Eastern Shore of Virginia Regional Hazard Mitigation Plan

Kick Off Meeting Agenda

- Welcome and Introductions
- Brief Hazard History of the Shore
- **Hazard Mitigation Planning – Requirements & Process**
- BREAK
- Planning Activity 1: Steering Committee & Planning Council
  - Participant Expectations
  - Establish dates & times for monthly Steering Committee meetings
- Planning Activity 2: Review ES Hazards & Ranking Process

Eastern Shore of Virginia

Hazard Mitigation Plan Update

The Eastern Shore of Virginia HAZARD MITIGATION PLAN **2016**

Eastern Shore Hazard Mitigation Steering Committee
Accomack-Northampton Planning District Commission

FEMA

- Describe your expectations for how the Plan will affect your locality/organization?

- ⓘ Start presenting to display the poll results on this slide.

What is a Mitigation Plan?

Hazard images credit: vectorstock.com

A plan of policies and sustained actions to reduce or eliminate the long-term risk to human life and property from hazards

Most basic elements:

- Requires jurisdictions to identify hazards and their vulnerabilities to them
- Identify goals, strategies and actions to reduce losses caused by these hazards

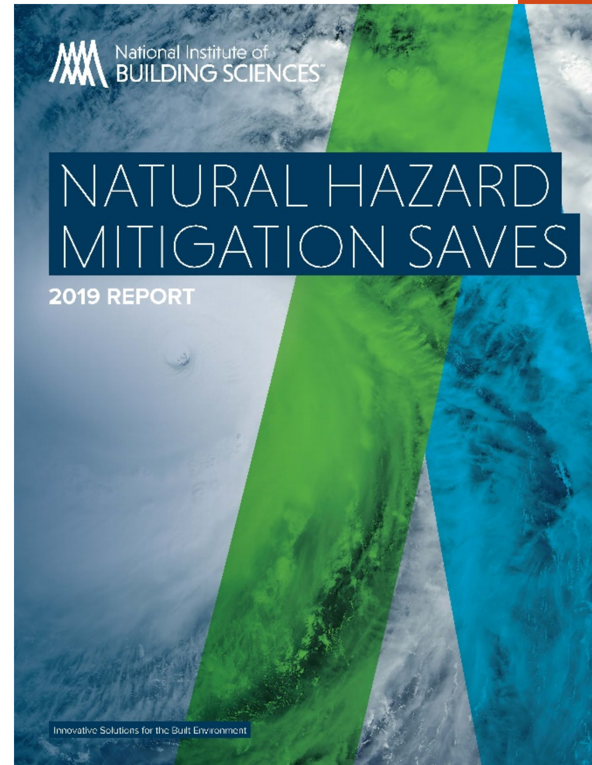
Why Is This Plan Important?

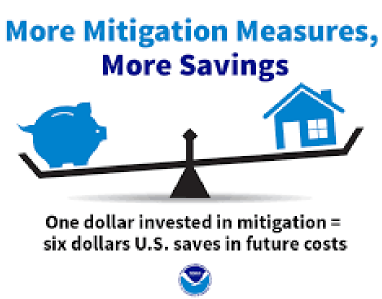
- Guides Post-Disaster Recovery
- Involves Multiple Community Stakeholders
- Promotes Public Participation
- Evaluates Hazards & Risks
- Builds Support for Mitigation Activities
- Helps Educate Community Officials and Public
- Helps Develop More Effective Community Policies

Mitigation Saves

- The <u>Natural Hazard Mitigation Saves: 2019 Report</u> represents the most exhaustive benefit-cost analysis of natural hazard mitigation, from adopting up-to-date building codes and exceeding codes to addressing the retrofit of existing buildings and utility and transportation infrastructure.

- The Table summarizes benefit-cost ratios for mitigation measures the team examined.





National Institute of BUILDING SCIENCES

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
Overall Benefit-Cost Ratio	11:1	4:1	4:1	4:1	6:1
Cost ($ billion)	$1/year	$4/year	$520	$0.6	$27
Benefit ($ billion)	$13/year	$16/year	$2200	$2.5	$160
Riverine Flood	6:1	5:1	6:1	8:1	7:1
Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
Wind	10:1	5:1	6:1	7:1	5:1
Earthquake	12:1	4:1	13:1	3:1	3:1
Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

HMA Hazard Mitigation Assistance

Mitigation Minute

FEMA

✓ Yes! Building Codes Save

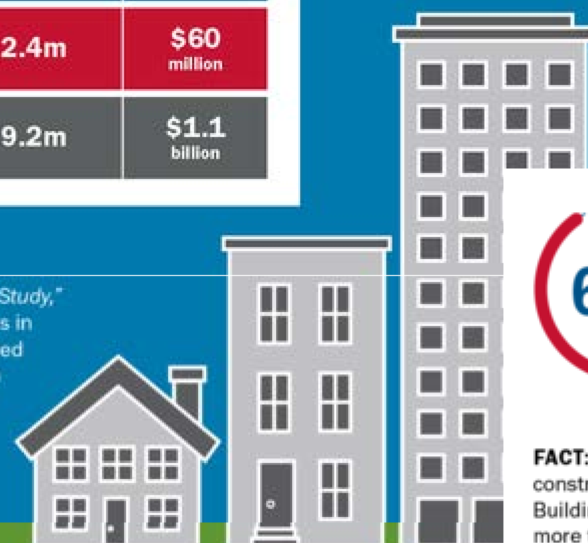
And FEMA Hazard Mitigation Grants Support Building Code Activities

FEMA has found that one of the most cost-effective ways communities can safeguard against natural disasters is to adopt and follow hazard-resistant building codes. For this reason, the agency is providing grant funds to incentivize the adoption and enforcement of modern building codes nationwide.

Building Codes Save
National Findings of Modeled I-Code® Savings

Total Losses Avoided *Based on building and content damage*	**Number of Post-2000 Structures**	**Money Saved** annually, on average
Flood	786k	$484 million
Seismic	2.4m	$60 million
Hurricane Wind	9.2m	$1.1 billion

The new FEMA study, *"Building Codes Save: A Nationwide Study,"* shows that modern building codes lead to major reductions in property losses from natural disasters. The analysis revealed that over a 20-year period cities and counties with modern building codes would avoid at least $132 billion in losses from natural disasters, when compared to jurisdictions without modern building codes.



$132 BILLION

Estimated reduction in property losses based on forecasted consistent growth associated with use of modern building codes from 2000-2040.*

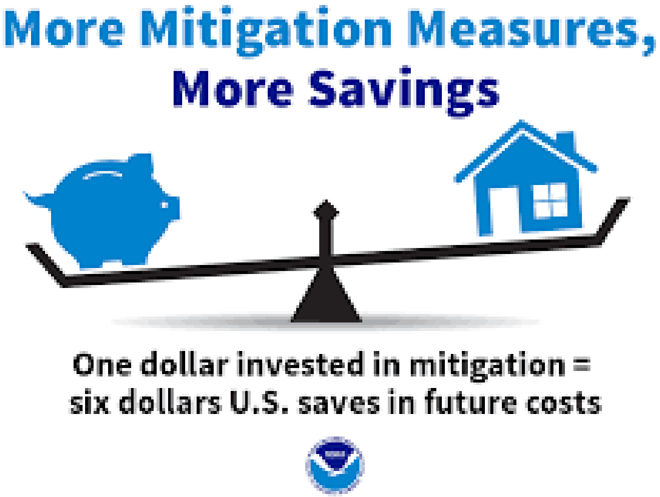
65% of counties, cities, and towns across the U.S. today still have **not** adopted modern building codes.

FACT: For every $1 society spends on construction using the 2018 International Building Codes (I-Codes©), it saves $11 more than it does when building using the 1990-era design codes. It can take years to recover from disasters, which is why the cost of not adopting modern building codes is too high.

Why Is This Plan Important?

- Required under the Disaster Mitigation Act of 2000
- Future federal funding is contingent on having a mitigation plan, including eligibility for the following FEMA programs:
  - Hazard Mitigation Grant Program (HMGP)
  - ~~Pre-Disaster Mitigation (PDM)~~
  - Building Resilient Infrastructure and Communities (BRIC)
  - Flood Mitigation Assistance (FMA)
  - Fire Management Assistance Grant (FMAG)
  - Public Assistance Grant Program (PA)

- Additionally, impacts programs like:
  - U.S. EDA
  - Virginia Community Flood Preparedness Fund



How this Plan Aligns & Integrates with Other Efforts in the Region & State

- Locality Comprehensive Plans & Capital Improvement Plans
- Regional Economic Development Plan Update
- State Resilience Plan
  - ES Climate Adaptation Working Group (CAWG) - VCZMP
  - Virginia Community Flood Preparedness Fund – VDCR & RGGI
- Water Supply Plan & Groundwater Supply Protection and Management Plan
- Transportation Planning
- Disaster Preparedness Coalition
- Others?

44 CFR Part 201

Statutory Planning Requirements

- ✓ Process Description
- ✓ Public Involvement
- ✓ Hazard Location
- ✓ Hazard Extent
- ✓ Previous Occurrences
- ✓ Probability
- ✓ Vulnerability
- ✓ Impacts to Assets
- ✓ Potential Loss Estimates
- ✓ Analyze Development Trends
- ✓ Mitigation Goals
- ✓ Mitigation Objectives
- ✓ Mitigation Actions and Projects
- ✓ Prioritization Process
- ✓ Cost Beneficial Alternatives
- ✓ Implementation Options
- ✓ Monitoring, Evaluating, and Updating Process
- ✓ Schedule for Plan Maintenance
- ✓ Continued Public Involvement
- ✓ Incorporate Process with Other Initiatives
- ✓ Plan Adoption

Saxis Harbor, VA; Photo: Randy Peterson

Hazard Mitigation Plan Chronology

- 2006: First ESVA Regional (multi-jurisdictional) Hazard Mitigation Plan approved & adopted
- 2010-2011: ESVA HMP Committee reforms to update 2006 Plan
    - December 2011: 2011 HMP Adopted
- 2014-2016: ESVA HMP Committee reforms to update 2011 Plan
    - All participating jurisdictions adopted by the end of January 2017
- 2020: ESVA HMP Committee reforms to update 2016 Plan
    - August 2021 draft Plan must be submitted to VDEM
    - January 2022 jurisdictions must adopt approved Plan

What's new this iteration?

- Updated HAZUS models, with new data and figures/maps
- Codified entire document, aligns with regulatory requirements
- Room for improvement:
  - Consolidate
  - Make sure Climate Change content is robust
  - Include more 'future conditions' data – land use patterns, demographic changes, climate change
  - Include additional partners/stakeholders in the Planning Council
- Include Pandemic response, preparation, etc.
- FEMA "Community Lifelines"

Community Lifelines

- Agriculture
- Arts & Culture
- Equity
- Electric Power
- Municipal Finance
- Public Health
- Transportation
- Telecommunications

Community Lifelines

		COMMUNITY LIFELINES						
HAZARD	PROJECT NAME	Safety & Security	Food, Water, Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
All Hazards	County-wide Mitigation Education	X	X	X	X	X	X	X
Pandemic	County-wide provide PPE			X				
Utility Interruption								
Terrorism	County-wide educate mitigating attacks	X						
Flood, Ice Jams	West Mead Twp. Stormwater drainage on Alden St.		X				X	
	Venango Twp. Stormwater drainage on Center Rd.		X				X	
	Vernon Twp. Install structures to prevent ice jam on French		X				X	

Next Steps….

2022 ESVA HMP Update Schedule

January Committee Meeting
- Edit Document & Update Data/HAZUS
- Work with Planning Council
- HIRA

February Committee Meeting
- Locality Meetings & Chapter Updates
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- Committee approve final Draft
- Submit to VDEM

Localities must Adopt FEMA/VDEM approved Plan in by end of January 2022!

Hazard Mitigation Planning

Sign up for Northampton County Citizen Alert with EverBridge

Sign up for Accomack County Community Enrollment with CodeRED

2022 Eastern Shore Hazard Mitigation Plan Rewrite Underway!

The Eastern Shore Hazard Mitigation Plan identifies policies and actions that can be taken over time to reduce losses from natural and hazards, as well as those created by –or helped along – by humans. These preventive actions protect our community – our friends, family, employees, neighbors, business owners, and their properties. They reduce exposure to risk and curb financial losses. With support from the Virginia Department of Emergency Management (VDEM) and the Federal Emergency Management Agency (FEMA), the A-NPDC is facilitating this process with localities, agencies, organizations, and stakeholders in our region.

Past Eastern Shore Hazard Mitigation Plans

- 2011 ESVA Hazard Mitigation Plan
- 2006 ESVA Hazard Mitigation Plan

Coastal Resources Management

Climate Adaptation Working Group

Ocean & Marine Planning

Technical Assistance Program

Hazard Mitigation Planning

For More Information Contact:
Shannon Alexander
Director of Planning
757.787.2936 x.115
salexander@a-npdc.org

2016 Eastern Shore Hazard Mitigation Plan chapters are available independently below, or the entire document can be downloaded, but it is a large file. The Plan will be updated again in 5 years. Please send any feedback, comments, or suggestions to salexander@a-npdc.org or call 757-787-2936 ext. 115. Thank you!

Entire draft full final report: FullHMP2016 (last revised March 30, 2017) (39.4 MB)

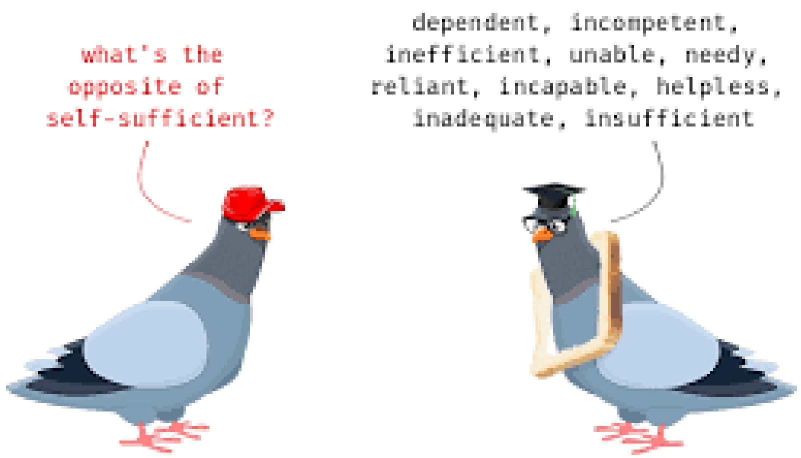
- Introduction

1. Chapter 1 Hazards on the Shore
2. Chapter 2 Planning Process (revised March 30, 2017)
3. Chapter 3 Risk Assessment
4. Chapter 4 High Wind
5. Chapter 5 Coastal Erosion
6. Chapter 6 Coastal Flooding
7. Chapter 7 Stormwater
8. Chapter 8 The Region
9. Chapter 9 Accomack County
10. Chapter 10 Northampton County
11. Chapter 11 Town of Bloxom
12. Chapter 12 Town of Cape Charles
13. Chapter 13 Town of Cheriton
14. Chapter 14 Town of Chincoteague
15. Chapter 15 Town of Eastville
16. Chapter 16 Town of Exmore
17. Chapter 17 Town of Hallwood
18. Chapter 18 Town of Keller
19. Chapter 19 Town of Melfa
20. Chapter 20 Town of Nassawadox
21. Chapter 21 Town of Onancock
22. Chapter 22 Town of Onley
23. Chapter 23 Town of Parksley
24. Chapter 24 Town of Saxis
25. Chapter 25 Town of Tangier
26. Chapter 26 Wachapreague (revised March 30, 2017)
27. Chapter 27 Mitigation Action Development (revised March 30, 2017)
28. Chapter 28 Accomack County Mitigation Strategies (revised March 30, 2017)
29. Chapter 29 Northampton County Mitigation Strategies (revised March 30, 2017)
30. Chapter 30 Town of Chincoteague Mitigation Strategies (revised March 30, 2017)
31. Chapter 31 Mitigation Funding Options

- Appendix A References
- Appendix B Process for Hazus Risk Analysis
- Appendix C Storm Surge Methodology
- Appendix D Meetings & Outreach (added March 30, 2017)
- Appendix E Adoption Resolutions (added June 7, 2017)

2016 Vision Statement

As a result of planning and mitigation actions, damage and disruption will be minimized during natural hazard events. Federal and state agencies cooperate with the local government and guide necessary resources to the governments for recovery activities. To the extent possible, residents will be self-sufficient and will have taken responsibility for their own economic and physical protection. Infrastructure smoothly functions throughout the event and the recovery period following.



2016 Mitigation Goals

•Goal 1 - **Local Governments Guide a Comprehensive Mitigation Program Including Public Education and Ongoing Hazard Assessments.**

•Goal 2 - **Residents, Businesses, Local Governments, and Other Community Partners Will Work Together to Minimize Community Disruption Through Planning and Residential and Commercial Mitigation Activities.**

•Goal 3 - **Local Governments Encourage Self-sufficiency and Personal Responsibility for Managing Risk.**

•Goal 4 - **Local Governments Will Work to Ensure That Infrastructure Will Continuously Function During and After a Hazard Event.**

•Goal 5 - **Local Governments Will Make Efforts to Reach Special Needs Populations.**

2016 Mitigation Strategies (Locality Specific)

Identified Mitigation Goals & Strategies – Accomack County

Goal 1 - Local Governments Guide a Comprehensive Mitigation Program Including Public Education and Ongoing Hazard Assessments

Strategy 1.1 - **Train County staff for mitigation duties.**

Strategy 1.2 – **Promote mitigation programs throughout the County.**

Goal 2 - Residents, Businesses, Local Governments, and other Community Partners Will Work Independently and Together to Minimize Community Disruption Through Planning and Mitigation Activities

Strategy 2.1 - Reduce damages from flooding.
Strategy 2.2 – Reduce damages from non-flooding natural disasters, if that type of event occurs.

Goal 3 - Local Governments Encourage Self-sufficiency and Personal Responsibility for Managing Risk

Strategy 3.1 - **Educate the public about their responsibility to respond safely and effectively during a disaster.**

Strategy 3.2 - **Educate the public about their responsibility in reducing and insuring their own risks.**

Goal 4 - Local Governments Will Work to Ensure That Infrastructure Will Continuously Function During and After a Hazard Event

Strategy 4.1 - **Maintain safe traffic flow in case of wide scale power loss.**

Strategy 4.2 - **Maintain emergency service functions in case of wide-scale power loss.**

Goal 5 - Local Governments Will Make Efforts to Reach Special Needs Populations

Strategy 5.1 – **Define and identify special needs populations in the County.**

Strategy 5.2 - **Assure migrant population has access to County emergency response efforts.**

Strategy 5.3 - **Assure Tangier Island residents have access to County emergency response efforts.**

Mitigation Projects/Actions

Goal 2 - Residents, Businesses, Local Governments, and other Community Partners Will Work Independently and Together to Minimize Community Disruption Through Planning and Mitigation Activities

Strategy 2.1 - **Reduce damages from flooding.**
Strategy 2.2 – **Reduce damages from non-flooding natural disasters, if that type of event occurs.**

Priority Rank	Accomack County – Goal 2: Description of Projects	Hazard(s) Addressed	Responsible Department	HMP Year / Start Timeline	Status as of 2011	Status as of 2016
1	Formalize and maintain the Residential Mitigation Project Waiting List	ALL	Accomack Co. Building & Zoning (ACB&Z)	2006 / 2006	Ongoing	Ongoing
1	Drainage Survey of Nelsonia, north of Fisher Corner and Route 13	Storm Water Flood, Biohazard	VDOT, Accomack Co. Public Works	2006 / 2008	Not Complete	Not Complete
1	After any presidentially declared disaster, manage Residential and Commercial Mitigation Projects that address the most critical damage that has occurred.	ALL	ACB&Z	2006 / Post-declared disaster	Ongoing	Ongoing
1	Continue a comprehensive drainage plan that identifies specific projects to improve drainage.	Flood	Accomack Co. Public Works, VDOT	2011 / Ongoing	Ongoing	Ongoing
1	Amend the future land use map and zoning ordinance to direct high density development away from critically eroding shorelines identified as high erosion areas (loss of greater than one foot per year) in the VIMS Shoreline Situation Report for Accomack County.	Erosion	Accomack Co. Planning	2011 / Ongoing	Ongoing	Ongoing
1	Mitigate public infrastructure against damage caused by natural disasters. For example, hurricane shutters, flood-proofing, etc.	ALL	Accomack Co. Public Works	2011 / Post-declared disaster	Ongoing	Ongoing
1	Mitigation of flood prone properties (to include, but not limited to acquisition, elevation, relocation, and dry and wet flood proofing of flood prone structures, and mitigation reconstruction for NFIP defined SRL properties only).	Flood	ACB&Z	2011 / Post-declared disaster	Not Started	Ongoing

Projects/Actions Prioritization

Identified Mitigation Projects – town of Chincoteague

Goal 1 - Local Governments Guide a Comprehensive Mitigation Program including Public Education and Ongoing Hazard Assessments

Strategy 1.1 – Ensure emergency management and government operations can continue during and after a hazard event.

Strategy 1.1 – Complete hazard assessment mapping and Storm Water Master Plan to better inform Town Council decisions and public outreach efforts.

Priority Rank	Town of Chincoteague – Goal 1: Description of Projects	Hazard(s) Addressed	Responsible Department	HMP Year / Start Timeline	Status as of 2011	Status as of 2016	Add'l. Info.
1	Set a regional compatibility standard for emergency communications	ALL	ESDPC	2006	Funding attained, Pending	Ongoing	
1	Perform GIS mapping project to evaluate incremental flooding issues.	Flood	Chincoteague Planning & Zoning	2012	Not Started	Not Started	Staff Expertise
1	Study and map critical infrastructure including new FEMA wave analysis.	Flood	Chincoteague Planning & Zoning	2013	Not Started, awaiting FEMA map updates	Not Started	Staff Expertise, Coordination
1	Implement the Storm Water Master Plan	Storm Water Flood, Biohazard	Chincoteague Planning & Zoning	2017	-	Ongoing	
1	Investigate potential tertiary locations for a Chincoteague Emergency Operation Center located off the island and in northern Accomack County	ALL	Emergency Services Coordinator	2009	Ongoing	Ongoing	
1	The Causeway: raise, retrofit, or replace with a bridge so that the island is still accessible during flooding events.	Flood	VDOT	2016	-	Not Started	Funding, Coordination
1	Outfit the Community Center for a shelter of last resort.	ALL	Chincoteague Planning & Zoning	2016	-	Not Started	Funding
Completed Projects							
---	Conduct a Phase 2 Storm Water Master Plan to improve drainage infrastructure for the Town and mitigate flooding hazards.	Storm Water Flood, Biohazard	Chincoteague Dept. of Public Works	Ongoing	Phase 1 Complete	Phase 2 Incomplete	Funding, Staff Expertise

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- **BREAK**
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- Planning Activity 2: Review ES Hazards & Ranking Process

- 10 Minute Break

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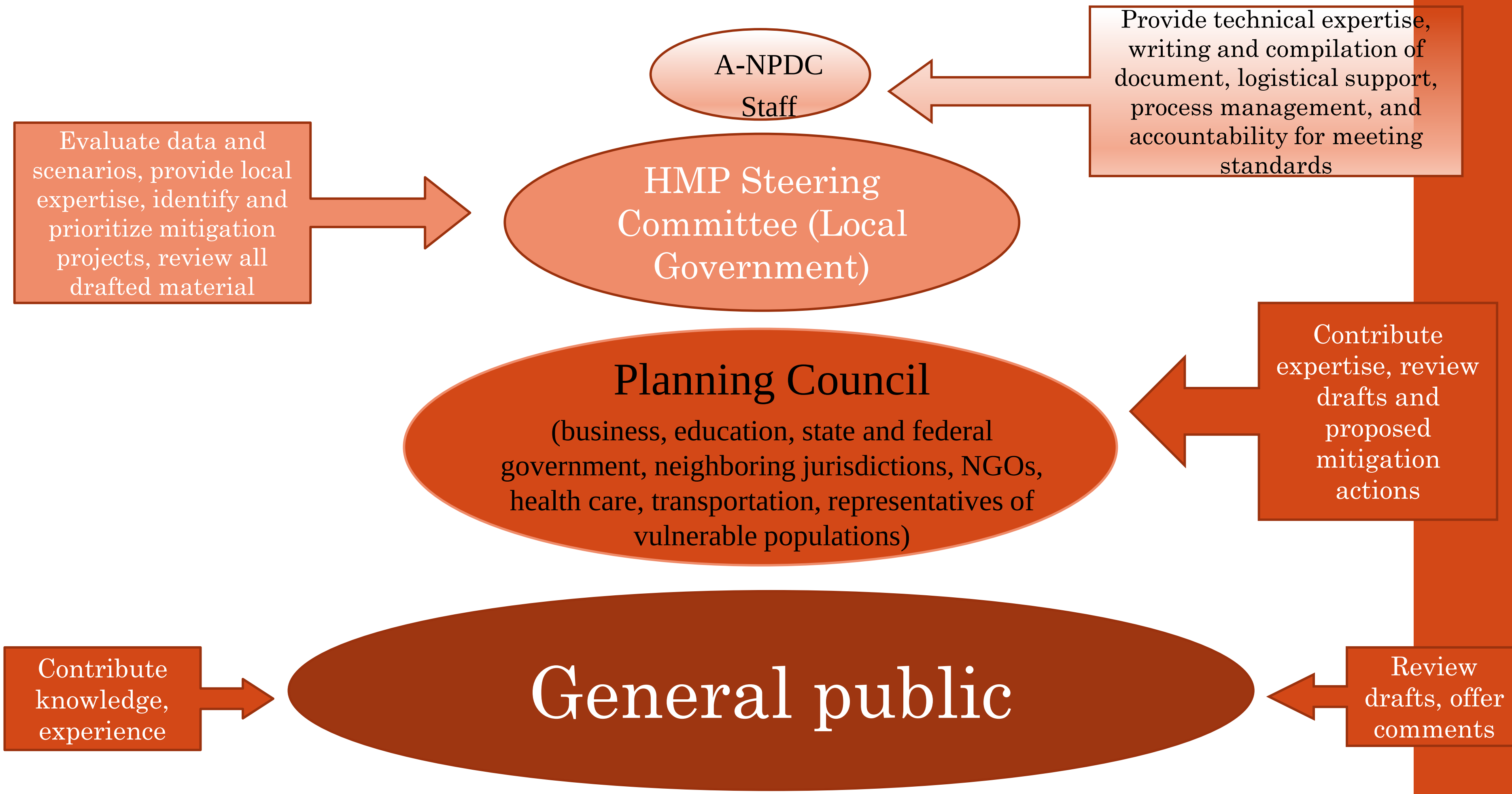
Eastern Shore Hazard Mitigation Plan

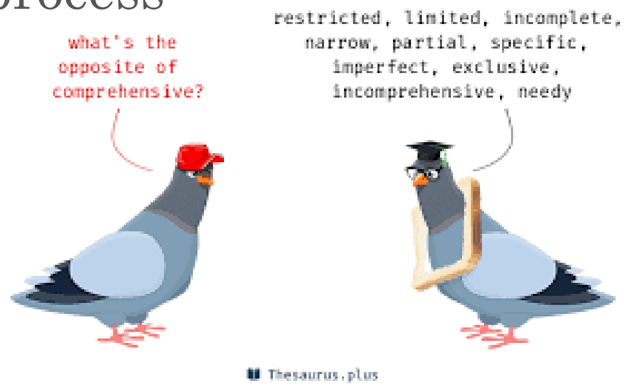


Steering Committee

- Representatives from participating Towns & Counties
- Attend at all Committee meetings
  - Participate in THIRA
  - Collaboratively develop Strategies
- Relay information to their locality staff and elected officials
- Contribute local knowledge to the Plan and particularly to their locality chapter
  - Critical infrastructure
  - New resilience/mitigation projects status
  - Review updated Census/ACS data
  - Unique vulnerabilities
  - Appropriate actions

Planning Council

- Representatives from local, regional, state agencies and organizations
- Ranging from historical and cultural non-profits, to social services, to neighboring county governments
- Invited to participate in all Steering Committee meetings & receive all the same materials as those Committee members
- Respond to A-NPDC staff information requests as needed during the writing/editing process



Monthly Steering Committee Meetings

2021 Calendar with Holidays

January

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August

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HAZUS Presentation

- Thomas Hicks of the Berkley Group

Hazard Identification

Hazard images credit: vectorstock.com

Hazard Prioritization

Hazard Type	2016 Plan Ranking	2011 Plan Ranking	2006 Plan Ranking	Probability	Impacts: Affected Structures	Impacts: Primary Impact	Impacts: Secondary Impact	Mitigation Options	Total Score
High Wind	High	High	High	2.96	2.92	2.58	2.67	1.79	12.92
Coastal Erosion	High	High	High	2.96	2.83	2.46	2.58	1.83	12.67
Coastal Flooding	High	High	High	2.96	2.96	2.46	2.63	1.67	12.67
Storm Water Flooding	High	High	High	2.92	2.63	2.38	2.38	2.17	12.46
Well Contamination	Medium	Unranked	Unranked	2.00	2.17	1.96	1.75	2.04	9.92
Ice-Snow	Medium	Medium	Medium	2.46	2.13	1.50	2.13	1.67	9.88
Biological Hazards**	Medium	Unranked	Unranked	2.35	1.63	1.71	1.83	1.88	9.39
Drought	Medium	Medium	Medium	2.13	1.63	2.13	1.88	1.46	9.21
Sewage Spills	Medium	Medium	Unranked	2.00	1.79	1.58	1.79	1.83	9.00
Wildfire	Low	Medium	Low	1.75	1.96	1.71	1.67	1.71	8.79
Hazardous Materials Incidents*	Low	Low	Low	2.04	1.42	1.38	1.71	1.92	8.46
Heat Wave	Low	Low	Medium	2.42	1.38	1.46	1.50	1.38	8.13
Fish Kills	Low	Unranked	Low	2.04	1.38	1.58	1.67	1.29	7.96
Invasive Envirnonmental Disease***	Low	Unranked	Unranked	2.00	1.00	1.00	1.00	2.00	7.00
Earthquake	Low	Unranked	Unranked	1.00	1.50	1.50	1.50	1.00	6.50

*Haz-Mat Incidents include oil spills, blast zone, thermo-nuclear

**Bio Hazards include invasive human diseases and pandemic pathogens

***Invasive Environmental Disease includes invasive land and water species and diseases

Risk Assessment

2016 HMP

Hazard Type	2016 Plan Ranking	Likelihood of Occurrence	Affected Structures	Primary Impact	Secondary Impact	Mitigation Options	Total Score
High Wind	High	2.96	2.92	2.58	2.67	1.79	**12.92**
Coastal Erosion	High	2.96	2.83	2.46	2.58	1.83	**12.67**
Coastal Flooding	High	2.96	2.96	2.46	2.63	1.67	**12.67**
Storm Water Flooding	High	2.92	2.63	2.38	2.38	2.17	**12.46**
Well Contamination	Medium	2.00	2.17	1.96	1.75	2.04	**9.92**
Ice-Snow	Medium	2.46	2.13	1.50	2.13	1.67	**9.88**
Drought	Medium	2.13	1.63	2.13	1.88	1.46	**9.21**
Sewage Spills	Medium	2.00	1.79	1.58	1.79	1.83	**9.00**
Wildfire	Low	1.75	1.96	1.71	1.67	1.71	**8.79**
Hazardous Materials Incidents*	Low	2.04	1.42	1.38	1.71	1.92	**8.32**
Heat Wave	Low	2.42	1.38	1.46	1.50	1.38	**8.13**
Fish Kills	Low	2.04	1.38	1.58	1.67	1.29	**7.96**
Biological Hazards**	Low	2.35	1.63	1.71	1.83	1.88	**7.46**
Invasive Envirnonmental Disease***	Low	2.00	1.00	1.00	1.00	2.00	**7.00**

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- What are the greatest hazard threats that you see for the Eastern Shore region (specifically keep in mind the jurisdiction you represent)?

- ⓘ Start presenting to display the poll results on this slide.

Regional Hazard Mitigation Plan

Thank you for your time, expertise, and commitment to improving resiliency of the Eastern Shore of Virginia!

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