

Municipal Vulnerability Preparedness Planning

Heather McElroy

May 13, 2019



EXECUTIVE ORDER 569: AN INTEGRATED CLIMATE CHANGE STRATEGY FOR THE COMMONWEALTH 9.16.16

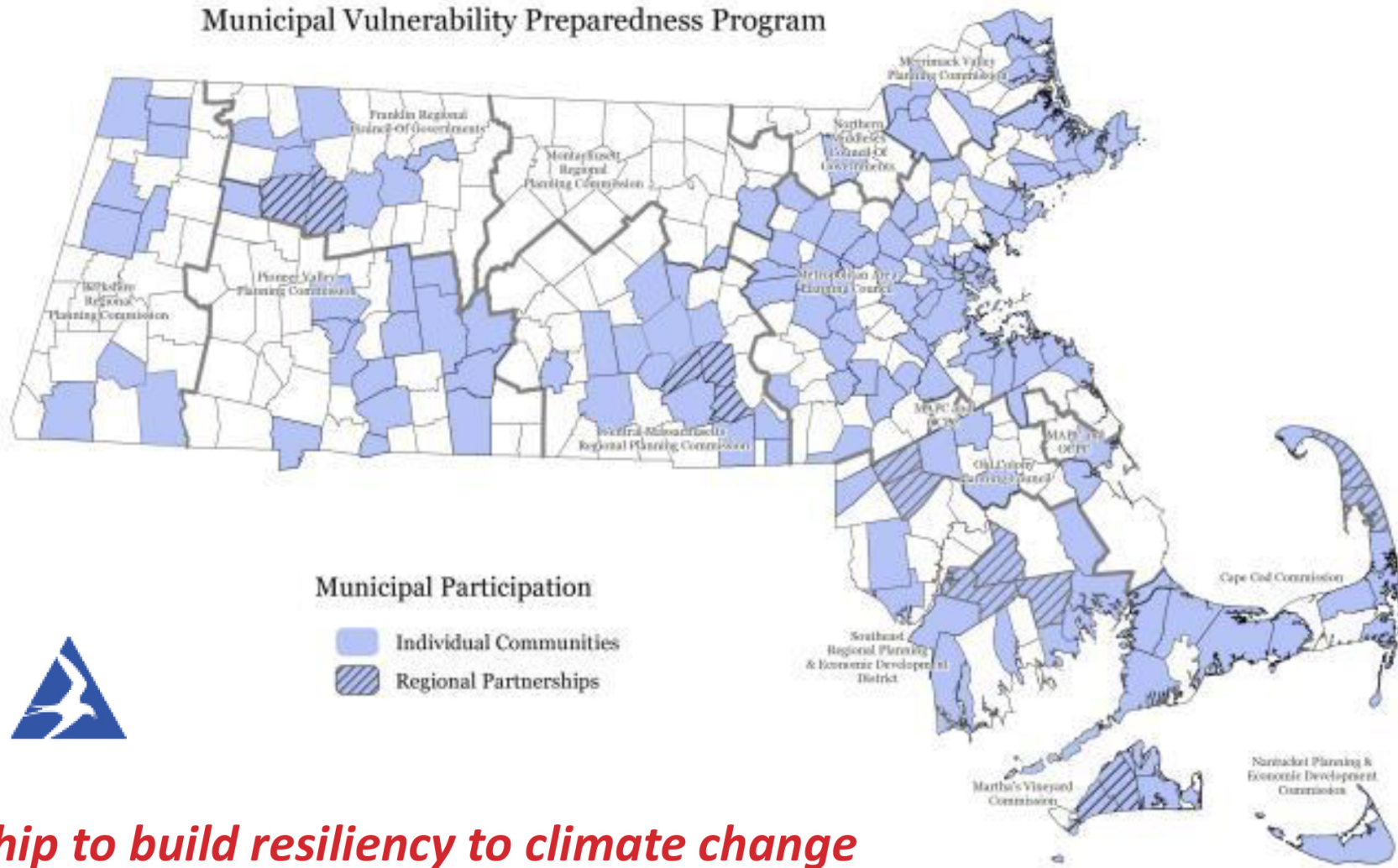


- Reducing greenhouse gas emissions to combat climate change
- Preparing for the impacts of climate change
 - State Adaptation Plan
 - Agency Vulnerability Assessments
 - Municipal Support
 - Climate Coordinators

Municipal Vulnerability Preparedness Program

Municipal Vulnerability Preparedness (MVP)

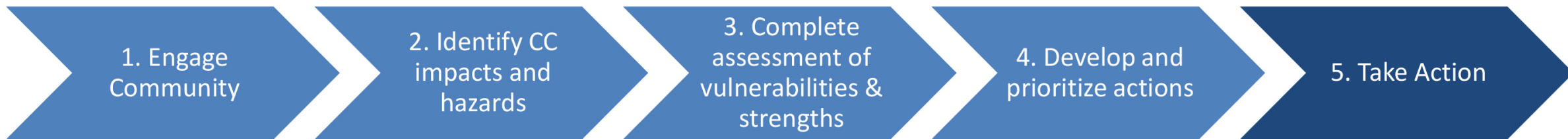
2017-2019



Municipal Participation

- Individual Communities
- Regional Partnerships

State and local partnership to build resiliency to climate change

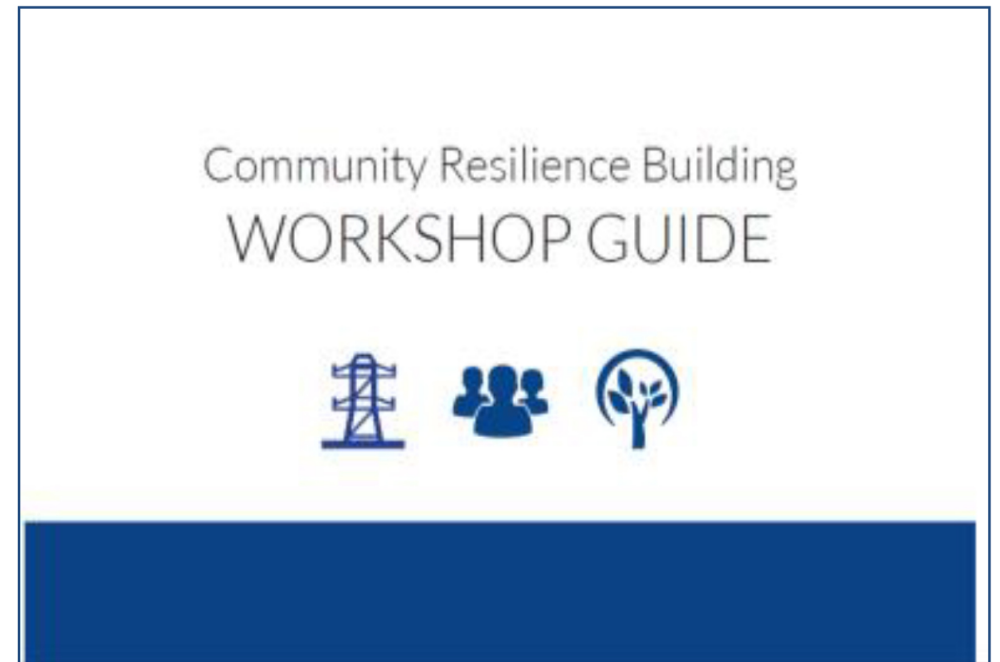


MVP Principles

- **Community-led process** that employs local knowledge and requires local buy-in and support
- **Accessible**
- **Utilizes partnerships** and leverages existing efforts
- **Mainstreams** climate change
- **See communities** as local innovators
- **Frames** coordinated statewide efforts.



The Nature Conservancy
Protecting nature. Preserving life.



Overview of the Process



**PREPARE FOR
THE WORKSHOP**



**CHARACTERIZE
HAZARDS**



**IDENTIFY COMMUNITY
VULNERABILITIES AND
STRENGTHS**



**IDENTIFY AND
PRIORITIZE
COMMUNITY
ACTIONS**



**DETERMINE
OVERALL
PRIORITY
ACTIONS**



**PUT IT ALL
TOGETHER –
FINAL REPORT**



**MOVE
FORWARD**

Project Team

MVP PROVIDER | CAPE COD COMMISSION

- Sharon Rooney - *Chief Planner*
- Heather McElroy - *Natural Resources Manager*
- Erin Perry - *Deputy Director*
- Chloe Schaefer - *Community Design Planner*
- Martha Hevenor - *Planner II*
- Anne Reynolds - *GIS Director*

MVP PROVIDER | COOPERATIVE EXTENSION

- Greg Berman - *Coastal Processes Specialist, Woods Hole Sea Grant/
Cape Cod Cooperative Extension*
- Shannon Hulst Jarbeau - *Floodplain Specialist & CRS Coordinator,
Woods Hole Sea Grant/Cape Cod Cooperative Extension*

TOWN PROJECT MANAGER



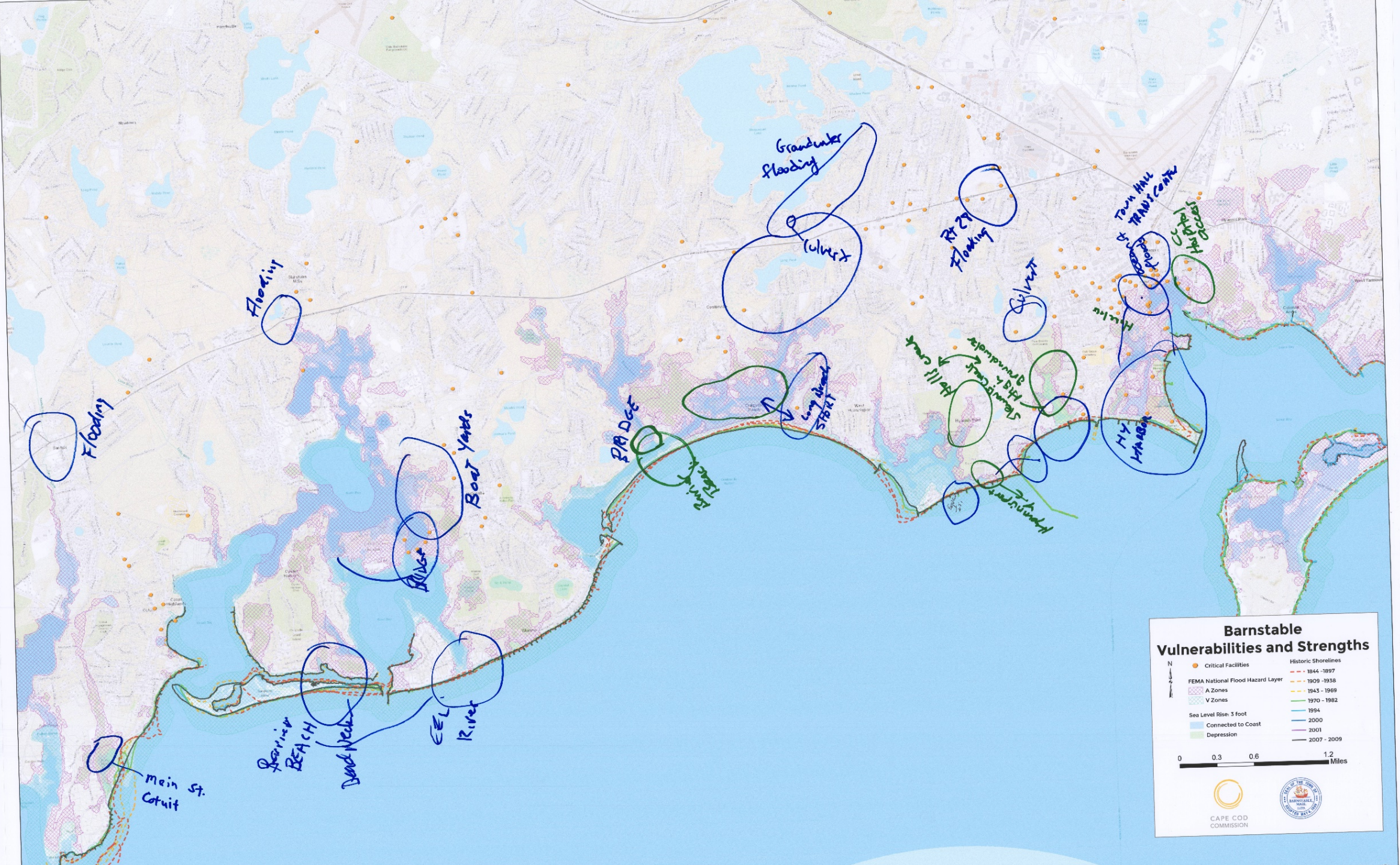
Municipal Vulnerability Program



Workshop Agenda

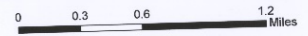
Morning

- 9:00** Registration, coffee, tea...
- 9:15** Workshop Overview and Introductions
- 9:30** MVP Program Background – Heather McElroy
- 9:45** Science, Climate Projections, Resources – Greg Berman
- 10:15** Break
- 10:20** Small Team Exercise
 - Team Orientation
 - Discuss and Identify Priority Hazards
 - Identify Vulnerable Features and Strengths
 - Prepare for Report-out
- 12:00** Teams Report on Hazards, Vulnerabilities, Strengths
- 12:30** Lunch!



Barnstable Vulnerabilities and Strengths

- Critical Facilities
- - - 1844 - 1897
- - - 1909 - 1936
- - - 1945 - 1969
- - - 1970 - 1982
- - - 1994
- - - 2000
- - - 2001
- - - 2007 - 2009
- ▨ FEMA National Flood Hazard Layer
▨ A Zones
▨ V Zones
- ▨ Sea Level Rise: 3 Foot
▨ Connected to Coast
▨ Depression



Workshop Agenda

Afternoon

- 1:00 Review afternoon workshop goals** – Shannon Hulst Jarbeau
- 1:10 Small Team Exercise** – Heather McElroy
 - **Discuss and Identify Actions**
 - **Identify Priority and Urgency of Actions**
 - **Prepare for Report Out**
- 2:45 Break**
- 3:00 Small Teams Report on Top Actions**
- 3:30 Dot Exercise**
- 3:45 Summary Discussion – Compile Top Actions**
- 4:15 Wrap Up and Next Steps**
- 4:30 Adjourn**

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Community Resilience Building Risk Matrix				www.CommunityResilienceBuilding.org						
H-M-L priority for action over the Short or Long term (and Ongoing)				Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)						
V = Vulnerability S = Strength				High Winds	Flooding	Severe Winter Weather	Erosion	Priority	Time	
				Wildfire				H-M-L	Short Long Ongoing	
Features	Location	Ownership	V or S							
Infrastructural										
Canal Bridges		Public	V	- INCREASE ADVOCACY FOR REPLACEMENT OF CANAL BRIDGES				H	O	
Above ground utility lines		Private/ Public	V	- UNDERGROUND UTILITY LINES				M	L	
Undersized culverts		Public	V	- PRIORITIZATION & DESIGN OF HIGH PRIORITY PROJECTS				H	O	
Main access roadway impacts	Sandy Neck Sandy Pt. Sandy Islands	Public	V		- FUNDING WEST BAY DRAWBRIDGE REPLACEMENT				H	S
Hospital (High quality, but small)		Private	V/S	- SUPPORT ROADWAY CAPACITY IMPROVEMENTS TO INCREASE ACCESS TO HOSPITAL				H	L	
sewer system - needs expansion New water supplies		Public	V/S	- SUPPORT & FUND IMPLEMENTATION OF CWMP - REGIONAL COORDINATION OF IMPLEMENTATION - FUNDING - AND EXPANSION OF SYSTEM				H	L	
Societal										
Lack of localized shelters/warming stns.		Public	V	- IDENTIFY & FUND FACILITIES/EQUIPMENT FOR LOCAL "SUBSHELTERS" - GENERATORS/WARMING - CAPACITY ASSESSMENT FOR SHELTER + PLAN FOR ADAPT. EVOLUTIONS				H	S	
Isolation of individuals		Private/ Public	V							
Communications btwn town & citizens		Public	S	- BUILDING SUSTAINABILITY & RELIABILITY OF COMMUNICATION NETWORKS				M	O	
Seniors (+90-100) w/ limited mobility		Private/ Public	V	- ASSESS & ADDRESS TRANSPORTATION CHALLENGES TO GET PEOPLE TO SHELTERS/SAFETY DURING EVENTS				L	L	
Seasonal/Summer Pop.		Private/ Public	V	- BUILDING SOCIAL NETWORKS & CONNECTIONS TO REACH ISOLATED INDIVIDUALS						
Mutual Aid/Coord. Emergency Services		Public	V/S							
Environmental										
Sandy Neck protects town		Public	S/V	Implement sandy Neck Resiliency plan, inc. gate house, access trail & plug lot relocation				H	S	
Impact of homes/buildings on ecosystem services		Public/ Private	V	- IDENTIFY OPPORTUNITIES & FUNDING OPPS FOR TARGETED LAND ACQ. IN VULNERABLE COASTAL AREAS				M	O	
Sole source aquifer		Public	V	- CONTINUE TO SUPPORT REGIONAL/WATERSHED SOLUTIONS TO WATER RESOURCE CHALLENGES				H	L	
Open space in West part of town	W.B. (W. B. Con. S. area)	Public/ Private	S							
Open spaces		Public/ Private	S	- FUND OPEN SPACE ACQUISITION (ESP. CONNECTIVITY FOR WATER SUPPLY)				H	L	
				- EVALUATE & CONSIDER OPTIONS, LIKE ZONING, TO LIMIT NEW DEVELOPMENT IN VULNERABLE AREAS				M	O	



of implementation - funding -

warming -

MVP Themes

HAZARDS

- Flooding
- Winter/Extreme storms
- Erosion
- Sea level rise
- Temperature/drought/fire

CONCERNS AND CHALLENGES

- Low-lying infrastructure
- Impacts to human health
- People in harm's way
- Threats to the environment
- Telecommunications

MVP Themes

OPPORTUNITIES AND STRENGTHS

- Emergency services
- Community connections, networks
- Natural assets

ACTIONS

- Planning, zoning changes
- Infrastructure improvements (culverts, roads, bridges)
- Coastal resource studies, assessments
- Community outreach, education
- Land acquisition

MVP Action Grants

Shannon Hulst Jarbeau, Floodplain Specialist
Woods Hole Sea Grant & Cape Cod Cooperative Extension



What can grants be used for?

- Planning and Management
 - Detailed Vulnerability and Risks Assessment Further Planning
 - Community outreach and education
 - Local Bylaws, Ordinances, Plans, and Other Management Measures
 - Chemical Safety and Climate Vulnerabilities
- Existing Buildings and Infrastructure
 - Redesigns and Retrofits
 - Energy Resilience Strategies

What can grants be used for?

- Green Infrastructure and Nature-Based Solutions
 - Nature-Based Flood Protection, Drought Prevention, Water Quality, and Water Infiltration Techniques
 - Nature-Based Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality
 - Nature-Based Solutions to Reduce Vulnerability to Climate Change Impacts
 - Acquisition of land to achieve a resiliency objective
 - Ecological restoration and habitat management to increase resiliency

Details

- One-year timeframe
- Address project stages
- \$25,000 - \$2,000,000 for single towns
- Up to \$5,000,000 for regional projects
- Must be used to advance priority adaptation actions identified in MVP reports
- 25% match
- Due by May 18
- Next round: late summer/ early fall



CZM's Coastal Resilience Grant Program

- Vulnerability and Risk Assessment
- Public Education and Communication
- Local Bylaws, Adaptation Plans, and Other Management Measures
- Redesigns and Retrofits
- Natural Storm-Damage Protection Techniques

MVP vs CZM

MVP

- All climate-related issues
- Currently open
- \$25K - \$2 million
- 25% match
- If it fits CZM, apply to both programs

CZM

- Coastal only
- Currently open
- Up to \$500,000
- 25% match
- If it fits MVP, apply to both programs



Questions
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Barnstable County Coastal Resources Subcommittee

Mission Statement

Promote regional awareness of coastal issues by serving as conduit or liaison for the exchange of information between Cape Cod communities and the Barnstable County Coastal Management Committee, and,

As directed by the Barnstable County Coastal Management Committee, undertake special projects, provide recommendations for coastal policy, and help identify solutions to Cape Cod coastal zone management problems.