce resilience and expedite recovery.
- ☐ Promote the development of pre-incident agreements, accreditation equivalencies and mechanisms to share skilled labour personnel across the border and between trade unions and organizations.
- ☐ If required, engage a third party to help identify significant resilience and recovery gaps and vulnerabilities that cross organizational, jurisdictional, sectorial, and/or national boundaries
- ☐ Encourage and facilitate the exchange of lessons learned and best practices relevant to resilience and recovery planning. Integrate these into the information elements as necessary.
- ☐ Develop provisions that limit the liability of and repercussions to those taking reasonable and prudent action for the purposes of minimizing damage and expediting maritime commerce recovery during and immediately after an emergency or disaster.
- ☐ Develop a Regional Bi-National Disaster Alerting Protocol and/or agreement.
- ☐ Integrate the maritime community and interests in local, regional and cross-border emergency management, emergency management operation centres, and region-wide business continuity planning.

Facilitating the sharing of information *before* a disruption of maritime commerce

- ☐ Identify or create a tool to conduct organization-level risk, resilience, consequence-of-loss and critical infrastructure assessments. This should include a review of key threats and risks, dependencies, interdependencies, back-up strategies and contingencies. Encourage all COI members to conduct this type of assessment.
- ☐ Identify or create a tool for individual organizations and others to identify products, services, critical infrastructure and other assets that may be vital to local, regional or national economic and social well being and/or reputations. Develop and implement a process to gather and securely transfer this information among COI members as appropriate.
- ☐ Develop and share tools to facilitate resilience and recovery planning at the organization and regional levels.
- ☐ Identify issues of national, sectorial or regional concern, including resilience and recovery priorities, gaps and weaknesses to the COI Region.
- ☐ Develop bi-national or joint strategies, plans and agreements (and triggering criteria) to help mitigate likely incident scenarios.
- ☐ Develop and share standard data requirements and basic, simple reporting templates, systems and protocols scalable to the organizations participating.
- ☐ Consider the information elements listed above in Part B 2.1 – 2.17 of the guidelines. Develop and implement a plan to gather, communicate and create an understanding of this information among COI members as it becomes available.
- ☐ Periodically review the information elements listed above in Part B 2.1 – 2.17 of the guidelines to ensure they are comprehensive and remain relevant.

Facilitating the sharing of information *after* a disruption of maritime commerce

- ☐ Relevant government and non-government organizations should develop a method or system to advise COI members of key information in the event of an emergency or disaster. This method or system should include a mechanism to keep COI members informed of any changes or new developments during the recovery, and any safety, security or operational concerns.
- ☐ COI members should develop a method or system to advise relevant government and non-government organizations of information that could be important for recovery efforts. This method or system should include a mechanism to provide updates as required.
- ☐ Information and status updates should be communicated positively.
- ☐ Develop a framework or process for COI members to identify and manage priorities and conflicting priorities within the COI in the event of an incident.

Communication and information-sharing mechanisms

- ☐ Establish a common lexicon and language among COI members.
- ☐ Coordinate the development of a communication protocol(s) or model(s) for use within the COI Region by strategic, operations, and communication areas of COI member organizations.
- ☐ Develop a system and mechanisms to gather, report and disseminate critical information to decision-makers, the COI members, and others. Establish agreed-

upon formats, forums and communication channels. Establish criteria to activate the system and mechanisms.

- Develop protocols, agreements and mechanisms to enable communication and the sharing of sensitive and classified information between government and non-government organizations, and COI members, networks, committees and others as appropriate.
- Develop an integrated alerting system to alert and provide consistent information to affected COI members throughout the COI Region.
- Select and help facilitate the implementation of a shared or compatible incident command system(s) to help manage recovery activities in a bi-national, multi-jurisdictional, multi-sector environment.
- Require COI members to designate a Point of Contact (POC), including alternates, to give or receive maritime commerce resilience and recovery information to others within their organization and to other COI Region stakeholders.
- Identify a lead organization, or implement a process to identify a lead organization after an emergency or disaster, that will contact and coordinate the other POCs in the COI Region.
- Require COI members to each designate one media or public relations spokesperson, including alternates, for their organization to manage external crisis communications. Establish a network of spokespersons within the COI and encourage them to share training, best practices and expertise, develop integrated crisis management plans and strategies, and collaborate on key message templates and other tools in advance of an emergency or disaster.
- Identify a lead organization(s) or implement a process to identify a lead organization(s) to contact and coordinate the other spokespersons in the COI Region after an emergency or disaster.
- Develop systems and protocols for COI spokespersons to address and coordinate public messaging.
- Regularly exercise and evaluate communication and information-sharing systems, protocols, processes and procedures, and the common Alerting Protocols.

Introduction: The recommendations are paraphrased from the "*Guidelines for Communication and Information Sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster*." These recommendations apply to the maritime region, defined as the Province of British Columbia and the State of Washington. They also apply to all stakeholders associated with the maritime economy or community of interest. The guidelines are listed numerically. Similar and compatible recommendations are listed in the second column. The entire Guidelines and full recommendations are available at this link <click here>.

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#1: Identify a Community of Interest (COI) from both government and non-government maritime commerce stakeholders.		Bi-National Workshop to Expedite Maritime Commerce Recovery Through Regional Collaboration		Procedure to identify specific COI members and method to "sign on" to participate. **T** Create charter for taskforce and private sector equivalent, as required. **T**	**1** **2**	**Task Force** **Contract**
#2: Identify a Sponsoring Organization(s) to oversee and provide leadership in the establishment and work of networks and committees and related strategies.	#12 #34	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Add PNEMA emergency management agency's and a task force to implement to the protocol framework Annex C or alternative. **S** Create charter for taskforce and private sector equivalent, as required. **T**	**1** **2**	**PNWER** **Task Force**
#3: Establish a committee, network, or other forum through which to plan and coordinate resilience and recovery strategies.	#4	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Develop procedures to outline specific committee, network and forum details and process. **T**	**1.5**	**Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#4: Require organizations to designate a Point of Contact (POC), including alternates, who may be called upon to participate or work with the networks and committees.	#3	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Develop procedures to outline specific committee, network and forum details and process. **T**	**1.5**	**Task Force**
#5: Draft an Information Sharing Protocol framework.	#6 #17 #19 #24	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Finalize Annex C or alternative. **S**	**1**	**PNWER**
#6: Develop a bi-national accord that references existing frameworks, protocols, agreements, plans, procedures, communication and information-sharing.	#5 #17 #19 #24	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Finalize Annex C or alternative. **S**	**1**	**PNWER**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#7: Promote the development of pre-incident agreements, accreditation equivalencies and mechanisms to share skilled labor/labour personnel across the border and between trade unions and organizations.	#10	Pacific Northwest Emergency Management Arrangement, Draft Annex B, Pacific Northwest Emergency Management Arrangement Implementing Procedures The Canada-United States Framework For The Movement Of Goods And People Across The Border During And Following An Emergency		Procedure outlining process in Annex B for Maritime specific requirements. **T**	**3**	**Task Force (Adopt)**
#8: Engage a third party to help identify and mitigate significant resilience and recovery gaps.	#9	Contracted with the Pacific Northwest Economic Region, Center for Regional Disaster Resilience		Continue Contract. **S/T**	**1**	**Sponsor Contract**
#9: Encourage and facilitate the exchange of lessons learned and best practices relevant to resilience and recovery planning.	#8	Contracted with the Pacific Northwest Economic Region, Center for Regional Disaster Resilience		Continue Contract. **S/T** Develop method for exchange of lessons learned and best practice information. **T**	**1** **2**	**Sponsor Contract**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#10: Develop provisions that limit the liability of and repercussions to those taking reasonable and prudent action for the purposes expediting maritime commerce recovery.	#7	Pacific Northwest Emergency Management Arrangement, Draft Annex B, Pacific Northwest Emergency Management Arrangement Implementing Procedures The Canada-United States Framework For The Movement Of Goods And People Across The Border During And Following An Emergency		Procedure outlining process in Annex B for Maritime specific requirements. **T** Procedure to specifically limit liability (may require legislation). **S/T** Procedure recommending Regulatory, statutory and ordinance changes, suspensions or waivers necessary post disaster. **T**	**3**	**Task Force**
#11: Develop a regional bi-national alerting protocol and/or agreement.	#18 #23 #25 #26 #28 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T**	**2.5**	**Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#12: Integrate the maritime community and interests in local, regional and cross-border emergency management, and region-wide business continuity planning.	#2 #34	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Add PNEMA emergency management agency's and a task force to implement to the protocol framework Annex C or alternative. **S** Create charter for taskforce and private sector equivalent, as required. **T** Procedure to integrate maritime community into Annex B or emergency operations directives. **T**	**1** **2** **3**	**Task Force or Contract**
#13: Identify or create a tool to conduct organization-level risk, resilience, consequence-of-loss and critical infrastructure assessments.	#14 #15			Conduct workshop to evaluate information sharing tools. **S/T**	**3**	**Contract**
#14: Identify or create a tool to identify products, services, critical infrastructure and other assets which may be vital to economic and social well-being.	#13 #15			Conduct workshop to evaluate information sharing tools. **S/T**	**3**	**Contract**
#15: Develop and share tools to facilitate resilience and recovery planning at the organization and regional levels.	#13 #14			Conduct workshop to evaluate information sharing tools. **S/T**	**3**	**Contract**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#16: Identify issues of national, sectorial or regional concern, including resilience and recovery priorities, gaps and weaknesses.		Bi-National Workshop to Expedite Maritime Commerce Recovery Through Regional Collaboration Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery Through Regional Collaboration		Workshop report. **S** Tabletop report. **S**	**1**	**PNWER**
#17: Develop bi-national or joint strategies, plans and agreements (and triggering criteria) to help mitigate likely incidents.	#5 #6 #19 #24	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Finalize Annex C or alternative. **S** Develop procedure for triggering criteria. **T**	**1** **3**	**Contract** **Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#18: Develop and share standard data requirements and basic, simple reporting templates, systems and protocols.	#11 #23 #25 #26 #28 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T** Review and develop public disclosure exemptions. **T**	**2.5** **2.5** **3**	**Task Force**
#19: Develop and implement a plan to gather, communicate and create an understanding of critical information.	#5 #6 #17 #24	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Finalize Annex C or alternative. **S** Develop procedure to identify critical information elements. **T**	**1** **2**	**PNWER** **Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
Periodically review the critical nation elements to reflect best ices and lessons learned and remain ant.	#21 #22	Bi-National Workshop to Expedite Maritime Commerce Recovery Through Regional Collaboration Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery Through Regional Collaboration		Workshop report. **S** Tabletop report. **S** Develop procedure to create a review schedule. **T**	**1** **1** **2**	**PNWER** **PNWER** **Task Force**
Relevant government and non-rnment organizations should develop thod or system to provide key nation in the event of an emergency aster.	#20 #22			Develop procedure to identify critical information elements. **T**	**2**	**Task Force**
Develop a method or system to advise ant government and non-government nizations of information that could be rtant for recovery efforts.	#20 #21			Develop procedure to identify critical information elements. **T**	**2**	**Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#23: Information and status updates should be communicated positively.	#11 #18 #25 #26 #28 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T**	**2.5**	**Task Force**
#24: Develop a framework or process to identify and manage priorities and conflicting priorities.	#5 #6 #17 #19	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Finalize Annex C or alternative. **S** Develop procedure to identify critical information elements. **T** Develop procedure to identify key priorities and method to update status. **T**	**1** **2** **2**	**PNWER** **Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#25: Establish a common lexicon and language.	#11 #18 #23 #26 #28 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T**	**2.5** **2.5**	**Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#26: Coordinate the development of a communication protocol or model.	#11 #18 #23 #25 #28 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T**	**2.5** **2.5**	**Task Force**
#27: Develop a system and mechanisms to gather, report and disseminate critical information and criteria to activate the system and mechanisms.		Northwest Warning, Alert and Response Network		Conduct workshop to evaluate tools to report and disseminate critical information. **S/T**	**2**	**Contract**

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Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#28: Develop protocols, agreements and mechanisms to enable communication and the sharing of sensitive and classified information between government and non-government organizations.	#11 #18 #23 #25 #26 #29 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T** Develop sensitive or classified information protocol through procedure. **T**	**2.5** **2.5** **3**	**Task Force or Contract**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#29: Develop an integrated alerting system to alert and provide consistent information throughout the region.	#11 #18 #23 #25 #26 #28 #35	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T**	**2.5** **2.5**	**Task Force**
#30: Select and help facilitate the implementation of a shared or compatible incident command system to help manage recovery activities.				Develop procedure for how maritime incident recovery is structured and operated. **T**	**3**	**Task Force**
#31: Require a Point of Contact (POC), including alternates, to give or receive maritime commerce resilience and recovery information to others.	#32 #33			Develop a joint information system procedure. **T**	**1**	**Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#32: Identify a lead organization after an emergency or disaster, that will contact and coordinate the other POCs.	#31 #33			Develop a joint information system procedure. **T**	**1**	
#33: Require one media or public relations spokesperson, including alternates, for their organization to manage external crisis communications including a network of spokespersons and encourage them to share training, best practices and expertise, develop integrated crisis management plans and strategies, and collaborate on key message templates and other tools in advance of an emergency or disaster.	#31 #32			Develop a joint information system procedure. **T**	**1**	
#34: Identify a lead organization to contact and coordinate the other after an emergency or disaster.	#2 #12	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Add PNEMA emergency management agency's and a task force to implement to the protocol framework Annex C or alternative. **S** Create charter for taskforce and private sector equivalent, as required. **T** Procedure to integrate maritime community into Annex B or emergency operations directives. **T**	**1** **2** **2**	**Complete** **Task Force**

Bi-National Maritime Commerce Recovery Action Plan Roadmap			Green = Complete Yellow = Progress Red = Gap	Level of Action Strategic Framework = S Tactical Procedures = T	**1** ≤ 90 days **2** ≥ 91 & ≤ 180 days **3** ≥ 181 days	Who should be responsible for this action?
Guideline Recommendation	Compatible Recom-mendation	Action Taken	Status	Suggested Action(s) and Level	Priority	Respon-sible Party
#35: Develop systems and protocols spokespersons to address and coordinate public messaging.	#11 #18 #23 #25 #26 #28 #29	Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations Organization for the Advancement of Structured Information Standards (OASIS) Common Alerting Protocol http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2-os.pdf		Adopt alerting protocol standards through procedure. **T** Develop procedure with templates. **T** Develop a joint information system procedure. **T**	**2.5** **1** **1**	**Task Force or Contract**
#36: Regularly exercise and evaluate communication and information-sharing systems, protocols, processes and procedures.		Pacific Northwest Emergency Management Arrangement, Draft Annex C, Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations		Develop procedure to outline training and exercise schedule. **T**	**3**	**Task Force**

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Section 1: Report on the 1st Canadian Stakeholder's Workshop

EXERCISE OVERVIEW

The April 5th workshop took place during a Pacific Region Maritime Commerce Resumption Committee meeting. Government, the Port Metro Vancouver, industry and its associations, labour, service providers, the supply chain, rail, trucking, academia and others were invited to participate. The PNWER attended as an observer while the national and regional U.S. Coast Guard and Transport Canada HQ attended via teleconference. A complete list of organizations that participated in the workshop is in Appendix 1.

A container ship approaches the Port of Vancouver (Photo: Vancouver Port Authority)

The expected outcomes of the workshop were:

1) preliminary identification of cross-border communication and information sharing and other needs of key maritime commerce stakeholder groups for facilitating the recovery of maritime commerce after an emergency;

2) stakeholder feedback on the applicability of existing cross-border communication and information-sharing protocols, strategies, plans, agreements and best practices for maritime commerce recovery, identification of others not included in the draft summary, and critical gaps in communication and information-sharing mechanisms; and,

3) recommendations from stakeholders to Initiative 5(b) project coordinators to achieve the overall objectives.

METHODOLOGY

Invited participants were sent the following background documents in advance of the workshop:

- Workshop agenda
- BEYOND THE BORDER: A SHARED VISION FOR PERIMETER SECURITY AND ECONOMIC COMPETITIVENESS
- Exercise Sedna Scenario
- Exercise Sedna Final Report
- Pacific Region Integrated Maritime Commerce Resumption Plan

- Version 8: Draft Guidelines on Measures Towards Enhancing Maritime Trade Recovery Related to the Global Supply Chain System and Maritime Conveyances

During the workshop participants were provided with an overview of Initiative 5(b), the workshop and its objectives and the key points from the advance background documents including the Exercise Sedna. The following presentations on key cross border communication and information sharing protocols, agreements and best practices were made:

1) The *International Mobility and Trade Corridor Project (IMTC)* – presented by Mimi Sukhdeo, Regional Director, TC Coordination and Policy

2) *Pacific Northwest Emergency Management Arrangement (PNEMA)* – presented by Mike Andrews, Regional Manager Emergency Management BC/PEP

After a general discussion on the information provided, participants worked on three guided discussion topics, in sub-groups and in plenary. The topics and the results of the discussions are below.

TOPICS AND DISCUSSION RESULTS

Topic #1 Canada-US Communication and Information Sharing

What information does industry and government need during and after this disaster to significantly improve the ability to resume and restore the marine transportation system and maritime commerce? What should be provided to and requested from the U.S.?

1) Damage Assessments:
    a. How bad is it? Triage to find out where the worst parts are and what needs to be recovered
    b. Duration of disruptions
    c. Location of damage
    d. Scope
        i. Physical damage: structural assessments, gantry/asset assessments, windshield assessments, engineering assessments
        ii. Disruption of services
        iii. Delays/impact on staff required to report for work
        iv. Border crossings: level of functionality, damage details
        v. Washington State: are they affected? Can we look south for support? Do they need our support?
    e. Transportation delays

i. What will get in the way of response and recovery?
ii. What was the impact on BC Ferries?
iii. What was the impact on the flow of traffic through border crossings?

f. Soundings for underwater movement are a priority; buoys, channel markers. Need to know how navigational priorities will be addressed on both sides of the border

2) Information flow
   a. Need communication/information flow agreements, protocols, processes that stakeholders are aware of and know how to access

3) Scenarios:
   a. Prepare for cross border security emergencies and disasters. The impact may be greater with a security incident
   b. Washington State impacted – they are unable to provide assistance
   c. Washington State – they are able to provide assistance
   d. Incident in rush hour – will delay response and people not where they need to be
   e. Incident outside work hours – labour may not be able to reach work destinations

4) Impacts on critical infrastructure
   a. Communications – Outside of Metro Vancouver communication is not well coordinated
   b. Container ports/port authorities
   c. Rail lines
   d. Transportation routes
   e. What critical infrastructure has priority for recovery? Lessons learned from Japan – pre-identify and prioritize CI before a disaster strikes; make this mandatory!

5) Capacity
   a. What is the capacity and capability of the local area/region/Pacific Northwest to do the damage assessments/inspections and recovery work? Where will the inspectors, engineers, and other key personnel come from (need inventories/lists)? Are there any credential or other barriers to getting the necessary human resources, equipment and supplies across the border ?
   b. What are the competing demands for inspectors, experts, resources, aid?
   c. Asset lists
   d. Need to know things like: can Deltaport, etc, handle additional ships/cargo from Seattle and vise versa? Are there foreseeable labour and supply chain issues we can deal with now? What is Prince Rupert's dock and rail capacity? What is CBSA's border capacity – can

they handle the increase in truck and rail traffic due to diverted cargo, and for how long? Can the border's critical infrastructure accommodate more truck traffic and diversion of trucks to other border points?

5) Standardization
    a. Lexicon
    b. Priorities at the border – both sides!
    c. Emergency Operation Centre reports – format, content, dispersal, sharing
    d. Industry damage assessment reports – as above

6) Labour
    a. Agreements, lists and system to move labour, inspectors, engineers across the border quickly
    b. Recognition of labour credentials cross border
    c. Awareness and understanding of labour health and safety regulations cross border
    d. Priority of use of labour within the ports/region/Pacific Northwest
    e. Where is the skilled labour located? How will they be transported to work sites if routes are damaged or have restricted access or are located in the other country/outside the region?

7) Other
    a. Who shuts a border (US-side, Canadian-side, both sides) and will that determine a deployment of resources?
    b. Who owns/manages key critical infrastructure and how do they become engaged? E.g. Canada Border Services Agency buildings at the border are managed by Public Works Canada and by closing these buildings Public Works may close the border crossing

Who should provide and receive that information? How and when should it be communication and in what form?

1) Organizations with Business Continuity Plans will need information to activate their plans. Dark site for information sharing?

2) Information is needed to enable organizations to do their own damage assessments and prioritization, and to communicate results and needs to decision makers/gate keepers

3) Provincial Regional Emergency Operations Centre will need damage assessments, priorities and needs assessments from industry to establish and manage alternate transportation routes

4) Trucking is relying on the port authority to provide information and direction

5) Shipping agents, Coast Guard, Port Authorities and others need regular status updates to manage vessel traffic

6) BCMEA receives information from the terminals to coordinate dispatch of labour.

7) Industry needs damage assessments, status/situation updates and estimates of recovery to inform clients, owners and other stakeholders

What systems, procedures, protocols and agreements would be needed and who should be involved?

1) Prioritization:
    a. Province needs a means to consult and provide information to port authorities and industry including terminals, rail operators, trucking associations, shipping and suppliers
    b. Implement systems and procedures to identify where to start damage assessments and inspections, and to communicate the results to stakeholders including service providers
    c. Plans and systems to determine alternate transportation routes, who/what cargo has access to them and how this will be coordinated, managed and communicated. This includes border crossing access; to and from the U.S.
    d. Maritime commerce priorities should be set in advance. Is the port a #1 priority? Or facilities? Or others? Why?
    e. Prioritize by sectors for recovery to get goods moving: transportation systems, water and utilities

2) Communication:
    a. There is a notification system and protocol in place to communicate with the U.S. Its use may be expanded? Keep it simple
    b. The chemical industry has its own communication protocols and systems but it isn't international. This should be expanded and mesh with maritime commerce protocols and systems.
    c. Government and industry will need to know:
        i. situation and status reports/updates
        ii. alternate transportation routes within Canada and cross-border
        iii. priorities for damage assessments – where do we/'they' begin
        iv. priorities for inspections and aid/resources
        v. priorities and processes for access to transportation routes

   d. Need a plan to develop consistent and accurate key messages to media, public, clients, and others within Canada and cross border. Pre-plan how this will be done and coordinated
   e. Need a system to communicate with decision makers diverting or accepting vessel traffic, and the respective supply chains
   f. Need a 'dark site' where information will be posted. Cloud computing? Information sharing will need to be done in 'layers' based on security and need to know
   g. Need an out-of-area conference bridge and means to overcome interoperability challenges

3) Coordination
   a. the PREOC plays an important role in maritime commerce recovery and a Declaration of a State of Local Emergency can supersede authorities. But the PREOC can't communicate with every maritime stakeholder. System/protocol is needed to coordinate and manage two-way communication. (MCR Coordination Model and Communication Protocol should be widely adopted and communicated)
   b. there may be restrictions on navigation. The Port Authority will continue to manage resources and the movement of priority cargo but information about what cargo is priority will be required
   c. identify communities of interest
   d. vessels trying to access different ports will impact an entire supply chain. Need plans/ agreements in place to manage these scenarios
   e. Companies will be working on their own to do whatever it takes to get their cargo out. Industry-level MOUs – In the event of an emergency companies/port authorities will accept ships and cargo from their competitors, and agree not to attempt to keep them when the original entities can resume business
   f. Need to coordinate various inspectors/engineers/service providers etc so that they have the same priorities. E.g. if a critical infrastructure is identified as a top priority then all work to get it operational first and in logical sequence (lesson learned from Japan – several large fires were caused when electrical workers reconnected services before gas lines were repaired)

4) Hazard, Risk and Vulnerabilities
   a. Organizations need a process to assess their critical infrastructure/assets and to determine key dependencies; what do they depend on and who depends on them, what is the consequence of their loss to the economic and public wellbeing? This information should be communicated to decision makers and others who need it to plan and to set priorities

5) Resources and aid

a. Pre-identified lists/inventories of critical resources and aids such as equipment, docks, inspectors, engineers – on both sides of the border. And an agreement and processes in place to facilitate movement of these resources and aids across the border on a priority basis

Topic #2 Cross-Border Communication and Information-Sharing Tools and Best Practices

What are the most critical gaps or weaknesses in existing cross-border communication and information sharing protocols, strategies, plans and agreements that need to be resolved in order to expedite the recovery of maritime commerce after an emergency?

U.S. and Canadian models are different. In a bi-national meeting there may be multiple Canadian federal departments/sections represented whereas the U.S. needs just one because of their broader mandates. This will slow down decision making and planning on the Canadian side. Need to develop protocols/systems to streamline decision making when more than one federal department/area is involved

1) Different groups/areas within federal departments have different contacts in their counterparts. This makes coordination and consistency difficult

2) MOUs / mutual aid agreements at the industry and port authority levels to accept ships, cargo and other business in the event of an emergency and to 'give them back' afterwards

3) Port Authorities need to set/identify priorities or a framework for setting priorities and the terminals and other MCR stakeholders need to be informed. This should include cross-border priorities to ensure diverted cargo fits the category given precedence at the receiving port

4) Try for consistent rules about what is a priority within the Pacific Northwest on both sides of the border. Cross-border strategies and plans to identify, prioritize and coordinate the movement of truck and rail traffic at the border. Ensure that economic recovery is a factor in determining categories for prioritization

5) Develop common Alerting Protocols

6) Asset lists: who has what, what capacity is out there now on both sides of the border that can be leveraged to enable a fast response and recovery?

7) Identification of what can't be diverted cross border and strategies to manage these

8) Expand the awareness, understanding and acceptance of the MCR Coordination Model and MCR Communication Protocol – add in the cross border piece

Topic #3 Recommendations for Initiative 5(b)

What recommendations do you have for the project leaders of Initiative 5(b)?

1) In addition to addressing the needs previously identified, consult with those who were involved in the 2010 Olympic Planning. There are lots of Olympic legacy activities and lessons learned that would be useful. There were MOUs, mutual aid agreements, communication protocols, etc. that could be revived and/or expanded. Inspection and Customs protocols were developed for the Olympics

2) Review the Canada/US Resilience Experiment (CAUSE) to see if Initiative 5(b) can align with and make use of its objectives and outcomes.
   (Additional information on CAUSE: 'The CAUSE Resiliency (West Coast) experiment 2011 was one of a series of projects sponsored by the Department of Homeland Security (DHS) and the Defense Research and Development Canada (DRDC) and supported by Emergency Management BC (EMBC)… One key goal was to improve interoperability between systems in Canada and the United States. The experiment implemented a number of technologies and integrations and engaged operational emergency management communities in British Columbia and bordering organizations in the United States.'[1])

3) The Retail and Chemical Industry sectors have lots of technology, protocols, systems and coordination plans in place that may be useful. Begin by consulting with their associations

4) Create more opportunities to build trust and relationships between Canadian and US stakeholders, and promote cross border understanding of each other's protocols and regulations

5) Develop consistent priorities, alert levels, and language

6) Make the compilation of a critical infrastructure asset list, consequence of loss assessments, and inventories of critical resources (e.g. docks, engineers) a priority

[1] EVENTS: Canada/US Resilience Experiment, Emergency Management BC website, http://www.pep.bc.ca/events/events.html, accessed April 19, 2012.

SUMMARY

Efforts to strengthen the resilience of the maritime commerce supply chain have been ongoing for some time on both sides of the border with recent major disasters in Japan, New Zealand and elsewhere adding urgency. The Maritime Commerce Resumption Project (MCR), the International Mobility Trade Corridor Project (IMTC), the Pacific Northwest Emergency Management Arrangement (PNEMA), the Canada/US Resilience Experiment (CAUSE), and the Washington State Department of Transportation Commercial Vehicle Pass System are some examples of industry-government and government-government collaboration. Within the marine transportation supply chain itself there are also measures, agreements and plans in place or under development to expedite disaster recovery in several sectors, as explained by representatives of the Retail Council of Canada and the Chemical Industry Association of Canada during the workshop. The results of the workshop; however, emphasize the complexity and breadth of the work that remains to be done.

As a next step, the results of the April 5th workshop and the International Maritime Organization Trade Facilitation Committee document entitled *Version 8: Draft Guidelines on Measures Towards Enhancing Maritime Trade Recovery Related to the Global Supply Chain System and Maritime Conveyances* can inform the development of a preliminary planning guide for cross border communication and information sharing. This draft guide will align with known systems, protocols and agreements already in place and be refined and improved in collaboration with Canadian and American stakeholders with a vested interest in Initiative 5(b).

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Section 2: Report on the Bi-National Workshop to Expedite Maritime Commerce Recovery Through Regional Collaboration

EXERCISE OVERVIEW


A U.S. Coast Guard cutter approaches the City of Seattle (Photo: USCG)

This initiative, known as Initiative 5B, is part of the US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan, working to develop information-sharing protocols and communication mechanisms to swiftly recover from any maritime disruption. The Bi-National Workshop to Expedite Maritime Commerce Recovery through Regional Collaboration was designed to engage stakeholders from all sectors of the maritime domain. The workshop purpose was to review and validate the concepts outlined in the draft "Guidelines for Communication and Information-sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster" (referred to as the 'Guidelines' in subsequent references in this report) and prepare for an October exercise based upon the workshop findings.

There were eighty-five workshop participants including representatives from ports, local government, state/provincial government, federal government, and businesses from a wide range of maritime sectors including transportation, industry, tug and barge, shippers, and others. The participants rated the workshop overall between very good and excellent with a 4.2 average rating out of 5. The quality of presentations was rated 4.3, with the quality of discussion rated 4.3 and the utility of the information provided rated 4.2. The primary recommendation for improvement was the ability for more dialogue in the breakout sessions. A post-workshop survey was used to add additional validity to our findings.

There has been long-standing bi-national cooperation in the region regarding our shared borders and waterways. This initiative is designed to build on those agreements and protocols to improve the coordination mechanisms and build disaster resiliency in the maritime domain.

When a disruption occurs, the interdependent maritime economy is dependent on three primary areas: first, swift, accurate information about the disruption; second, the ability for business and industry to recover without delay; and third, the ability to share resources across borders without unnecessary burdens. When efficiencies are gained in these focus areas it improves the capability for the region to effectively recover economically.

We chose three scenarios for our workshop discussions: a major power grid disruption, a major earthquake, and a regional disruption caused by a legitimate threat of and subsequent actual terrorist attack. Mr. Cosmo Perrone (Cosmo Perrone and Associates, LLC) helped set the stage for the workshop activities, highlighting and analyzing recent events to show the types of situations that could devastate the region. A private sector panel followed the scenario outline which emphasized the importance of accurate information and the necessity to rapidly recover. Any delay, misinformation, or lack of clear priorities and restoration timelines, as this could lead to business finding somewhere else to reconstitute their operations.

The objectives of the workshop were to: 1) capture resilience related concerns of stakeholders; 2) review and improve cross-border partnerships; and 3) review, validate and refine cross-border communication and information-sharing guidelines.

The key findings from the days' activities centered on three primary areas of focus: 1) information; 2) business resumption; and 3) infrastructure priorities. First, information must be readily available, shared and wherever possible flow to and from a single source. Second, having the right information at the right time is a business resumption challenge. Third, infrastructure such as roads, power, water, communications, transportation systems, financial capacity, fuel and the myriad of interdependent systems need to be prioritized quickly, based on the event, in order to speed business resumption. The maritime industry has the unique expertise and knowledge necessary to rapidly change and recover the Marine Transportation System so vital to the region's supply chains. The region's governments need that critical information to assist with infrastructure prioritization.

The top three high level recommendations supporting the key findings were: 1) review and utilize existing structure, plans and procedures to determine existing mechanisms that share information and communicate bi-nationally; 2) draft an international agreement referencing existing regional plans and procedures to expedite maritime commerce recovery; and 3) draft a regional information-sharing protocol framework that includes all Community of Interest stakeholders.

A barge trapped on top of railroad tracks in the wake of Hurricane Isaac (Photo: USCG)

In conclusion, the workshop focused on bi-national government and private industry communication mechanisms, information-sharing and common situational awareness. The areas of discussion considered which coordination elements were needed *before* an emergency or disaster that disrupted maritime commerce, and those needed *after* the emergency or disaster, and how the coordination might change. The goal is to facilitate a more effective regional coordinating process that enables faster maritime commerce recovery thereby promoting regional economic resilience. Coordination is the key to disaster preparedness and effective communication of the risks the lynch pin of regional resilience. The participants recognized the cascading effects of a major maritime disruption and the need for a comprehensive coordination strategy. It takes dialogue, planning and action. The Pacific region has taken the lead; it is now time to act to build the framework for effective and efficient communication.

WORKSHOP DESIGN

1. <u>Workshop Purpose and Design:</u> Initiative 5B is part of the US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan which is developing information-sharing protocols to swiftly recover from any maritime disruption. The Bi-National Workshop to Expedite Maritime Commerce Recovery through Regional Collaboration was designed to engage stakeholders from all sectors of the maritime domain. The workshop purpose was to review and validate the concepts outlined in the draft 'Guidelines' and prepare for an October 2, 2012 tabletop exercise.

2. <u>Workshop Objectives:</u> The objective of the workshop was to enable collaboration at the regional level (US and Canada) to expedite maritime commerce recovery following an

emergency, disaster or disruption. The knowledge, insight, ideas and concerns of the participants were critical to building the best possible commerce recovery strategy for our region. The overarching workshop objectives were:

A. Capture resilience related concerns of stakeholders.

B. Review and improve cross-border partnerships.

C. Review, validate and refine cross-border communication and information-sharing Guidelines.

3. Scenario Summary: The Bi-National Workshop to Expedite Maritime Commerce Recovery through Regional Collaboration scenarios were outlined by Mr. Cosmo Perrone of Cosmo Perrone and Associates, LLC. The scenarios include:

A. A regional power outage caused by a powerful wind storm that cascades through the power grid knocking out power to most if not all of our regional ports and surrounding communities. Restoration of power could take days or weeks.

B. A major Cascadia Subduction Zone earthquake event with major damage to regional port facilities, infrastructure and surrounding communities. Recovery from the earthquake impact could take days, weeks or months.

C. A regional disruption caused by a legitimate threat of and subsequent actual terrorist attack involving the sinking of a deep-draft vessel resulting in an explosion, fire and sinking in the harbor channel of one major port with a claimed second event planned. The impact on regional ports may vary but caution and law enforcement actions could hamper port operations for days or more.

4. Workshop Assumptions: Two assumptions were made: 1) The scenario impacted participants; and 2) Communication of some kind was available.

WORKSHOP SUMMARY

1. **Pre-Workshop Webinar:** A pre-workshop webinar was hosted by the Pacific NorthWest Economic Region (PNWER) Center for Regional Disaster Resilience (CRDR) on Thursday, June 28th to introduce workshop participants to the draft 'Guidelines'. Opening comments were provided by the US Coast Guard and Transport Canada emphasizing the importance of the project and engagement by port stakeholders. The webinar provided an overview of the project using an earthquake scenario as the scene setter and provided questions to consider regarding port business resumption and resilience. The three sections of the Guidelines were outlined to familiarize those who

had not been involved in the development along with a set of considerations for preparing to engage in the workshop.

2. Overview of workshop presentations:

A. **USCG:** CAPT Scott Ferguson (Captain of the Port, USCG, Sector Puget Sound) outlined some of the existing bi-national agreements in place and about to be deployed. Agreements include oil spill response, use of pilots and the Shiprider program. He emphasized how important this initiative is and how challenging it may be. ADM Keith Taylor

CAPT Scott Ferguson, Captain of the Port, USCG, Sector Puget Sound, Welcomes participants to the Bi-Nation Workshop to Expedite Maritime Commerce Recovery (Photo: PNWER)

(Commander, 13th Coast Guard District) read a memo from US Consul General Anne Taylor outlining her commitment to this endeavor and the long standing cooperative relationship between the US and Canada nothing that although no solution is perfect, a cooperative effort to share critical information would improve our disaster resilience. ADM Taylor went on to say that a regional disruption to maritime commerce could be catastrophic for both countries. He made specific reference to the great work the private sector has done in their business continuity and disaster resilience planning and he hopes to capitalize on those efforts to give us the best bi-national result possible.

B. **Transport Canada:** Mr. Brian Bramah (Regional Director Transportation Security, Pacific Region) recognized the work developing the draft Guidelines to this point and welcomed this next phase in developing cooperative bi-national protocols. He emphasized how the existing strong relationship with the US Coast Guard and Transport Canada has resulted in communication mechanisms through forums and committees dedicated to our shared waterways and noted that the Guidelines are just a start of a process to move us closer to resilient ports built on shared communication and necessary situational awareness.

C. **Canadian Consulate General:** Consul General Denis Stevens said he is very interested in this project which will be a tangible result of the Beyond the Border action plan. He emphasized our integrated maritime economy and recognized the

importance and vitality of the US-Canadian trade and how a catastrophic event for one country would have ripple effects for the other; there would be no winners in a truly catastrophic event. He noted how it is incumbent on all of us to become more resilient, remain secure and become more seamless in our endeavors. It starts and ends with our ability to work together and create the communication methods to speed our collective recovery.

D. **Integrating Public and Private Resources: Industry's Role:** Mr. Charles Costanzo (Vice President - Pacific Region, The American Waterways Operators) outlined the AWO representation of 350 members of the tugboat and barge industry nationwide. He noted that the most critical aspect of integrating public and private resources is coordination and that the best way to achieve that is old fashioned and informal outreach. The next step is to discern whether a formal structure is valuable. The third step is to develop lists of companies and equipment so the command structure knows what's out there. Mr. Costanzo explained how this has already been done for environmental/oil spill response via the Washington Response Resource List (WRRL). The WRRL is a great tool for oil spill responders and it needs to be replicated for a more generalized freight disruption. He went on to explain how the GICA plan does a great job with the next issue: identifying priorities during the recovery phase and how it is important to know the order in which a coordinated response addresses needs and how it's helpful if we can point to a plan that will keep everyone on the same page during the short-term and long-term phases of a recovery effort. Finally, he explained that one must drill and exercise to test the plan for weaknesses and gaps. This is again something that can be borrowed from the successes within the environmental response community, which drills and exercises are frequently done for oil spill incidents and the concept is the same for natural disasters. He stressed that industry is a vital partner with experience in responding to major disruptions due to its familiarity with the waterways, the government authorities and the incident command structure. The challenge then is to ensure that the communication between government and industry stays robust and redundant, and to ensure that formal structures needed are in place to address whatever contingencies may arise. He noted the strong community in the Pacific Northwest which provided good examples and templates to leverage from around the country. Even though we hope that every day is calamity-free, he emphasized the need to be prepared and that he looked forward to being a partner in preparedness.

E. **Scene Setter Scenarios:** Mr. Cosmo Perrone (CEO Cosmo Perrone and Associates, LLC and former Director of Security, Port of Long Beach, CA) outlined the scenarios provided in Section 1, paragraph 3 above. He emphasized how regardless of the

event, the impact is on people. Therefore, coordination must include how to communicate with employees and family members as well in an overall preparedness process.

F. **Private Sector Panel:** Facilitated by Eric Holdeman (Director of Security, Port of Tacoma) the panel included Tony Gutenberg (Manager of Safety and Security, TSI Terminal Systems Inc.), Todd Brown (Vice President - Security, Health and Safety, Expeditors), Lorna Young (Regional Director, Chemistry Industry Association of Canada), Mark Burris (Regional Security Manager, Tesoro Refining and Marketing), and Ed Chapman (Director - Hazardous Materials, BNSF). The panelists were asked a series of questions about a catastrophic port event and the impact on the private sector. The discussion centered on the impact on industry and the desire to get back in business quickly. The final question summarized the panel discussion. If they had one wish for swift disaster recovery, what would it be?

1) An effective communication system for all groups that would work efficiently;

2) Assurances that industry can fix business infrastructure and get back in operation without future repercussions (that waived requirements would not later end up with some liability for the company);

3) Seamless cooperation between companies, agencies and government;

4) Know what are the expectations and priorities of all stakeholders, and;

5) Expected recovery timeline from all key service providers and one location to get that information.

G. **Overview of how guidelines were developed:** Pat Docking (PDocking Consulting Ltd.) gave an overview of the development leading to draft 4 of the Guidelines, including how government and private sector entities came together to determine how and why communication before and after a crisis were important to disaster resilience. She outlined the significance of this initiative relating to the Beyond the Border effort agreed upon by President Obama and Prime Minister Harper.

H. **Key points of guidelines for breakout sessions:**

1) Tony Gutenberg (Manager of Safety and Security, TSI Terminal Systems, Inc.) outlined the importance of information-sharing before and after a disaster or disruption (Part B of the Guidelines). He shared real-life examples of where information-sharing was successful and where it wasn't, and why this bi-national effort is important to our region and sends the message that resilience is important at all levels. He noted that without effective coordination the

collateral damage will last for a long time, regardless of how fast recovery occurs, and that preparedness and planning is essential to an effective recovery outcome and practice is a key to its lasting success.

2) Cindy Jeromin (Safety and Emergency Management Coordinator, Operations and Security, Port Metro Vancouver) provided a review of Part C of the Guidelines, the communication and information-sharing mechanisms. She emphasized the importance of common language, using the Vancouver Olympics as an example. During the Olympics there were over 400 spreadsheet pages of acronyms from the myriad of agencies involved in the games. Therefore, use of a common alerting protocol is important to utilize existing emergency communication channels in the US and Canada (IPAWS and MASAS). Although there are many systems that work for their intended purpose, there is no one connected system to share critical information to all stakeholders.

3. Summary of breakout sessions:

A. The focus of the workshop was to explore the Guidelines in three breakout sessions.

1) Part B, Section 2: Information Elements Critical to Maritime Commerce Resilience and Recovery, Section 2, Information Elements *Before* a Disruption of Maritime Commerce.

2) Part B, Section 3: Information Elements Critical to Maritime Commerce Resilience and Recovery, Section 3, Information Elements *After* a Disruption of Maritime Commerce.

3) Part C: Communication and Information-Sharing Mechanisms among Government and Non-Government Community of Interest Members.

B. Breakout #1, Part B, Section 2, facilitated by Pat Docking.

1) All of the information elements in Part B2 of the guidelines were endorsed.

2) Below are additional elements or points to incorporate:

a) Need information about criteria that will trigger various plans, strategies, agreements, protocols and authority delegations.

b) Suggestion: a 'wheel' or matrix that shows the various authorities, stakeholder groups and key organizations involved in recovery coordination/management. Various scenarios would 'spin' the wheel and make it clear who is responsible for leadership, roles & responsibilities, various activities, etc.

c) Need integrated communication plans, strategies, agreements, protocols that are shared with stakeholders before a disruption.

d) Need information about tools and mechanisms that will be used to communicate with stakeholders after an incident happens. Stakeholders will want to know what plans/agreements/etc are being implemented, where to go for information, what to do. Could be methods such as cell phone alerts, dark site websites, etc…but these have to be easy to access and well known to stakeholders so they can access them without delay.

e) Need to find a simple, systematic way to communicate across jurisdictions, sectors, countries. Avoid information overload and overwhelming decision-makers with too many points of contact.

f) Need processes to facilitate effective two-way communication between decision-makers and others. These must be set up and shared with stakeholders in advance.

g) Processes and tools to conduct general and specific risk identification. Methods to communicate these to the appropriate parties.

h) Adopt a standard set of data and methods of sharing data including data mining and data integration to make data usable.

i) Information on known restrictions and protocols affecting the use and availability of resources. For example, there are differences in the levels of sulfur permitted in the fuel used in the US and Canada.

j) Important!

i. Review the entire guidelines from the perspective of an incident where recovery is *not* coordinated or lead by federal authorities.

ii. Review to ensure the guidelines are scalable.

C. Breakout #2, Part B, Section 3 facilitated by Kathy Gleaves.

1) This group focused on the elements of information needed and the nature of communications after a maritime commerce disruption; immediately after and at multiple intervals covering the response and the recovery phases. The group focused on US/Canadian government communications:

a) One-on-one communications are not viable; we need simple, centralized method of sharing information, getting a common operating picture.

b) A simplified method of data gathering, a red/green or yes/no matrix to show what the conditions are.

c) Within the sharing methodology, information should be delivered in the positive, i.e., what we can do, what is working as opposed to what is not working or what we can't do - the group felt others would be willing to share the positives.

d) There needs to be better integration of the maritime community into the local/regional emergency planning/business continuity/emergency operations center and the rest of the world. The group felt the maritime community was too isolated and needed to integrate better.

e) Develop pre-incident agreements regarding sharing skilled labor personnel across the border (CBP and ICE) and across trade unions (directed more at the before disruption section)

2) Suggestions for the October tabletop exercise.

a) Test movement of goods;

b) Accounting of resource inventories;

c) Bi-National organization charts;

d) How to deal with competing priorities and interests;

e) Communications between entities;

f) Assessment of what can I do now? How bad is it? Who do I tell about it? How long will this last?

g) What will it cost to get back up and running and can I afford it?

h) Recovery needs and options for the short term and mid-term; and

i) Target interdependencies and interoperability.

D. Breakout #3, Part C facilitated by Joe Huden.

1) The group first explored existing communication and information-sharing mechanisms. Existing mechanisms were many and varied (e-mail, websites, meetings, seminars, conferences, etc...) and the majority worked well before a disruption or disaster but sometimes failed in catastrophic events. Additionally, there was no single source of information or a clearinghouse to sift information and provide it in meaningful and useful formats. Crisis communication needs to be redundant and accessible to make informed decisions.

Joe Huden leads a breakout group in a discussion of Part C (Photo: PNWER)

2) The second task explored the

recommendation provides the structure for the protocols and the system to be effective.

d) Recommendation #29: Regularly exercise and evaluate communication and information-sharing systems, protocols, processes and procedures, and the common alerting protocols. This recommendation was the fourth priority, however, the discussion centered on this element being critical when development of the first three recommendation priorities is fully implemented. The effectiveness of any structure, protocol and system must be measured through systematic testing.

4) The fourth and final task of the group was to discuss what might be missing from this part of the Guidelines. There were four key points of emphasis outlined by the group:

a) International protocol: Although the Guidelines implies development of joint bi-national protocols there was consensus that emphasis needed to be placed on joint development and agreements to have an effective system. The basis is who is in charge, when and how? What are the triggers for the international protocol?

b) Effective joint information system: Consistency in messaging will be critical for effective disaster management. Everyone needs to know the same information critical to the recovery efforts. Harnessing social media is a huge part of consistent messages and getting ahead of rumors to make sure our stakeholders have valid information for decision making.

c) Authorities: Protocols and agreements must outline the proper authorities for official information. Any system for information-sharing and situational awareness must allow for confirmation of valid information.

d) Respect for sovereignty: Development of the protocols and process must be cognizant of the rights and issues of governments as well as tribal and First Nations inclusion.

E. A survey was developed to allow participants and those who could not attend the workshop the ability to participate in the process. The results of the survey were used to validate the summary and recommendations.

4. <u>Summary of results and recommendations:</u> The following information summarizes the workshop results and recommendations.

A. <u>Results:</u> The workshop met its objective to enable collaboration at the regional level (US and Canada) to expedite maritime commerce recovery following an

emergency, disaster or disruption. The key result was a validation of the work in developing the Guidelines with minor adjustments. The workshop is a first step toward the development of a information-sharing framework to be used in a tabletop exercise in October 2012. This report will be used by COI stakeholders to further participate in development of this pre- and post-disaster framework.

B. **Recommendations:** There are three primary recommendations as a result of meeting the workshop objective in preparation for the October tabletop exercise:

1) Review and utilize existing coordinating structures, plans and procedures to determine existing mechanisms that share information and communicate bi-nationally;

2) Draft an international agreement framework referencing existing plans and procedures to expedite maritime commerce recovery; and

3) Draft a regional information-sharing protocol framework that includes all community of interest stakeholders.

C. The key recommendation and conclusion to the day's work comes down to the ABC of resilience and recovery -- Always Be Communicating. When faced with disruptions, effective information-sharing is the key to business resumption and economic recovery and without it we are doomed to repeat mistakes made in other catastrophic events, while with it we can mitigate historical problems, speed maritime business resumption thereby promoting economic recovery and improving our regional resilience.

CONCLUSION

This workshop focused on bi-national government and private industry communication mechanisms, information-sharing and common situational awareness. The areas of discussion considered coordinating elements needed *before* an emergency or disaster that disrupted maritime commerce and *after* the emergency or disaster and how the coordination might change. The goal is to facilitate a more effective regional coordinating process that enables faster maritime commerce recovery thereby promoting regional economic resilience.

Coordination is the key to disaster preparedness and effective communication of the risks the lynch pin of regional resilience. The participants recognized the cascading effects of a major maritime disruption and the need for a comprehensive coordination strategy. The topic is complex and there are no easy answers, but the collective wisdom of the

participants provided insight into what would keep a business from reopening following a catastrophic event in the region. Forty-three percent of the participants were from the private sector which added great value to the discussion and clear focus to the real problems facing business resumption.

The result of the workshop was a greater understanding of cascading interdependencies and impediments to the maritime economic recovery process. By exposing the areas that differ and highlighting the common ground the process of identifying the important elements of information-sharing has begun. The next phase of this project is to draft an international agreement referencing existing regional plans and procedures to expedite maritime commerce recovery and to draft a regional information-sharing protocol framework to be discussed in the facilitated October 2, 2012 tabletop exercise.

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Section 3: Report on the Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery Through Regional Collaboration

EXERCISE OVERVIEW

This initiative is part of the US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan, working to develop information-sharing protocols and communication mechanisms to swiftly recover from any maritime disruption to Canada or the United States. The Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery through Regional Collaboration was designed to engage stakeholders from all sectors in the maritime domain. The exercise was the result of several workshops with stakeholders in British Columbia and Washington State over the past year to develop a communications and information sharing protocol framework. The exercise purpose was to validate the draft communication and information sharing protocol framework (Annex C to the Pacific Northwest Emergency Management Arrangement), determine possible implementing plans and procedures, priorities and the timeline for next steps.

There were 100 workshop attendees and 13 participating remotely including representatives from ports, local government, state/provincial government, federal/national government, and businesses from a wide range of maritime sectors including transportation, industry, tug and barge, shippers, and others. The participants rated the workshop overall between very good and excellent with a 4.1 average rating out of 5.

There has been long-standing bi-national cooperation in the region regarding our shared borders and waterways. This initiative is designed to build on those agreements and protocols to improve the communication and information sharing mechanisms to build disaster resiliency in the maritime domain.

A sunken vessel awaits rescue in the aftermath of Hurricane Isaac (Photo: USCG)

When a disruption occurs, the maritime economy is dependent on three primary areas: first, swift, and accurate information about the disruption; second, the ability for business and industry to recover without delay; and third, the ability to share resources across borders without unnecessary burdens. When efficiencies are gained in these areas it improves the capability for the

The U.S. Coast Guard organize response in the incident command center during Hurricane Irene (Photo: USCG)

region to effectively recover, mitigate disruptions and restore economic vitality. The estimated regional economic impact of imports and exports through the ports in Washington and British Columbia is over $200 billion annually.

The exercise scenario was used as a guide for discussion. The scenario was a major Seattle Fault earthquake severely impacting the Port of Seattle and causing some damage to other Washington and British Columbia Ports. A short video previously produced to show impact of an earthquake on the Alaskan Way Viaduct in Seattle was used to illustrate the impact of a 7.0 Seattle Fault earthquake on the port and the supporting infrastructure.

The tasks for discussion of the exercise were as follows:

1) examine the protocol framework for gaps;
2) examine existing communication, information-sharing, situational awareness capabilities;
3) examine situational awareness requirements, who owns the information including data standards;
4) examine cross border interdependencies that could have cascading impacts on regional port operations and the economy;
5) examine a Bi-National Maritime Commerce Recovery Action Plan Roadmap; and,
6) determine next steps and timeline.

The areas of discussion considered the strategic communication and information sharing protocol framework and the next steps to implement the Guidelines recommendations into actionable plans and procedures. The key recommendations from the days' activities centered on three primary areas: 1) finalize the strategic protocol framework (Annex C to PNEMA); 2) develop a process flow diagram to document the priorities and timeline; and 3) draft a charter for the implementing task force.

In conclusion, the exercise continued the focus on bi-national government and private industry communication mechanisms, information-sharing and common situational awareness. The result of the exercise was a greater understanding of the next steps in this initiative and the difficulties involved. Dialogue, planning and action will be required. The

group reached consensus on the need to maintain momentum and to be individual champions of the process in order to gain executive support and resourcing.

EXERCISE DESIGN

1. **Exercise Design and Purpose:** As part of the US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan the project focus is developing information-sharing protocols to swiftly recover commerce and the regional economy from any maritime disruption. The Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery through Regional Collaboration was designed to engage stakeholders from all sectors of the maritime domain. An exercise design team of thirty-two US and Canadian stakeholders (see Appendix C) met regularly to develop and review the exercise outline and documentation. The design team also acted as either facilitators or evaluators during the exercise discussion since they were the most familiar with the objectives of the exercise. The purpose of the exercise was to validate the draft communication and information sharing protocol framework (Annex C to the Pacific Northwest Emergency Management Arrangement), determine possible implementing plans and procedures, priorities and the timeline for next steps.
2. **Exercise Tasks:** The goal of the exercise was to enable collaboration at the regional level (US and Canada) to expedite maritime commerce recovery following an emergency, disaster or disruption. The knowledge, insight, ideas and concerns of the participants were critical to building the best possible commerce recovery strategy for our region. The overarching exercise tasks were:
   A. Examine the protocol framework for gaps considering the scenario as a frame of reference.
   B. Examine existing communication, information-sharing, situational awareness capabilities. Recommend course of action (plans, procedures, etc.).
   C. Examine situational awareness requirements and who owns the information including data standards (common alerting protocol, etc...). Recommend course of action (plans, procedures, etc.).
   D. Examine cross border interdependencies that could have cascading impacts on regional port operations and the economy.
   E. Examine the Bi-National Maritime Commerce Recovery Action Plan Roadmap. Validate the course of action and priorities.
   F. Determine next steps and timeline.

3. **Scenario Summary:** The Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery through Regional Collaboration scenario was used as a guide for discussion. The scenario was a major Seattle Fault earthquake severely impacting the Port of Seattle and causing some damage to other Washington and British Columbia Ports. A short video previously produced to show impact of an earthquake on the Alaskan Way Viaduct in Seattle was used to illustrate the impact of a 7.0 Seattle Fault earthquake on the port and the supporting infrastructure.
4. **Exercise Assumptions:** The following assumptions were used:
   A. Strong shaking occurred for 1 minute 24-hours ago.
   B. Strong aftershocks are anticipated for the next 3 days.
   C. Utilities and transportation were impacted in and around the ports and may be disrupted for weeks to months.
   D. Impacted ports: Port of Bellingham, minor damage; Port of Everett, moderate damage; Port of Seattle, severe damage; Port of Tacoma, moderate damage. Canadian ports, minor damage.

EXERCISE SUMMARY

1. **Overview of participation**: The exercise was attended by one-hundred stakeholders from the United States and Canada. Attendees represented most of the maritime industry including ports, shippers, terminal operators, national, federal and local agencies, infrastructure providers and private sector companies that rely on maritime commerce. The attendees were assigned to ten separate tables to allow varied and wide ranging points of view. Additionally, there were 13 remotely connected attendees participating as a separate table. The questions posed elicited lively discussion focusing on the validation of the strategic communication and information sharing protocol framework and the next steps to full implementation of the Guidelines recommendations.
2. **Overview of exercise opening comments:**
   A. **PNWER:** Matt Morrison (Executive Director, Pacific NorthWest Economic Region) opened the day with welcoming remarks and a thank you to the US Coast Guard and Transport Canada for their leadership on this initiative. He emphasized that the participants will ultimately make this process successful.

B. **USCG:** CAPT Scott Ferguson (Captain of the Port, USCG, Sector Puget Sound) emphasized the importance of this effort and the necessity to continue to develop this project. We do a good job of response but we need to do an equally good job at recovery and it all starts with information. A case must be made for government leaders and private sector executives to make this a priority and to dedicate time and resources to make it a reality.

Seattle Police partner with the U.S. Coast Guard during a SeaFair event on Elliot Bay (Photo: USCG)

C. **Commander, 13th Coast Guard District:** RADM Keith Taylor (Commander, 13th Coast Guard District) emphasized the need to work together for common maritime resiliency. This project is the starting line of building a framework so we can communicate critical information. RADM Taylor went on to say there are three key tenets for success: 1) swift and accurate information; 2) a common understanding of the information; and, 3) sharing of resources and systems. He made specific reference to the great work the private sector has done in their business continuity and disaster resilience planning and he hopes to capitalize on those efforts to give us the best bi-national result possible.

D. **Transport Canada:** Dr. Allan Bartley (Director, Marine Security Policy) agreed with the comments of RADM Taylor and recognized the work developing the Guidelines and draft communication and information sharing protocol framework to this point and welcomed this next phase. He emphasized how the existing strong relationship with the US Coast Guard and Transport Canada has resulted in communication mechanisms through forums and committees dedicated to our shared waterways and noted that the Guidelines are just a start of a process to move us closer to resilient ports built on shared communication and necessary situational awareness.

E. **Overview of how the communication and information sharing protocol framework was developed:** The protocol framework was developed as a result of several workshops with stakeholders in British Columbia and Washington State and specifically was a recommendation from the workshop held in Seattle on July 10th. There were three key elements the protocol framework was based on:

1) The utilization of existing coordinating structures, plans and procedures to determine mechanisms that share information and communicate bi-nationally;

2) An international agreement framework referencing existing plans and procedures to expedite maritime commerce recovery; and

3) The drafting of a regional information-sharing protocol framework that includes all community of interest stakeholders.

After exhaustive research into existing cross-border agreements, plans and processes, the Pacific Northwest Emergency Management Arrangement (PNEMA) was selected as the basis for developing the protocol framework. The reason for this selection was it was an existing international agreement focused on the Pacific Northwest and based on the need to share resources during emergencies and disasters. Likewise, the structure of PNEMA allows for additional annexes to implement other efforts. Annex C was drafted to provide a strategic communication and information sharing protocol framework. This fills a large gap in PNEMA, which Annex A and Annex B do not adequately address. The current draft Annex C is provided at Appendix B to this report.

3. Summary of task breakout sessions:

A. The focus of the exercise was to validate the communication and information sharing protocol framework (PNEMA draft Annex C) and chart the path forward to fully implement the Guidelines recommendations in three tabletop discussion sessions. The participants used the scenario as a basis for discussion. In addition they used the draft communication and information sharing protocol framework (Annex C to PNEMA (Appendix B); draft 5.2 of the "Guidelines for Communication and Information-sharing between Stakeholders in Canada and the United States to Enhance Maritime Commerce Recovery after an Emergency or Disaster" (referred in this document as the "Guidelines"); the Exercise Plan; and, the Bi-National Maritime Commerce Recovery Action Plan Roadmap. The six tasks of this exercise were organized into three sessions with table reports after each session. The tasks were:

1) Examine the protocol framework for gaps considering the scenario as a frame of reference.

2) Examine existing communication, information-sharing, situational awareness capabilities. Recommend course of action (plans, procedures, etc.).

3) Examine situational awareness requirements and who owns the information including data standards (common alerting protocol, etc...). Recommend course of action (plans, procedures, etc.).

4) Examine cross border interdependencies that could have cascading impacts on regional port operations and the economy.

5) Examine Bi-National Maritime Commerce Recovery Action Plan Roadmap. Validate the course of action and priorities.

6) Determine next steps and timeline.

B. Task Discussion #1, Examine the protocol framework for gaps considering the scenario as a frame of reference.

1) The group discussions validated the approach using an annex to the PNEMA (Draft Annex C at Appendix B). Ninety-five percent of the post exercise evaluations were in favor of the PNEMA approach. Stakeholders felt that because the ports are the lifeblood of the regional economy, a regional agreement led by states and provinces was the best approach over a pure federal to federal arrangement. It was noted that all relevant US-Canada federal plans are referenced in Annex C as supporting documents and federal partners are included in the Annex.

2) The participants recommended that the emergency management agency's of the signatories to the annex (State of Washington, Oregon, Idaho and Alaska, and the Province of British Columbia and the Yukon) maintain the annex as part of the PNEMA portfolio. This structure is the same for Annex A and B as well. The participants also recommended that the signatory states and provinces create a taskforce of stakeholders to further develop implementing plans and procedures related to Annex C.

3) Several exercise participants felt that the next phase of implementation must include the ability for stakeholders at all levels to "sign on" to the framework as participants in developing the subsequent plans and procedures. This stakeholder "contract" should clearly articulate the value of participation.

4) Additional considerations raised by participants regarding the implementation of the protocol framework included:

a) Government:

i. United States and Canadian federal government parent agencies should endorse and place a priority on this effort with dedicated time and resources for its implementation.

ii. Specific implementation efforts must address liability and insurance capacity for business.

iii. Regulatory, statutory and ordinance changes, suspensions or waivers necessary post disaster to speed recovery need to be worked out in advance so they are known by business.

b) Private Sector:

i. A business case for participation in this effort must be made. Incentives for business participation should be explored.

ii. A workshop should be undertaken with the private sector to write a charter as part of the implementation.

iii. Options for signing on as a partner to the effort should be explored.

iv. Priorities for restoration and recovery are critical information to business as they will not wait for government to act. The expectations of the private sector from government in the implementation should be identified.

c) Other:

i. Better outreach is necessary to the supply chain, infrastructure providers, business associations and other identified partners to gain support.

ii. The engagement of the Chamber of Shipping and Marine Exchange is required as critical partners in this effort.

iii. The utilization of the Olympic cross-border plan as a model should be considered and it should be repurposed for this effort.

C. Task Discussion #2, Examine existing communication, information-sharing, situational awareness capabilities. Recommend course of action (plans, procedures, etc.).

1) The group consensus was to have a focused workshop on existing technology and capability to see what might be adaptable, scalable and acceptable to all stakeholders. Several groups pointed to the Northwest Warning Alert and Response Network (NWWARN) as a current cross border information sharing system used mainly in WA but does have other state and provincial members. Other systems mentioned were Homeport, Homeland Security Information Network (HSIN), however most felt these were limited options because of strict membership requirements and may not be open to both sides of the border.

2) The harnessing of social media to allow flexible information sharing platforms and common operating picture visual tools was a consensus capability.

3) Additional considerations:

a) Potential may exist to adapt the US Coast Guard Common Assessment and Report Tool (CART) system with Shareable Essential Elements of Information.

b) Several groups brought up the importance of harnessing social media to allow flexible information sharing platforms and common operating picture visual.

c) The critical decision points are the location of the data, control of the data shared (confidentiality and public disclosure concern) and the essential elements of information. Development should be private sector driven.

d) Common terms and lexicon will be essential to actionable information. The 2010 Olympics common lexicon could be used as a template for this effort.

e) Push versus pull systems for data sharing should be determined as what is best for the stakeholders and the system adapted to individual needs.

D. Task Discussion #3, Examine situational awareness requirements and who owns the information including data standards (common alerting protocol, etc...). Recommend course of action (plans, procedures, etc.).

1) The clear consensus of this task is the need to develop common language and terms with cross reference to industry, government and marine terminology. The "dictionary" of terms for information sharing is a critical element of data standardization.

2) Data must be geo-spatially visual. The capability to sort the volume of information into a common operating picture for key decision making is more important than the data itself. The categorization of data sources, its validation and weight will be critical to businesses that must make on-the-spot decisions for the viability of their business.

3) Additional considerations:

a) Information sharing must have government moving at the speed of business. Success includes keeping business informed and the consideration of the economic impact of information or lack of information.

b) Confidentiality is a key element of information sharing for private business. An understanding of this fact and a procedure clearly outlining confidentiality agreements will encourage business to participate.

c) Concerns over public disclosure were raised by several participants; this will need to be examined on both sides of the border with respect to specific state/provincial and federal laws.

d) The utilization of common alerting protocol standards simplifies the movement of information through international systems. It should be considered in evaluating data standards. The United States standard is the Integrated Public Alert and Warning System (IPAWS). The Canadian standard is the Multi-Agency Situational Awareness System (MASAS). An additional standard for consideration is the American Society for Industrial Security (ASIS) International/American National Standards Institute (ANSI) SPC.1-2009 on organizational resilience.

e) The integration of the enormous volume of information from hundreds of sources using some industry standard will be the most significant challenge. To be useful the information must be filtered through a validation process and provided to the consumer in an agreed upon format.

f) Most participants are currently using informal networks of trusted peers via email and phone calls to share information. There is a need to host regular meetings to maintain trust and build relationships.

E. Task Discussion #4, Examine cross border interdependencies that could have cascading impacts on regional port operations and the economy.

1) Interdependencies in the maritime environment are varied and far reaching. The ability of commerce to resume following a disaster impacting infrastructure will require massive coordination and prioritization. Negative impacts on some infrastructure may be mitigated temporarily with pre-planning and investment but quickly communicated priorities are essential for the private sector to make critical decisions in response and recovery. The key concern is the impact and length of time it will it take to restore capability. Development of specific individual infrastructure plans (e.g. transportation, energy, water, etc.) impacting maritime commerce operations after a disaster would be an important step in the implementation of the Annex C.

2) Additional considerations:

a) A "certification for resiliency" for businesses may be an incentive to participate in this endeavor.

b) Human capital interdependencies must be considered in the process, including how to get people to work following a disaster.

c) Under water dependencies need to be considered and the ability to quickly dredge or clear so ships can get to port.

d) Understanding and mitigating tug pilot standard differences and any other standards that might keep recovery assistance cross border from occurring. May be able to use the Ship Rider program as a guide.

e) The impact of a disruption has a profound impact on Alaska which depends on shipping of goods for survival.

f) The vessel management system between the US and Canada is a success that can be used as a model. US Coast Guard Home Port is another viable program along with the Marine Exchange for cargo issues. All present systems should be explored to mitigate interdependency issues.

g) Many interdependencies remain undiscovered. There is a need to continue to provide opportunities for cross border and cross sector discussions on potential cascading impacts of various scenarios.

F. Task Discussion #5, Examine the Bi-National Maritime Commerce Recovery Action Plan Roadmap. Validate the course of action and priorities.

1) The roadmap was discussed to determine priorities for implementation of the Guidelines recommendations. Additional plans and procedures were suggested throughout the day. These recommended actions will be integrated into a comprehensive project diagram distributed separately from this report.

2) The top four short-term priorities from the roadmap are:

a) Finalize the strategic communication and information sharing protocol framework (Annex C to PNEMA). Develop a task force to carry out the implementation.

b) Develop a procedure to allow stakeholders to officially "sign-on" to the protocol framework and assign an organization point of contact.

c) Identify and document a lead organization to be the coordination contact after an emergency or disaster through an implementing procedure.

d) Adopt a communication protocol standard with agreed upon common language through an implementing procedure.

G. Task Discussion #6, Determine next steps and timeline.

1) The overall consensus was that this initiative is difficult but very important and that the stakeholders need to grind it out. It will take executive commitment both from governments and the private sector to make this initiative a reality. The current sponsors, US Coast Guard, Transport Canada and Pacific NorthWest Economic Region, must continue to elicit support to keep the momentum. An executive forum is necessary to gain commitment.

2) A private sector corollary to Annex C may be necessary to integrate the private sector. An industry association forum could help facilitate private sector integration, and continued opportunities to build better relationships and trust through public-private sector engagement.

3) A charter for the Guidelines/Annex C task force needs to be established after Annex C is adopted. Some key questions for the charter are:

   a) What's in it for my organization?

   b) Who is in control?

   c) Who can direct action?

   d) What's voluntary and what's mandatory?

   e) How much will it cost?

4) A series of focused workshops should be used to capture the stakeholder input on specific implementation issues, such as:

   a) What regulatory relief is needed?

   b) What decisions need to be made and by who?

   c) What mitigation efforts can be done ahead of time?

   d) What are the essential elements of information?

   e) What Continuity of Operations Plans (COOP) are needed?

4. <u>Summary of results and recommendations:</u> The following information summarizes the exercise results and recommendations.

A. <u>Results:</u> The exercise met its primary purpose to validate the draft protocol framework, determine possible implementing plans and procedures, priorities and the timeline for next steps. The Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations (Draft Annex C to PNEMA) approach was validated. Ninety-five percent of post-exercise evaluations confirmed the Annex C approach. The input summarized in paragraph 3 above for each exercise task framed the next implementation steps with a focus on the short-term specific priorities.

B. <u>Recommendations:</u> There are three primary recommendations as a result of meeting the exercise objectives:

1) Finalize the strategic protocol framework (Annex C to PNEMA);

2) Develop a process flow diagram to document the priorities and timeline; and

3) Draft a charter for the implementing task force.

CONCLUSION

Maritime commerce includes not only the ports, but trucking, utilities, and other public and private sector organizations. (Photo: Vancouver Port Authority)

This exercise focused on bi-national government and private industry communication mechanisms, information-sharing and common situational awareness. The areas of discussion considered the strategic communication and information sharing protocol framework and the next steps required to convert the Guidelines recommendations into actionable plans and procedures. The goal is to facilitate a more effective regional coordinating and communication process that enables faster maritime commerce recovery thereby promoting regional economic resilience.

Coordination is the key to disaster preparedness and effective communication of the risks the lynch pin of regional resilience. The participants recognized the cascading effects of a major maritime disruption and the need for a comprehensive coordination strategy. The topic is complex and there are no easy answers, but the collective wisdom of the participants provided insight into what would keep a business from reopening following a catastrophic event in the region. Forty percent of the participants were from the private sector which added great value to the discussion and clear focus to the real problems facing business resumption decisions.

The result of the exercise was a greater understanding of the next steps in this initiative and the difficulties involved. There was consensus on the need to keep the momentum and to be individual champions of the process to gain executive support and resourcing. The next phase of this project is to finalize Annex C to PNEMA and develop a charter for the implementing task force.

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Section 4: After Action Conference Report on the Bi-National Tabletop Exercise to Expedite Maritime Commerce Recovery Through Regional Collaboration

EXERCISE OVERVIEW

This initiative is part of the US-Canada Beyond the Border declaration and its Perimeter Security and Economic Competitiveness Action Plan, working to develop information-sharing protocols and communication mechanisms to swiftly recover from any maritime disruption. The exercise series was designed to work with public and private stakeholders in British Columbia and Washington State to develop a communications and information sharing protocol framework.

Rail, trucking, and shipping are key to keeping the Ports running, and to getting Port facilities on-line after a disaster (Photo: Port of Seattle, Don Wilson)

In conjunction with representatives from Transport Canada and the United States Coast Guard, the Pacific NorthWest Economic Region (PNWER) facilitated a series of webinars, workshops and a tabletop exercise to develop the protocols outlined in the Action Plan.

An After-Action Conference was held on November 26 in Vancouver, British Columbia to review exercise findings and recommendations, and prioritize next steps for the final Action Plan.

The tasks for discussion of the After-Action Conference were to confirm commitments to a long-term improvement plan, strategies for moving forward with regional governmental support, and finding funding for on-going work on this initiative.

EXERCISE DESIGN

The After-Action Conference's goals were to ensure the conclusions and findings stated the Exercise After-Action Report were accurate and appropriate to the project goals of the participants. It also had the stated purpose of defining the next steps in the process in order to continue momentum gained over the past year. This was presented and discussed

in the form of Maritime Commerce Action Plan Milestones, attached as Appendix B. The Action Plan Milestones were identified by stakeholders as the highest priority actions over the next year. Project leaders reviewed the findings and recommendations from the table top exercise, webinars, and workshops, and asked for participant assistance in ensuring the Action Plan Milestones outlined a realistic and achievable guide for project next steps.

The exercise was attended by 34 participants from the United States and Canada. Both government and private sector representatives attended from both countries offering a balanced discussion.

EXERCISE SUMMARY

1. Overview of exercise opening comments:

A. **Transport Canada:** Dr. Allan Bartley, Director, Marine Security Policy, stated that enhancing the capacity for recovery in our region is a goal worthy of the time, effort and resources expended by the participants. This region is especially vulnerable to natural hazards and threats, and that is likely why we were chosen for this pilot program. We have the local expertise, understanding, and means to work together cooperatively. He noted there are $600 billion a year in economic transactions between Canada and the U.S., which is part of why this initiative is so important across the whole border. This will benefit not just this region, but benefit other regions along the border in the months and years ahead.

B. **United States Coast Guard:** Captain Mike Gardiner noted that the entire project began because of the interest between the U.S. and Canadian governments, and the private sector to work collaboratively on the Initiative. He

U.S. Coast Guard crews survey damage at a marina post-Hurricane Sandy (Photo: USCG)

said that for as much as we have to be proud of, this is just the first step and a long-term commitment is required to ensure we continue to push these issues and get as prepared as we can. He also highlighted the contribution of Transport Canada. He noted that we still need everyone's opinions and expertise on how to move this forward, and praised PNWER's efforts in framing the questions and finding answers.

C. **PNWER:** Matt Morrison, Executive Director, affirmed the dependency of the regional economy on the maritime sector. He said that $200 billion annually comes from our ports, and it is the lifeblood of the regional economy. This project requires a long term commitment. He noted the impacts of Hurricane Sandy on the east coast as evidence that this work is very important.

2. Discussion Areas/Tasks:

A. Confirm the Action Plan Milestones are appropriate and achievable next steps, make changes as agreed upon.

B. Confirm the plan to include the Communications and Information Sharing protocols as Annex C to the Pacific Northwest Emergency Management Arrangement (PNEMA) is appropriate.

C. Determine the need for a Task Force to continue the work.

D. Discuss Task Force participants, leaders, and goals.

E. Define methods to encourage participation in the protocols by government and private sector.

F. Identify any existing committees or organizations that could share the workload identified in the Action Plan Milestones.

G. If no single organization can be appointed to lead the project forward, determine if a third party or a contractor should be considered for that responsibility.

3. Conference Summary:

During the Tabletop Exercise, participants ranked the top priority activities in the Guidelines Road Map. These priority activities were summarized in the Action Plan Milestones list and were adopted as the project Action Plan by participants at the After-Action Conference. Tasks 1-7 were identified as highest priority and participants were asked to focus on these activities first. Participants discussed the Action Plan Milestones

and timeline, agreeing that they were a good roadmap for project next steps. One edit requested by participants pertained to Milestone #19, the review of regulatory and ordinance changes or waivers. Participants recommended the start date be moved up from the March 2015 date listed due to the time required for changes to government regulations.

Puget Sound and Prince William Sound Ports are twenty-four hour a day operations. Over $200 Billion comes through the U.S. and Canadian ports each year (Photo: Port of Seattle, Don Wilson)

All agreed Annex C of the PNEMA agreement was the best platform to house the protocols. Project sponsors have begun the formal process of briefing Emergency Management leads from Washington State, Alaska and British Columbia to discuss the next steps. Other federal cross border arrangements are being examined as well to help move the process forward. Options for encouraging insurance companies to offer incentives to signatories were discussed as a method for encouraging private sector participation. It was also suggested that a Resiliency Certification program that included membership in this agreement might provide a significant incentive for participation.

A Task Force structure was identified as the best option for ensuring the suggested milestones be monitored and accomplished. The Task Force would include specific members from the broader community of interest group. Participants felt the Task Force should serve as an advisory committee to assist in providing input to the implementation of the Action Plan. The broader Stakeholder Advisory Group would be all the participants across the region. Stakeholders felt that efforts should be made to develop opportunities for virtual and electronic collaboration. Participants agreed that a third-party agency, outside of government, would be the best option to act as the Task Force facilitator, noting that while the Ports understood the importance of working collaboratively, no one Port was in the position to take the lead on this initiative. Participants recommended PNWER fill the role of Task Force facilitator if funding could be secured.

Several existing agencies, including the Marine Exchange, Area Maritime Security Committee, and others were suggested as possible partners in helping to accomplish the tasks defined in the Action Plan, but none of these agencies was thought to be likely to act as the Task Force facilitator.

Participants agreed that the Priorities outlined in Phase 1 of the Action Plan have been accomplished, and work needs to begin on Phase 2.

CONCLUSION

Critical Next Steps – Phase 2

1. Identify funding sources based on the Maritime Commerce Recovery Action Plan Milestones, Phase 2 and Phase 3 objectives.

2. Identify a Task Force facilitator and build a team to organize key participants. The Task Force would ensure identified tasks are assigned and progress is made according to the defined timeline.

3. The Task Force should appoint cross-border committees to accomplish specific tasks, develop functioning information sharing tools, define responsibilities and liabilities of parties, and develop and test the communications and information-sharing methods.

In summary, stakeholders from both sides of the border recognize the need to collaborate to create a US-Canada Maritime Recovery Strategy for the region. Hurricane Sandy illustrates the severe impact to the maritime supply chains and the need to coordinate as a region. Participants believe the effort was worthwhile, that significant progress was made toward improving the resilience of the maritime community in both countries, and that a clear roadmap was developed to move the initiative forward from a written protocol to an actual working plan.

Participants developed working relationships with their counterparts throughout the region in both countries. These relationships will be key in building trust and in working through future planning efforts. Funding remains a primary concern. Without funding, there will be no recognized organization structure to perform the proposed tasks, organize the committees and drive the initiative forward. All participants were eager to find solutions to the listed issues and expressed an interest in continuing their work on the protocols.

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Appendix A: Project Participants

British Columbia

Peter Anderson
Associate Professor
Simon Fraser University
School of Communication

Anne Callaghan
Consul General
US Consulate

Mike Carlson
Inspector
RCMP (Border Integrity Program)

David Charlton
Manager Port Operations & Deputy Harbour Master
Prince Rupert Port Authority

Gregg Clackson
Director , Ops & Security
BC Ferries

Edward Dahlgren
Manager of Marine Operations & Harbour Master
Nanaimo Port Authority

Patricia Docking
President
Pdocking Consulting Ltd.

Marisa Ferguson
US Consulate General
Vancouver

Allan Galambos
Bridge Rehabilitation Engineer
Ministry of Transportation, British Columbia, Canada

Bob Gowe
Manager
Transport Canada

Tony Gutenberg
Manager of Safety, Security and Environmental Services
TSI Terminal Systems Inc

Andrea Heba
Deputy Harbour Master
Port Metro Vancouver

Mike Hryciuk
Chief operations
Canada border services agency

Shafiq Jamal
VP Western Canada
Retail Council of Canada

Cindy Jeromin
Safety and Emergency Management Coordinator
Port Metro Vancouver

Will Keenlyside
Regional Manager, Marine Security Operations
Transport Canada - Pacific Region

Binder Kooner
Chief of Operations
Canada Border Services Agency

Alyssa Megale
Regional Program Officer
Canada Border Services Agency

Phillip Nelson
President
Council of Marine Carriers
pnelson@comc.cc

John Oakley
Senior Regional Manager
Ministry of Justice

Chad Pacholik
Emergency Management Planning Coordinator
Integrated Partnership for Regional Emergency Management (IPREM)

Steven Sapinsky
Manager, Labour Relations
British Columbia Maritime Employers Association (BCMEA)

Colin Smith
Past President
APEGBC

Mimi Sukhdeo
Transport Canada

Tanya Traverse
Emergency Managment Coordinator
Canada Border Services Agency

Rod Tulett
Security & Emergency Coordinator
Metro Vancouver (GVRD)

Sean Wheeler
Operations Coordinator
RCMP Border Integrity

Jessica Yen
Regional Economic Officer
Transport Canada

Brian Young
Director, Marine Operations
Pacific Pilotage Authority Canada

California

Cosmo Perrone
Principal
Cosmo Perrone & Associates, LLC

Washington DC

Kevin Floyd
LCDR
USCG Headquarters

Andrew Tucci
Captain
U.S. Coast Guard

Ontario

Allan Bartley
Director
Transport Canada

Natalie Fraser
Policy Analyst
Transport Canada

Laura Hoy
Policy Analyst
Transport Canada

Gerry Miele
Risk Management
St. Lawrence Seaway

Marilou Moles
Policy Analyst
Transport Canada

Scott Naugler
Chief, Strategic Policy
Transport Canada

Oregon

Rick Carter
Public Utility Commission of Oregon

Lorraine Churchill
Columbia County Emergency Management

Virginia

John Milam
Dynamis

Washington

Darnell Baldinelli
Safety Systems Manager
Washington State Ferries

Tony Barge
Security Supervisor / FSO
Shell - Puget Sound Refinery

Sharon Barnes
Supervisory Program Manager
Customs and Border Protection

Scott Bates
Security Specialist (Port)
US Coast Guard District 13

Jeannie Beckett
Principal
The Beckett Group

Matthew Bernard
Regional NIMS Coordinator
FEMA Region 10

Jason Biermann
Recovery Program Manager
Snohomish County DEM

Chad Bowechop
WAVE Consulting

Steve Boyer
Senior Vice President
Hill+Knowlton Strategies

Randy Boyington
Hazmat Safety Insp
DOT/FRA

Tim Brewer
T-Mobile

Leonard Burke
Logistics Management Specialist
DHS/FEMA Region 10

Mark Burris
NW Regional Security Manager
Tesoro Refining and Marketing

Lon Cain
District Manager/WSMC Board Member
Transmarine Navigation Corp/WSMC

Maralyn Chase
Senator
WA State Legislature

Helena Chavez
Special Agent
Coast Guard Investigative Service

Andrew Cleaves
FEMA Region 10

Neil Clement
Emergency Management & Security Officer
Port of Bellingham

Kevin Cook
Political & Academic Officer
Consulate General of Canada-Seattle

Ed Cunningham
Program Manager
AT&T

Dave DeHaan
Emergency Manager
City of Everett Emergency Management

Lit Dudley
Exercise and Training Mgr
Washington State Emergency Mgmt

John Dwyer
OCMI/CHIEF, Inspections
USCG Sector Puget Sound

Lawrence Eichhorn
Emergency Management Coordinator
Seattle Department of Transportation

Fred Felleman
WAVE Consulting

Scott Ferguson
CAPT,USCG -- Captain of the Port
U.S. Coast Guard Sector Puget Sound

Marvin Ferreira
Safety & Security Manager
APM Terminals

Jason Flennoy
Preparedness Specialist
US Coast Guard Sector Puget Sound

Marie Fritz
Cruise & Maritime Operations
Port of Seattle

Michael Gardiner
Chief, Prevention Division
US Coast Guard 13th District

Kaylee Garrett
Pierce County Department of Emergency Management

Arif Ghouse
Director, Maritime Security/Emergency Preparedness
Port of Seattle

Kathleen Gleaves
President
Gleaves Consulting

Gala Gulacsik
Federal Emergency Management Agency - Region X

Randy Hansen
Battalion Chief
Seattle Fire Department

Brandon Hardenbrook
Deputy Director
PNWER

Joseph Hesbrook
Deputy Federal Preparedness Coordinator
FEMA Region 10

John Himmel
Emergency Manager
WSDOT

David Holcomb
Protective Security Advisor
U.S. Dep. of Homeland Security

Eric Holdeman
Director of Security
Port of Tacoma

Rob Hollander
Intelligence Analyst
Washington State Fusion Center

Joe Huden
Project Manager
PNWER

Jim Hutchinson
Catastrophic Planner
WA Mil. Dept./EMD
Bldg 20

Brad Jenson
Mgr, Security & Public Safety Technology
Port of Seattle

Carolyn Kavanagh-Saini
security & compliance program manager
Starbucks Coffee Company

Ralph Kliem
Project Manager
Boeing

Rachel Knutson
Freight Transportation Planner
WSDOT

Hans Kueck
Economic Development
Pierce County Economic Development Department

Rick LaBlond
Marine Technical Advisor
Shell Trading N.A.

Joe Larsen
Border Program Assistant
PNWER

Megan Levy
Program Coordinator
PNWER

Tim Lupher
Security Specialist (Port Recovery)
USCG/Sector Puget Sound

Edward Madura
Security Director
Port of Everett

Gretchen Martinsen
Logistics Branch Chief
FEMA Region X

Patrick Massey
FEMA

Matt Morrison
CEO
PNWER

Steven Myers
Program Manager
PNWER

Dave Ochs
Regional Emergency Transportation Representative
US DOT / FAA

Janelle Panoke
Program Manager
U.S. customs and border protection

Mark Peterson
Program Manager
Customs and Border Protection

Lucianne Phillips
Private Sector Liaison
FEMA Region X

Jerry Prichard
Special Agent
U.S. Coast Guard Investigative Service

Lorna Proctor
Supply Chain Continuity, sr. specialist
Starbucks Coffee Company

Paul Riemann
Moffatt & Nichol

Tommi Robison
Aronson Security Group Inc.

Keysha Ross
Officer-in-Charge
CDC Seattle Quarantine Station

Kiley Ross
Chief of Prevention
CG Sector Puget Sound

Mike Ryan
Emergency Mgt. Coordinator
SHS Region 6 / Zone One

Stephen Simerly
Exercise Specialist
FEMA Region 10

Patrick Smith
XRM Consultant
Madrona Solution Group

Chris Springer
USCG D13

Gerhard Steinke
Professor
Seattle Pacific University

Denis Stevens
Consul General
Consulate General of Canada

Ashley Travis
R&R Enterprises

Ronald Tso
Chief of Police
Lummi Nation Police Department

Anne Tyler
USCG Sector Puget Sound

Randy Unger
Policy Analyst

Lynn Vander Stoep
Emergency Planning and Operations Coordinator
City of Everett

John Veentjer
Executive Director
Marine Exchange of Puget Sound

Laura Vonnahme
Epidemiologist
CDC Seattle Quarantine Station

Joel Ware
Deputy Director
Seattle Aux Comms Service

Debra Winsor
Sergeant-Critical Infrastructure Section
Washington State Fusion Center | Seattle Police Department

M. Zitrin
Investor
DBA M. Stephen Zitrin

Russell Amacher
Office of Facility Compliance
US Coast Guard

Ben Atherly
Director, Shore Operations
Holland America Line

Amanda Bibler
Assistant Director, Field Operations
US Customs and Border Protection

Jane Blaiso
Chief Operations Manager
Customs and Border Protection

Myles (Chip) Boothe
Prevention Section Mgr
WA Dept of Ecology - Spills Program

Luke Carpenter
Principal
Carpenter Northwest, Inc.

Mary Ann Chapman
Program Manager, PSGP
Marine Exchange of Puget Sound

Hugh Conroy
Project manager
Whatcom Council of Governments

Charles Cordova
Battalion Chief
Seattle Fire Department

Adam Couvillion
Senior Analyst
U.S. GAO

Tiffany Curtiss
Director, Government Affairs
Vigor Industrial

William Devereaux
Consultant

Dave Ebert
Asst. V.P.
Cosco Container Lines America

Joseph Gustafson
Chief, Floating Plant
US Army Corps of Engineers

Stephen Harvey
Supervisory Security Specialist
U. S. Coast Guard

Mart Kask
Project Manager
Thurston County EM

John Lockwood
Senior Advisor
Vigor Shipyards, Inc.

Stephanie MacLachlan
Senior Program Manager
KPFF Consulting Engineers

Mike Maloy
I.T. Manager
2-1-1 & Crisis Clinic of King Co., WA

Charlie Mandigo
Director Fleet Security
Holland America Line NV

Brian Mannelly
Planning Director
Port of Tacoma

Aaron Marks
Manager, Preparedness Support Programs
Dynamis, Inc.

Lyn McClelland
USCG Auxiliary

Melissa Miller
Whatcom Council of Governments

Crescent Moegling
NOAA

Robert Moore
Business Resumption Planning
CBP

Lise Northey
Program Manager
City of Seattle

Kevin Obermeyer
CEO
Pacific Pilotage Authority Canada

Alex Richards
Emergency Management
Pierce County

Larry Salter
President
LGS Solutions

Patrick Schmitt
Peace Winds America

Bill Sharp
VP Port & Shore Operations
Holland America Line

John Smith
Cloud Safetynet

Helmut Steele
Company Security Officer
Washington State Ferries

Steve Stein
Director, NW Regional Technology Center
Pacific Northwest National Lab

Jeffrey Thompson
Principal
JL THOMPSON MARITIME

Grant Tietje
Emergency Manager
Seattle Office of Emergency Management

Jennifer Waggoner
Regional Manager, Shore Ops
Holland America Line

Nigel Waterton
VP Business Development
Aronson Security Group

Dave Wenger
Surveyor
E.F. Travers & Associates

Mark Wilkerson
Area Port Director
U.S. Customs and Border Protection

Greg Wirtz
President
North West and Canada Cruise Association

Jody Woodcock
Deputy Director
Pierce County Emergency Management

Appendix B: Background Information

Pacific Northwest Marine Transportation System Recovery/ MTS Recovery Units: US Coast Guard District 13 Prevention Division Information Paper

Marine Transportation System Recovery Unit Pocket Guide: US Coast Guard

Critical Elements and Lessons Learned - Maritime Commerce Resumption: Transport Canada

Maritime Resilience Planning: Questions and Answers: Transport Canada

A Guide to Getting Started: Resilience Planning for Maritime Commerce – Public Safety Canada

Pacific NorthWest Emergency Management Agreement (PNEMA)

Northwest Maritime Recovery Appendix

U.S. Coast Guard District 13 Prevention Division (Dp)
Information Paper

Subject: Pacific Northwest Marine Transportation System (MTS) Recovery/MTS Recovery Units

National perspective

Summary. The Coast Guard's multifaceted MTS recovery project is leveraging multiple statutory maritime security requirements and implementing regulations (Box 1) for recovery from Transportation Security Incidents (TSI's). This to advance development of MTS recovery policies, protocols and procedures, while also leveraging MTS recovery experience from other hazards to advance preparedness for recovery from TSIs. The MTS recovery project is maintaining alignment with the DHS Global Supply Chain Security initiative and its associated *DHS Strategy to Enhance International Supply Chain Security*, the *National Infrastructure Protection Plan* (NIPP), the combined *National Maritime Transportation Security Plan* (NMTSP) and *Maritime Transportation Systems Annex* to the Transportation System Sector Specific Plan (TS SSP), the *National Recovery Framework* (NRF), the *National Disaster Recovery Framework* (NDRF), and the NDRF Infrastructure Systems Recovery Support Function (IS RSF). Area Maritime Security Plans and Committees are centerpieces of partner and stakeholder mutual cooperation for establishing and implementing MTS Recovery protocols and procedures. The Customs and Border Protection and U.S. Coast Guard's *CBP/USCG Joint Protocols for the Expeditious Recovery of Trade* are applied as needed to support national-level stakeholder coordination and sharing of recovery, carrier, and trade information.

Box 1
MTS RECOVERY MANDATES AND REGULATIONS

- The Maritime Transportation Security Act (MTSA) of 2002 requires the NMTSP to include mitigation of TSIs and a plan for restoration of commerce. AMS Plans to work in conjunction with the NMTSP.
- The Security and Accountability for Every Port Act (SAFE Port) of 2006 requires that AMS Plans include a salvage response plan for resumption of commerce and listing of salvage response equipment. The Act requires a strategic plan to enhance the security of the international supply chain (provided for on an interim basis by the DHS Strategy to Enhance International Supply Chain Security, 2007 (which incorporates USCG MTS recovery preparedness). The Act also requires protocols for the expeditious resumption of cargo flows for all forms of Transportation Disruptions including Transportation Security Incidents. T*he CBP-USCG Joint Protocols for the Expeditious Recovery of Trade* support this requirement.
- The Coast Guard Authorization Act of 2010 requires AMS Plans to include protocols and procedures for response and recovery from TSIs.
- T itle 33 of the Code of Federal Regulations, 33 CFR parts 103 requires AMS Plans to include procedures for facilitating MTS recovery, including an AMS salvage response plan.

MTS Recovery post Hurricane Katrina. The Coast Guard recognized the need to quickly ramp up our all-hazard preparedness before the next large-scale disaster, and leveraged maritime security policy development to accomplish this objective. The Coast Guard, in cooperation with partners and stakeholders in the public and private sectors, leveraged a nationwide Area Maritime Security Plan update to establish a common, scalable, all-hazards MTS recovery concept of operations. Stakeholders included DOD representatives with distinct MTS stakeholder equities. This 5 year cycle AMSP plan update was completed in 2009 with next update scheduled for 2014. The updated AMSP's included MTS recovery plans referenced within the Transportation Security Incident contingency context of the AMSP's but able to be stand alone plans in non TSI defined MTS disruptions. These MTS recovery plans provide a planning framework nationwide to facilitate a cooperative process for

accomplishing near-term recovery (i.e., restoration of partial functionality) of the MTS following a substantial or catastrophic transportation disruption, including resumption of trade inside and outside of incident areas. This approach is designed to also help set the stage and position the system to support follow-up long-term recovery measures by system stakeholders relative to their portions of the system.

Regional, JFO/ Area Command Perspective

In lessons learned from the 2011 New Madrid faultline National level exercise**;** FEMA, with USCG and U.S. Army Corps of Engineers (USACE) planning and technical support, explored the development of a riverine task force concept housed within an overarching, regional incident management structure above Joint Field Offices for a mid-West catastrophic earthquake scenario. Conceptually, lead for the maritime component could be Coast Guard during the Response Phase (including short-term recovery) and the USACE during the Recovery Phase (i.e., long-term community recovery). Further development to define CG MTS recovery role within JFO and NIMS defined Area Command structures at the HQ/ Area level continues. Seeking to meet this need for regional/ national MTS recovery planning in support of port level recovery in the Pacific Northwest and aligned with current MTSR policy, District13 continues to explore D13 staff MTS recovery roles, responsibilities within these settings.

West Coast Perspective

Pacific Area Marine Transportation System Recovery Instruction 16001.1b: This draft 2012 instruction clarifies MTSRU roles responsibilities and training expectations in support of existing AMSP associated MTS Recovery Plans. Additionally this instruction clarifies Disrtict staff MTS recovery planning roles, responsibilities in support of Sector(s) IC/UC objectives and as conduit to best employ the Pacific Area IMAT's Marine Transportation System Recovery Assist Teams (MTSRAT's) surge capability.

Marine Transportation System Recovery Unit Leader (MTSRL3) type-3 Qualification: In Accordance with the CG-544, CG-5322, Lant-55 and PAC-54 MTSRU Master Lesson Plan; the first Pacific Area MTSRU leader type 3 course was convened and completed at Sector Puget Sound May 23-24, 2012. This 2012 master lesson plan established the core competencies necessary for a type 3 MTSRU leader. This type 3 is defined as the basic level necessary to complete expected duties as a day to day sector level MTS recovery planner as well as expectations associated with UC planning section MTS recovery setting. Additionally, this is the only CG approved course that includes in combination with MTSRL3, a users level Common Assessment and Reporting Tool (CART) qualification.

Pacific Northwest Perspective

All-hazard MTS recovery plans, tailored for Sector Puget Sound and Sector Columbia River have been promulgated for transportation disruptions in consultation with respective stakeholders. Procedures are in place for forming and activating MTS Recovery Units (MTSRU) within the planning section(s) of unified commands when established. The MTSRUs are staffed by a core of Coast Guard personnel as a collateral duty, supplemented by stakeholder SMEs to include Army Corps of Engineer and other Department of Defense representatives as available.

The Coast Guard District 13 staff components have MTS Recovery planning responsibilities in support of the Sector Commander (s) IC/ UC driven recovery objectives. This support accounts for potential Sector AOR conflicts of MTS recovery priority, as well as conflicts that may arise in other established or evolving regional/ Area command settings. These recovery conflicts typically pertain to other non-MTS NIPP defined sector(s) and their respective recovery priorities. DOD decision makers within these command structures, while aware of port level IC/UC derived MTS recovery priorities will likely be interacting with D13 staff members during emergency response and regional recovery disaster environments.

Coast Guard Pacific Area per instruction 16001.1b has also established a procedure for drawing on existing resources to enable supplementation of local MTSRUs for major disasters employing outside of District resources. These CG Area derived Marine Transportation System Recovery Assist Teams, (MTSRAT's) are a part of the Pacific Area IMAT teams. These teams are intended to support MTS recovery plans/ planning either at the sector UC level directly or at the District staff level working with District staff components seeking to support UC MTS recovery objectives within potential scenario driven regional command structures per the National Response Framework and the National Disaster Recovery Framework.

Recovery Data Decision Support

Computer assisted documentation and reporting of MTS recovery information, the Common Assessment and Reporting Tool (CART), was developed in prototype by Coast Guard Atlantic Area. Commandant (CG-PSA) is now serving as CART sponsor to both areas. The CART prototype application is available for use and assessment nationwide. The application has been debugged based on results of field use and is currently a Level 2 prototype system hosted at the Coast Guard's Operations Support Center (OSC). A System Development Life Cycle (SDLC) process is being initiated to upgrade the application to Level 3 status for integration into the Coast Guard enterprise system. CART is planned for progressive upgrading as resources permit to provide an improved capability for incident management, implementing the CBP-USCG protocols, and for responding to national level information needs.

Exercising recovery coordination, plans, procedures, and lessons learned from actual experience are an essential part of the preparedness cycle. MTS recovery is one of the required elements of the mulit-year AMS Exercise Program cycle, and may be tested in conjunction with other exercises such as PREP, SONS, and NLE excerises.

Additionally, CART has a Geogrphic Information display capability that allows CART users the ability to display users described EEI status as layers on a GIS display. Currently, the CART program is seeking to consolidate any redundant functionality its current capability with MSRAM GIS functionality. This area of improving GIS in support of operational and contingency planning pertaining to the protection, response and recovery of the MTS is ongoing.

TAB A
Practical Application of MTS Recovery Concepts

- Hurricane Katrina and Rita. The MTS Recovery Unit concept was conceived in conjunction with Coast Guard response for Hurricanes Katrina and Rita. The concept has been adapted and fully integrated into all-hazard MTS Recovery preparedness.

- Lake Charles Oil Spill – 2006. A prototype MTSRU drawing on personnel engaged in prototype development was field-tested during a major oil spill in Lake Charles during 2006. The lessons learned from this event were used to refine the concept.

- I-35 Bridge Disaster. The MTS Recovery Unit concept was tested for partial restoration of infrastructure and resumption of commerce during the Spill of National Significance (SONS) field exercise and workshop in 2007 based on a New Madrid major earthquake scenario. Several months later, the Coast Guard COTP and MTSRU leader who participated in SONS deployed to Minneapolis for the maritime component of the I-35 Bridge collapse. The practical insights obtained from the SONS 07 exercise were directly applied in the assessment and reporting of marine transportation and associated economic implication elements of the disaster.

- CBP/USCG Joint Protocols for the Expeditious Recovery of Trade. The protocols have been activated for recovery information sharing and coordination with Carrier and Trade Support Groups relative to floods on the Western Rivers and hurricanes in 2008, and as advance planning for the potential national effects on marine transportation of the then imminent eruption of Mt. Redoubt volcano and the spread of the H1N1 virus in 2009. The advance application of the protocols for H1N1 preparedness identified the need for enhanced communications and coordination pertaining to maritime labor issues associated with large-scale incidents or disasters.

- HAITI Earthquake Response and Recovery. An 11-member MTS Recovery Assist Team composed of personnel from Atlantic Area Districts and the National Strike Force was deployed to assist with recovery efforts in Haiti. The team functioned similar to a domestic MTSRU and was called "Haiti Marine Transportation System Recovery Unit". The team was berthed and initially operated aboard Coast Guard Cutter OAK. The Haiti MTSRU worked under the Joint Task Force (JTF) structure called the Port Management Team. The Haiti MTSRU mission provided Coast Guard Port Management expertise in support of Haitian Earthquake Recovery and reconstition of Haitain Port Authority functions and capabilities. This expertise provided included MTS Recovery, Port Safety, Port Security, Pollution/HAZMAT response, and Vessel Traffic Management.

  Deepwater Horizon – 2010. MTS Recovery Units were established at Incident Command and Unified Area Command levels with technical support from CG Atlantic Area. Field-level MTSRUs performed MTS recovery documentation and reporting using the Common Assessment and Reporting Tool (CART) software application. The CG Headquarters MTSRU, a collateral duty incident management system structure, was activated and provided MTS Recovery information and assessment support to the

National Incident Command (NIC) Assist Team, performed strategic-policy-level outreach for information exchanges with marine industry stakeholders, and also supported identification and assessment of economic, environmental, and transportation risk analyses pertinent to maritime commerce. The CGHQ MTSRU also coordinated with the Unified Area Command MTSRU to resolve several information and technical issues that were identified.The MTSRU coordinated use of the *CBP/USCG Joint Protocols for the Expeditious Recovery of Trade*, performing for national-level inter-agency and private sector outreach, information sharing, and collaboration. National and international maritime industry stakeholders, through the Carrier and Trade Support Groups supporting the protocols, were appraised daily of MTS status and contingency arrangements for decontamination of shipping. The MTSRU's outreach and information support was intended to reassure shipping companies, enabling them to maintain their schedules with confidence, thereby minimizing the potential for supply chain disruptions with national economic impact. The CGHQ MTSRU also provided subject matter technical and information support to the Homeland Infrastructure Threat and Risk Analysis Center (HITRAC) to support economic risk and cascading effects assessments.

Data Supporting the MTSRU

Essential Elements of Information (EEIs): Categories of information on the MTS collected prior to an incident or event and updated following a Transportation Disruption.

Waterways and Navigation Systems

- Aids to Navigation
- Deep Draft Channels
- Non-Deep Draft Channels
- Locks
- Vessel Salvage/Wreck Removal
- Oil Pollution Incidents
- Hazardous Materials Incidents

Port Area - Critical Infrastructure

- Bridges
- Bulk Liquid Facilities
- Container Cargo Facilities
- Non-containerized Cargo Facilities
- Shipyards
- High Capacity Passenger Vessel and Ferry Terminals

Port Area - Vessels

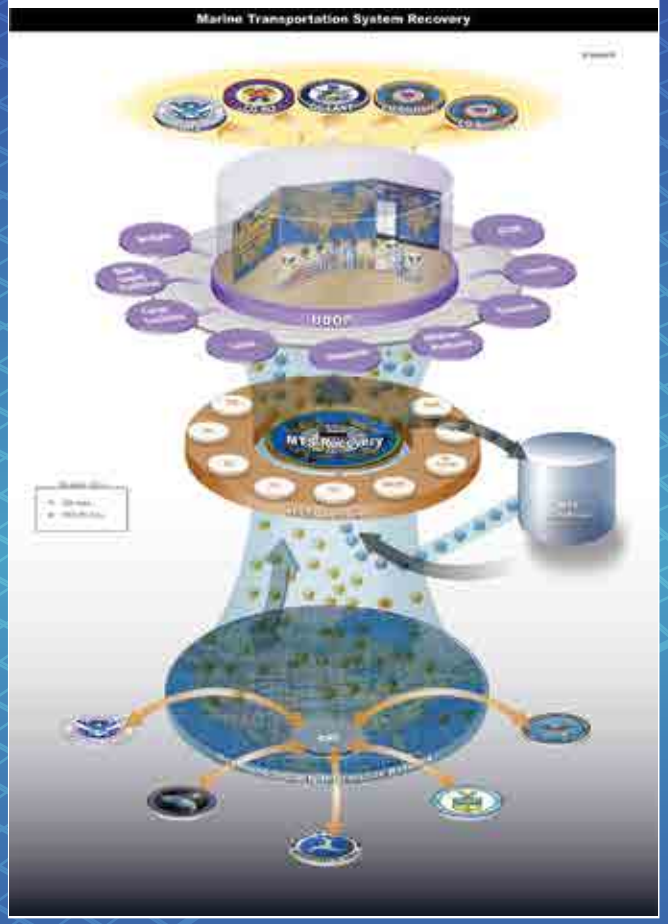
- Commercial Fishing Vessels
- High Capacity Passenger Vessels and Ferries
- Small Passenger Vessels
- Gaming Vessels
- Barges

Offshore Energy

- Offshore Platforms
- Offshore Production
- Offshore Renewable Energy Installations

Monitoring Systems

MTS Recovery Model



For additional information or to learn how to engage with the Marine Transportation Recovery Unit in your local area, contact the Planning Department at your local Coast Guard Sector Command.

Contact information can be found at: http://www.uscg.mil

Marine Transportation System Recovery Unit (MTSRU) Pocket Guide

"The nation needs a coordinated, integrated approach to planning for and responding to major disruptions in our marine transportation system, the lifeblood of America's economy"

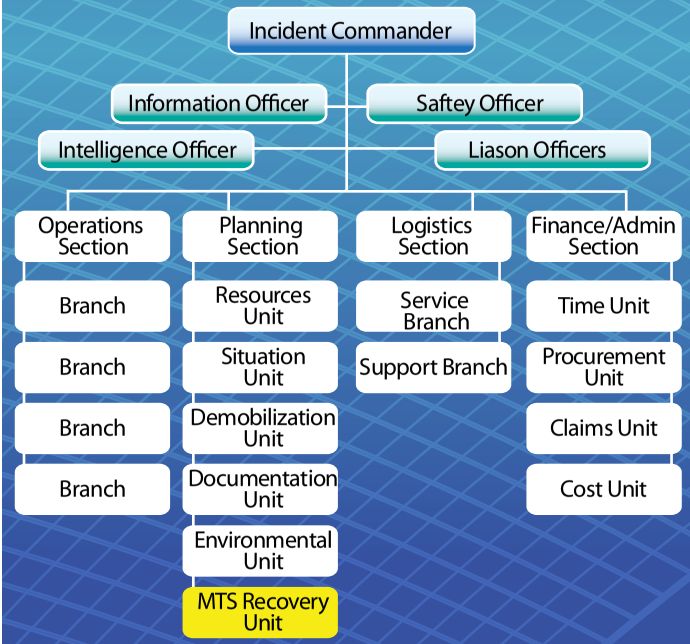
ADM Allen, 2007 State of the Coast Guard Address

MTSRU Organization

The Marine Transportation System Recovery Unit (MTSRU) is an element in the Incident Command System (ICS) organization that is responsible to:

- **Track & report status of the MTS in an accurate & timely manner**
- **Develop a clear understanding of critical recovery pathways**
- **Develop courses of action to support MTS Recovery**
- **Provide an avenue of input to the response organization for MTS stakeholders**
- **Identify and develop long-term restoration issues and forward to the IC/UC**

Incident Command System



Composition of MTSRU

The responsibilities associated with the MTSRU will require participation from a broad spectrum of agencies and entities. The success of the MTSRU will depend on having an appropriate mix of stakeholder representation, including:

- **Federal Representation**
- **Local Industry Representation**
- **State and Local Government Representation**

MTSR
Marine Transportation System Recovery

CART
Common Assessment and Reporting Tool

What is the Common Assessment and Reporting Tool (CART):

- Prototype Database serving as repository for MTS Recovery Baseline Data
- Generates MTS Executive Summary Report
- Generates MTS Recovery Trend Lines
- Stores Past Incident Documentation

Purpose of CART: The CART database provides a repository of MTS Recovery information that is not currently available to the Coast Guard. It is a bridging tool until the CG Enterprise Systems can be updated to better facilitate MTS Recovery. The information contained in CART assists the MTSRU in making MTS Recovery recommendations to the Unified Command and facilitates MTS Recovery Operations by:

- Providing Timely and accurate information on pre incident conditions in a Sector AOR
- Comparing baseline data and post incident data to characterize the extent of the impact on the MTS
- Auto-generating the MTS Executive Summary Report in various formats to ease in sharing of data with all MTS stakeholders
- Use of web-based format facilitates transmission and sharing of MTS Recovery Status and Impact reports

CART Features:

Home Page: Snapshot of all active MTS Recovery Actions with brief overview.

Baseline Data: Sector can enter Baseline data on the 22 categories of Essential Elements of Information (EEI's) prior to an incident/event.

Create Event: Sectors can create an event in the system and update the database with current impacts to the MTS.

Reports: CART generates the MTS Executive Summary report using information entered into the database. Reports include Trend line diagrams.

Active Events: Provides access to view detailed information on all Active Events.

Past Events: CART maintains documentation on all MTS Recovery information entered into the database for past incidents/events.

CRITICAL ELEMENTS AND LESSONS LEARNED MARITIME COMMERCE RESUMPTION

Introduction

This document is intended to be non-mandatory recommendations for those involved in the development of Maritime Commerce Resumption plans. The information contained here is based on the research of Transport Canada staff, and best practices identified by others following port related closures and related disasters. To demonstrate similarities and differences between possible scenarios, it is divided into sections based on six major events in a 15-year timeframe: the 1995 Kobe earthquake, the September 11, 2001 terrorist attack in New York, Hurricane Katrina in 2005, the 2008 Mississippi River oil spill, the 2008 Minneapolis bridge collapse, and the 2003 Northeast blackout. It is an inventory of elements to be considered for inclusion in a plan based on lessons learned from these experiences.

Maritime Commerce Resumption plans are crucial to protecting the Canadian and international economy, as over 80 percent of the world's trade occurs by water. The existence of comprehensive commerce resumption plans and resiliency efforts aid in protecting the maritime industry and preparing for high consequence events.

The information provided here is not exhaustive. Rather, it is limited and intended to provoke discussion and serve as a starting point in developing Maritime Commerce Resumption plans.

Kobe Earthquake

In 1995, an earthquake registering 7.2 on the Richter scale hit the northern end of Awaji Island, Japan, just outside the city of Kobe. More than 5,000 people were killed, 25,000 people were injured and more than 50,000 buildings were reported damaged. Damage to critical infrastructure was extensive. This included damage to gas lines, and blocked or damaged highways, bridges, railways and subways. The Port of Kobe reported cave-ins at yards, collapsed buildings, destruction of equipment and only 9 of 186 berths remained in tact. The Kobe Bridge and two highways (the Harbor Highway and Hanshin Expressway) going into the Port were destroyed.

Critical Element: A belief existed that the area had low seismic vulnerability, so bridge and building designs were not equipped for an earthquake of this intensity.

Lesson Learned: Give consideration to the vulnerability of important critical infrastructure, regardless of their age in both development and maintenance. Consider threats and disasters of all levels and types to maximize preparedness.

Critical Element: The city had numerous aging structures; many buildings were designed in the 1960s.

Lesson Learned: As part of a long-term plan, buildings may need to be retro-fitted to meet and surpass current standards.

Critical Element: Numerous main transport routes were parallel to shorelines with unstable soil conditions, so bridges and their supporting structures were easily destroyed. Many of the city's transportation routes were designed one above the other or side-by-side in narrow corridors.

Lesson Learned: If existing routes are susceptible to destruction, develop backup plans for transportation, including alternate modes (road, air, rail, etc). When designing transportation routes, consider the need for accessibility during times of emergency.

Critical Element: At the Port of Kobe, container berths, gantry cranes, and other critical equipment were either damaged or entirely destroyed. Many cranes tilted or fell, port buildings were damaged and berths were destroyed.

Lesson Learned: Develop plans to acquire appropriate technology for resumption of port activities, in case of partial or total equipment destruction. Plans need to consider the capacity of alternate modes (e.g. rail, trucking) to accommodate a surge in freight volumes. Port metrics could be used in developing this component of plans. Consider the geographic location of ports and surrounding critical infrastructure. Secondary storage locations for containers may be necessary. Rail, highway and other methods of transportation into and out of the port could all be affected in a disaster, hindering commerce resumption.

Critical Element: At the Port of Kobe, most workers used public transit to get to and from work and were unable to reach their worksites due to blocked roads.

Lesson Learned: Ensure plans are in place to have port staff reach their work place if public transport is not operating (e.g. car pooling, arrangements for car parking, dedicated buses, etc). Ensure all staff is aware of secondary operating locations, how they will receive information during an emergency and commerce resumption plans.

New York, September 11, 2001

On September 11, 2001 terrorists hijacked four planes in the United States and intentionally crashed two into the World Trade Centre buildings in New York City, which were under the jurisdiction of the Port Authority. Two others crashed in separate locations in the United States (Arlington, Virginia, and Pennsylvania).

The Port of New York and New Jersey was closed for 48 hours immediately following the attacks. The Port's location near major rail, highway and air methods of transportation made it vulnerable, but it also made it easier to direct cargo elsewhere. The total direct cost of the two-day shutdown at the Port was estimated at $20.5M/day (USD).

Critical Element: Lack of communication and cooperation between agencies created difficulties for emergency responders in managing responsibilities.

Lesson Learned: In case of an emergency, develop plans for inter-agency communication and response management, considering various scenarios. Detailed communication plans for all staff, first responders, industry, modes, emergency operations centres, etc. are critical to a plan. This includes plans for a backup communication system and a pre-planned communication tree. The plans need to be updated and tested frequently due to staff and organizational changes. Competitors should realize that all benefit by ensuring the existence of commerce resumption plans including detailed inter-agency communications plans.

Critical Element: Preparation, training and exercises played a role in saving the lives of those in the World Trade Centre towers below where the crashes occurred. This included the presence of fire wardens on each floor, fire alarms, a duplicate source of power, intercoms and bi-annual evacuation drills. The Port Authority of New York and New Jersey had existing plans for closing bridges in case of emergencies, but not of the magnitude of these attacks. Port Authority staff had some security and emergency response training, such as evacuation procedures and practice drills.

Lesson Learned: Each stakeholder should develop plans and training for staff based on possible scenarios. Inter-agency training and exercises are important for a multilateral response. Plans should represent the integrated plans of all government levels, industry, first responders, ports and all modes of transport doing business with the port. Assure that individual plans, pertinent information and priorities are shared between each level of stakeholder involved, when possible. Annexed to the plan should be documents such as reciprocal agreements (e.g. port to port). There is a tendency to exercise plans more exclusively at the operational level. As a result, in prior emergency situations, much of the confusion or lack of communication has been at senior levels. A comprehensive training program should be included in development for all government employees, emergency personnel, private sector enterprises and volunteer groups, regardless of their level in the organization. Consider emergencies and terrorist attacks of different magnitudes when developing plans and training employees.

Critical Element: The destruction of utilities and communications made internal and external intelligence gathering and communication difficult.

Lesson Learned: The inclusion of utilities in resumption plans should be integral since resumption of these services is most often a prerequisite to the resumption of other services. Examine various methods of telecommunication during an emergency when preparing plans and plan for backup methods, such as satellite phones instead of cell phones. Consider that communications infrastructure may be destroyed in an emergency and how to work without it.

Critical Element: The port authority closed the George Washington Bridge after the initial attack, but left it open to emergency response vehicles.

Lesson Learned: When preparing plans, consider the possibility of various main routes into and out of the port being closed due to an emergency and plan for alternate methods and modes of transportation. Planning for alternate routes and the reestablishment of transit routes after an event is important, as reconstruction of roadways and railways has proven to be one of the most time and labour intensive activities. In considering alternate routes, thought should be given to how road restrictions (e.g. trucks, tonnage) might be lifted.

Hurricane Katrina

In August 2005, Hurricane Katrina hit the southern United States, causing extensive flood damage in New Orleans, Louisiana. Nearly 2,000 people died and overall damages were estimated at $89 billion USD. The Port of New Orleans had more than $250 million in damages, with one-third of the port being virtually wiped out. Remaining port facilities (e.g. cranes, electrical equipment, cargo sheds) were all heavily damaged. Extensive water damage throughout the port posed a problem in removing debris and resuming work.

Critical Element: Private sector stakeholders were able to rapidly and effectively respond to the emergency due to their extensive planning in the days before the hurricane struck. When the hurricane landed, government officials knew the situation was serious, but had difficulty communicating and coordinating with each other due to communications infrastructure destruction and lack of adequate pre-planning.

Lesson Learned: When a situation is anticipated (e.g. hurricane, civil unrest), begin pre-planning in the days leading up to the event, based on the situation. This could include the establishment of a command centre, acquiring intelligence and organizing emergency supplies (e.g. adequate water supplies and fuel). Pre-planning should include backup systems for communications, considering the possibility that communications infrastructure may be destroyed. Information management should be a component of a commerce resumption plan (e.g. providing employees with remote access to pertinent work information from home computers or other locations). Thorough planning is necessary to minimize delays in responding to an emergency (e.g. while generators may be available, access to fuel may limit their use).

Critical Element: Government agencies and some stakeholders were accused of being rule-bound and unable to act, causing problems in reacting and responding to emergency circumstances.

Lesson Learned: Prepare and create plans for circumstances outside of normal jurisdiction and consider developing methods to circumvent rules in emergency circumstances. Government regulators and others need to give consideration to including plans and mechanisms by which regulations might be suspended or adjusted during an emergency. This would include labour restrictions on hours of work, etc., especially as it

relates to truckers and terminal gate hours In emergency situations, especially Hurricane Katrina, this apparent inflexibility posed a significant challenge.

Critical Element: Poor prior coordination between municipal, state and federal government and local stakeholders caused problems in sharing responses and responding swiftly to the emergency.

Lesson Learned: A coordinated plan across jurisdictions and sectors must be developed to ensure a strong response. This should identifying weaknesses and planning for how to close gaps. Plans should take into consideration stakeholders' geographic location, assets and business needs.

Critical Element: Although numerous command centres existed during the emergency, overlapping roles and responsibilities caused problems for response management.

Lesson Learned: Clearly define stakeholders' roles and responsibilities to minimize overlap and confusion. Engaging in exercises and practices prior to events, and modifying plans accordingly can help prepare for emergencies and minimize overlap.

Critical Element: Those involved in responding to the emergency had difficulty keeping track of what resources were needed and what was available.

Lesson Learned: Where possible, information should be shared on stakeholders' assets to maximize efficacy of use. This could include access to office space, critical equipment for commerce resumption (e.g. cranes), and vehicles.

Critical Element: Many port facilities suffered extensive damage, including to container cranes, electrical equipment and cargo sheds.

Lesson Learned: Consider secondary locations for cargo loading and storage, and that the use of other ports or marine terminals may be necessary due to damage in some areas or the inability of vessels to arrive at a certain port. Also consider preplanned arrangements for dredging, general removal of debris and temporary storage of debris and potential environmental hazards.

Critical Element: As with other jurisdictions in emergency situations, The Port of New Orleans had difficulty finding truck drivers to move cargo, and other necessary staff to resume commerce activities.

Lesson Learned: There is often a shortage of workers, including first responders, during and after an emergency. Consideration should be given to the availability of backup workers. Also consider alternative methods to move freight, such as rail and air. Methods for acquiring essential staff must be prepared in advance of an emergency (e.g. ensuring employees are trained in various key job functions).

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Mississippi River Oil Spill

In 2008, a barge collided with a tanker on the Mississippi River near New Orleans, Louisiana, one of the United State's major shipping routes. More than 400,000 gallons of oil spilled into the river, which was closed to traffic for two days. More than 200 vessels were initially stranded. The Port of New Orleans estimated losses of $100,000 a day. Reports stated that the river closure cost the United States economy $275 million per day.

Critical Element: More than 400,000 gallons of oil were spilled, closing 100 miles of the river to vessel traffic.

Lesson Learned: Develop plans for environmental events, the cleaning of debris and diversion of vessels when a waterway is closed.

Critical Element: Vessels were moved in the days after the spill based on their cargo priority, in terms of having the most critical need to the port, and their estimated length of time at a decontamination station. A ship carrying oil for a local refinery was the first to move.

Lesson Learned: A team of industry and maritime commerce stakeholders should determine criteria for the prioritization of the movement of vessels after an emergency. It is important that stakeholders coordinate with each other and have alternative arrangements in place in the event that the movement of freight is impeded.

Critical Element: Due to concerns about water contamination, some suburbs (e.g. Plaquemines and St. Bernard) shut off their water intake immediately after the spill.

Lesson Learned: When planning for the response to an emergency, consider that essential utilities like water and sewage may be unavailable. Subsequently, to ensure safe water, the transportation of certain goods (e.g. chlorine) could be vital.

2008 Minneapolis Bridge Collapse

During the evening rush hour, the Interstate 35W Mississippi River Bridge in Minneapolis collapsed into the Mississippi River. More than 88 vehicles and 18 construction workers were on the bridge at the time; some landed in the river and others landed on chunks of concrete from the bridge. Thirteen people were killed and 121 were injured.

Critical Element: An Emergency Operations Center (EOC) was in place less than 15 minutes after the bridge collapsed. The city of Minneapolis emergency manager was responsible for the management of the EOC, which had primary teams and plans in place ensuring positions were maintained.

Lesson Learned: The rapid implementation of the EOC meant there was no debate over who was in charge and emergency partners were able to quickly assemble. This was partly the result of a post-9/11/FEMA course on organizational cohesion, relationship development and cooperation and participation in other preparedness activities. Emergency responders and industry were well prepared and reported that the exercises allowed them to develop interpersonal connections that were crucial in the response effort.

Critical Element: Exercises before the bridge collapse allowed the city to identify flawed communications technology and acquire necessary upgrades.

Lesson Learned: These exercises highlighted the weaknesses and vulnerabilities in existing communications technology and allowed for action before a problem occurred. It also allowed for emergency responders to streamline their communications equipment compatibility and systems.

Critical Element: In an emergency course held after 9/11, one of the exercise scenarios included the collapse of a major structure. Hospitals in the area were well prepared to receive and treat patients with the type of injuries sustained from the bridge collapse.

Lesson Learned: The exercises made an important difference in the emergency preparedness of the city and its capacity and ability to respond to a major disaster.

Northeast Blackout of 2003

An electricity blackout on August 14, 2003 affected parts of Ontario and parts of the Northeast and Midwest of the United States. 50 million people lost their power. In Ontario, power was largely restored the following evening, but the return of essential services varied by region. Less then ten people were reported killed in both countries and many injuries were due to heat stroke or motor vehicle accidents. Among a litany of repercussions, cities had to cancel or reroute flights, trains were halted and boil water orders were widely implemented.

Critical Element: Electricity outage caused traffic lights in various cities to stop working.

Lesson Learned: Emergency responders should prepare backup routes in case traffic jams occur on major highways or roads.

Critical Element: Gas stations in some cities in Ontario were unable to pump due to lack of electricity, causing a backup of transport trucks.

Lesson Learned: Trucking companies should determine methods for acquiring backup fuel for their trucks.

Critical Element: Some cities in Ontario didn't operate their streetcars on the weekend due to rolling blackouts. Jammed highways, tunnel closures, loss of traffic lights and delays or cancellations at buses, rails and airways all caused transportation problems.

Lesson Learned: Businesses and industry need to come up with backup plans to get their workers to work (or an alternate location) if public transit isn't operating.

Critical Element: Many water treatment plants in Ontario had business continuity plans that allowed them to continue to function. However, problems did occur in various towns, including failed backup generators causing boil water advisories and water shortages due to decreased pumping capacity.

Lesson Learned: Businesses should include water accessibility in their emergency planning, especially in the immediate days after an emergency where employees will be required to come to work. Farms should also ensure backup access to water for the safety of their livestock and crops.

Critical Element: Ottawa and Toronto emergency responders reported a dramatic increase in calls, including looting, break-ins, elevator rescues, personal injury accidents, robberies and assaults.

Lesson Learned: Emergency responders should develop plans for ensuring their workers are able to arrive at work during an emergency, as well as acquiring extra staff.

Summary

The information provided in the document is meant to be a tool in developing maritime commerce resumption plans, based on lessons learned from emergency situations in other countries. It is not an exhaustive list, but is meant to aid in planning and preparation for emergencies. Attached are a checklist of key points in developing maritime commerce resumption plans, a list of resources used to develop this document and further reading suggestions.

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DEVELOPMENT OF MARITIME COMMERCE RESUMPTION PLANS KEY POINTS CHECKLIST

- Develop backup plans for transportation routes and alternate modes (road, air, etc.).
- Develop plans to acquire appropriate technology to resume port activities, in case of partial or whole equipment destruction (e.g. cranes, vehicles).
- Ensure plans are in place to assist staff in resuming their work if public transport is not operating.
- Develop plans for inter-stakeholder communication and response management in case of an emergency.
- Develop emergency response plans and training for staff based on possible scenarios.
- Include utilities in resumption plans since resumption of these services is often a prerequisite to the resumption of other services.
- Develop methods of pre-planning for a situation and mechanisms to activate them before an anticipated event (e.g. having staff work from alternate location).
- Give consideration to how regulations might be suspended or adjusted during an emergency.
- Consider stakeholders' geographic location, assets and business needs when defining roles in commerce resumption plans.
- Coordinate plans across jurisdictions and sectors.
- Clearly define stakeholders' roles and responsibilities and share this information.
- Where possible, information should be shared on stakeholders' assets to maximize efficacy of use (e.g. number of staff, office space, equipment).
- Secondary locations for cargo should be planned.
- Exercise any maritime commerce plans developed on a regular basis.
- Preplan for debris removal and temporary storage, and dredging and potential environmental hazards.
- Have plans in place for acquiring essential and/or supplementary staff in an emergency.

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Resources and Future Reading

This is a list of resources used to develop the MCR Critical Elements and Lessons Learned paper, as well as further reading on each topic. All references were last accessed on October 16, 2009. NOTE – Many of these resources may only be available in English.

Kobe Earthquake

1. Measuring Post-Disaster Transportation System Performance: The 1995 Kobe Earthquake in Comparative Perspective. By Stephanie E. Chang and Nobuto Nojima. Available at: http://www.cive.gifu-u.ac.jp/~nojima/pdf/2000_transportation_a.pdf

2. Lessons from the Kobe Quake, by James D. Cooper and Ian Buckle. Available at: http://www.tfhrc.gov/pubrds/fall95/p95a29.htm

3. Great Hanshin Earthquake Restoration, Kinki Regional Development Board, Ministry of Land, Infrastructure and Transport. Available at: http://www.kkr.mlit.go.jp/en/topics_hanshin.html

4. The Kobe Earthquake of 1995, Text Source: by Stephen J. Anderson, International University of Japan (IUJ). Available at: http://welcome.warnercnr.colostate.edu/avprojects/98proj/world_volc/web_docs/kobe.html

5. City of Kobe website - Port of Kobe Damage and Reconstruction. Available at: http://www.city.kobe.lg.jp/foreign/harbor/shinsai_e.html

New York, September 11, 2001

1. Lessons Learned from 9/11, Teresa McCallion & A.J. Heightman, JEMS. Available at: http://www.jems.com/news_and_articles/articles/Lessons_Learned_From_9_11.html

2. Fact Sheet: U.S. Department of Homeland Security 9/11 Anniversary Progress and Priorities. Available at: http://www.dhs.gov/xnews/releases/pr_1221078411384.shtm

3. Effects of Catastrophic Events on Transportation System Management and Operations. New York City – September 11, U.S. Department of Transportation. Available at: http://ops.fhwa.dot.gov/opssecurity/case_studies/nycprelim.htm

4. Five Years After 9/11 Attacks: U.S. Ports More Secure Than Ever; Progress Must Continue. Available at: http://www.aapa-ports.org/Press/Prdetail.cfm?itemnumber=1092

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Hurricane Katrina

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2. "Making Hurricane Response More Effective: Lessons from the Private Sector and the Coast Guard During Katrina" Policy Comment #17, Mercatus Center, Washington, DC. Available at: http://www.mercatus.org/uploadedFiles/Mercatus/Publications/PDF_20080319_MakingHurricaneReponseEffective.pdf

3. State of Louisiana - Hazard Mitigation Plan – Port of New Orleans. Available at: http://biotech.law.lsu.edu/blaw/DOD/manual/.%5CFull%20text%20documents%5CState%20Authorities%5CLa.%20HMP.pdf

4. New Orleans port is getting over Katrina. Available at: http://www.iht.com/articles/2006/01/03/business/port.php

5. Lessons learned from Katrina. Available at: http://www.cnn.com/2005/US/09/22/rita.preps/index.html

6. Hurricane Katrina: Lessons Learned. Available at: http://georgewbush-whitehouse.archives.gov/reports/katrina-lessons-learned.pdf

7. Lessons Learned from Katrina: A Retail Store Takes Action. Available at: http://www.fema.gov

Mississippi River Oil Spill

1. Spill could close part of Mississippi River for days. Available at: http://www.cnn.com/2008/US/07/23/mississippi.spill/index.html

2. Mississippi river reopened after oil spill. Available at: http://www.nytimes.com/2008/07/25/us/25spill.html

3. Port chief: Oil spill costing $275 million a day. Available at: http://www.cnn.com/2008/US/07/25/mississippi.spill/index.html

4. First ships crawl up Mississippi as cleanup of oil spill continues. Available at: http://www.gmanews.tv/story/109539/First-ships-crawl-up-Mississippi-as-cleanup-of-oil-spill-continues

5. Oil spill pilots to testify before US coast guard. Available at:

http://www.guardian.co.uk/environment/2008/aug/04/oilspills.wildlife

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2. FEMA Course Lays Framework for Minneapolis Bridge Collapse Response. Available at: http://www.emergencymgmt.com/infrastructure/FEMA-Course-Lays-Framework.html

3. Minneapolis Bridge Collapse: Why Cellular Service Goes Down During Disasters. Available at: http://www.cio.com/article/print/127901

4. US Fire Administration/Technical Report Series: I-35W Bridge Collapse and Response. Available at: http://www.usfa.dhs.gov/downloads/pdf/publications/tr_166.pdf

5. Minneapolis Response to Bridge Collapse Emergency Applauded. Available at: http://govtsecurity.com/news/bridge-collapse-response-0501

6. Time to Close Gaps in Emergency Communications. Available at: http://www.wired.com/politics/security/commentary/securitymatters/2007/08/securitymatters_0823?currentPage=all

Northeast Blackout

1. U.S. power grid in better shape 5 years after blackout. Available at: http://www.usatoday.com/money/industries/energy/2008-08-12-blackout-power-outage_N.htm

2. Blackouts cause N America chaos. Available at: http://news.bbc.co.uk/2/hi/americas/3152451.stm

3. Blackout edged Ontario towards chaos: documents. Available at: http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20040106/ontario_blackoutrevelations_20040105?s_name=&no_ads

4. Public Safety and Emergency Preparedness Canada – Ontario-U.S. Power Outage – Impacts on Critical Infrastructure. Available at: http://www.publicsafety.gc.ca/prg/em/_fl/ont-us-power-e.pdf

5. Effects of a Catastrophic Event on Transportation System Management and Operations. Available at: http://www.itsdocs.fhwa.dot.gov/jpodocs/repts_te/14022.html

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Other

1. The CIP Report April 2009. Available at: http://cip.gmu.edu/archive/cip_report_7.9_revised.pdf

2. Disaster Recovery: Experiences from Past Disasters Offer Insights for Effective Collaboration after Catastrophic Events. U.S. Government Accountability Office. Available at: http://www.gao.gov/new.items/d09811.pdf

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Maritime Resilience Planning: Questions and Answers

Background

1. What is maritime resilience planning?

Maritime resilience planning (until recently known in Canada as Maritime Commerce Resumption, or MCR) is Canada's approach to resilience planning in the maritime transportation system. Since 2007, Transport Canada (TC) has been working to improve Canada's capacity to mitigate the impacts of a disruption to maritime commerce, enhance supply chain resilience, and enable ports to resume commercial activity as soon as possible following a serious disruption that might result, for example, from a terrorist attack, emergency or other man-made or natural disaster. Resilience planning in Canada is a voluntary, from-the-ground-up, multi-modal approach that builds on existing emergency plans and processes.

Maritime resilience planning ideally takes place on two levels: at the organization level and at a broader, integrated level. At the organization level, maritime community stakeholders are encouraged to systematically assess and augment the resilience of their organization's critical infrastructure and supply chains. Those involved in integrated regional resilience planning also work with key stakeholders, including: the port authority and its tenants; municipal, provincial and federal governments and local authorities; labour, industry and their associations; key service providers, supply chain operators; and others. Together, they develop regional plans, agreements, protocols and tools. The result is improved coordination of resilience, resumption and recovery activities at both the organizational and regional levels.

2. What are the benefits of participating in maritime resilience planning?

The time to discover a preventable gap or vulnerability in an organization's and/or region's capability to achieve a quick disaster recovery is *not* during a disaster! By systematically examining and addressing its own resilience challenges in advance, and then partnering with other private and public sector organizations on integrated regional resilience planning, all stakeholders reap the benefits of planning—benefits that may include:

Pre-disaster benefits:

- Mitigation of resilience gaps and vulnerabilities, and validation of assumptions about what government, key suppliers and critical service providers can and are prepared to do to assist with recovery efforts. This results in realistic resilience plans and strategies. Formal agreements can also be set up in advance to protect essential assets and services.

- New partnerships and stronger relationships between government, industry and other stakeholders (including those from other transportation modes, such as rail and trucking)

results in the sharing of information and the leveraging of expertise and other resources that benefit "normal" operations as well as expediting disaster recovery.

- Resilience at the organizational and regional levels can be a useful marketing tool. Moreover, labour, employees, customers, shareholders and insurance companies are also likely to view favourably the development and maintenance of resilience plans.

- The voluntary, holistic approach to integrated resilience planning provides an effective means of bringing together organizations from multiple jurisdictions and sectors to address a range of concerns—with each working within its legislative mandate and authorities. For example, some critical infrastructure and resilience gaps are outside the control of a single organization relying on them, or more than one jurisdiction has ownership of the infrastructure; and/or the importance (criticality) of an asset to others may not be recognized by an organization.

Post-disaster benefits:

- Industry is a partner with government in the recovery efforts, rather than an observer.

- Maritime commerce organizations (who may or may not be outside the jurisdiction of the port authority) and their key supply chain operators (including rail and road) have a reliable, coordinated and recognized conduit for information from/to government emergency operation centres and other vital services.

- Key messages and communication with the media and industry are consistent, timely and better reflect the needs of maritime resilience planning stakeholders (for example, consistent use of language and terminology).

- Government is able to call upon industry to assist by providing expertise, intelligence, aid and resources for regional response and recovery activities—in a manner that coordinates/is consistent with other efforts. Moreover, some maritime communities may use their resilience plans to help coordinate marine assistance with non-marine emergencies.

- Decision makers (industry and government) receive the information they need from maritime commerce stakeholders to make effective and sound decisions—for example, making contextualized requests for aid and resources.

- Recovery of the region and the port is carried out in a structured and orderly manner, thus maximizing efficiency, minimizing recovery costs, decreasing the likelihood of a permanent diversion of trade, and increasing the reputation of the port and its maritime commerce stakeholders as reliable trading partners.

For more benefits of resilience planning, please refer to TC's *A Guide to Getting Started . . . Maritime Resilience Planning*.

3. Why does Transport Canada promote maritime resilience planning?

TC's mission is to serve the public interest through the promotion of a safe and secure, efficient and environmentally responsible transportation system in Canada. Effective maritime resilience planning helps maintain Canadian public confidence in the system and enhances Canada's international reputation as a reliable and strong trading partner. Development of sound processes and approaches to maritime resilience planning can encourage similar efforts in other nations. Resilient ports strengthen the global supply chain and Canada's approach to planning for resilience enhances the marketability of our ports.

Strong resilience can prevent or mitigate a terrorist threat and the partnerships established and maintained through integrated resilience planning are able to address residual issues caused by such events. Resilience planning makes good economic sense—the potential costs of a disruption to the marine system are significant to all provinces/territories, municipalities and other stakeholders, including in other transportation modes. Import/export delays and supply shortages cause hardship to the Canadian public, and the effect of a disruption are felt well beyond our borders.

4. What are Transport Canada's roles and responsibilities to ensure the resilience of Canadian ports and their critical infrastructure?

TC is the lead federal department for coordinating maritime security policy. The department helps the maritime industry become resilient and capable of resuming normal operations as soon as possible following a disruption. In addition to the 17 other federal departments and agencies that play a role in marine security, TC is partnering with other levels of government and local authorities, as well as industry and its international and United States counterparts, to develop a national strategy for the coordination and facilitation of the resumption of maritime trade in the event of a disruption to the maritime transportation system. TC's maritime commerce resilience work is also part of the *Maritime Security Strategic Framework* being developed by various federal government departments to advance the resilience of Canada's maritime community.

5. How is Maritime Commerce Resumption planning different from Business Continuity Plans and port security plans?

Most organizations' existing plans tend to focus on coordinating activities during the response (Emergency Management Plans) and/or the immediate aftermath of a crisis (Business Continuity Plans, or BCP) with little planned beyond the time required to address the emergency. These plans are often developed in isolation and without alignment with others who may be planning to use the same external resources or assets as others. The focus of maritime resilience planning is on providing maritime stakeholders with the tools to minimize vulnerabilities in their supply chain and, over the longer term, to address challenges associated with resumption, resilience and recovery of the flow of commerce.

Resumption and resilience planning call for organizations to evaluate the criticality of their assets and the dependencies on those assets, as well as the regional economic and social significance of their assets and infrastructure—all aimed at ensuring that the organization has comprehensive knowledge of what to expect during a crisis and how to plan for it effectively.

Key Domestic Partnerships

6. What Departments and agencies did Transport Canada engage in developing its approach to Maritime Commerce Resumption?

TC is working with other government departments, including Public Safety Canada and Canada Border Services Agency, as well as other levels of government, to develop a national strategy to coordinate and facilitate the resumption of maritime trade in the event of a disruption to the maritime transportation system. TC also works closely with other stakeholders and international partners to share best practices, promote international collaboration on specialized research and development, and encourage cooperation among government authorities, operators and all relevant stakeholders for a strong and coherent approach to maritime commerce resumption.

7. How are Canadian port authorities involved in Transport Canada's maritime resilience initiative?

Port authorities are critical to the development and implementation of the Canadian approach to maritime resilience planning. Ports employees possess knowledge and operational capabilities critical to the recovery and resilience of the maritime transportation system following a major disruption or emergency.

Key International Partnerships

8. What is the United States doing?

TC participated in the development of a *Maritime Annex* to the *Canada–United States Framework for the Movement of Goods and People Across the Border During and Following an Emergency.* The *Maritime Annex* was approved by Public Safety Canada and the U.S. Department of Homeland Security in May 2009. This framework outlines each government's communication protocols for managing emergencies affecting the two countries' shared maritime transportation systems. TC works closely with the U.S. Coast Guard to ensure the resilience-related work and initiatives of the two organizations align.

9. How is Transport Canada engaging in resilience planning internationally?

Maritime resilience planning requires effective and efficient partnerships with international partners. Not only does this enhance our ability to develop security priorities and strategies, ensure consistency between international partners, and clarify roles and responsibilities, it also enables us to learn from domestic and international best practices and take advantage of existing resumption strategies.

Transport Canada and Public Safety Canada

10. How does Transport Canada's approach align with that of Public Safety Canada?

The objective of Public Safety Canada's *National Strategy for Critical Infrastructure* (the Strategy) is to promote a safer, more secure and more resilient Canada. It focuses on the prevention, mitigation and recovery from disruptions to critical infrastructure. The Strategy covers 10 critical infrastructures: energy and utilities; finance; food; transportation; government; information and communication technology; health; water; safety; and manufacturing.

TC's *Draft National Maritime Commerce Resumption (MCR) Strategy* is complementary to Public Safety Canada's Strategy and provides a practical means of implementing the latter's objectives. Further, TC's *Draft National MCR Strategy* provides a comprehensive framework for a coordinated whole-of-government approach with industry participation to facilitate the timely resumption of maritime trade in the event of a disruption.

11. How does Transport Canada ensure coordination with Public Safety Canada and other departments?

TC works with its partners, including Public Safety, Canada Border Services Agency and others, to ensure that maritime resilience planning processes are in harmony with existing emergency management plans and protocols. TC Headquarters (Ottawa) also involves its Regional Offices so that regional work is not duplicated and local initiatives are aligned. Headquarters and Regional Offices share responsibility to ensure that the maritime industry can resume operations as soon as possible in the event of a partial or full closure of a port or its facilities.

A Guide to Getting Started:

Resilience Planning for Maritime Commerce

The world is increasingly dependent on international trade, with the maritime transportation system accounting for the movement of over 90% of the world's commerce. The inter-connectedness and interdependence of global commerce has been brought into sharp focus by a number of major disruptions to the maritime transportation system in recent years. The impacts of these events can be enduring. The longer the disruption, the more costly and difficult is recovery—trade finds new paths, businesses and suppliers relocate, and the economic and social well-being of the afflicted country suffers.

Canada enjoys an international reputation as a reliable, attractive place to do business. Protecting that reputation calls for effort from both private and public sector stakeholders in Canada's maritime community. They must equip themselves to be as resilient as possible and capable of recovering quickly from significant supply chain disruptions.

Maritime resilience planning is a vital aspect of emergency planning that can make or break the full and long-term recovery of an enterprise, sector or region following a serious disruption. Planning for resilience needs to take place at two broad levels: ***within the individual organization*** and at a broader level, such as ***across organizations, sectors and regionally***. There are different (yet overlapping) benefits of resilience planning at each level—and each level calls for somewhat different approaches.

This Guide

This guide provides an introduction to resilience planning, including what it means, why it's important to maritime commerce stakeholders and how your organization can get resilience planning off the ground individually and collectively, with others in your region and sector.

What's Inside

Resilience Planning—Part of a Bigger Picture

Industry and governments have achieved considerable success in addressing three of the four pillars of emergency management: Prevention, Mitigation and Response. Resilience planning focuses on the fourth pillar—Recovery—often forgotten and certainly less well-developed than the others.

Resilience plans and strategies, which address the period from the moment a disruption occurs to long after the first responders return to their regular duties, can take many forms. Ideally, their scope includes the need for leadership and coordination throughout the course of recovery from a major event that may take weeks, months, or even years.

A. About Maritime Resilience Planning in Canada

In 2007, Transport Canada (TC) began engaging maritime community stakeholders and government partners with the goal of strengthening Canada's capacity to mitigate the impacts of a disruption to maritime commerce and enable ports to resume commercial activity as soon as possible following a disruption resulting from a terrorist attack, emergency or natural disaster. The result was the development of a *National Maritime Commerce Resumption Strategy* which articulated a way forward for what we now call maritime resilience planning in Canada. The strategy set out a number of principles to guide all future work (see chart, below).

> ***Resilience is…***
>
> the capability to anticipate risk, limit impact, and bounce back rapidly; it is the ultimate objective of both economic security and corporate competitiveness.

Beginning in 2009, TC conducted projects in the Port of Vancouver and later with the ports of Hamilton, Halifax and Montreal to further develop its strategy. The approach in all four ports has involved partnering with the local port authority to help maritime stakeholders systematically assess the resilience of their critical infrastructure and supply chains, and work with key stakeholders to develop regional plans, protocols and reference guides to improve coordination of resilience, resumption and recovery activities.

Guiding Principles for Maritime Resilience Planning in Canada

Ground-up	A supply chain is only as resilient as its individual parts—thus supply chain resilience begins within individual organizations. Maritime resilience planning in Canada has focused on working with local stakeholders to build organizational resilience, facilitate collaboration and, in the process, ensure that the chosen approach reflects local and regional circumstances.
Collaborative	Collaboration, coordination and commitment from government, industry, labour, service providers, supply chain partners and other key stakeholders are essential ingredients for effective resilience planning.
Voluntary	Incentives for industry and government to contribute to building a more resilient supply chain are many. Rather than regulate resilience planning, TC works collaboratively with private and public sector partners to facilitate planning at the organizational, regional and national levels. A voluntary approach helps build the collegial and collaborative environment needed to build resilience into a supply chain consisting of different local, national and international stakeholders.
Multi-modal	Canada's maritime supply chain involves connections between public and private sector stakeholders across all modes of transportation. An incident that affects maritime commerce may have repercussions for rail, road and air operations. The reverse is also true. From the outset, TC has engaged representatives from all modes of transportation in its resilience planning.
Built on existing emergency and business continuity plans	Given the myriad of efforts across Canada to improve supply chain resilience and critical infrastructure protection, Transport Canada worked with Public Safety Canada and other federal, provincial and local stakeholders to ensure that maritime resilience planning in Canada extends from, complements, is consistent/ aligns with, existing federal plans and processes, such as the *Federal Emergency Response Plan* (FERP) and the *National Strategy and Action Plan for Critical Infrastructure*, provincial emergency management systems, and organizational business continuity and emergency management plans.

B. Resilience Planning Within an Organization

Every day that a business is down means it will be that much harder to recover. Resilience planning is aimed at more than preventing financial loss—planning makes an organization more resilient and competitive, and improves investor, customer and employee confidence.

Why Plan? 14 Reasons for Organizations to Plan for Resilience

1. **Better understanding of the resilience of key assets.** Evaluating the resilience of an organization's key assets allows for better identification and mitigation of gaps and vulnerabilities.
2. **More effective investment spending.** Knowing where vulnerabilities exist within an organization allows for more effective investment decisions.
3. **Improved supply chain resilience.** Assessing the level of preparedness and reliability of key suppliers allows an organization to address vulnerabilities and improve supply chain resilience.
4. **Better understanding of how resources may be allocated during a disruption.** Knowing what level of aid/priority/service an organization can expect from key suppliers, service providers and government after a disaster allows more effective planning.
5. **More effective relationships with key suppliers, service providers and other stakeholders.** Engaging key suppliers, service providers and other stakeholders tends to open new channels of communication and relationships essential to resuming operations quickly after a crisis.
6. **Increased capacity for crises response and recovery.** Planning can help an organization react quicker and more effectively to a disruption, resume operations sooner and recover in an orderly manner.
7. **A more vigilant and prepared workforce.** Involving an organization's workforce prepares employees to deal with short- and long-term disruptions. Providing staff with information needed for their own disaster recovery plans could enable them to return to work quickly.
8. **Minimized cost and impacts of a disruption.** A faster, coordinated recovery can help minimize the impact of a disruption, lowering an organization's financial and reputation costs.
9. **Less vulnerability to security threats.** A more resilient organization is by its nature a less attractive target to those looking to cause serious harm or destruction and/or to gain media attention.
10. **Improved capacity for organizational learning.** Planning encourages knowledge transfer and helps eliminate the "silos" that tend to divide organizations.
11. **A better improved/maintained reputation as a safe, stable place to do business.** Resilient organizations are marketable. An effective recovery plan can reassure the public and/or clients that an organization is robust and able to mitigate disruptions both big and small.
12. **Increased potential insurance benefits.** Risk-based resilience planning can reassure insurers that an organization is protecting the viability of its critical assets, and thus poses a lower insurance risk.
13. **Competitive advantage over competitors.** Resilience planning can speed the resumption of operations following a disruption, which may allow an organization to gain at least temporary market advantage over its competitors.
14. **Better management of public communications.** Communication planning helps an organization deliver informed, consistent messages during and after an emergency, to assure public and shareholder confidence and avoid preventable confusion and scrutiny.

At the organization level . . .

Taking a Proactive Approach

"*It is impossible to plan for every unforeseen disaster*" and "*Circumstances will dictate how an organization will respond to a crisis*." These two often-heard statements in discussions about resilience planning reflect some truth. However, experience suggests that the more proactive and prepared an organization is by ensuring that its assets and dependencies are as resilient as possible, the more prepared and focused will be its response in the face of a disaster.

Resilience planning is. . .

a proactive and systematic process meant to identify, manage and mitigate risks to an organization's key assets and dependencies. It requires the use of a holistic, risk management approach to assess and strengthen the resilience of an organization's critical infrastructure.

Let's face it: in the aftermath of a crisis, when resources are limited and conflicting priorities abound, those with existing agreements, plans and strategies for recovery will be better prepared to resume operations quickly and more effectively. While individual plans will vary, depending on the nature of the organization, two aspects of a proactive approach will serve all organizations well:

- building on existing plans
- making the most of current relationships and networks

Building on what you have: assessing your existing plans

In Canada, government agencies and maritime stakeholders already maintain some form of business continuity plan (BCP), emergency response plan (ERP), and/or regulated security plan. While many such plans touch on aspects of resilience, in all but a few rare cases these tools are insufficient. For example, existing plans tend to focus on coordinating emergency response (ERP) and/or the immediate aftermath of a crisis (BCP), rather than addressing the longer term challenges associated with recovering from significant disasters.

This is where resilience planning fits in—by taking into consideration a longer time horizon. It calls for organizations to develop plans that address issues of coordination, leadership, prioritization and inter-agency collaboration over an extended period of weeks, months or even years. Moreover, unlike ERPs and BCPs, which are often developed by an organization without alignment with or consideration of the plans of others, organizational resilience planning "looks outside the gates" to validate assumptions about external resources, available aid and the priorities associated with them.

Think about it . . .

Knowing your vulnerabilities is vital

While it is likely impossible to fully mitigate the loss of all critical assets and dependencies, developing a better, shared understanding of where an organization's vulnerabilities lie and taking steps to mitigate them are important elements of a truly resilient enterprise.

Nevertheless, BCPs or ERPs are often a good starting point for resilience planning. In most cases these tools require that an organization identify its assets, suppliers and dependencies. BCPs call for an organization to develop strategies to deal with the loss of these assets. Where such plans are well-developed, resilience planning may mean simply extending, and/or formalizing existing plans to include a systematic assessment of critical organizational assets and dependencies, including validating assumptions about external recovery resources. A new and separate resilience or resumption plan

may not be required—or even recommended—given the administrative burden that comes with developing an entirely new plan.

Making the most of existing relationships and networks

An important first step an organization can take to strengthen its resilience is to develop relationships with and networks of key partners, suppliers and service providers before a disaster occurs. Built on mutual trust and a shared understanding of roles and responsibilities before an event takes place, these "pre-need" relationships and networks are critical to the response, resumption and recovery phases of a disaster. Since it's impossible to plan for every eventuality, it is important that an organization have and maintain relationships with its key suppliers, partners and clients prior to an incident. It could be as simple as a monthly phone call or e-mail to ensure contact information is up to date.

This foundation work will help ensure a more rapid and coordinated response from all parties, clarify operating assumptions, and reduce the time and effort devoted to finding out who does what. Ideally, relationship building begins within an organization, moves on to key suppliers and partners, and later expands to consider the organization's supply chain and eventually the region.

Think about it . . .

Formalizing relationships ahead of time

Two tools are widely used to formalize organizational relationships into agreements: Memoranda of Understanding (MOUs), Service Level Agreements (SLAs) These tools all help establish a framework that supports parties to:

- clarify expectations, assumptions, roles and responsibilities
- better plan and prioritize resources and services
- identify impediments to recovery and resumption and take steps to address or forestall them

Templates for and "how to" information on developing MOUs and SLAs are included in this information package.

Organization-Level Resilience Planning: Seven Steps to Consider

While there's no single "right way" to develop a resilience plan, a good planning process could include the following seven steps.

1. ***Identify all critical assets.*** Engage all internal departments (for example, management, human resource, information technology, engineering, logistics) in the identification of infrastructure, systems and personnel critical to maintaining business operations.

Everyone on board!

An organization's different branches may assess differently the importance and resilience of the same asset or dependency.

Effective resilience planning is a comprehensive whole-of-organization approach with active participation from all areas of an organization, and input from key suppliers and dependencies.

2. ***Evaluate the "criticality" of each critical asset***. This involves determining what the loss or impairment of a particular asset would mean to the organization's capacity to operate normally (i.e., how important is the asset to delivering core services), and what the predicted consequence of a loss would be to others. "Others" can include: other marine transportation system stakeholders; other modes; upstream and downstream businesses and their customers; suppliers and service providers; and labour, contractors and employees. Consequences may include the social and economic well being and reputation of the port municipality, region, provinces and country. By being as inclusive as possible, an organization will develop a better, more objective understanding of the assets it needs to protect and make more resilient.

3. ***Identify mitigating/alternative measures and backup strategies for the loss of each critical asset.*** For each critical asset, identify the measure(s) in place to either mitigate or work around its loss or replacement. Include the costs, limitations and consequences of each mitigating and alternative measure. If the mitigating measure or backup strategy involves reliance on another organizational asset (for example, company radios will be used to communicate if cell-phones fail), make sure to include the other asset amongst your critical assets. Where appropriate, consider developing one or more of the following backup strategies and alternatives to mitigate the loss of the asset in question:
    - Service Agreements and Service Level Agreements to protect and clarify expectations by all signatories and (ideally) ensure a priority response.
    - Memorandums of Understanding between organizations to provide interim solutions to the failure of certain critical assets (for example, pier sharing agreements between terminals can help ensure that the affected terminal maintains operations while it works to recover a lost or damaged asset).
    - Standing Offers (where a vendor allows a buyer to purchase specified goods or services at a predetermined price for a certain period on an "*as and when*" requirement basis) can help expedite the purchasing process.
    - Securing alternative sources for essential supplies, services and expertise.

4. ***Consider each asset's dependencies.*** *Direct dependencies* are dedicated resources required by an asset to maintain normal operations (such as proprietary software for dealing with human resources). *Shared dependencies* are usually owned and operated by service providers or suppliers on which a number of assets external to the organization also rely. They may include physical support infrastructure such as roads, bridges, electric power grids, gas and liquid fuel distributors; systems or networks like telecommunications and the internet; or services such as transportation, waste disposal, water supply, contracted specialized equipment and expertise.

    Think about it . . .

    A more resilient organization is a more competitive organization.

    

5. ***Assess the criticality of each dependency.*** Assess how the loss or impairment of each dependency would affect the capacity of the asset reliant upon it. Doing so will enable your organization to have a better, more objective understanding of the assets it needs to protect and make more resilient; it will also highlight those that will need priority attention.

6. ***Identify mitigating/alternative measures and backup strategies for the loss of each dependency.*** This step involves identifying the measure(s) in place to mitigate or work around the loss of each dependency. Measures can vary in complexity and cost, and can include such tools as back-up or redundancy systems to reduce operational downtime (for example, back-up generators), service agreements to help ensure a prioritized response, or standing offers to ensure a quick transition to a new supplier.

7. ***Check your assumptions and align your organization's resilience plan with others' plans.*** Assumptions about the capacity, resilience and actions by others your organization will depend upon during disaster recovery should be validated. It's also important to check whether your organization's plan conflicts with others' plans. You will want to know, for example: *Are other organizations also reliant on specialized equipment and expertise from a contractor? Can our fuel distributor honour all contracts if*

there is a widespread disaster? Will there likely be enough security guards available if there is a demand from this organization and others like it?

A detailed resilience assessment tool is included with this information package (see *Critical Infrastructure Resiliency Assessment Questionnaire*).

Resilience Planning in Action: Example Assessment of a Gantry Crane

Identify critical assets	Evaluate the criticality of each asset	Identify mitigating or alternative measures	For each asset consider dependencies	Assess criticality of each dependency (Critical, Medium, Low)	Identify mitigating/ alternative measures
Gantry Crane	- Cost to replace: approximately $26 M - Time involved: approximately 4 months - Loss of crane will mean: slow down of TEU* movement; possible loss of business; slower vessel handling - Businesses importing certain commodities and specialized parts suffer significant losses/ costs - Loss of jobs on/off shore *Twenty-foot Equivalent Unit	- Standing offer agreement with crane supplier in place to expedite purchase procedure - Possibility of diverting vessels to neighbouring terminal for up to two months. No formal relationships exist on this, but a collegial relationship would likely facilitate a smooth transition.	Direct : - Crane operator - Proprietary computer system - Crane communication system Shared: - Electricity supplied by ABC Power - Gas and fuel distributor—XYZ Fuel Services	Direct : - Skilled labour (Critical) - Computers (Critical) - Motor for crane (Critical) - Crane communication system (Medium) Shared : - Electric power grid (Medium) - Gas and fuel distributor (Medium)	Direct: - Skilled labour—cross-training - Computers—available from supplier - Motor for crane—backup on site - Radios for operators—back-up parts on site. If radio goes down, satellite phones available on site Shared: - Electric power grid—backup generator on site available (with one month fuel supply on site) - Gas and fuel distributor—a Service Level Agreement with supplier to ensure priority service and response times

C. Beyond the Organization: Integrated Resilience Planning for Regions and Sectors

There are limits to what an individual organization can do on its own to plan for and achieve expedited commerce resumption. What would happen if key bridges and roads are inaccessible, critical resources are limited, and/or expertise and equipment are in high demand? Many critical assets are outside the control of

the entities reliant on them. Will decision makers have the timely information needed to effectively prioritize, allocate and distribute scarce or urgent resources?

Integrated resilience planning requires unprecedented collaboration and coordination between the public and private sectors. Proactive stakeholders develop and exercise integrated resilience plans, check assumptions, share information, set up agreements and build relationships *before* a disaster.

Reaping the Benefits of Integrated Regional/Multi-Agency Resilience Planning

Looking beyond the organization level, integrated resilience planning can help an entire region and/or sector become more resilient. This minimizes the negative impacts on social and economic well-being, thus making the area a more attractive place to do business.

Benefits of integrated resilience planning	Risks of NOT undertaking resilience planning
Resilience as a selling point to attract and maintain business and investment ✓ Coordinated resilience planning reduces the risk to organizations which depend on the regional supply chain, which in turn makes it more attractive to investors. The capacity of a region to recover quickly and efficiently after a disruption can reassure investors of a region's resilience.	***X*** Prolonged disruption to a region's supply chain can significantly damage its reputation in the short- and long-term as a place to do business. In the worst case, businesses relocate to more stable locations. In general, the cost of doing business will rise in a region perceived to be unsafe or unprepared to manage disruptions.
Encouraging reciprocity with other regions and countries ✓ Organized regional resilience planning encourages regions and countries to work together to enable comprehensive supply chain resilience and coordinated recovery.	***X*** Supply chains are global. A disruption in one part of the world very often affects commercial activity in another.
A more engaged private sector ✓ Involving industry in resilience planning helps develop critical linkages between government and industry. Industry becomes a partner in response and recovery rather than a bystander. During an event, industry can speak to government with one recognized (integrated) voice, thus eliminating confusion, uncertainty and wasted effort.	***X*** Industry, as the owner of significant critical infrastructure, has expertise and resources at its disposal that could be leveraged to respond to and recover from an emergency. Failing to involve industry leaves these resources idle, or their use uncoordinated and misaligned within a larger effort.
Reduced risk associated with just-in-time supply chains ✓ Regional resilience planning can reduce the risks associated with just-in-time supply chains by building in resilience throughout the supply chain.	***X*** A disruption (or threat of disruption) to the maritime just-in-time supply chain could require businesses to invest in maintaining costly inventories and/or use other, more expensive and inefficient modes of transportation.

Suggested Steps in Developing an Integrated Resilience Plan

As is the case within an organization, there is more than one way to conduct integrated resilience planning that looks beyond the organization. Operational environments, existing stakeholder engagement processes and a range of other factors must be considered. Of importance, integrated resilience plans build upon but ***do not*** replace existing mandates, authorities and legislated requirements.

The following are nine key elements that contribute to a successful approach to integrated resilience planning:

1. ***Conduct research and initial consultations*** to identify and understand what legislation, systems, plans, and initiatives already apply to or are being planned for disaster recovery in your area. What groups are already working on recovery planning and how could they be involved? TC has developed and made available documents on topics such as lessons learned from international disasters, how to conduct critical infrastructure resilience assessments, and more. Resources from others include organizational resilience standards and tools.

2. ***Identify who to involve in the planning process and how they will be engaged***. While existing networks or engagement processes may work well, review their mandates to ensure a good fit. For example, Port Security Committees in Canadian ports may focus only on security and safety issues, and not on business recovery. Although many of the desired organizations may be represented in the Committee make-up, the current representatives may not be the best for resilience planning (see sidebar on page 10: *Who to involve*).

3. ***Develop a shared vision*** of what integrated resilience planning will include and achieve. Coming to a consensus on objectives, timelines, and information security guidelines can help organize the planning process and focus efforts.

4. ***Encourage organization-level resilience planning***. Besides enabling mitigation of stakeholder gaps and vulnerabilities, this can help identify critical dependencies common among stakeholders and gaps and vulnerabilities of regional significance that may fall outside any one stakeholder's jurisdiction and require attention, such as traffic management and roads (see also *B. Resilience Planning Within an Organization*).

5. ***Hold information sharing and awareness sessions*** with key stakeholders and providers of critical dependencies to learn what their roles, responsibilities and priorities would be during the recovery phases.

Importance of exercises, hot washes and lessons learned

Exercises help uncover gaps and vulnerabilities allowing for better resilience planning and the opportunity to mitigate vulnerabilities before they can cause detriment to your organization or region. Exercises, hot washes and post event debriefs are highly useful for gaining lessons learned, improved stakeholder communications, greater knowledge of access to resources and an in-depth understanding of roles and responsibilities during an emergency.

Incorporating these lessons learned is essential to strengthening organizational and integrated resilience planning. Hot washes and debriefs support better, shared understanding of roles and responsibilities, decision-making processes, capacities and resources of the private and public sector stakeholders. It also helps validate and/or dismiss assumptions and demonstrates where further planning is necessary.

Think about it . . .

Who to involve

Suggested stakeholders for integrated maritime resilience planning include:

- ✓ Local port authority
- ✓ Federal government
- ✓ Provincial government
- ✓ Municipal government
- ✓ Local authorities
- ✓ Emergency management services
- ✓ Terminal operators
- ✓ Labour associations
- ✓ Industry associations
- ✓ Utility companies/ providers
- ✓ Shipping lines/agents
- ✓ Freight forwarders
- ✓ Rail carriers
- ✓ Trucking industry/ associations
- ✓ Pilots
- ✓ industry forums/groups
- ✓ Navigation services (tug/barge)
- ✓ Others

6. ***Address post-event coordination and communication***. Whether it's the development of new arrangements to improve post-event coordination and communication, or simply the fostering of a shared understanding of how governments (all levels), critical service providers and suppliers, the port authority, and industry *currently* interact during each of the response, resumption and recovery phases of a disaster. Consensus on post-event coordination and communication can create a more involved, informed and better prepared maritime industry.

7. ***Consider formalizing integrated resilience planning***, making sure to include coordination and communication protocols if applicable. Should integrated resilience planning be formalized, determine how the formalized plan will be maintained, exercised, promoted and kept current.

8. ***Test or exercise integrated resilience measures***. Table-top exercises, full-scale exercises, workshops and facilitated discussions are proven, effective means to test resilience measures, identify areas for improvement, and highlight overlooked issues. Exercise scenarios should commence *at least* 72 hours after the disaster event. Balance the mix of participants and lead in a way that keeps the focus on recovery (not response) over the weeks, months and years following the disaster in the scenario (see sidebar, this page 9).

9. ***Expand integrated resilience planning*** beyond the region and throughout the marine transportation system. Consider developing multi-port, multi-modal or even international integrated plans and strategies that will expedite recovery resulting from a disruption anywhere in the system or its supply chain.

Want more information and resources?

A number of resources are available for further information on organization-level and maritime resilience planning, including those that reflect Canada's experience. For more information, consult the information package on maritime resilience developed by TC, as well as these websites: Transport Canada www.tc.gc.ca and Public Safety Canada www.publicsafety.gc.ca.

PACIFIC NORTHWEST EMERGENCY MANAGEMENT ARRANGEMENT

- between -

The Government Of The State of Alaska,

The Government Of The State of Idaho,

The Government Of The State of Oregon,

The Government Of The State of Washington,

The Government Of The Province of British Columbia, and

The Government Of The Yukon Territory

hereinafter referred to collectively as the "Signatories" and separately as a "Signatory".

WHEREAS the Signatories recognize the importance of comprehensive and coordinated civil emergency preparedness, response and recovery measures for natural and technological emergencies or disasters, and for declared or undeclared hostilities including enemy attack;

AND WHEREAS the Signatories further recognize the benefits of coordinating their separate emergency preparedness, response and recovery measures with that of contiguous jurisdictions for those emergencies, disasters or hostilities affecting or potentially affecting any one or more of the Signatories in the Pacific Northwest;

AND WHEREAS the Signatories further recognize that regionally-based emergency preparedness, response and recovery measures will benefit all jurisdictions within the Pacific Northwest, and best serve their respective national interests in cooperative and coordinated emergency preparedness as facilitated by the Consultative Group on Comprehensive Civil Emergency and Management established in the Agreement Between the Government of The United States of America and the Government of Canada on Cooperation and Comprehensive Civil Emergency Planning and Management signed at Ottawa, Ontario, Canada on April 28, 1986;

NOW THEREFORE, it is hereby agreed by and between each and all of the Signatories hereto as follows:

Advisory Committee

1. An advisory committee named the Western Regional Emergency Management Advisory Committee (W-REMAC) shall be established which will include one member appointed by each Signatory.

2. The W-REMAC will be guided by the agreed upon Terms of Reference—Annex A.

Principles of Cooperation

3. Subject to the laws of each Signatory, the following cooperative principles are to be used as a guide by the Signatories in civil emergency matters which may affect more than one Signatory:

a) The authorities of each Signatory may seek the advice, cooperation or assistance of any other Signatory in any civil emergency matter.

b) Nothing in the arrangement shall derogate from the applicable laws within the jurisdiction of any Signatory. However, the authorities of any Signatory may request from the authorities of any other Signatory appropriate alleviation of such laws if their normal application might lead to delay or difficulty in the rapid execution of necessary civil emergency measures.

c) Each Signatory will use its best efforts to facilitate the movement of evacuees, refugees, civil emergency personnel, equipment or other resources into or across its territory, or to a designated staging area when it is agreed that such movement or staging will facilitate civil emergency operations by the affected or participating Signatories.

d) In times of emergency, each Signatory will use its best efforts to ensure that the citizens or residents of any other Signatory present in its territory are provided emergency health services and emergency social services in a manner no less favorable than that provided to its own citizens.

e) Each Signatory will use discretionary power as far as possible to avoid levy of any tax, tariff, business license or user fees on the services, equipment and supplies of any other Signatory which is engaged in civil emergency activities in the territory of another Signatory, and will use its best efforts to encourage local governments or other jurisdictions within its territory to do likewise.

f) When civil emergency personnel, contracted firms or personnel, vehicles, equipment or other services from any Signatory are made available to or are employed to assist any other Signatory, all providing Signatories will use best efforts to ensure that charges, levies or costs for such use or assistance will not exceed those paid for similar use of such resources within their own territory.

g) Each Signatory will exchange contact lists, warning and notification plans, and selected emergency plans and will call to the attention of their respective local governments and other jurisdictional authorities in areas adjacent to inter-signatory boundaries, the desirability of compatibility of civil emergency plans and the exchange of contact lists, warning and notification plans, and selected emergency plans.

h) The authority of any Signatory conducting an exercise will ensure that all other signatories are provided an opportunity to observe, and/or participate in such exercises.

Comprehensive Nature

4. This document is a comprehensive arrangement on civil emergency planning and management. To this end and from time to time as necessary, all Signatories shall:

a) review and exchange their respective contact lists, warning and notification plans, and selected emergency plans.

b) as appropriate, provide such plans and procedures to local governments, and other emergency agencies within their respective territories.

Arrangement Not Exclusive

5. This is not an exclusive arrangement and shall not prevent or limit other civil emergency arrangements of any nature between Signatories to this arrangement.

a) In the event of any conflicts between the provisions of this arrangement and any other arrangement regarding emergency service entered into by two or more States of the United States who are Signatories to this arrangement, the provisions of that other arrangement shall apply, with respect to the obligations of those States to each other, and not the conflicting provisions of this arrangement.

Amendments

6. This Arrangement and the Annex may be amended (and additional Annexes may be added) by arrangement of the Signatories.

Cancellation or Substitution

7. Any Signatory to this Arrangement may withdraw from or cancel their participation in this Arrangement by giving sixty days written notice in advance of this effective date to all other Signatories.

Authority

8. All Signatories to this Arrangement warrant they have the power and capacity to accept, execute and deliver this Arrangement.

Effective Date

9. Notwithstanding any dates noted elsewhere, this Arrangement shall commence April 1, 1996.

IN WITNESS WHEREOF, the undersigned have signed this Arrangement.

THE STATE OF ALASKA

Tony Knowles — 4/4/96

GOVERNOR (Date)

THE STATE OF IDAHO

Cecil D. Andrus — 6/2/97

GOVERNOR (Date)

THE STATE OF OREGON

John A. Kitzhaber — 8-12-96

GOVERNOR (Date)

APPROVED AS TO LEGAL SUFFICIENCY
Lynn Rosik
Asst. Attorney General
Date 7-30-96

THE STATE OF WASHINGTON

Mike Lowry — 7-11-96

GOVERNOR (Date)

THE PROVINCE OF BRITISH COLUMBIA

M. Harcourt — January 30, 1966

PREMIER (Date)

THE GOVERNMENT OF THE YUKON TERRITORY

February 16.96

GOVERNMENT LEADER (Date)

ANNEX A

REGIONAL EMERGENCY MANAGEMENT ADVISORY COMMITTEE

TERMS OF REFERENCE

1. PURPOSE

The Regional Emergency Management Advisory Committee was established to promote emergency management coordination and preparedness at regional levels and to complement the work of the Can/US Consultative Group.

2. MANDATE

REMAC provides a forum where members and guests can raise issues and receive advice on emergency preparedness matters.

REMAC encourages and supports preparation and exercising of emergency plans for all members.

REMAC will serve as a regional link to the Can/US Consultative Group.

3. NUMBER OF COMMITTEES

Four REMACs are established to cover the following areas:

- Eastern REMAC:

In Canada: Regions/Provinces of New Brunswick, Nova Scotia, and Quebec.

In U.S.A.: FEMA Regions I and II, States of Maine, New Hampshire, Vermont and New York.

- Central REMAC:

In Canada: Regions/Provinces of Quebec and Ontario.

In U.S.A.: FEMA Regions II and V, States of New York, Pennsylvania, Ohio, Michigan, Wisconsin and Minnesota.

- Prairies REMAC:

In Canada: Regions/Provinces of Manitoba, Saskatchewan and Alberta.

In U.S.A.: FEMA Region VIII, States of Minnesota, North Dakota and Montana.

- Western REMAC:

In Canada: Regions/Provinces/Territories of British Columbia and Yukon.

In U.S.A.: FEMA Region X, States of Washington, Idaho, Oregon and Alaska.

4. MEMBERSHIP (participation as delegated by respective government agency)

- EPC: Regional Directors
- FEMA: Regional Directors
- Provinces/Territories: Head of Emergency Measures Organization
- States: Head of Emergency Management Agency (EMA)

Non-Representatives of other government departments, industry or academia may be invited on an "AS NEEDED BASIS" and may be part of working groups.

5. MEETINGS

Frequency: One per year or at the call of the Chair.

Duration: One to two days depending on the agenda.

Location: Alternating between countries and regions as decided at the previous conference, but if possible, at least two months before the Can/US Consultative Group meeting.

Chair: Host regional director FEMA/state EMA head or host regional director EPC/provincial EMO head co-chair (provide conference secretarial services).

Committee Secretariat:

The repositories for committee documentation are in Washington and Ottawa. Copies of documents will also be held at regional level for convenience. This would provide for systematic circulation of important information to Can/US Consultative Group and to other REMACs.

EPC region/FEMA region directors are responsible for holding minutes of meetings, assisting in the formulation of meeting agendas and identifying meeting venues.

Financing: Members and guests make their own financial arrangements for participation.

Reporting: The Chairs of the four REMAC meetings provide their reports to designated Regional Directors for presentation to the Can/US Consultative Group.

7-20-05 Revision

ANNEX B

TO THE PACIFIC NORTHWEST EMERGENCY MANAGEMENT ARRANGEMENT OF 1996 BETWEEN THE GOVERNMENTS OF THE STATE OF ALASKA, THE STATE OF IDAHO, THE STATE OF OREGON, THE STATE OF WASHINGTON, THE PROVINCE OF BRITISH COLUMBIA AND THE YUKON GOVERNMENT

PACIFIC NORTHWEST EMERGENCY MANAGEMENT ARRANGEMENT (PNEMA) IMPLEMENTING PROCEDURES

Article I - Purpose and Authorities

The governments of the State of Alaska, the State of Idaho, the State of Oregon, the State of Washington, the Province of British Columbia, and the Yukon Government are signatories to the Pacific Northwest Emergency Management Arrangement (PNEMA). Article 6 of PNEMA provides: "This Arrangement and the Annex may be amended (and additional Annexes may be added) by arrangement of the Signatories." Pursuant to this provision, the undersigned Signatories hereby enter into this arrangement, which shall be designated as Annex B to PNEMA.

The Pacific Northwest Emergency Management Arrangement Implementing Procedures, hereinafter referred to as the "arrangement" is made and entered into by and among such of the signatories as shall enact or adopt this arrangement, hereinafter referred to as "signatories." For the purpose of this agreement, the term "signatories" may include any or all of: the States of Alaska, Idaho, Oregon, Washington: the Province of British Columbia; and the Yukon Government, all of which entered into the Pacific Northwest Emergency Management Arrangement (PNEMA) in 1996-97 and such other states, provinces and territories as may hereafter become a signatory to PNEMA and this arrangement.

The purpose of this arrangement is to provide for the possibility of mutual assistance among the signatories entering into this arrangement in managing any emergency or disaster when the affected signatory or signatories ask for assistance, whether arising from a natural disaster, accidental or intentional events or the civil emergency aspects of resources shortages.

This arrangement also provides for the process of planning mechanisms among the agencies responsible and for mutual cooperation, including, if need be, emergency-related exercises, testing, or other training activities using equipment and personnel simulating performance of any aspect of the giving and receiving of aid by signatories or subdivisions of signatories during emergencies, with such actions occurring outside actual declared emergency periods. Mutual assistance in this arrangement may include the use of emergency forces[1] by mutual agreement among signatories.

The purpose of these implementing procedures is to provide specific procedures, agreed to by the signatories, for implementing PNEMA. The signatories acknowledge that the signatory states of the United States (Alaska, Idaho, Oregon, and Washington) have adopted the Emergency Management Assistance Compact (EMAC). Nothing in the arrangement or these implementing procedures shall supersede EMAC.

Article II - General Implementation

Each signatory entering into this arrangement recognizes that emergencies may exceed the capability of a signatory and that intergovernmental cooperation is essential in such circumstances. Each signatory further recognizes that there may be emergencies that require immediate access to outside resources and that procedures need to be in place to request outside resources to make a prompt and effective response to such an emergency because few, if any, individual signatories have all the resources they need in all types of emergencies or the capability of delivering resources to areas where emergencies exist.

The prompt, full and effective utilization of resources of the signatories, including any resources on hand or available from any other source that are essential to the safety, care and welfare of the people in the event of any emergency or disaster, will be the underlying principle on which all articles of this arrangement are understood

[1] Emergency forces include but are not limited to: police/security forces; and fire-rescue (Hazmat/USAR): emergency medical and emergency management services.

On behalf of the signatories, the legally designated official who is assigned responsibility for emergency management is responsible for formulation of the appropriate inter-signatory mutual aid plans and procedures necessary to implement this arrangement and for recommendations to the signatories concerned with respect to the amendment of any statutes, regulations or ordinances for that purpose.

Article III - Signatory Responsibilities

1. Formulate plans and programs. Each signatory will formulate procedural plans and programs for each inter-signatory cooperation areas listed in this section. In formulating and implementing such plans and programs the signatories, to the extent practical, shall:

A. Review individual signatory hazards analyses that are available and, to the extent reasonably possible, determine all those potential emergencies the signatories might jointly suffer, whether due to a natural disaster, an accidental or intentional event or the emergency aspects of resource shortages;
B. Initiate a process to review the signatories' individual emergency plans and develop a plan that will determine the mechanism for the inter-signatory cooperation;
C. Develop inter-signatory procedures to fill any identified gaps and to resolve any identified inconsistencies or overlaps in existing or developed plans;
D. Assist in warning communities adjacent to or crossing signatory boundaries;
E. Protect and ensure delivery of services, medicines, water, food, energy and fuel, search and rescue and critical lifeline equipment, services and resources, both human and material to the extent authorized by law;
F. Inventory and agree upon procedures for the inter-signatory loan and delivery of human and material resources, together with procedures for reimbursement or forgiveness; and
G. Provide, to the extent authorized by law, for temporary suspension of any statutes or ordinances that impede the implementation of the responsibilities described in this subsection.

2. Request for assistance. The authorized representative of a signatory may request assistance of another signatory by contacting its authorized representative. These provisions only apply to requests for assistance made by and to authorized representatives. Requests may be verbal or in writing. The authorized representative of signatories will confirm their verbal request in writing within 15 days. Requests must provide the following information:

A. A description of the emergency service function for which assistance is needed and of the mission or missions, including but not limited to fire services, emergency medical, transportation, communications, public works and engineering, building inspection, planning and information assistance, mass care, resource support, health and medical services and search and rescue;

B. The amount and type of personnel, equipment, materials and supplies needed and a reasonable estimate of the length of time they will be needed; and

C. The specific place and time for staging of the assisting party's response and a point of contact at the location.

3. Consultation among signatory officials. There will be frequent consultation among the signatory officials who have assigned emergency management responsibilities, such officials collectively known hereinafter as the International Emergency Management Group, and other appropriate representatives of the signatory with free exchange of information, plans and resource records relating to emergency capabilities to the extent authorized by law.

Article IV - Limitation

Any signatory requested to render mutual aid or conduct exercises and training for mutual aid will respond as soon as possible, except that it is understood that the signatory rendering aid may withhold or recall resources to the extent necessary to provide reasonable protection for itself. To the extent authorized by law, each signatory will afford to the personnel of the emergency forces of any other signatory while operating within its signatory limits under the terms and conditions of this arrangement and under the operational control of an officer of the requesting signatory the same treatment as is afforded similar or like forces of the signatory in which they are performing emergency services. Emergency forces continue under the command and control of their regular leaders, but the organizational units come under the operational control of the emergency services authorities of the signatory receiving assistance. These conditions may be activated, as needed, by the signatory that is to receive assistance or upon commencement of exercises or training for mutual aid and continue as long as the exercises or training for mutual aid are in progress, the emergency or disaster remains in effect or loaned resources remain in the receiving signatory or signatories, whichever is longer. The receiving signatory is responsible for informing the assisting signatory when services will no longer be required.

Article V - Licenses and Permits

Whenever a person holds a license, certificate or other permit issued by any signatory to the arrangement evidencing the meeting or qualifications for professional, mechanical or other skills, and when such assistance is requested by the receiving signatory, such person is deemed to be licensed, certified or permitted by the signatory requesting assistance to render aid involving such skill to meet an emergency or disaster, to the extent allowed by law and subject to such limitations and conditions as the requesting signatory prescribes by executive order or otherwise.

Article VI - Liability

Any person or entity of a signatory rendering aid in another signatory pursuant to this arrangement is considered an agent of the requesting signatory for tort liability and immunity purposes. Any person or entities rendering aid in another signatory pursuant to this arrangement is not liable on account of any act or omission of good faith on the part of such forces while so engaged or on account of the maintenance or use of any equipment or supplies in connection therewith. Good faith in this article does not include willful misconduct, gross negligence or recklessness.

Article VII - Supplementary Agreements

Because it is probable that the pattern and detail of the provision for mutual aid among two or more signatories may differ from that among the signatories that are party to this arrangement, this contains elements of a broad base common to all signatories, and nothing in this arrangement precludes any signatory from entering into supplementary agreements with another signatory or affects any other agreements already in force among signatories. Supplementary agreements may include, but are not limited to, provisions for evacuation and reception of injured and other persons and the exchange of medical, fire, public utility, reconnaissance, welfare, transportation and communications personnel, equipment and supplies.

Article VIII - Workers' Compensation and Death Benefits

Each signatory shall provide, in accordance with its own laws, for the payment of workers' compensation and death benefits to injured members of the emergency forces of that signatory and to representatives of deceased members of those forces if the members sustain injuries or are killed while rendering aid to another signatory pursuant to this arrangement, in the same manner and on the same terms as if the injury or death were sustained within their own jurisdiction.

Article IX - Reimbursement

Any signatory rendering aid to another signatory pursuant to this arrangement shall, if requested, be reimbursed by the signatory receiving such aid for any loss or damage to or expense incurred in the operation of any equipment and the provision of any service in answering a request for aid and for the costs incurred in connection with those requests. An aiding signatory may assume in whole or in part any such loss, damage, expense or other cost or may loan such equipment or donate such services to the receiving signatory without charge or cost. Any two or more signatories may enter into supplementary agreements establishing a different allocation of costs among those signatories. Benefits under Article VIII are not reimbursable under this section.

Article X - Evacuation

Each signatory shall initiate a process to prepare and maintain plans to facilitate the movement of and reception of evacuees into its territory or across its territory, according to its capabilities and powers. The signatory from which the evacuees came shall assume the ultimate responsibility for the support of the evacuees, and after the termination of the emergency, for the repatriation of such evacuees.

Article XI - Implementation

1. This arrangement is effective upon its execution or adoption by any two signatories, and is effective as to any other signatory upon its execution or adoption thereby: subject to approval or authorization by the U.S. Congress, if required, and subject to enactment of any national, state, provincial or territorial legislation that may be required for the effectiveness of the arrangement.

2. Any signatory may withdraw from this arrangement but the withdrawal does not take effect until 30 days after the governor or premier of the withdrawing signatory has given notice in writing of such withdrawal to the governors or premiers of all other signatories. The action does not relieve the withdrawing signatory from obligations assumed under this arrangement prior to the effective date of withdrawal.

3. Duly authenticated copies of this arrangement in the French and English languages and of such supplementary agreements as may be entered into shall, at the time of their approval, be deposited with each of the signatories.

Article XII - Severability

This arrangement is construed so as to effectuate the purposes stated in Article I. If any provision of this arrangement is declared unconstitutional or invalid or inapplicable to any person or circumstances, the validity of the remainder of this arrangement to that person or circumstances and the applicability of the arrangement to other persons and circumstances are not affected.

Article XIII - Inconsistency of Language

The validity of the arrangements and agreements consented to in this arrangement shall not be affected by any insubstantial difference in form or language as may be adopted by the various states, provinces and territories.

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IN WITNESS WHEREOF, the undersigned have signed ANNEX B to the PACIFIC NORTHWEST EMERGNECY MANAGEMENT ARRANGEMENT

THE STATE OF ALASKA

GOVERNOR — Date

THE STATE OF IDAHO

GOVERNOR — Date

THE STATE OF OREGON

GOVERNOR — Date

THE STATE OF WASHINGTON

Christine Gregoire
GOVERNOR

Date

THE PROVINCE OF BRITISH COLUMBIA

PREMIER

Date

THE YUKON GOVERNMENT

PREMIER

16 Aug/07
Date

Appendix C: Acronyms

Annex C - Annex to the Pacific Northwest Emergency Management Arrangement (Canada-United States Protocol Framework for Communication and Information-Sharing Before, During and Following an Emergency Disrupting Maritime Commerce or Port Operations)

ANSI - American National Standards Institute

ASIS - American Society for Industrial Security International

AWO - American Waterways Operators

BNSF - Burlington Northern Santa Fe Railroad

BC - British Columbia

CART - Common Assessment and Report Tool

CAUSE - Canada/U.S. Resiliency Experiment

CBP - US Customs and Border Protection

COOP - Continuity of Operations Plan

COG - Continuity of Government

COI - Community of Interest

CRDR - Center for Regional Disaster Resilience

DC - District of Columbia

DHS - Department of Homeland Security

DRDC - Defense Research and Development Canada

EMBC - Emergency Management British Columbia

GICA - Gulf Intracoastal Canal Association

Guidelines - The Guidelines for Communication and Information-Sharing between Stakeholders in Canada and the United States to enhance Maritime Commerce Recovery after an Emergency or Disaster

HQ - Headquarters

ICE - US Immigration and Customs Enforcement

IMTC - International Mobility and Trade Corridor Project

IPAWS - Integrated Public Alert and Warning System

IT - Information Technology

MASAS - Multi-Agency Situational Awareness System

NWWARN - Northwest Warning, Alert, and Response Network

PNEMA - Pacific Northwest Emergency Management Arrangement

PNWER - Pacific Northwest Economic Region

U.S. - United States

USCG - United States Coast Guard

WA - Washington State

WRRL - Washington Response Resource List

Appendix D: Northwest Maritime Recovery Appendix

Transport Canada Transports Canada

Northwest Maritime Recovery Appendix

A stakeholder-led process in the US Pacific Northwest / BC Lower Mainland produced the following draft action plan to implement the priority outcomes of the 2012 bi-national maritime commerce resilience regional consultative process. Timelines are notional, dependent on available resources and subject to the formation of a regional Community of Interest.

Phase 1 (Jul 2012 - Dec 2012)			
Priority	**Task Deliverable Milestones**	**Estimated Start**	**Estimated End**
1	Conduct a workshop and exercise to identify issues of national or regional concern, including resilience and recovery priorities, gaps and weaknesses and complete reports for each.	July 2012	December 2012
2	Add the PNEMA emergency management agency's and a task force as the responsible parties to implement the action steps to the protocol framework Annex C or alternative.	Oct 2012	Dec 2012
3	Finalize Pacific Northwest Emergency Management Arrangement Annex C or alternative.	Oct 2012	Dec 2012
	Phase 2 (Jan 2013 - Dec 2015)		
4	Create charter for implementing task force and private sector equivalent, if required.	Jan 2013	Jul 2013
5	Develop a procedure to identify specific Community of Interest members and method to "sign on" to participate.	Feb 2013	Sep 2013
6	Develop procedures to outline specific committee, network and forum details and process.	Mar 2013	Nov 2013
7	Engage a third party to help identify and mitigate significant resilience and recovery gaps, provide leadership and facilitate action deliverables.	Apr 2012	Dec 2015
8	Review and develop procedures recommending regulatory, statutory and ordinance changes, suspensions or waivers necessary post disaster.	Jan 2013	June 2013

9	Conduct a workshop to identify or create a tool to identify products, services, critical infrastructure and other assets which may be vital to the maritime economy.	Nov 2013	Dec 2013
10	Develop procedures to identify critical information elements and adopt standard alerting protocols.	Jan 2014	Mar 2014
11	Develop a procedure to identify triggering criteria to implement the protocol and to help mitigate likely incidents.	Jan 2014	Apr 2014
12	Develop a procedure to identify key priorities and the method to update status.	Jan 2014	Mar 2014
13	Conduct a workshop to evaluate tools to report and disseminate critical information.	Apr 2014	May 2014
14	Develop a procedure for how maritime commerce recovery is organizationally structured and operated.	Apr 2014	Sep 2014
15	Review and develop public disclosure exemptions to facilitate the sharing of information.	Jun 2014	Oct 2014
16	Develop a procedure to share and control sensitive or classified information.	Sep 2014	Jan 2015
17	Develop a joint information system procedure.	Sep 2014	Dec 2014
18	Develop a procedure to share skilled personnel across the border and between trade unions and organizations outlining a process in PNEMA Annex B or emergency operations directives for maritime specific requirements.	Jan 2015	Mar 2015
19	Develop a procedure to specifically limit liability during recovery (may require legislation).	Mar 2015	Sep 2015
20	Conduct a workshop to identify or create a tool to conduct organization-level risk, resilience, consequence-of-loss and critical infrastructure assessments.	Apr 2015	May 2015
21	Conduct a workshop to develop and share tools to facilitate resilience and recovery planning at the organization and regional levels.	Jun 2015	Jul 2015
22	Develop a procedure to create a protocol, plan and procedure review schedule.	Sep 2015	Dec 2015

23	Develop a method for exchange of lessons learned and best practice information.	Sep 2015	Dec 2015
24	Develop a procedure to outline a comprehensive training and exercise schedule.	Sep 2015	Dec 2015

Phase 3 (Dec 2015 - Continual)

	Task Deliverable	Timing Cycle
	Engage a third party to help identify and mitigate significant resilience and recovery gaps, provide leadership and facilitate action deliverables.	Jan 2016 and annual
	Conduct protocol, plans and procedural training.	Semi-Annual
	Conduct exercise to test protocol, plans and procedures	Annual