



# Federal, State, and Regional Strategies for Critical Infrastructure Protection and Resilience

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# A Decade of Evolution From Infrastructure Protection to Resilience

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- In the United States at the national level—
  - In 1990s focus on disaster preparedness and mitigation—  
natural disasters and energy “crisis”
  - President's Commission on Critical Infrastructure Protection  
Report highlighted infrastructure interdependencies
  - September 11, 2001 terrorist attacks—dramatic reorientation by  
U.S.—focus on security of infrastructure assets
- Protection and prevention focus continued despite lessons  
learned from Hurricane Katrina until mid-2007 incorporation
- Today resilience is a national homeland security priority
  - Federal agencies focusing on defining, strategizing, and  
measuring regional and community resilience
  - FEMA “Whole Community” approach to disaster preparedness



## **A Decade of Evolution From Infrastructure Protection to Resilience, cont.**

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- **At the state and local level, there has been a growing focus over the past several years on “operationalizing” resilience**
- **Public-private partnerships and regional initiatives in many regions with focus on infrastructure interdependencies and holistic preparedness**
- **Earliest and most developed initiative in the Pacific Northwest**
  - **Based on concern over cross-border interdependencies and economic consequences**



## Based on Fundamental Assumptions About Interdependencies/Resilience Connection

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- **Disaster resilient assets and infrastructures require resilient regions**
- **Disaster resilience requires understanding which assets may be critical in normal and stressed conditions**
- **Determining criticality depends upon understanding infrastructure interdependencies**
- **Understanding interdependencies requires cross-sector, multi-jurisdiction, cross-border collaboration and information sharing**
- **Cross-sector and public/private information sharing requires the creation of an environment of trust where stakeholders feel safe to share their concerns and vulnerabilities**

# Pacific Northwest Economic Region (PNWER)

- Formed by statute in 1991
- Alaska, Alberta, British Columbia, Idaho, Montana, Oregon, Saskatchewan, Washington, Yukon, and the Northwest Territories
- Purpose—to foster collaboration on broad range of economic development and related challenges
- Created Center for Regional Disaster Resilience in 2006





## Holistic, Stakeholder-Driven Approach

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- PNWER adopted a multi-step approach first used to prepare for the 2002 Salt Lake City Olympics
  - Involves mobilizing broad “Whole Community” in a region—local, state, and national government agencies, utilities and other essential service providers, businesses, non-profit organizations and social service groups, academe, faith-based and ethnic groups
  - Builds trust, promotes information sharing, and serves as the foundation for a *sustainable, ongoing resilience process* based on public-private collaboration
  - Can be used to address any hazard or significant challenge
- Over the past several years, this approach has been adopted by a growing number of states and localities



# Multi-Step Regional Resilience Process

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- 1. Identify cross-border key stakeholders and convene a Planning Group**
- 2. Conduct one or more regional workshops to explore resilience challenges and identify focus areas and priority issues**
- 3. Conduct a gap analysis—i.e., baseline assessment of current resilience needs and existing capabilities**
- 4. Develop an initial draft Action Plan framework**
- 5. Plan and conduct a regional tabletop exercise**
- 6. Hold a post-exercise Action Planning Workshop to examine the outcomes of the preceding activities**
- 7. Produce a stakeholder-coordinated Action Plan of improvement activities**
- 8. Develop an implementation strategy that includes lead and partner organizations, sets up work groups to determine project requirements; milestones, and sources of assistance**

# Blue Cascades Regional Exercise Series

- ***Blue Cascades I (2002)***
  - Physical disruptions
- ***Blue Cascades II (2004)***
  - Both cyber and physical disruptions
- ***Blue Cascades III (2006)***
  - Recovery & Restoration from major earthquake
- ***Blue Cascades IV (2007)***
  - Pandemic Preparedness
- ***Blue Cascades V (2008)***
  - Disaster Supply Chains
- ***Blue Cascades VI (2010)***
  - Major Flood



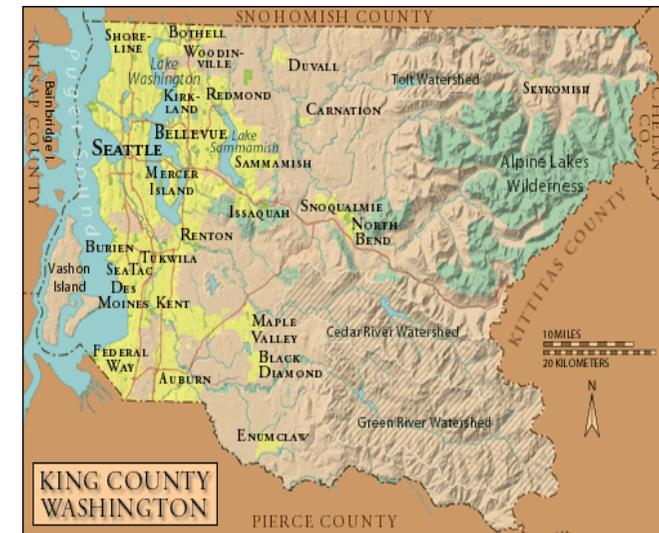
# Typical Regional Resilience Focus Areas



# Case Study: Puget Sound Region

## *Comprehensive Community Bio-Event Resilience Pilot Project*

- **Focus on disaster life cycle: prevention, protection, preparedness, response, recovery/long-term restoration, and risk-based mitigation**
- **Used multi-step process with templates to facilitate development of requirements and implementation for a holistic disaster resilience Action Plan**
- **Grass-roots to national level, including US-Canadian cross-border challenges**
- **Stakeholder involvement led by the Pacific Northwest Center for Regional Disaster Resilience with Pilot Project Work Group**



# Bay Area Regional Disaster Resilience Action Plan Initiative

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- Association of Bay Area Governments in partnership with Bay Area Center for Regional Disaster Resilience and public, private sector, non-profit organizations, regional agencies and associations
- 14 month, multi-step Regional Disaster Resilience Action Plan process covering 12 counties to identify gaps and activities to improve Bay Area resilience
- Focus on recovery/long-term restoration
- Emphasis is on reconstituting lifeline and other critical infrastructures, businesses, government services, community institutions, housing, etc.





## Some Potential Areas for Additional Work

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- **Ways to sustain Action Plan Implementation Process over the long term**
- **Governance Issues**
- **Integration of funds for multi-sponsored projects**
- **Simple, useful metrics for community and regional resilience**
- **Templates, tools to enable stakeholders to undertake the process at low cost with local resources**
- **Need for additional regional initiatives and pilot projects to test, validate, enhance model**
- **Train the Trainer program**

# Maintaining and Sustaining the Collaborative Resilience Process—Challenges and Solutions

- **Essential to success:**

- **Ensuring respect and protection of jurisdictional and national authorities and prerogatives while overcoming political and cultural barriers to regional collaboration**
- **Assuring ongoing public-private and non-profit collaboration with help of a facilitation entity**
- **Finding regional resilience “champions” among government and business leaders, and among volunteers at the operational level**
- **Workshops & exercises that demonstrate interdependencies, vulnerabilities, consequences, and the need for collaboration**





## Progress Will be Built Over Time

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- **Outreach needed to raise awareness and gain support of elected local officials, city managers, and business leaders**
- **Progress made will depend on level of stakeholder interest, culture, available resources**
- **Resilience process will need “hands on” facilitation**
- **Metrics to demonstrate progress will need to be carefully considered—many factors involved, including lack of criteria for what constitutes resilience and of standards/policies/laws**
  - **Should be kept simple and spur, rather than deter, stakeholder motivation**



## **Value of Holistic Disaster Resilience Approach**

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- **Provides a practical, stakeholder-driven process to improve cross-jurisdiction, cross-sector, and cross-border**
- **Complements, supports, and enhances local and state planning and disaster management**
- **Builds trust among individuals, groups, localities, and nations and demonstrates how government, the private sector, and broader stakeholder community can partner for resilience**
- **Strengthens the level and effectiveness of cross-sector, multi-jurisdiction, and cross national border collaboration to address all-hazards, building sustainable public-private partnerships**
- **Builds upon existing security and resilience capabilities**



## For Further Information

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## Back-Up Slides

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**Some Regional Resilience  
Research Recommendations**

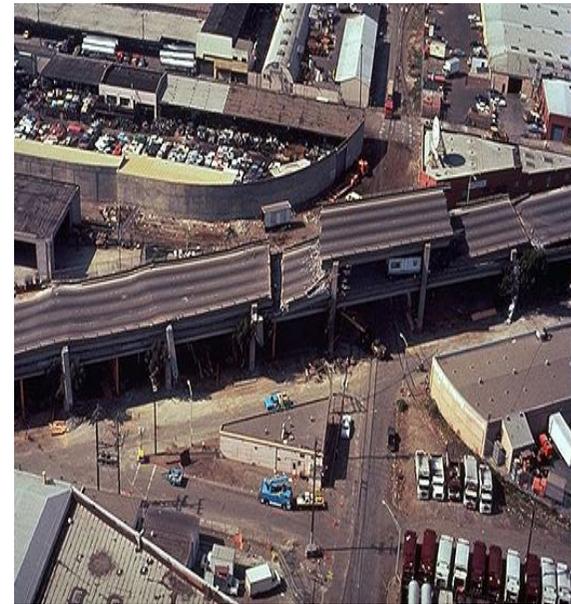
# Some Research Recommendations Based On Stakeholder-Driven Resilience Initiatives

- More than 75 workshops and 15 regional exercises focused on interdependencies and disaster resilience across U.S. and in Canada
- The Infrastructure Security Partnership (TISP) *Guide for Developing an Action Plan for Regional Disaster Resilience* (2006 and 2011 editions)
  - Compendium of outcomes from the above, plus inputs from 100-member national Task Force
  - 193 recommended activities



# Stakeholder Identified Interdependencies-Related Resilience Research Activities

- **Interdependencies inventory template that can be used by organizations in-house and enable mapping physical and virtual interdependencies**
- **Upgraded and new tools/approaches for localities to assess all-hazards impacts and restoration costs associated with interdependencies**
- **Interdependencies-related risk assessments focusing on high-risk areas and on impacts of evacuations and sheltering in place under different scenarios**



## Stakeholder Identified Interdependencies- Related Resilience Research Activities, cont.

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- A secure, virtual, database to “house” contributing organizations’ information with agreed security safeguards and legal provisions regarding unauthorized disclosure of information
- An integrated analysis capability (“toolset” of models and systems) that is developed and evaluated through pilot projects for use at the local level to assess and provide cost-effective protection and mitigation decisions that addresses interdependencies for preparedness planning, response, and restoration



# Interdependencies-Related Research Activities—Information-Sharing

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- Improved ways to communicate risk information to multiple audiences (e.g., policy and decision makers, private sector stakeholders, and the general public)
- Development of an information exchange system to provide better monitoring, collection, assessment, and reporting of the range of data necessary for community resilience, including health-related information, and a situational awareness capability to facilitate incident/disaster response



# Interdependencies-Related Research— At Risk Populations

- **Template for identifying at risk populations and the non-profit organizations that serve them (families, children and the elderly; ethnic, faith-based, and other cultural and special groups)**
- **Development of a model resilience strategy for these populations that includes:**
  - **Identification of points of contact**
  - **Outreach and education program of optimal ways to disseminate information on all-hazards threats, consequences, and preparedness actions based on what types of communications and communication channels are most effective for particular groups**
  - **Integration of these groups into preparedness activities and exercises**



# Interdependencies-Related Research— Restoration

- **Model procedures for long-term economic restoration, including which agencies will typically have lead roles in recovery activities, how to involve the private sector, and what mechanisms would be set up to oversee these activities**



- **Study of psychological, social, and economic factors that can affect post-event business retention and sustainability and new or revised policies and incentives to keep small businesses operating and encourage them to return to the region if they have left**