

# Virginia Silver Jackets Interagency Multi-Hazard Tournament Scoping Meeting

21 March 2016

Michelle Hamor  
Chief, Flood Plain Management Services  
U.S. Army Corps of Engineers, Norfolk District



# Why a Multi-Hazard Tournament?

- **It challenges people to think systemically (watershed vs. political boundary) within constraints.**
- **It allows teams (local governments) to plan in a safe environment.**
- **It is flexible in its application, so can engage with a range of data models and issues.**

# So why is MHT different?

- **It is more complex than previous efforts as it can integrate multiple hazards.**
- **The approach differs from shared vision planning as it is more participatory, intense and engaging.**
- **It captures the cross training of a workshop with the additional focus generated by friendly competition.**

# Goals and Objectives

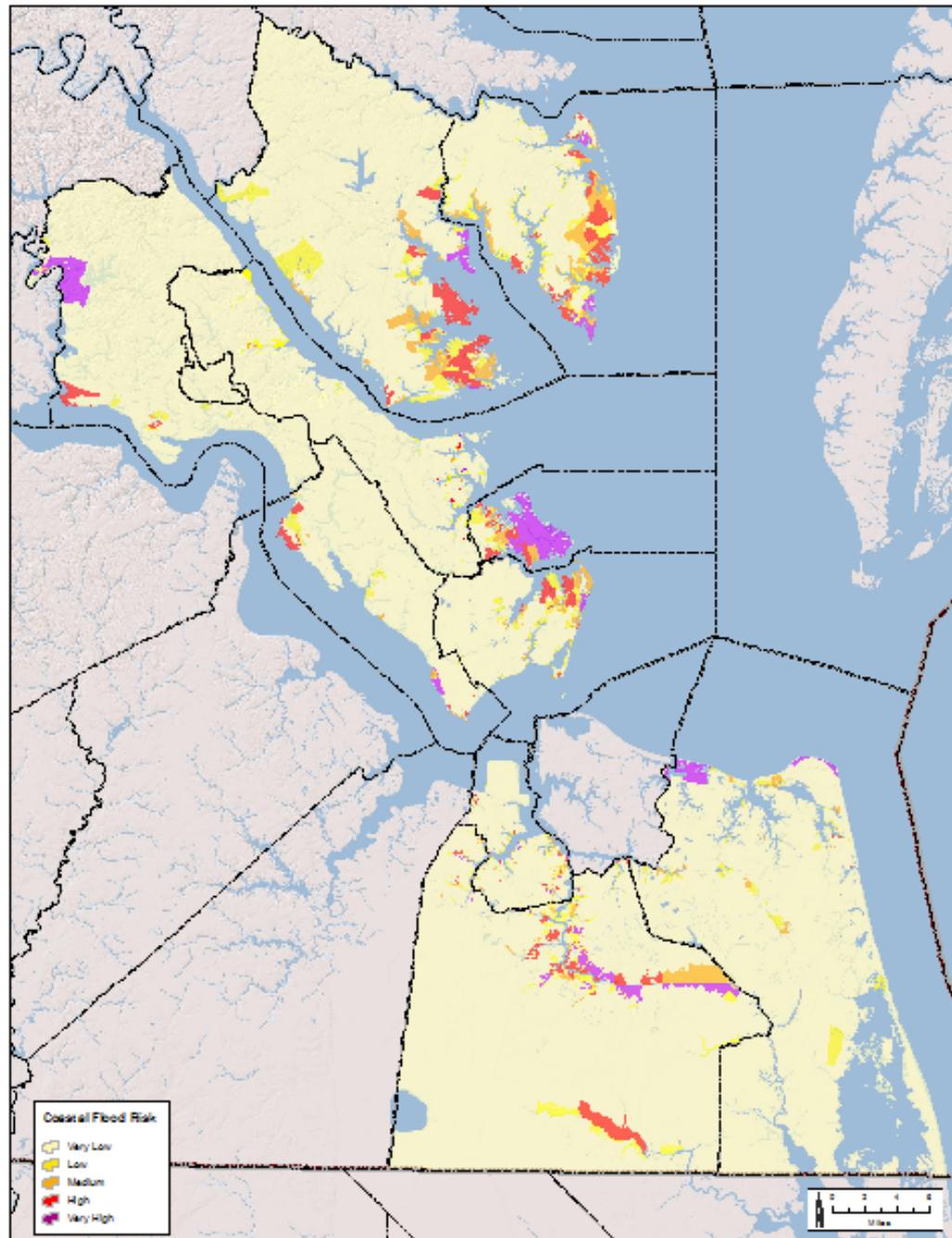
## ■ **Goals -**

- **Enhance Community Emergency Management Capability (Poquoson Goal 3)**
- **Gather Hazard-Related Data to Refine Risk Assessment and Target Mitigation Funds (Poquoson Goal 4)**

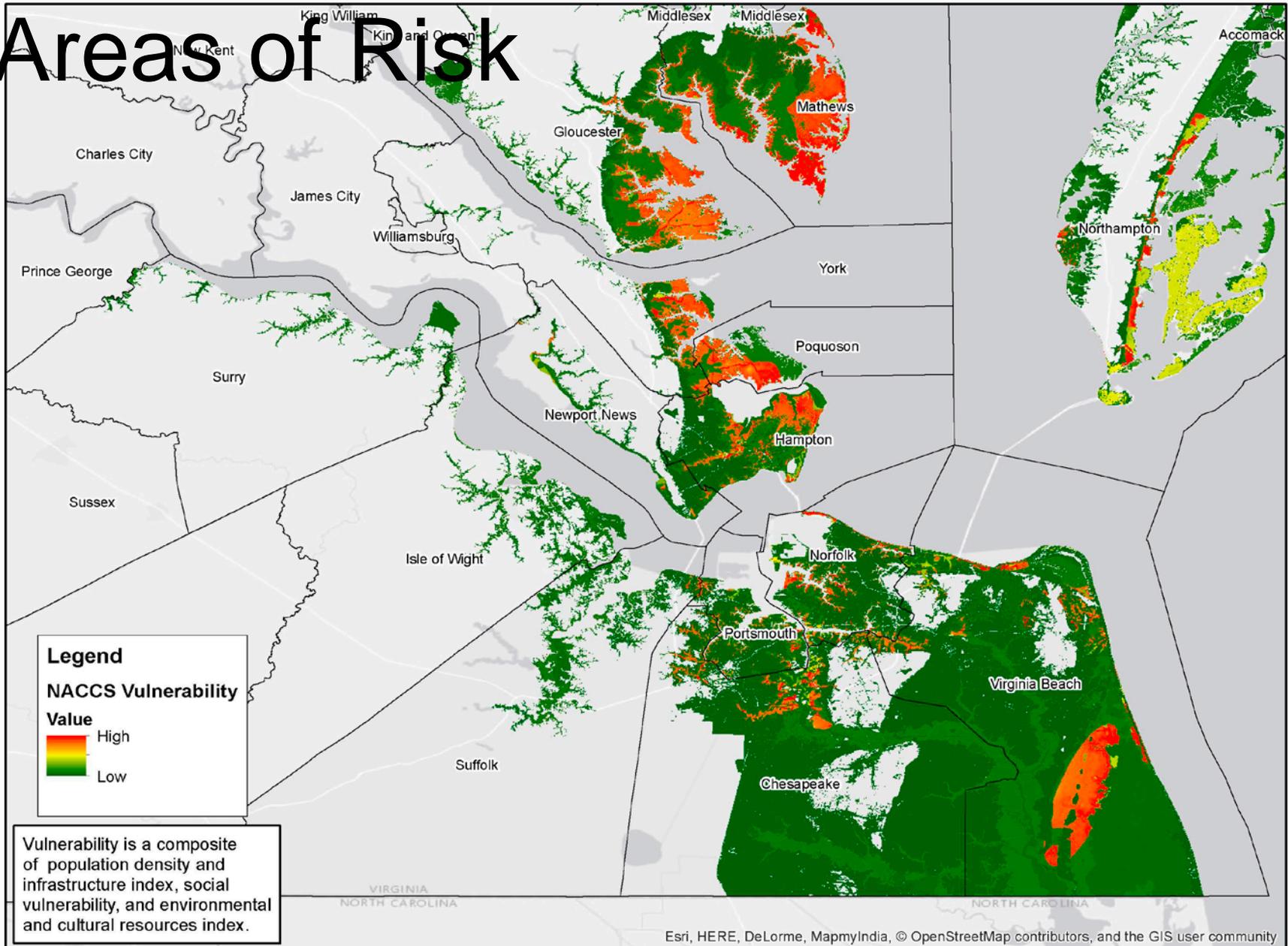
## ■ **Objectives**

- **1a - Increase Training and event exercise opportunities for staff (Poquoson Objective 3.3)**

# Flood Risk Map: Hampton Roads



# Areas of Risk



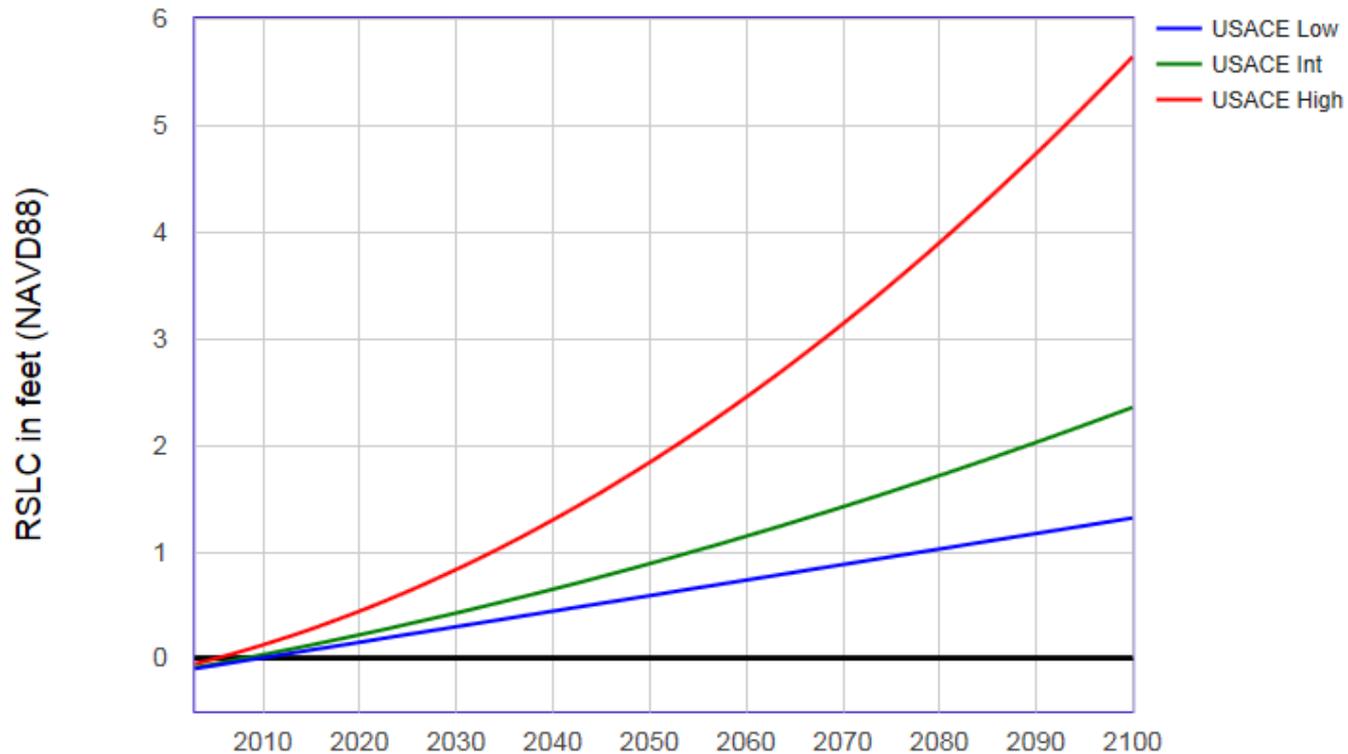
# Areas of Risk

8638610, Sewells Point, VA  
 NOAA's Published Rate: 0.01457 feet/yr  
 All values are expressed in feet relative to NAVD88

Year	USACE Low	USACE Int	USACE High
2003	-0.10	-0.09	-0.06
2005	-0.07	-0.06	-0.01
2007	-0.04	-0.02	0.04
2009	-0.01	0.01	0.10
2011	0.02	0.05	0.15
2013	0.05	0.09	0.21
2015	0.08	0.12	0.27
2017	0.10	0.16	0.34
2019	0.13	0.20	0.40
2021	0.16	0.24	0.47
2023	0.19	0.28	0.55
2025	0.22	0.32	0.62
2027	0.25	0.36	0.70
2029	0.28	0.40	0.79
2031	0.31	0.44	0.87
2033	0.34	0.49	0.96
2035	0.37	0.53	1.05
2037	0.40	0.58	1.15
2039	0.43	0.62	1.24
2041	0.45	0.67	1.34
2043	0.48	0.71	1.45
2045	0.51	0.76	1.55
2047	0.54	0.81	1.66

8638610, Sewells Point, VA  
 NOAA's Published Rate: 0.01457 feet/yr

Relative Sea Level Change Projections - Gauge: 8638610, Sewells Point, VA (05/01/2014)



# List of Management Measures

## IV. COASTAL STORM RISK MANAGEMENT FRAMEWORK FOR VULNERABLE COASTAL POPULATIONS

Table IV-4. Coastal Storm Risk Management and Resilience Attributes Associated with the Full Array of Measures

Aggregated Measure Type <sup>1</sup>	Category <sup>2</sup>	Coastal Storm Risk Management Function			Multi-Benefits <sup>3</sup>	Resilience
		Flooding	Wave Attenuation	Erosion		Adaptive Capacity <sup>4</sup>
Acquisition (building removal) and relocation <sup>5</sup>	Non-STR	High	High	High	High	High
Building retrofit (e.g., floodproofing, elevating structures, relocating structures, ringwalls)	Non-STR	High	Low	Low	Low	Low
Enhanced flood warning and evacuation planning (early warning systems, emergency response systems, emergency access routes)	Non-STR	Low	None	None	Low	High
Land use management/conservation and preservation of undeveloped land, zoning, and flood insurance	Non-STR	Medium	None	None	High	Medium
Deployable floodwalls	STR	Medium	None	None	None	Low
Floodwalls and levees	STR	High	Low	None	Low	Low
Shoreline stabilization (seawalls, revetments, bulkheads)	STR	Low	High	High	Low	Low
Storm surge barriers	STR	High	Medium	None	Low	Low
Barrier island preservation and beach restoration (beach fill, dune creation)	STR/NNBF	High	High	Medium	High	High
Beach restoration and breakwaters	STR/NNBF	High	High	High	High	Medium
Beach restoration and groins	STR/NNBF	High	High	High	High	Medium
Drainage improvements (e.g., channel restoration, water storage/retention features)	STR/NNBF	Medium	Low	Medium	Medium	Low
Living shorelines	STR/NNBF	Low	Medium	Medium	High	High
Overwash fans (e.g., back bay tidal flats/fans)	NNBF	Low	Medium	High	Medium	High
Reefs	NNBF	Low	Medium	Medium	High	High
Submerged aquatic vegetation	NNBF	Low	Low	Low	High	Medium
Wetlands	NNBF	Low	Medium	Medium	High	High

<sup>1</sup> An extensive list of management measures was compiled as part of the NACCS Measures Working Meeting in June 2013. The measures presented here represent an aggregated list of the categories of measures and corresponding conceptual parametric unit cost estimates.

<sup>2</sup> STR = structural measure, Non-STR = nonstructural measure, and NNBF = Natural and Nature-Based Features measure. Multiple measures are listed if the aggregated measure type is made up of a combination of measures.

<sup>3</sup> Multi-benefits focus on socioeconomic contributions to human health and welfare above and beyond the risk management benefits already highlighted in this table (i.e., flooding, wave attenuation, etc.). These benefits could include increased recreational opportunities, development of fish and wildlife habitat, provisioning of clean water, production of harvestable fish or other materials, etc.

<sup>4</sup> Adaptive capacity is the assessment of a measure's ability to adjust with changing conditions and forces (including sea level change) through natural processes, operation and maintenance activities, or adaptive management, to preserve the measure's function.

<sup>5</sup> Acquisition, relocation, and buyouts do not actually prevent flooding and erosion but remove the population and associated development from its effects.

# Next Steps

## *Tournament Phases*

### *Scoping Phase*

- USACE District Champion Identification,
  - Stakeholder Identification,
  - Problem and Objectives definition
    - Resource Identification

### *Technical Development and Logistics,*

- Scenario development,
  - Describe the impact of the hazard,
  - Definition of the types of adaptation options,
  - Identify the effects, tradeoffs and synergies of alternation adaptation choices by eliciting expert opinion or modeling,
  - Develop the decision support tool,
    - Create workbook
- Complete the logistics (Invitations, recruit referees, etc.)
  - Design of agenda

### *Testing and Implementation*

- Dress rehearsal,
- Actual tournament,
- Post tournament evaluation

### *Documentation*

- Post tournament reports,
  - Articles

# Questions?

