

The Business Case for Resilience Planning in Seaports

August, 2018



Who We Are

HudsonAnalytix is a US-based international business risk solutions company providing expertise and support to the world's leading commercial shipping, ports and terminals, insurance, and government sectors. Our clients include:

- Port Authorities and Terminal Operators
- National and Regional Port Systems
- Integrated Oil and Gas Companies
- National Oil Companies
- Global Maritime Transportation Companies
- Insurance Companies
- Governments



Key Facts:

- Established in 1986
- Worldwide Presence:
 - Philadelphia (Global HQ)
 - Washington, DC
 - Seattle, WA
 - San Diego, CA
 - Rome, Italy
 - Piraeus, Greece
 - Jakarta, Indonesia (JV)
 - Manila, Philippines

Operating Subsidiaries

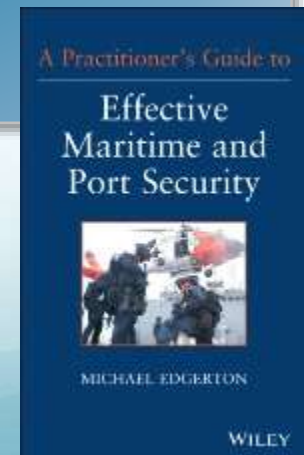
HudsonMarine – Risk and Crisis Management

HudsonTrident – Physical and Operational Security

HudsonCyber – Cyber Security

HudsonTactix - Consequence Management

HudsonSystems – Management Systems Development and Improvement



- Disaster response and management should be looked at as a cycle of continuous improvement with the effect of building the resilience of ports and related infrastructure.
- Key issues to be addressed ahead of time include:
 - Assessing and prioritizing risks;
 - Developing a common response system;
 - Including all key participants in plans and exercises;
 - Having clear authorities and jurisdictions; and
 - Planning for recovery (logistics!).

Potential Impacts of Disasters on Ports

- Disasters in ports can have significant implications at the corporate, regional, national, or international levels;
- Disasters can have physical, operational, and information-related impacts, including:
 - Prevention or delays in relief supplies;
 - Logistical delays (supply chain disruption);
 - Economic impacts (upstream and downstream);
and
 - National security such as political stability.

Potential Effect of Port Closures on the U.S. West Coast

Inforum (Interindustry Forecasting) Study:

	10 Days	20 Days
Employment Disruption	169,000 Jobs	405,000 Jobs
Reduced Economic Output (Measured by Loss to GDP)	\$21.2 Billion (0.12% of GDP)	\$49.9 Billion (0.29% of GDP)
Loss of Household Purchasing Power	\$170 per household	\$366 per household
Loss of exports	\$3.3 Billion	\$6.9 Billion
Loss of imports	\$3.9 Billion	\$8.3 Billion
Daily Cost of West Coast Port Disruption to U.S. Economy (Measured by Loss to GDP)	\$2.1 Billion	\$2.5 Billion

NotPetya... 0830 Hrs. EDT 27 June 2017



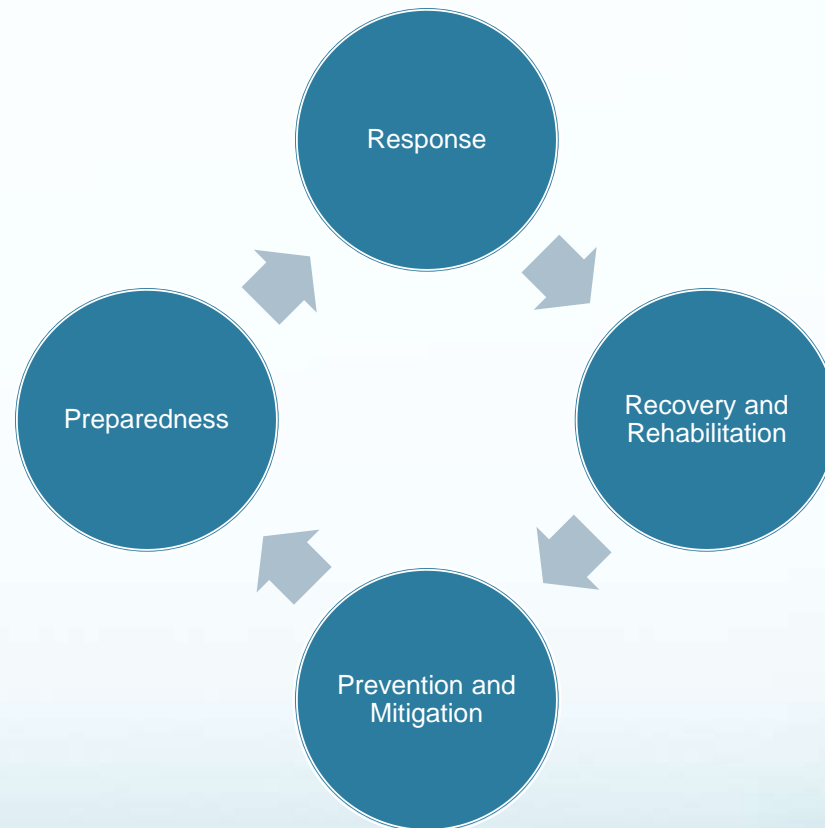
- Maersk handles 18% of global container trade with over 600 vessels
- Operator at 76 ports via APM Terminals division
- Maersk estimated to book 3,300 TEUs (\$2.7 million) per hour
- Caused global computer outages
 - Computers were infected by ransomware that encrypted APM hard drives at 17 terminals leading to confusion and congestion
 - “They went back to basics and did everything on paper.”
 - No one knew where their cargoes and containers were until systems were back on line.
- Tens of thousands of shippers affected.

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Components of Resilience- Focused Disaster Management

Key points:

- Risk-Based;
- Continuous Improvement;
- Measurable.



Prevention and Mitigation

- Develop Risk Register and Business Impact Analysis;
- Develop Strategy;
- Leverage preventive programs such as:
 - Laws and regulations such as:
 - Environmental regulations; and
 - Construction standards.
 - Public Relations campaigns, etc.



Preparedness

- Refine Risk Register and Business Impact Analysis;
- Develop Plans;
 - Leverage ALL Stakeholders and Expertise;
 - Identify resources and providers in advance;
 - Ensure inter-agency agreement and participation;
 - Train and exercise.



Response

- The actual management of the crisis as it develops;
- Multi-disciplinary;
- Command and control;
 - Pre-ordained;
 - Unified;
 - Varies upon type of incident.



Recovery and Rehabilitation

- Longer-term;
- Opportunities for improvement;
- Heavy financial investment and expenditures;
- Shift of command and control; and
- Planning needs to reflect:
 - Minimum tolerable downtime;
 - Recovery Time Objectives; and
 - Recovery Point Objectives.



The Objective is Resilience

Resiliency is the capability to absorb undesirable or unexpected events with minimal impact and to quickly recover full operations.

Includes Crisis Response and Recovery as well as Continuity planning.



- Top management is fully supportive of planning, training, and exercising;
- Clear lines of responsibility and authority;
- One nationally implemented command and control system which is, or is derived from, a globally recognized system;
- An investment in training and exercising with senior management participation;
- Inclusive of relevant stakeholders;
- Stakeholders know each other through the planning, training, and exercising activities;
- Risks and associated plans are updated regularly; and
- Take an approach focused on resilience.

Thank You & Questions?