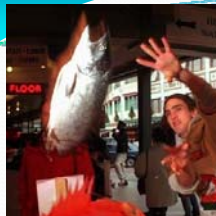


Emergency Managers Confront Climate Change

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Seattle Public Utilities

Webinar
Alliance for Resilient Cities
Clean Air Partnership
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About Seattle Public Utilities

- Department of the City of Seattle
- ~1407 employees
- Major services
 - Potable water to ~1.5 million customers (retail & wholesale) – 126 MGD
 - Sanitary and stormwater conveyance
 - Solid waste collection and disposal (including recycling, yard waste, & household hazardous waste)
- Two major watersheds owned by the City – closed to the public
- 2007 revenue -- \$460.5 million



Overview

- The Emergency Manager's Worldview
- Some definitions
- Mitigation and Adaptation
- Where does climate change fit?
- A seat at the table



You and Your Premonition !!

A Rose by Any Other Name...

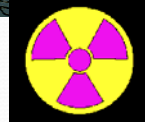
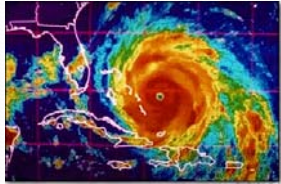
- Civil Defense
- Disaster Preparedness
- Emergency Preparedness
- Emergency Management
- Business Recovery
- Disaster Recovery
- Business Contingency Planning
- Contingency Planning
- Four Phases of Emergency Mgmt.
 - Mitigation
 - Preparedness
 - Response
 - Recovery

What is Emergency Management?

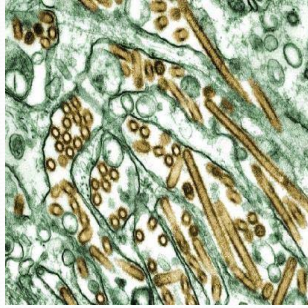
For any organization, creating the ability to:

- Assess the situation
- Restore organization and operations
- Mobilize and manage resources
 - Your own
 - Service providers
 - Volunteers
- Resume providing services/products

The Disaster Environment



The Disaster Environment (cont.)



The Emergency Manager's Worldview

- A focus on extreme events
- Acute vs. chronic hazards (floods vs. droughts)
- A shorter event horizon (5 years vs. 75-100 years)
- A shorter planning and operational cycle
 - Mitigation
 - Preparedness
 - Response
 - Recovery
- “Will current plans, actions, mitigation make things better during the next flood (storm, earthquake, hurricane, etc.)?”

An Interesting Debate

- “Climate change is a wholly new threat/hazard and thereby requires a unique set of responses.”
- “Climate change only makes existing hazards worse (in terms of severity, duration, geographic spread, etc.) and does not require special or novel adaptations.”

And, by extension...

- When does “emergency” become “business as usual?”

Some Definitions

Mitigation (Emergency Management)

- activities that reduce or eliminate the probability of a hazard occurrence, or eliminate or reduce the impact from the hazard if it should occur.

(ICDRM/GWU Emergency Management
Glossary of Terms)

Environmental mitigation

- steps taken to avoid or minimize negative environmental impacts. Mitigation can include: avoiding the impact by not taking a certain action; minimizing impacts by limiting the degree or magnitude of the action; rectifying the impact by repairing or restoring the affected environment; reducing the impact by protective steps required with the action; and compensating for the impact by replacing or providing substitute resources.
(Biology Online.)

Mitigation -- Global Warming


- actions taken by individuals or corporations to reduce the greenhouse gas emissions in order to minimize their effects on global climate change.

Adaptation

- Changes in an organism's physiological structure or function or habits that allow it to survive in new surroundings. (USEPA. Terms of Environment: Glossary, Abbreviations and Acronyms)
- **"adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities." (IPCC)**
- Responses to the changing climate (e.g., acclimatization in humans) and policies to minimize the predicted impacts of climate change (e.g., building better coastal defenses).

Adaptive Capacity

- ...a society's ability to adapt to changing climatic conditions, whether by reducing harm, exploiting beneficial new opportunities, or both. This ability to adapt, *whether to changing climate or other new circumstances*, is in part a function of a society's level of wealth, education, institutional strength, and access to technology.
- The nature and the extent of a society's development...heavily influence both its degree of exposure to climate risks and its capacity to adapt.

- 
- Adaptive Capacity – the ability to change in response to climate change effects.
 - Resilience – the ability to absorb or cope with the unexpected.
 - Different, but complementary, mutually-supporting.



“Prevention Dividend”

- How can investments in environmental management and sustainable development also reduce disaster risk?
- Is there a *prevention dividend that accrues from wise land use planning and development programs?* (“...the values of foregone disaster losses that accrue from well designed and implemented disaster risk reduction measures, including environmental management and sustainable development initiatives.”)
- Can *prevention dividends be measured; and, how might the ability to estimate these added values enhance policy and program planning?*

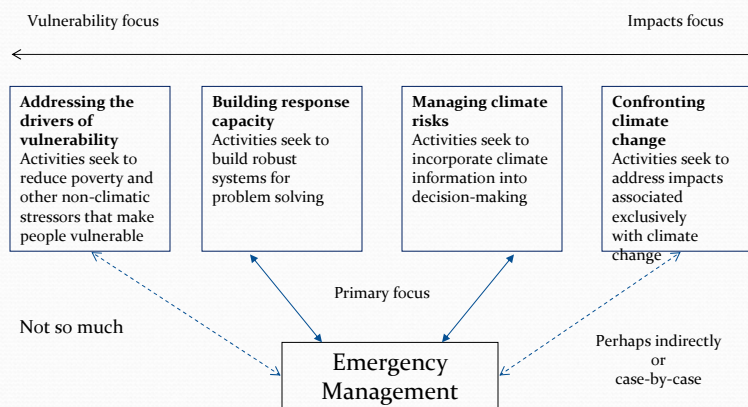
Resilience – A Popular Concept

- “Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters.”
- “World Resources 2008: Roots of Resilience - Growing the Wealth of the Poor.”
- “Community and Regional Resilience: Perspectives From Hazards, Disasters, And Emergency Management.”

Note: the concept used to be “survivability;”
it has since morphed into “resilience.”

Continuum of adaptation activities

Source: R. J. T. Klein and A. Persson, “Financing Adaptation to Climate Change: Issues and Priorities”



Emergency Managers are all about:

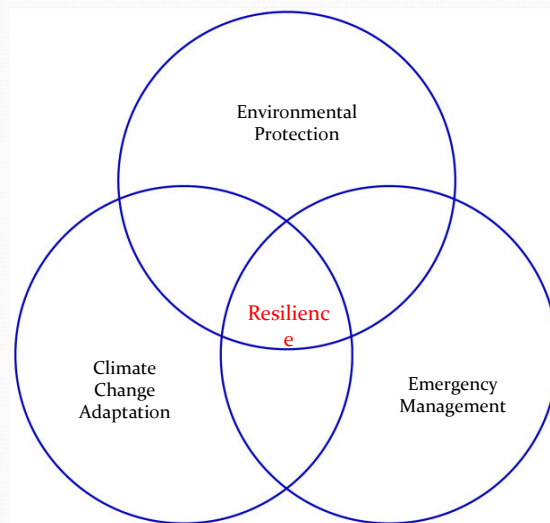
- Resilience
 - Sustainable development
 - No-regrets strategies
- } Mitigation
- These all do (or could) increase a community's ability to recover from, or be less affected by an extreme event.
 - While specific adaptive projects would not be ignored or rejected by EMs, those that contribute to a greater capacity or resilience would be favored.

EMs are also big on “mainstreaming” i.e.,

- Integrating EM goals, objectives, initiative into overall community planning and development.

This is often more a matter of funding rather than philosophy – funds are limited, and multiple-use (or multiple-benefit) is the way to go

How does it fit together?



Emergency Managers in their own words

I asked 10-12 emergency managers around the US (public and private sector), "What are you – as an EM – doing about climate change?"

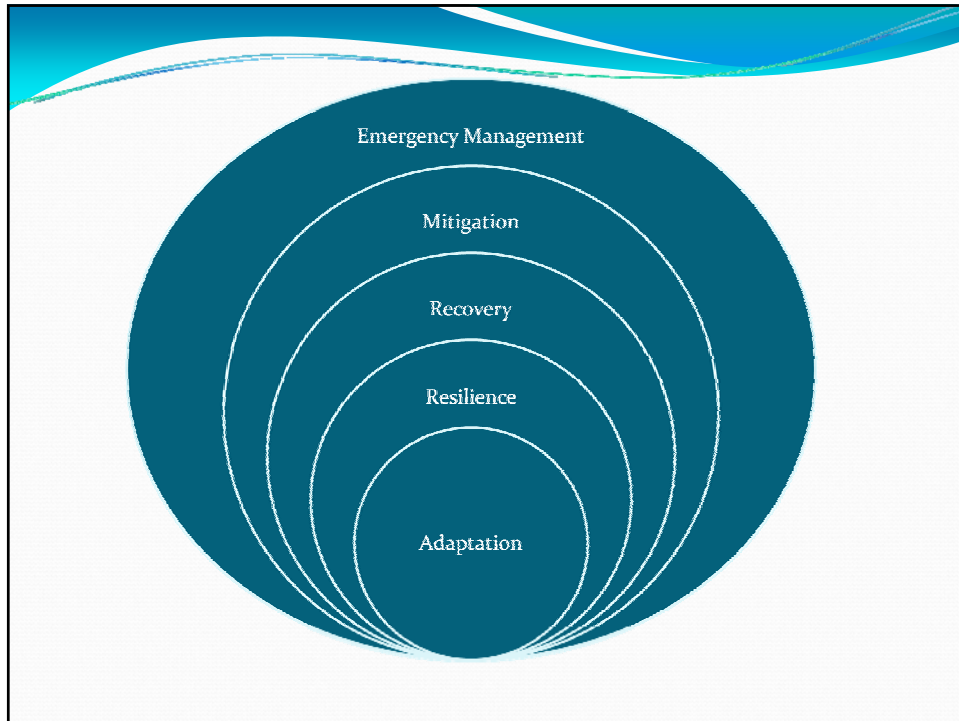
- "Hmmm...interesting question. I should think about it."
- "I haven't got time – I'm worried about next flood season."
- "I haven't got the budget (staff, resources, mandate, etc.) to deal with climate change."
- "The Department of _____ is responsible for that."

A Seat at the Table

- Disaster Preparedness is an accepted adaptation strategy (one of many)
- For emergency managers, mitigation & adaptation are essentially the same thing
- Emergency management should be part of the adaptation conversation – most effective in the scoping phase
- Identify synergies, no-regrets actions, multiple positive outcomes

Debatable Propositions

- Funds and resources invested in adaptation to extreme events (floods, hurricanes, tsunamis, heat waves, etc.) will produce more adaptive benefits, more quickly, and for more people than investment in long-term adaptation to chronic problems (drought, sea-level rise, etc.)
- Mainstreaming of adaptive strategies into development efforts and pursuing “no-regrets” adaptive strategies may be the best and most cost-effective path to success. Doing so could lead to immediate benefits and could thereby lend credibility to longer-term adaptive efforts.



Governance

- “...a process whereby elements in society wield power, authority and influence and enact policies and decisions concerning public life and social upliftment.” (World Bank)
- Importance of governance issues in adaptation programs
- Existing structures or new forms, practices?
- In the Emergency Management context, governance structures and processes already exist, they are mature, and (reasonably) well-understood.

In Summary

- Reaction to climate change is largely in the purview of the environmental (& political) community
- Climate change is not a primary emergency management concern – effects, yes; causes, no
- EMs deal with acute, not chronic, problems
- EMs generally do not deal directly with underlying problems/issues related to climate change
- EMs would support climate change adaptations, but would not generally take the lead.

Resources

- **Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters.** 2009
The International Bank for Reconstruction and Development/The World Bank.
http://siteresources.worldbank.org/INTEAPREGTOPURBDEV/Resources/Primer_e_book.pdf
- **World Resources 2008: Roots of Resilience - Growing the Wealth of the Poor.**
United Nations Development Programme, United Nations Environment Programme, World Bank, World Resources Institute. July, 2008.
http://pdf.wri.org/world_resources_2008_roots_of_resilience.pdf
http://pdf.wri.org/world_resources_2008_guide.pdf
- **Community and Regional Resilience: Perspectives From Hazards, Disasters, And Emergency Management.** Susan L. Cutter,* Lindsey Barnes, Melissa Berry, Christopher Burton, Elijah Evans, Eric Tate, and Jennifer Webb. Hazards and Vulnerability Research Institute, Department of Geography, University of South Carolina. Columbia, South Carolina. September 2008.
http://www.resilientus.org/library/FINAL_CUTTER_9-25-08_1223482309.pdf.
- **Global Warming, Natural Hazards, and Emergency Management.** Jane A. Bullock, George D. Haddow, Kim Haddow. CRC Press. Boca Raton, 2009.

Questions?

