New Hampshire's Coastal Risks and Hazards Commission

Overview and Climate Assumptions

Gulf of Maine Council Working Group Meeting
December 7, 2015

Cliff Sinnott, Commission Chair
Executive Director, Rockingham Planning Commission
Exeter, NH

Study Commission Established

- SB-163 Introduced by Sens. Watters, Stiles, Clark in Jan. 2013 - bipartisan
- An Act… *"establishing a Coastal Risks and Hazards Commission to recommend legislation to prepare for projected sea level rise and other coastal and coastal watershed hazards"*
- Enacted July 2013
- Commission began meeting in August 2013
- Will sunset December 1, 2016

Commission Membership (= 37)

- 2 Senators, 2 House members
- Reps from 17 coastal & tidal municipalities
- State Agency designees from:

NHDES	NH Office of Energy & Planning
NH Fish & Game	DRED – Commissioner's office
NHDOT	Div. of Parks and Recreation (DRED)
Bureau of Public Works	Div. of Historic Resources (DCR)

- Other Stakeholders:

NH Homebuilders	PRIMEX
Seacoast Board of Realtors	NHMA
UNH - SeaGrant	Strafford RPC
UNH – Pres. designee	Rockingham RPC

CRHC Mission

"The purpose of the Coastal Risk and Hazards Commission is to develop sound guidance and recommendations for the state and municipalities regarding prudent and necessary changes to laws, regulations, plans, standards, and other actions that should be taken to prepare for anticipated sea level rise and increased future risks from coastal flooding, stormwater and related hazards."

Key Questions

- What future condition should we be planning for? What does the best science tell us?
  - Sea level rise
  - Storm surge
  - Changes in precipitation
- What are the impacts?
  - Which areas, what assets, what severity
- What should we do about it?
  - What recommendations, what actions, by who, when

Science & Technical Advisory Panel

- "STAP" Established to help Commission interpret & assess peer-reviewed science
- Focused on preparing guidance on future sea-level rise, storm surge, and precipitation based on existing published science
- 2014 Report Co-authored by P. Kirshen, Chair (UNH), C. Wake (UNH), M. Huber (UNH), K. Knuuti (ACOE), M. Stampone (NH State Climatologist & UNH)
- Panel suggests report update at least every 2 years

STAP Findings & Guidance

SEA-LEVEL RISE

Planning Guidance:

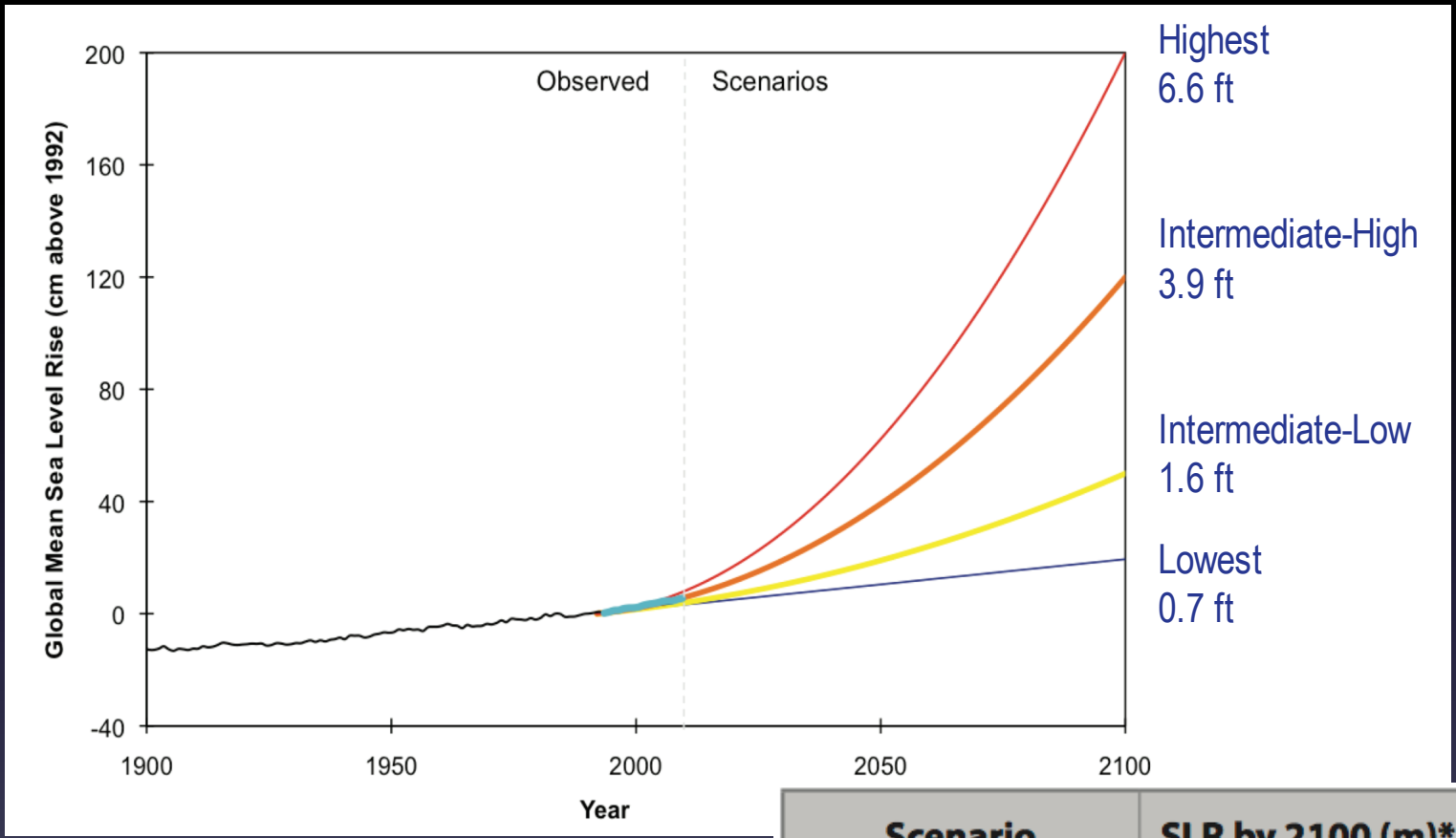
For coastal assets or areas with low risk tolerance: plan for "intermediate high" projection and be prepared to adapt to "highest" scenario projections:

- By 2050: 1.3 feet to 2 feet
- By 2100: 3.9 feet to 6.6 feet

EXAMPLES OF ASSETS WITH LOW RISK TOLERANCE:

- ✓ Essential Infrastructure (esp.: high cost and/or long design life)
- ✓ Densely settled areas
- ✓ Critical habitats
- ✓ Historical, archeological and valued cultural assets

GMSL Rise Scenarios from US National Climate Assessment (Figure 2.7)



Scenario	SLR by 2100 (m)*	SLR by 2100 (ft)*
Highest	2.0	6.6
Intermediate-High	1.2	3.9
Intermediate-Low	0.5	1.6
Lowest	0.2	0.7

STAP Findings & Guidance

SEA-LEVEL RISE

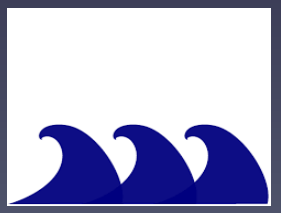
Planning guidance:

- Consider time period relevant to system/structure
- Commit to manage to "intermediate high" range, be prepared to adapt to "highest" range
- Update & revise as new science emerges and certainty increases

STAP Findings & Guidance

STORM SURGE:

- Observed Change: Increased frequency, intensity and duration.
- Science remains too uncertain to assign probability to future conditions
- Planning guidance:
  - Continue to plan for current storm frequency and intensity
  - Plan for greater flooding extent due to storm surge combined with sea-level rise
  - Update as new science emerges



STAP Findings & Guidance

PRECIPITATION:

- Mean annual precipitation increase 10% from 1895-2011
- Annual precipitation in extreme events increased more than 50% from 1901-2012
- Mean annual precipitation and precipitation in extreme events projected to increase, but magnitude is uncertain
- Planning guidance:
  - Use Cornell Northeast precipitation data for current projects
  - Plan for 15% increase in precipitation after 2050
  - Update as new science emerges

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Understandings

1. Ours is the 'first' state level guidance in New Hampshire, not the last, so keep it simple
2. Acknowledge that assumptions about future risk are based on information that is dynamic
3. There is value in acting now to take advantage of rehabilitation, reconstruction, redevelopment
4. Given uncertainty, the standards and adaptation responses should scale with risk tolerance, and be iterative
5. Use a no-regrets approach in preparing for coastal flood hazards

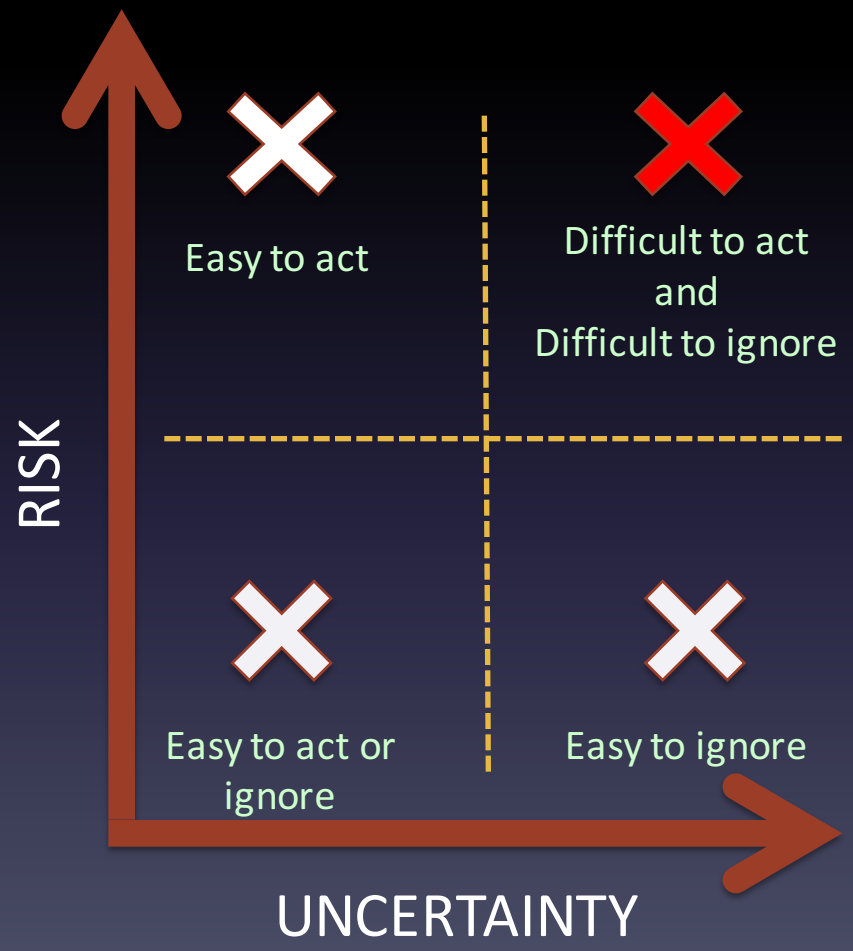
More Information

Website – via StormSmartCoasts NH

http://nhcrhc.stormsmart.org

(agendas, minutes, presentations, members roster, reports, resources)

Acting with uncertainty



Strategies:

- Consider phased & incremental responses
- Start early to lower cost and minimize disruption
- Consider risk tolerance in design
- Pursue 'no-regrets' policies
- Be ready to adapt to changing information