METROPOLITAN WASHINGTON DC COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

Northern Virginia (NoVA) Coastal

Open House September 11, 2019

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"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."





OPENING REMARKS

Steve Walz, Metropolitan Washington Council of Governments

PRESENTATION

Jacqui Seiple, US Army Corps of Engineers

OPEN HOUSE PURPOSE

- Introduce the study to the public
- Obtain public input into problems & opportunities
- Discuss study schedule and further opportunity for input

WE NEED YOUR INPUT

- Comment cards
- Post-it notes for problems & opportunities identification
- Study email address: <u>MetroDCCoastalStudy@usace.army.mil</u>







BACKGROUND NORTH ATLANTIC COAST COMPREHENSIVE STUDY

North Atlantic Coast
Comprehensive Study:
Resilient Adaptation to
Increasing Risk
MAIN REPORT
Final Report
January 2015
NACCS Coas

NACCS (2015) was a detailed study to evaluate **coastal storm risk vulnerability** to populations, property, ecosystems, and infrastructure affected by Hurricane Sandy in the North Atlantic.

NACCS Coastal Storm Risk Management Framework (Repeat initial five steps for each Tier 1, 2, and 3 Evaluations) INITIATE ANALYSIS Identify Stakeholders, Partners, and Authorities Identify Constraints and Opportunities Determine Spatial and Temporal Scale of Analysis CHARACTERIZE CONDITIONS Define Physical and Geomorphic Setting Compile Flood Probability Data Establish Baseline Conditions and Forecast Future Conditions ANALYZE RISK AND VULNERABILITY Map Inundation and Exposure Assess Vulnerability and Resilience Determine Areas of High Risk IDENTIFY POSSIBLE SOLUTIONS Assess Pull Array of Measures Consider Blended Solutions Develop Performance Metrics Establish Decision Criteria EVALUATE AND COMPARE SOLUTIONS Develop Cost Estimates Assess Benefits SELECT PLAN

- Identified 10 areas

 particularly vulnerable
 to coastal storms,
 including the DC

 Metropolitan Area and northern Virginia
- Developed a framework for coastal storm risk management

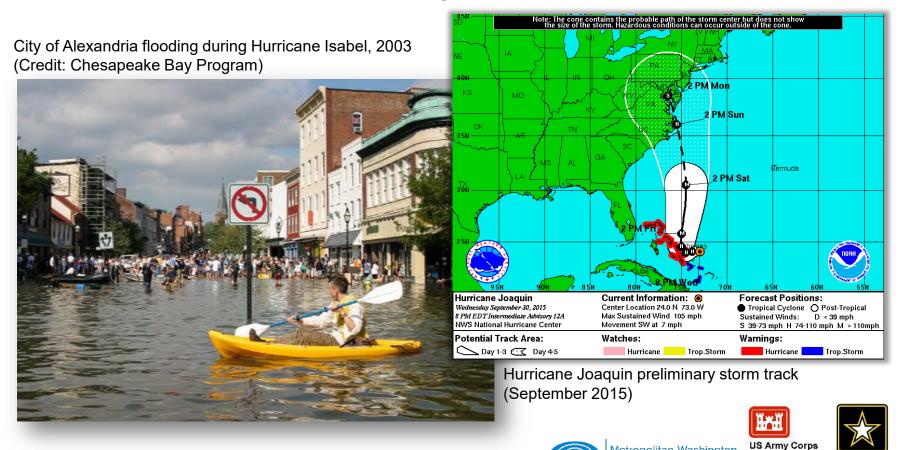






NOVA COASTAL – STUDY GOALS

Reduce coastal flood risk to vulnerable populations, properties, infrastructure, and environmental and cultural resources considering future climate and sea level change scenarios to support resilient communities in northern Virginia.



Metropolitan Washington

Council of Governments

of Engineers

Baltimore District

STUDY PARTNERS





Metropolitan Washington

Council of Governments













Feasibility Cost Sharing
Agreement signed between
the Army Corps and
Metropolitan Washington
Council of Governments
(COG)

COG representing:

- Commonwealth of Virginia
- Arlington County
- Fairfax County
- City of Alexandria
- Prince William County
- Metropolitan Washington Airport Authority







STUDY AREA

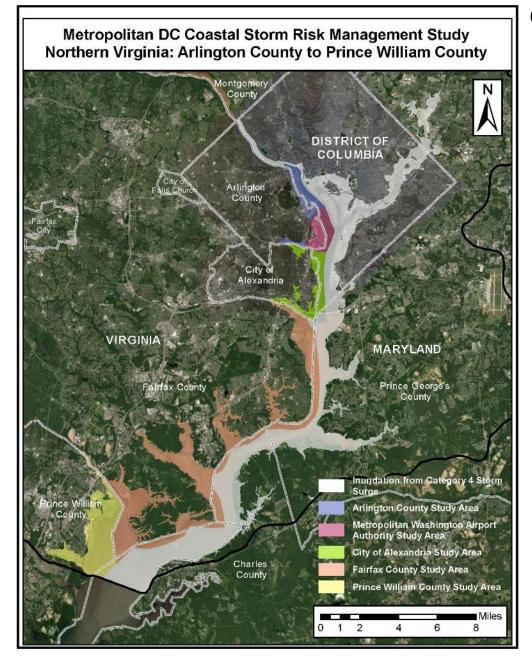
Defined by Category 4 storm

Identifying High Risk Areas:

- Study partner input
- NACCS vulnerable areas
- Flood inundation mapping



Example – Flood inundation mapping for Potomac River stage of 12 ft (NAVD88)



PLANNING STRATEGY

Analyze risk & vulnerability:

- Determine economic damages from coastal flooding.
 - Structure inventory
- Identify critical infrastructure & weakness
- Evaluate vulnerable populations
- Identify environmental & cultural resources
- Determine **future conditions** (e.g., sea level rise)

Identify & evaluate a range of possible solutions:

- Structural (e.g., breakwaters, jetties, levees)
- Non-Structural (e.g., structure elevation, flood proofing)
- Natural and Nature-Based Features (e.g., marsh restoration, oyster reefs)



Example – flood inundation overlaid on structure/infrastructure maps



Structural - breakwater



Non-Structural - elevation

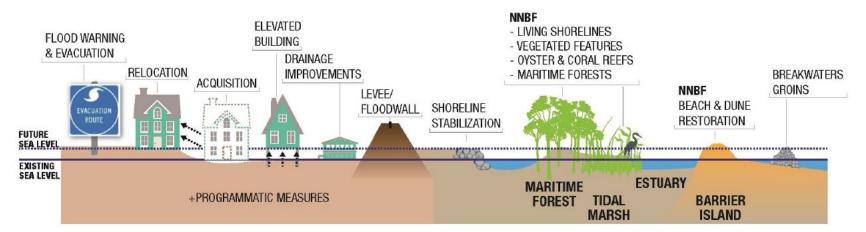




PLANNING STRATEGY

Recommend Solution:

- Calculate damages and the reduction in risk by implementing various solutions
- Calculate a Benefit to Cost Ratio (BCR) benefits of the recommended plan compared to costs to construct & maintain
- Analyze environmental and cultural impacts of the recommendation
- Consider social acceptability of the recommendation







STUDY PRODUCTS

- Flood Inundation Mapping
- Damage Assessment (structures and infrastructure vulnerability)
- Study Report
 - Recommendation for a plan to reduce coastal flood damages
 - Designs & Costs for Recommended Plan
 - Leads to congressional authorization for cost-shared engineering and construction of a project
- Environmental Impact Statement



Flooding in Huntington, Fairfax County







STUDY SCHEDULE

Scoping Alternative Evaluation Feasibility Analysis of Washington-& Analysis Selected Plan level Review

Milestone Name	Date
Study Start	July 2019
Public Open House	September 2019
Public Meeting on Proposed Recommendation	Mid-2020
Release Draft Report for Public Review	September 2020
Chief's Report (Submit report to Congress)	July 2022





STUDY POINTS OF CONTACT

Study Website: https://www.nab.usace.army.mil/NOVA_Coastal_Study/

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