Plenary 7: Command, Control and Interoperability

Coast Guard, Port and University Co-Creation of Regional Research for Enhanced Maritime Security & Societal Resilience

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Risk Analytics → Recovery Analytics

- 1st line of defense – Prevention

- 2nd line of defense – the 3 “R”s

Resilience, Response, Recovery

Look not only at the threat, but at what is being protected

Risk Assessment

- Threat Assessment
- Vulnerability Assessment
- Consequence Assessment

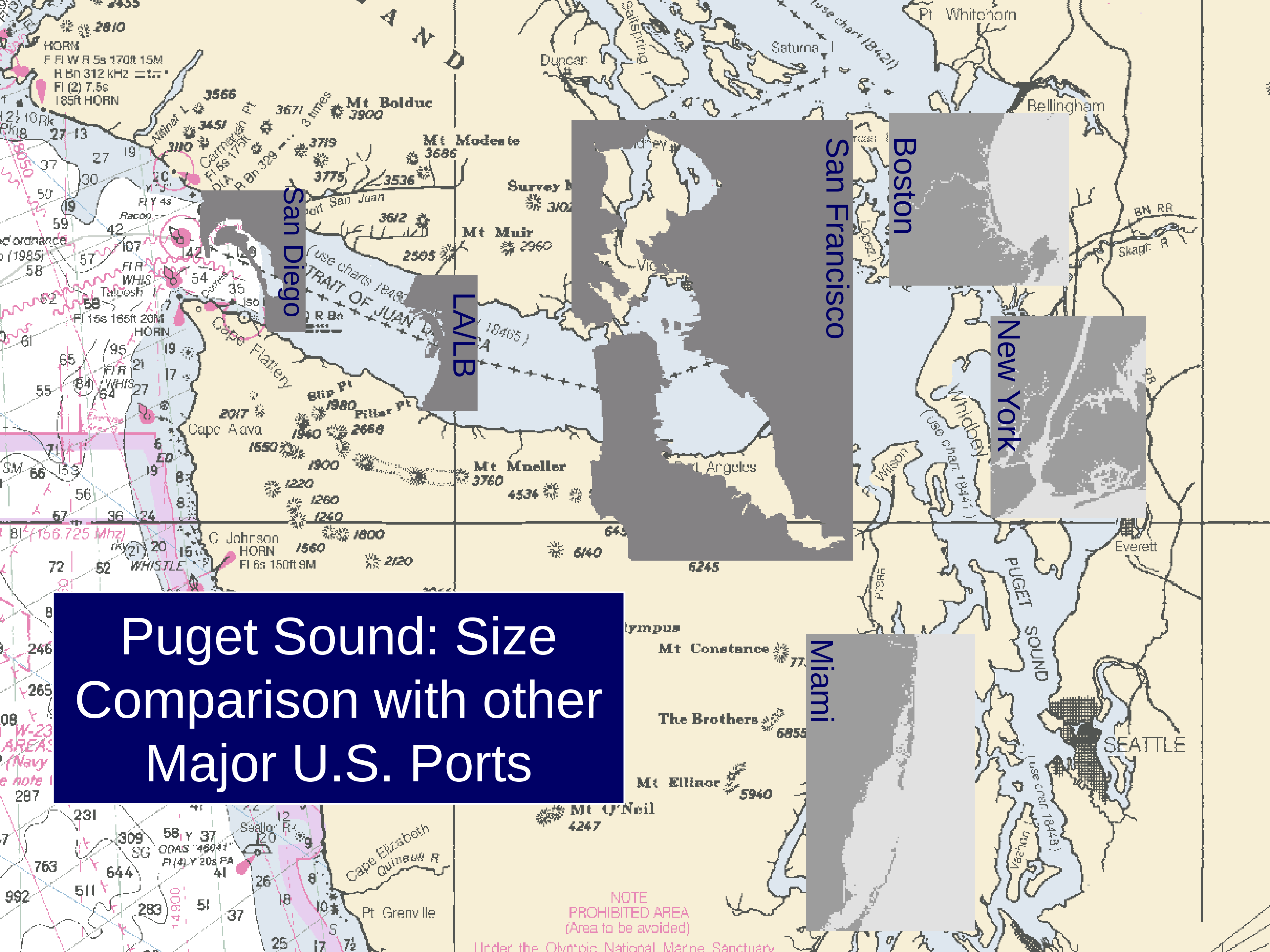
Risk Assessment → Recovery Planning

- Threat Assessment
- Vulnerability Assessment → Resilience
- Consequence Assessment → Choices

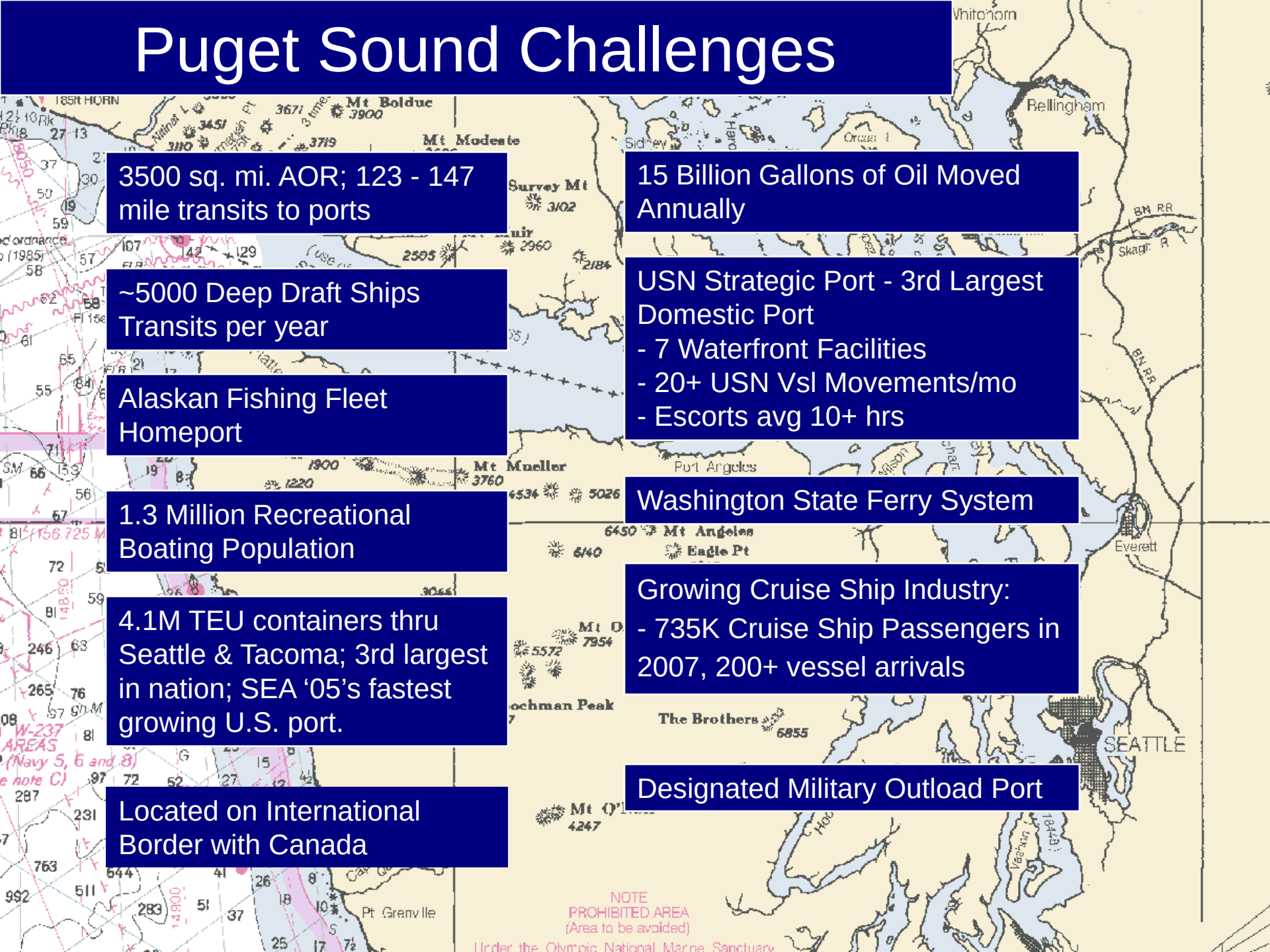
Choices

- Based on an understanding of the impacts of recovery alternatives on regional economy and society
- Improved by enhancing and exercising the collaborative decision-making community, including ports and private enterprise
- In a crisis situation, Captain of the Port has ultimate authority for decisions such as when to close and how to reopen a port

Puget Sound: Size Comparison with other Major U.S. Ports



Puget Sound Challenges



3500 sq. mi. AOR; 123 - 147 mile transits to ports

15 Billion Gallons of Oil Moved Annually

~5000 Deep Draft Ships Transits per year

USN Strategic Port - 3rd Largest Domestic Port
- 7 Waterfront Facilities
- 20+ USN Vsl Movements/mo
- Escorts avg 10+ hrs

Alaskan Fishing Fleet Homeport

Washington State Ferry System

1.3 Million Recreational Boating Population

Growing Cruise Ship Industry:
- 735K Cruise Ship Passengers in 2007, 200+ vessel arrivals

4.1M TEU containers thru Seattle & Tacoma; 3rd largest in nation; SEA '05's fastest growing U.S. port.

Designated Military Outload Port

Located on International Border with Canada

Puget Sound Area Maritime Security Committee

Advisory council to the Federal Maritime Security Coordinator (FMSC), to carry out activities necessary to *enhance the security of the Marine Transportation System* (MTS).

- Identify and validate critical infrastructure;
- Review/update the Area Maritime Security Plan;
- Conduct Area Maritime Security Assessments;
- Develop procedures for info sharing
  - threat warnings,
  - lessons learned,
  - response, and
  - intelligence gathering.
- Exercise the AMS Plan to ensure response, communications, and coordination throughout region.

Puget Sound Port-Wide Risk Management/Mitigation and Trade Resumption/Resiliency Plan

- **Resiliency-Building Strategy: *Develop "visual analytics" tools to facilitate and optimize decision-making during and after an incident*.**
  - **Goals and Objectives include:**

    Help public and private stakeholder make timely, defensible, and justifiable assessments, and thereby optimize decision-making, when confronted with massive amounts of confusing, dynamic, conflicting data during and after an incident.
  - **Recommended Initiatives include:**

    Define the comprehensive range of assessments and decisions necessary in responding to and recovering from terrorist and all-hazards incidents, and develop visual analytics tools to aid in making those assessments and decisions.

Ports are Economic Engines

GOAL:

Keep our ports open and our people safe

STRATEGY:

Regional Security Cooperation

Washington Ports are Public Agencies

- Commissioners are elected County-wide
- Port directors and employees are government employees
- Ports are owners of public facilities and assets – ports are infrastructure
- Port of Seattle owns and operates properties valued at $6.5 billion

CONTINUITY OF OUR REGIONAL ECONOMY: *WHAT'S AT STAKE NATIONALLY?*

- **Washington State: the most trade-dependent state in the nation – 33% of State GDP related to exports, imports, and trade-related industries**

- **Puget Sound: third largest container port in US**
- **Critical military infrastructure and national maritime industrial centers**

- **Home of North Pacific Fishing Fleet - 14,000 jobs, $1.85 billion in wages, salaries**

- **$65 billion in State GDP rides on the road corridor linking airport and seaport (Viaduct), including Boeing's $32 BillioN**

Economic Impact of the Port of Seattle

- **193,986 total direct, induced and indirect jobs**
  - **111, 317 Direct Jobs**
  - **62,128 Induced Jobs**
  - **20,540 Indirect Jobs**
- **$9.5 billion of personal income and consumption expenditures**
- **$17.6 billion of business revenue**
- **$1.4 billion of local purchases**
- **$867.0 million of state/local taxes**

Ports are Public-Private Partnerships

- Strategies for port cooperation
  - Government-to-Government MOUs
  - Government-industry contracts or leases
  - Cost-sharing strategies for regional security and transportation investments
- Port leadership and Captain of the Port are natural allies
  - Shared goal of reducing risks of disruption to trade and commerce

The Port of Seattle as a nodal point in a national distribution network

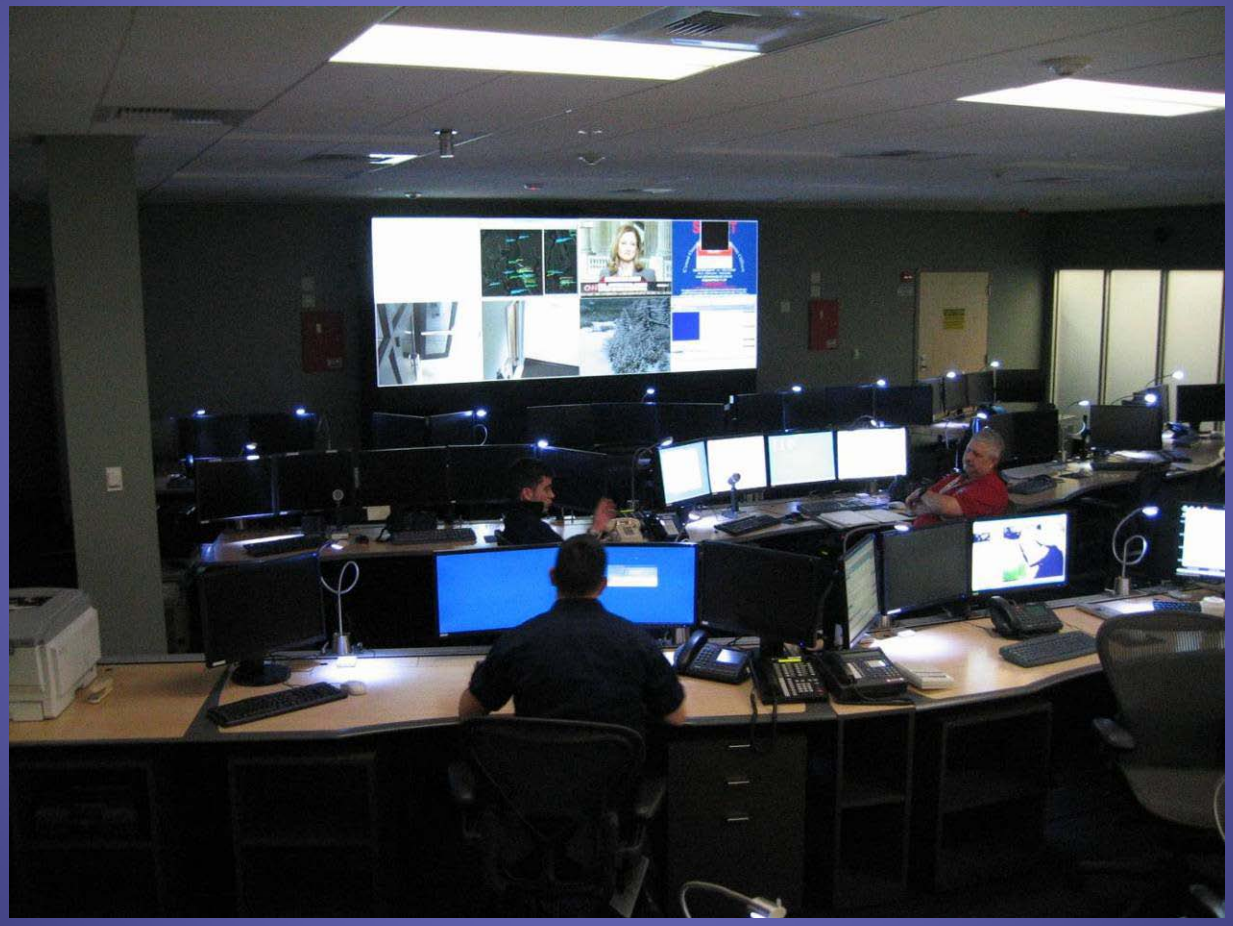
70% of our trade terminates in some other region of the country. This representation of the BNSF rail network illustrates how the Port of Seattle is one node in a much larger system. A disruption here affects far more than our local area.

Ports build partnerships to keep people safe and supply chains secure

- Formal organizational agreements
- Collegial stakeholders – Captain of Port, Puget Sound ports, UW, PNNL, industry, local/state/federal/international agencies
- Shared philosophy of risk management and mitigation to deal with disruptions
- Regional security and recovery planning

The Ivory Tower

Information and Communication



Research Owned by the Community of Practice

Development doesn’t end when the technology or research result is handed off to the stakeholders, it is the beginning of the most critical phase of development

Enhancements to decision making must improve over time with use, not degrade

Action Research

A process of cooperative problem solving between researchers and a “community of practice” to improve the way they address issues and solve problems

Research undertaken by large organizations or institutions, assisted by professional researchers, with the aim of improving their strategies, practices, and knowledge of the environments within which they practice

Term first introduces by Kurt Lewin, MIT (1944)

Complex Service Communities

- Multiple Stakeholders
- Multiple Missions
- Multiple Jurisdictions
- Multiple Business Processes
- Multiple Systems
- Multiple Terminologies
- Multiple Cultures

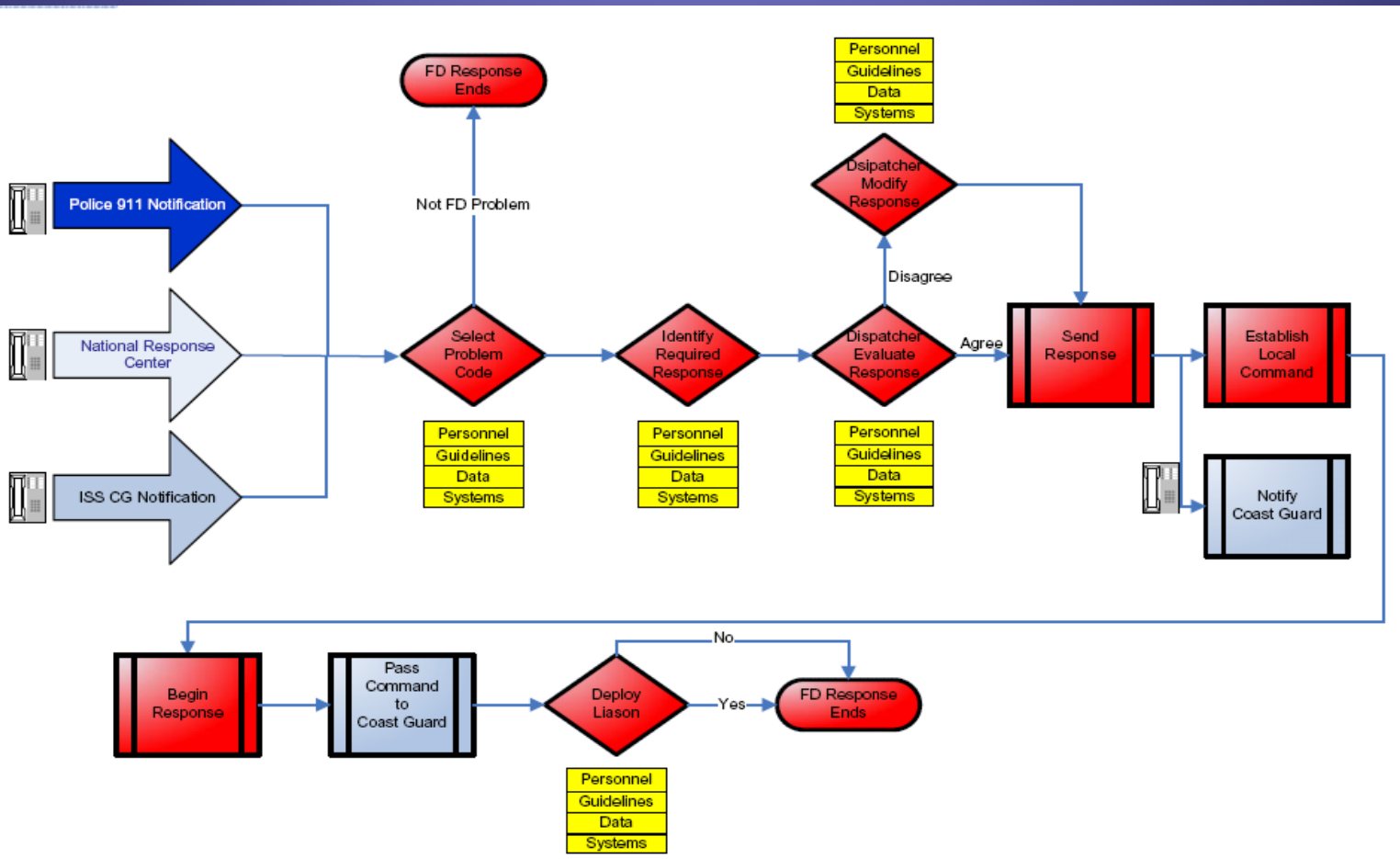
It is difficult to fully understand the processes that a community of stakeholders employs to create and deliver service, but mapping and analyzing these processes is a prerequisite to improving them.

PARVAC, Haselkorn, 2008

The Initial Project

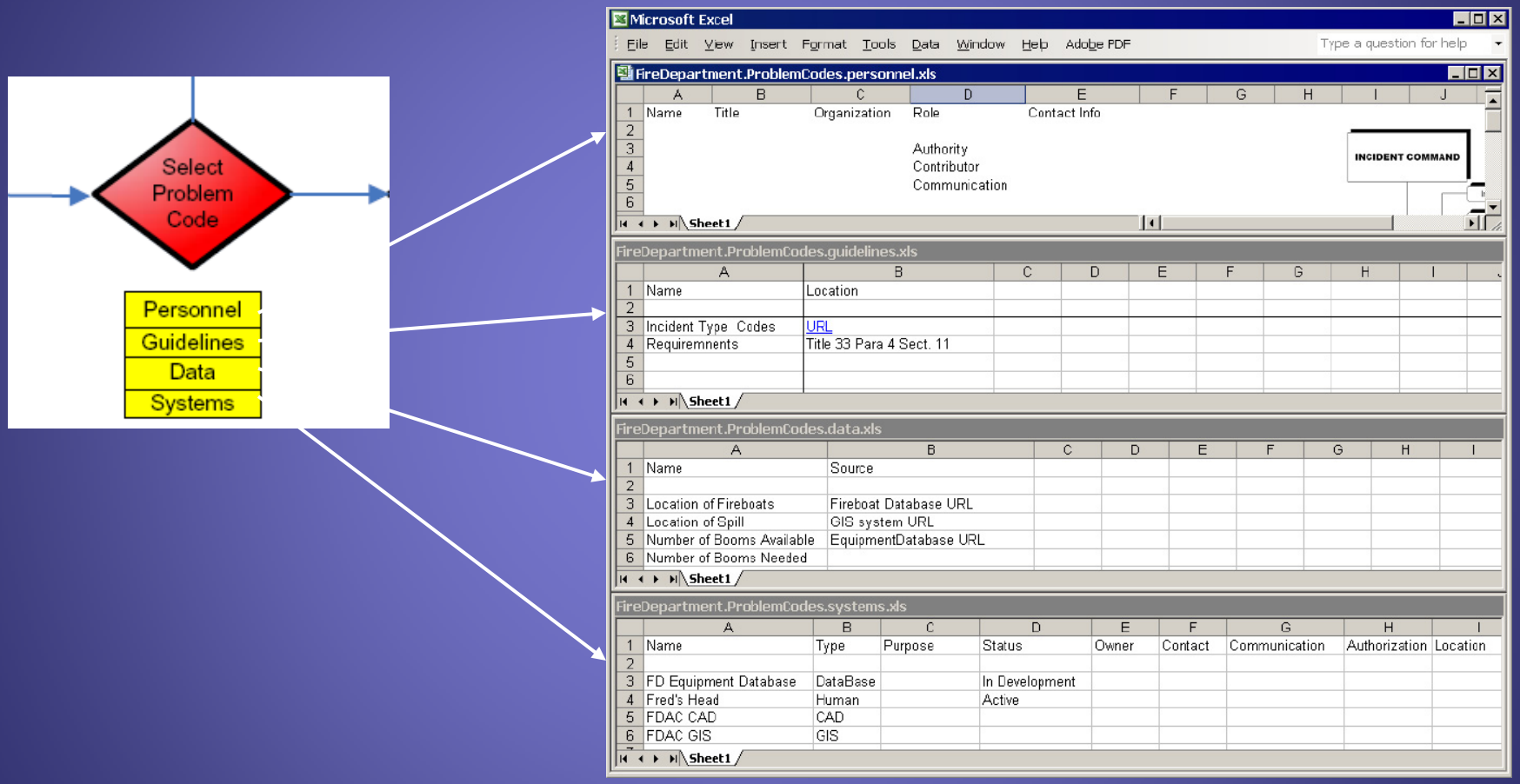
- A leadership tool (not a decision support tool)
- Transparency (“*Information transparency breeds self-correcting behavior.” – Admiral Allen)*
- *Relationships (between C^2 systems and decision making; among community decision makers and stakeholders)*

Understanding the decision making environment



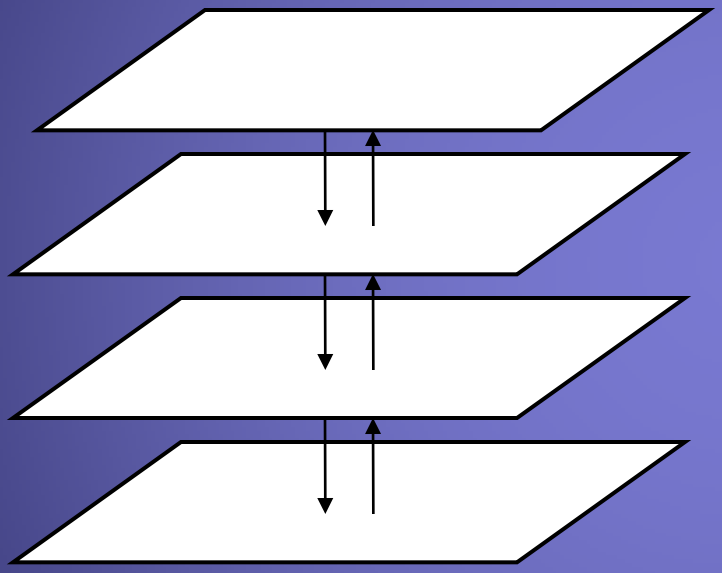
Seattle Fire Alarm Center Oil Spill Decision Process

Decision Drilldown



Layered Model of Regional Processes

Focus on Key Decisions with Regional Economic and Service Impacts



Organizational Decision Makers

Business Processes

Data

Technology Infrastructure
- Service Oriented Architecture

Add Economic Interdependencies Layer

A Problem Co-Developed with the Puget Sound Maritime Security Community

- Threat-based plans are critical to regional security, but they need to be augmented by consideration of what is being protected—the economic and service capacities of a region
- Need to understand the impact of security decisions and actions on economy and society
- Especially critical for Ports and waterways
- Especially critical for terrorism
- Especially critical for recovery and resumption of trade
- Not an individual, port-by-port problem