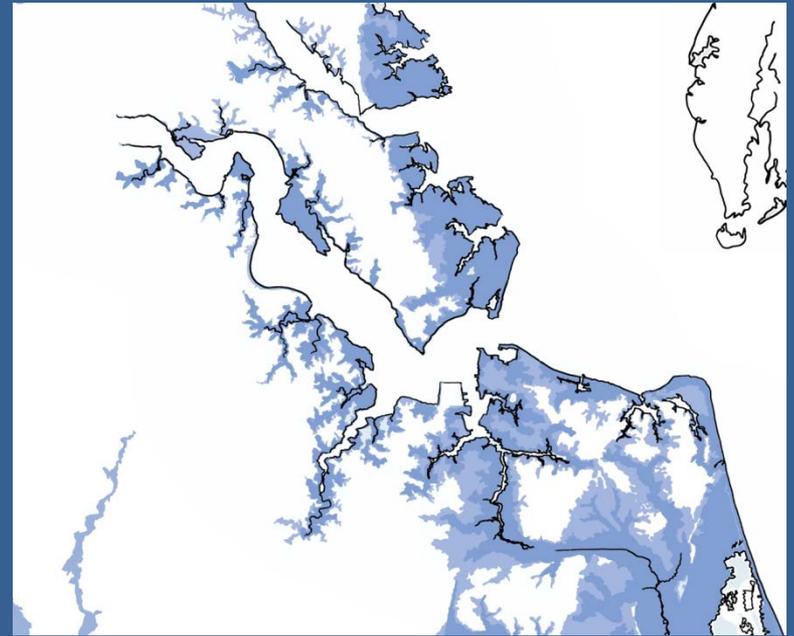


# Options for Assessing the Economic Impact of SLR in HR

Presented to the  
Hampton Roads  
Regional  
Environmental  
Committee



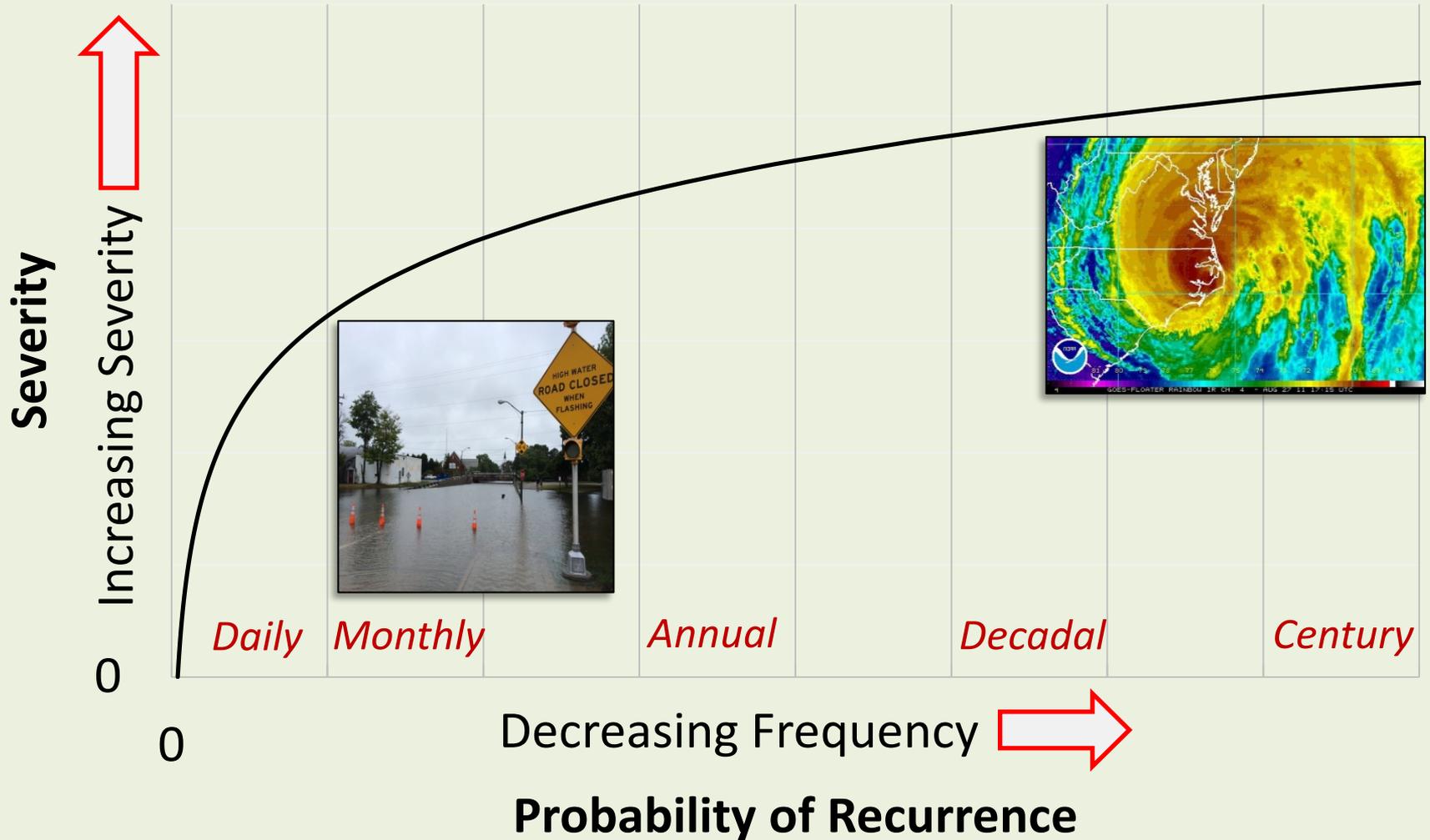
James Clary  
Senior Economist  
September 3, 2015



# Methods of Analysis

- 1) Direct Damage Estimate Analysis
- 2) Property Value Analysis
- 3) Economic Impact from Adaptations
- 4) Economic Drag From Sea Level Rise

# Vulnerability Spans a Range of Severity



# 1) Direct Damage Estimation

- Data Requirements
  - LIDAR data, assessed value of lands and buildings, first floor elevations, personal property
- Quality of Results
  - These are extremely straightforward results, with the direct damage to real and personal property as a result of flooding
  - Would produce a narrow impact estimate

# 1) Direct Damage Estimation

- Pros
  - Simple to explain
  - Reproducing work conducted in other localities and at smaller scale within the region
- Cons
  - Omits many other direct costs: emergency personnel, lost economic activity, which may represent an additional 50-75% of the direct property costs
  - Omits indirect costs

## 2) Property Value Analysis

- Data Requirements
  - Real estate transactions with complete records of housing characteristics, accurate information about extent and depth of flooding that occurred within the time period of the data set
- Quality of Results
  - Would indicate accurately whether the cost of flood insurance and the risk of flooding has been incorporated into home prices

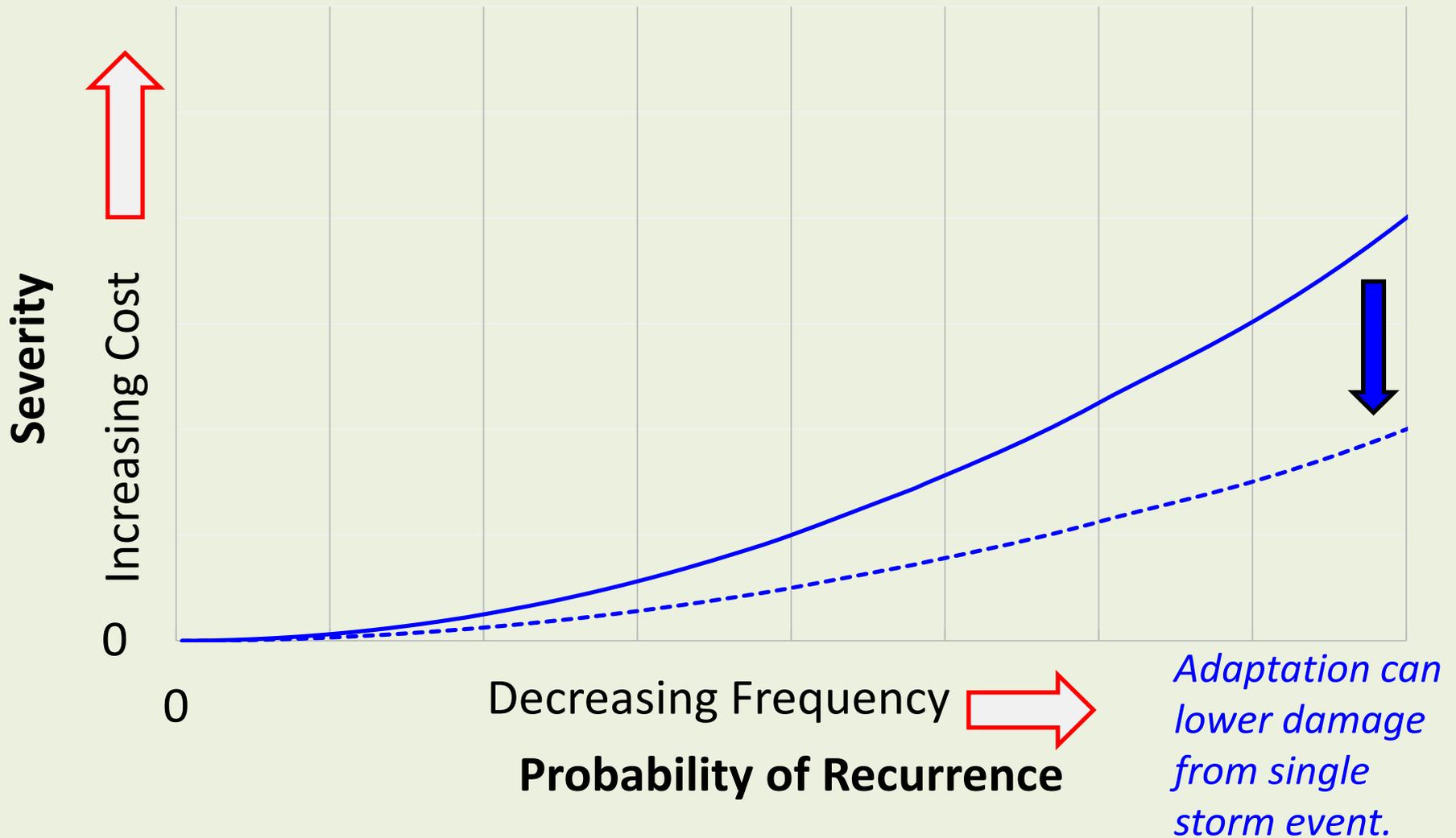
## 2) Property Value Analysis

- Pros
  - Provide analysis about potential rapid swings in home values as a result of flooding
  - Could be conducted using data from a sample of school districts rather than conducting a full regional analysis
- Cons
  - Analysis is both labor and data intensive

# 3) Economic Impact from Adaptation

- Data Requirements
  - Data requirements are extensive, and include: damage estimates from the Direct Cost Estimation, cost & effectiveness of adaptation techniques, interaction between adaptation efforts
- Quality of Results
  - Extremely sensitive to the quality of data, particularly with regards to adaptation

# Effect of Adaptation



# 3) Economic Impact from Adaptation

- Pros
  - Gets to the real policy question of what adaptation techniques are justified, i.e. a cost benefit analysis
- Cons
  - The engineering data related to adaptation is highly technical, requiring analysis at both the site and regional level

# Tires & Beach Prisms vs Nourishment



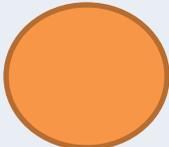
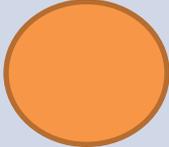
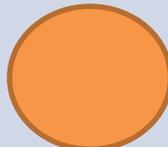
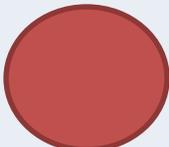
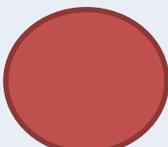
# 4) Economic Drag From Sea Level Rise

- Data Requirements
  - Data produced in the Direct Damage Analysis
  - Survey/historical data indicating response of businesses and households to flooding
- Quality of Results
  - The results would be ***Extremely*** sensitive to assumptions
  - It would be difficult to have confidence in estimates utilizing these techniques

# 4) Economic Drag From Sea Level Rise

- Pros
  - Only method that would get to the full cost of climate change
  - Would include a more developed impact on different socioeconomic groups
- Cons
  - Would be exceptionally timely and expensive to produce, with results that would be lacking in credibility

# Conslussion

	DATA Availability/Quality	Labor Intensity Clear/Clear Methodology	Quality and Applicability of Results
Direct Damage Estimation			
Property Value Analysis			
Economic Impact of Adaptation			
Economic Drag from Sea Level Rise			

# Questions

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