Metropolitan Washington, District Of Columbia (MD, DC, and VA) Coastal Storm Risk Management Feasibility Study

Study Summary

Air and Climate Public Advisory Committee

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BACKGROUND

The District of Columbia metro area was identified in the North Atlantic Coast Comprehensive Study (NACCS) as an area warranting further analysis:

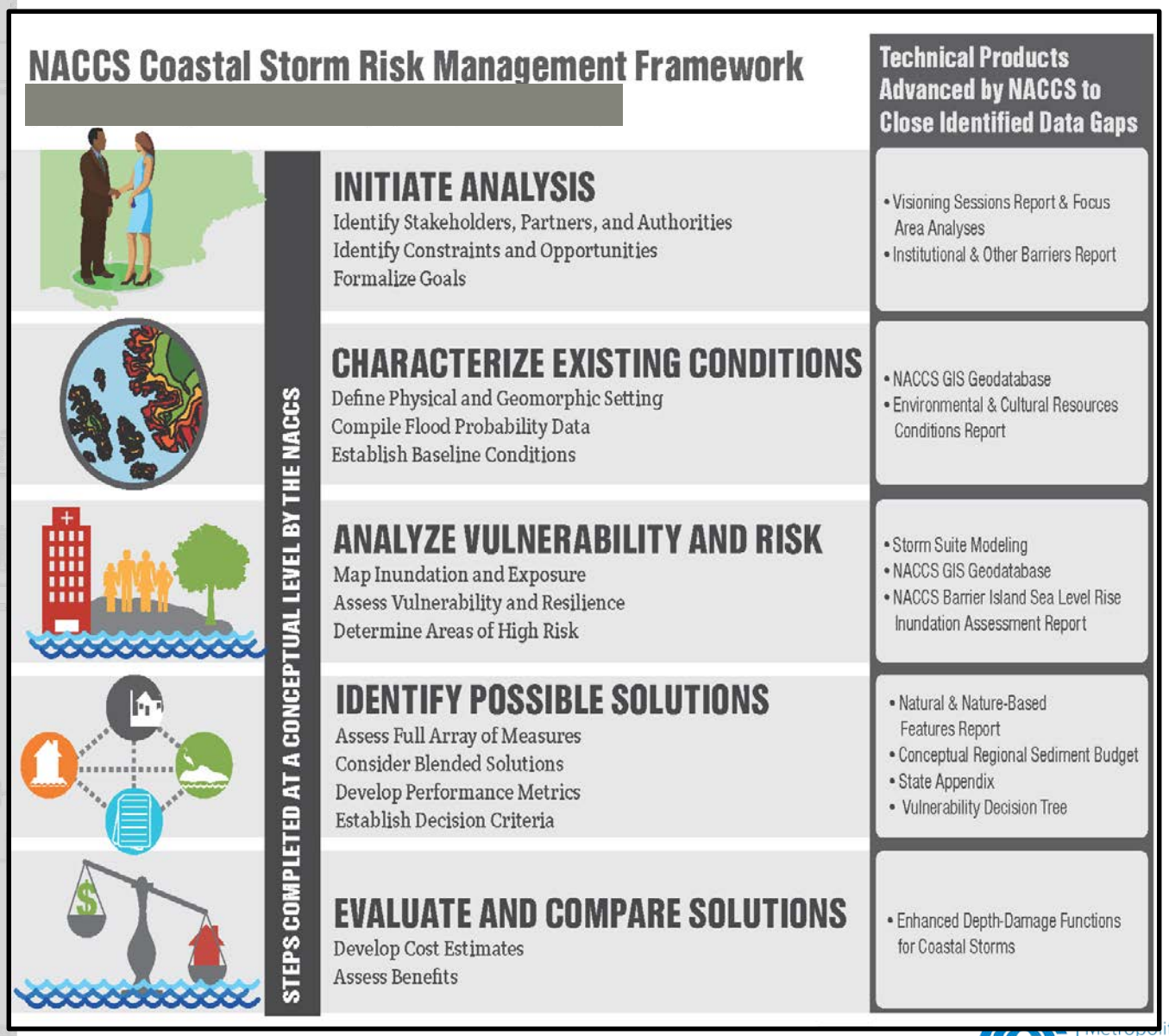
- NACCS completed January 2015: http://www.nad.usace.army.mil/CompStudy.aspx
- Nine focus areas warranting further analysis by USACE
  - Four studies currently underway
- Opportunity for USACE to use existing authority to investigate coastal flooding problems in the District of Columbia metro area

Superstorm Sandy, 2012

COASTAL STORM RISK MANAGEMENT FRAMEWORK

- **Who and what** is exposed to flood risk?
- **Where** is the flood risk?
- What are the **appropriate strategies** and measures to reduce flood risk?
- What is the **relative cost** of a particular strategy compared to the anticipated risk reduction?
- What **data are available** to make **RISK INFORMED decisions**?
- How can the **science be advanced/data gaps closed** through the study?

TECHNICAL PRODUCTS SUPPORTING THE FRAMEWORK



Products, planning tools, and models were developed to assist decision makers in going through the Coastal Storm Risk Management Framework

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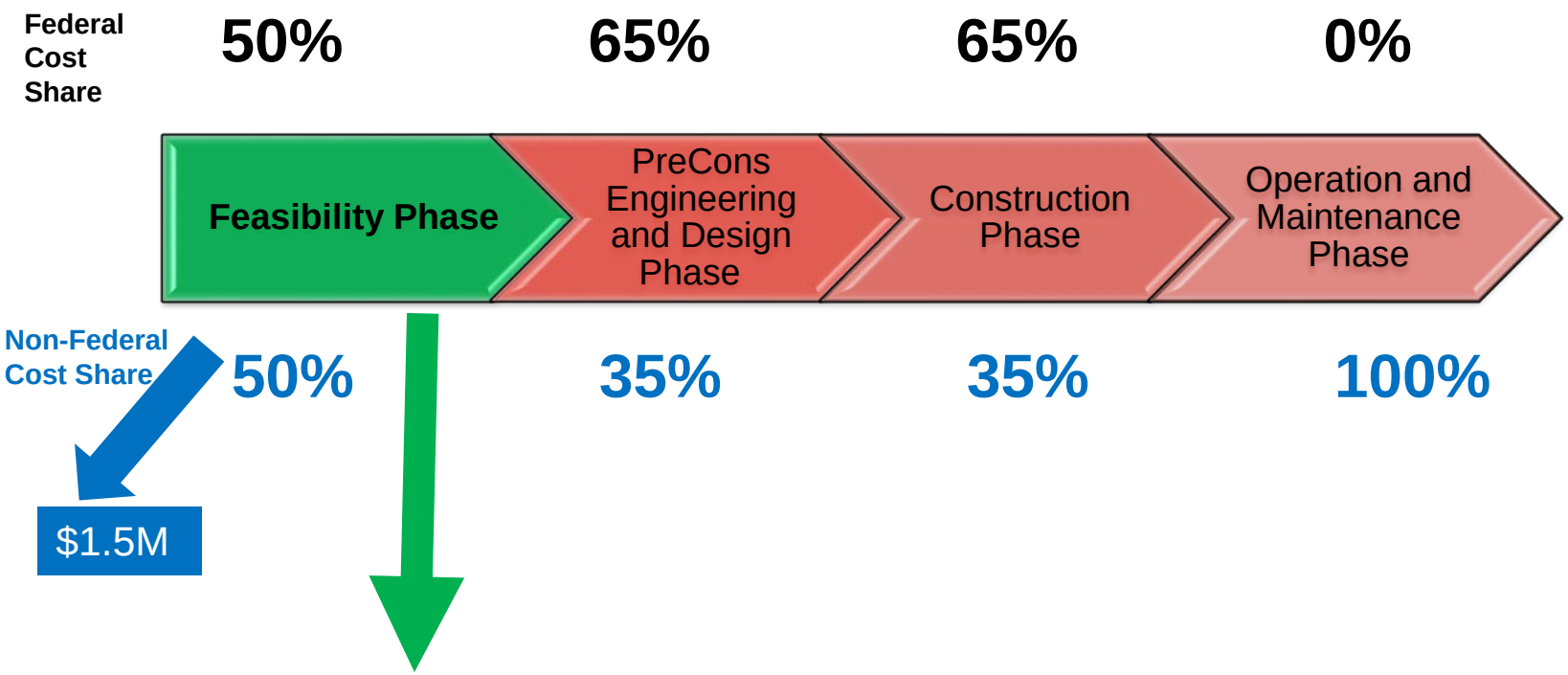
USACE CIVIL WORKS PROJECT DEVELOPMENT "FEASIBILITY STUDY"



- **Regional approach that yields local benefits**
- USACE Feasibility Study – end state is one constructible project, $3M, 3 years to complete
- *In the study efforts, **multiple projects** may be identified*

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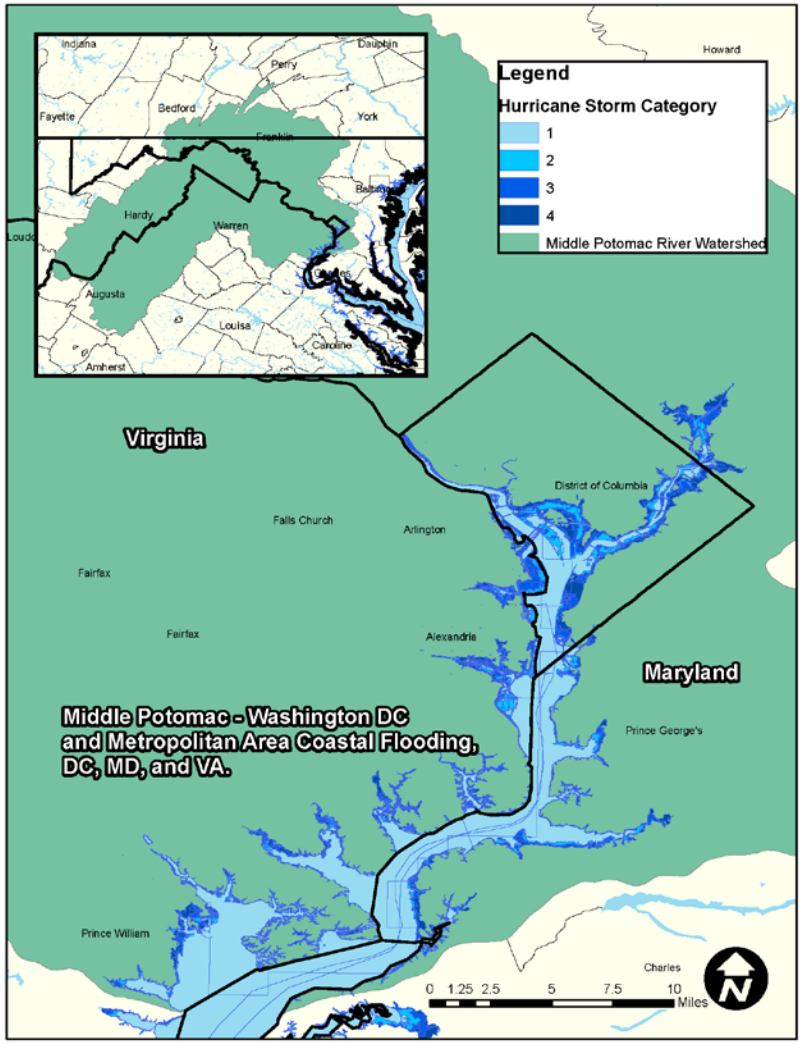
STATUS

- USACE and MWCOG signed a cost-sharing agreement to conduct the study on 18 July 2017
- Three year study
- $3M budget (50-50-percent federal and non-federal cost-sharing contributions)
  - NCPC
  - Jurisdictions
  - Other entities



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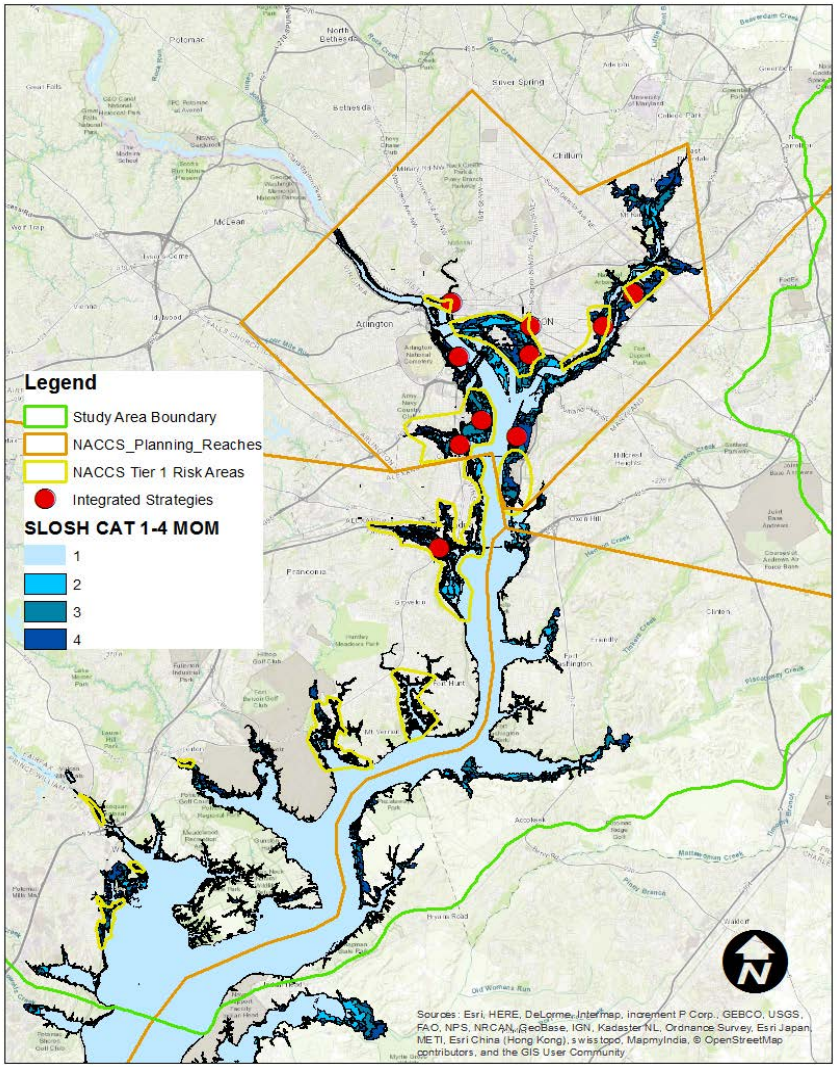
PURPOSE OF THE STUDY

- Need for comprehensive flood risk assessment
- Shared responsibility of all levels of government
- Rethink approach to adapting to risk
- Improve community resilience and sustainability



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COLLABORATIVE EFFORT

"No matter how it's done, addressing sea-level rise is expensive. In November, the Army Corps of Engineers told the much-larger city of Norfolk, just across the James River, that it would cost $1.8 billion to build flood walls, storm-surge barriers and tidal gates around the city. Norfolk has secured a $120 million grant from the Department of Housing and Urban Development and the Rockefeller Foundation to begin that work….

…City officials also are banking on the fact that if their flood-mitigation plans work, property values will rise, boosting tax revenue that could help pay for the effort….

"If we're not proactive, there's going to be a financial impact, as well as civil instability," Tuck said."

The city is working on creating breakwaters in parts of the bay, dredging certain channels and replenishing beaches to make them more resilient to waves.

https://www.washingtonpost.com/local/virginia-politics/this-coastal-towns-battle-against-sea-level-rise-could-offer-lessons-for-others/2018/07/26/8c7e43a2-8b6c-11e8-85ae-511bc1146b0b_story.html?utm_term=.c6374a0d509c

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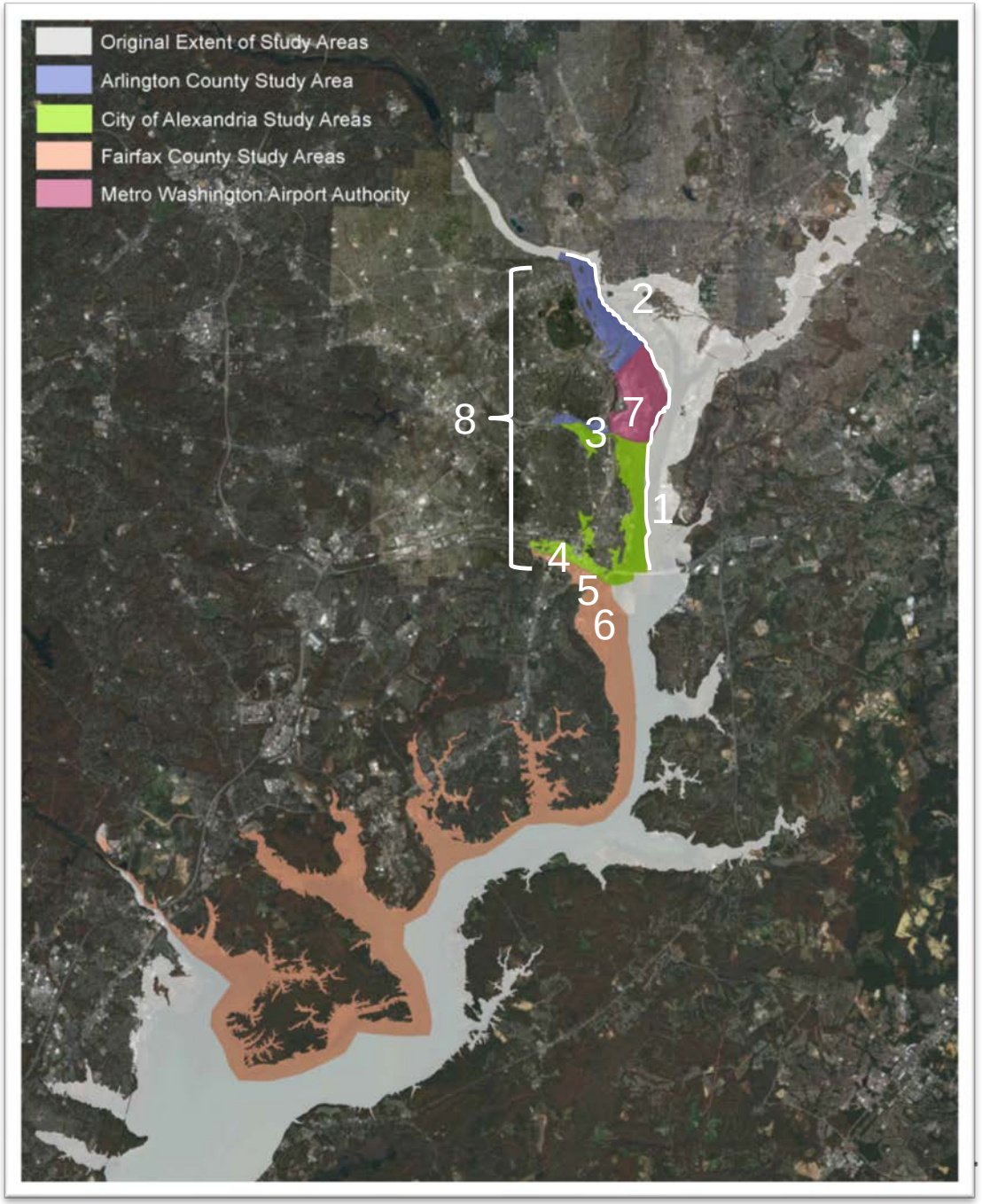
RISK AREAS

1. Potomac waterfront – Alexandria
2. Potomac waterfront – Arlington
3. Four Mile Run (less vulnerable than before FRM project but still needs help; Arlington Water Pollution Control Plant; parking areas associated with Reagan Airport)
4. Cameron Run (upstream of beltway)
5. Huntington (riverine and tidal flooding)
6. Belle View (tidal flooding)
7. Reagan National Airport
8. Metro/transportation in NOVA

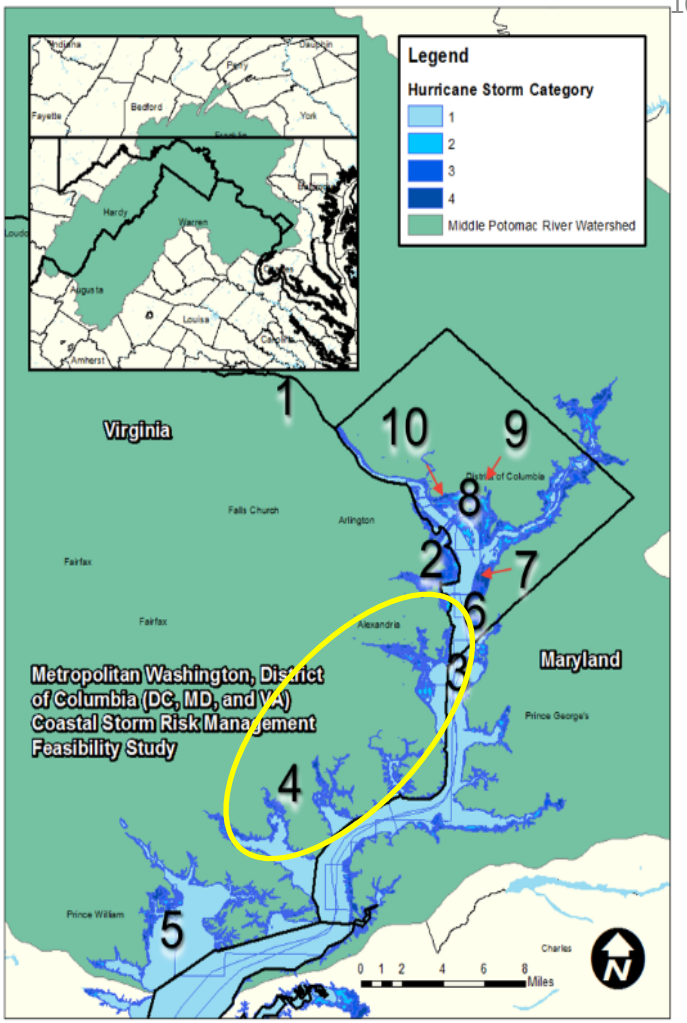


STUDY HIGHLIGHTS

<u>During this Study:</u>

- Evaluate existing flood risk structures and measures
- Investigate current/known flooding problems
- Assess flooding problems using future scenarios with respect to coastal storm surge and sea level rise
- Identify a range of possible solutions - structural, non-structural, and natural and nature-based features (e.g., **Green Infrastructure**)

- **Assess Economic Damages:**
  - **Structure inventory and valuation**
  - **Number of properties impacted, property type, and demographics (e.g., vulnerable communities)**



- **Most studies to date have not used an economic approach**
- **Allow jurisdictions to prioritize work efforts and budget decisions – based on quantifiable 'risk assessments'**

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EXAMPLE PROJECT TYPES
FLOOD MITIGATION MEASURES AND STRATEGIES

This map shows various coastal storm damage risk management strategies communities can use to adapt to increased flood risk by 2100 (at a non-specific location). Although specific communities should consider a range of all possible solutions based on site-specific conditions, not all strategies to reduce coastal storm damage risk are structural solutions. A text-only version of this information is available at the bottom of the page.

http://www.nad.usace.army.mil/CompStudy/

STUDY - OUTCOMES

1. Comprehensive coastal storm risk management strategies
   - Riverine & precipitation considerations
   - Coastal storm + sea level change scenarios
   - Inland drainage connected to coast
2. Vulnerability assessment – region-wide, plus targeted analysis
   - Critical infrastructure & system interdependencies
   - Determine damage and failure thresholds
3. Recommendations for Corps and local actions to address or mitigate risks
   - USACE structural or non-structural projects
   - Potential local actions
   - Locations TBD