The Marine Affairs Coastal Resilience Lab

We envision a world in which science informs coastal resilience decisions for the benefit of society.
Barriers to Extreme Weather Adaptation for Seaports – What do Decision-Makers say?

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Today

Presentation (20 min)

Workshop (15 min)

Discussion (10 min)
How can research and development assist decision-makers in implementing seaport adaptations to extreme weather impacts?
Rising Seas Are Flooding Virginia’s Naval Base, and There’s No Plan to Fix It

The giant naval base at Norfolk is under threat by rising seas and sinking land, but little is being done to hold back the tides.

By Nicholas Kusnetz

OCT 25, 2017
Resilience:
The ability to anticipate, prepare for, and adapt to changing conditions

and

withstand, respond to, and recover rapidly from disruptions
1. Protect

2. Elevate

3. Design for submersion

4. Abandon

Restoration - Current Status:

- HUD EA – Restoration
  - 60-acre fill was completed on March 27, 2011
  - 24-acre dredging schedule to advertise March 2011 – ON HOLD
  - 24-acre fill is scheduled to begin in April 2011
  - +25 feet elevation is scheduled to start Fall 2011
- Permanent tenant facilities
- Upgrades to road, rail and utilities on the Port
- Equipment upgrades

Photo from Alabama State Port Authority
> 99% of the volume of overseas trade enters or leaves the U.S. by ship (MARAD 2016)
World Ports and Tropical Storms (1990 – 2008)
Ports concerned, but little action thus far

- Impacts should be addressed by ports: 81%
- Feels informed about climate impacts: 31%
- Has adaptation plan: 4%

Ports have few formal plans that address adaptation

- Has specific adaptation policy document: 4%
- Funded as line item in budget: 8%
- Addressed in strategic plan: 12%
- Carries specific climate change insurance: 16%
- Holds staff meetings to discuss adaptation: 18%
- Part of design guidelines or standards: 28%

Our Organization is not responsible

Investments cost too high

Short term investments have higher payoffs

We may not see the benefits in our lifetime

Investments cost too high

Missing Information

Communication
What barriers prevent port authorities from making resilience investments at their ports?

How do port representatives perceive concepts of seaport vulnerability?
What is a

Factors that:

Impede
Prevent
Delay

Biesbroek et al 2011
End-users example:
Examples of barriers

OUR ORGANIZATION IS NOT RESPONSIBLE
Science, policy, communication gaps:

- low awareness
- skepticism
- overconfidence
- denial

Biesbroek et al. 2011
Misaligned time horizons

- Construction – 10 years
- Permitting & Regulatory Process – 10 years
- Engineering & Design – 5 years
- Project Design Life – 50 years
- Actual working life – >75 years

- My career (~35 years)
- The rest of my life (~55 years)
- My child’s life (~100 years)
- My grandchild’s life (~105 years)

Time

- I year
- 5-10 yrs

My career (~35 years)
The rest of my life (~55 years)
My child’s life (~100 years)
My grandchild’s life (~105 years)
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Barriers to Port Resilience

Missing Information

Communication
Topics for discussions

• Who specifically in these 23 ports should we interview?
  • What are the best ways to contact the decision-makers?
• What is AAPA’s role in helping its members build resilience?
  • And how would these results assist you in your efforts?
• The URI team is in the process of expanding this project:
  • Should we expand to include other facilities in the port service — chain?
  • Or should we expand in other regions that we have not covered yet?
  • What other questions should we seek to respond to?
Thank You!

For more information web.uri.edu/abecker

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Literature Cited


IPCC, Climate change 2001: impacts, adaptation, and vulnerability: contribution of Working Group II to the third assessment report of the Intergovernmental Panel on Climate Change. 2001, Intergovernmental Panel on Climate Change.


The Marine Transportation System, or MTS, consists of waterways, ports, and inter-modal land-side connections that allow the various modes of transportation to move people and goods to, from, and on the water. 27.