



**Pre-Disaster Mitigation Plan
Update 2013 draft
Assessment and Actions
excerpts**

Chilmark

What is a Pre-Disaster Mitigation Plan?

1. Hazards
2. Vulnerability
3. Critical Facilities
4. Community Actions (draft)

1. Hazards



**Hurricanes Carol and Edna in 1954
Category 3**



Nor'easters

Nor'easters cause more overall damage here than hurricanes, because they are more frequent and last longer – 12 hours to 3 days, versus 6 to 12 hours for hurricanes.

Sea Level Rise

Due to sea level rise and general subsidence of the land in our area, most of Dukes County shorelines are erosional. Climate change has greatly accelerated the landward retreat of shorelines.

The 2013 update to the Pre-Disaster Mitigation Plan for Dukes County projects approximately 1.5' rise in sea level by 2050 for the region and a 5' rise in Sea Level by 2100.

Visualizing Sea Level Rise Around Martha's Vineyard

Images prepared by Caitlin Michniewicz, MVC intern 2013

The 2013 update to the Pre-Disaster Mitigation Plan for Dukes County projects approximately 1.5' rise in sea level by 2050 for the region and a 5' rise in Sea Level by 2100. The following images are of locations within Edgartown with predictions of what this type of change in sea level could look like. The images are used to show high tide level estimates.



Menemsha Harbor



Mid-Century 1.5' Sea Level Rise



Late-Century 5' Sea Level Rise



Nashaquitsa Pond, Chilmark



1.5' Sea Level Rise



Ⓡ
ON
BRIDGE

5' Sea Level Rise

A photograph of Squibnocket Beach in Chilmark, Massachusetts, during high tide. The ocean is a deep blue, and the water is high enough to reach the rocky shore. A long, narrow path of large, light-colored rocks runs along the water's edge. To the right of the rocks, a dirt parking area contains several vehicles: a silver sedan in the foreground, a light blue SUV, and a red van further back. A person is standing near the blue SUV. In the background, a line of trees and some buildings are visible under a grey, overcast sky.

Squibnocket Beach, Chilmark
High Tide



1.5' Sea Level Rise



5' Sea Level Rise

Coastal Erosion And Shoreline Change

Due to sea level rise and general subsidence of the land in our area, most of Dukes County shorelines are erosional.

Wildfire

In 1957, 18,000 acres of Carver to Plymouth burned in 3 days, all the way to the ocean, which is what stopped the fire.

In the first 6 hours, 12,500 acres burned at a rate of 53 acres/minute.

Dam Failure



**There are 4 dams in
Chilmark;**

**all are rated low to moderate
risk.**

Low Hazard: Dams located
where failure or misoperation may
cause minimal property damage to
others. Loss of life is not expected.

2. Vulnerability



Wildland Urban Interface Chilmark, MA

Pre-Disaster Mitigation Plan

- Contiguous Woodlands
 - area >= 50 acres
 - 1000ft Buffer Area
- Vegetation
 - Pitch Pine or Shrub Oak
- Affected Structures
 - Bridges
- Critical Road Segment
- Critical Facilities
 - Affected
 - Affected Public Well
 - Hot Affected
 - Hot Affected Public Well
- Roads
 - Primary Road
 - Secondary Road
 - Tertiary Road
 - Fire Lane
- Town Boundary

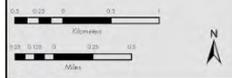
NOTES:
This map was produced by the Martha's Vineyard Commission for the Pre-Disaster Mitigation Project of 2013. Funding for the Pre-Disaster Mitigation Planning Grant was provided by the Massachusetts Emergency Management Agency.

Woodlands habitat was identified from the 2005 land use data from MassGIS. Non-forest land uses were buffered 250ft and the forest areas that did not overlap the non-forest plus 250ft were retained. Those contiguous forest areas of 50 acres or more are represented in this data layer.

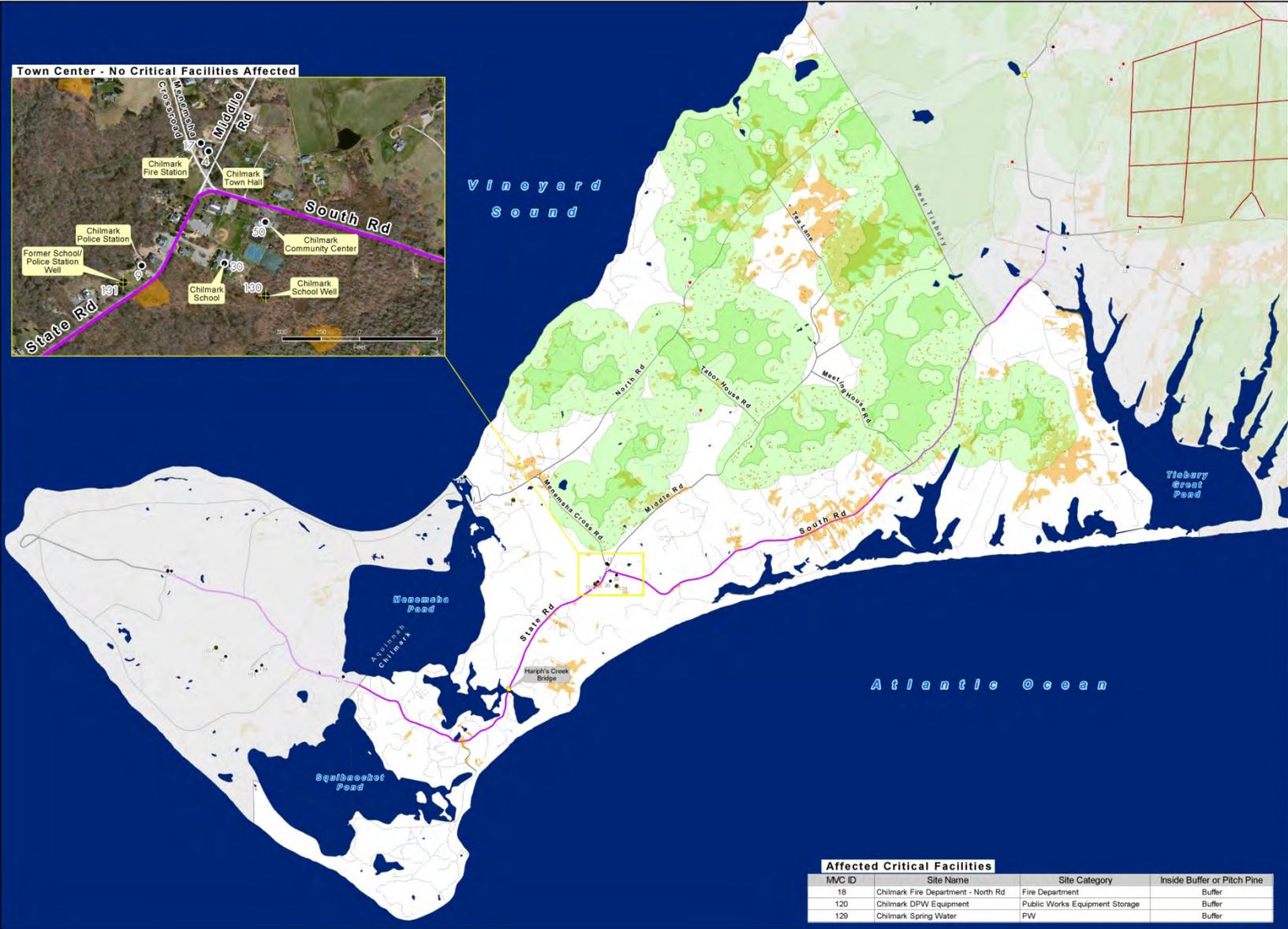
A structure is considered within the wildlife forest area if it is within a contiguous 50-acre woodland area or within the 1000ft buffer area or within the existing pitch pine/shrub oak area.

DISCLAIMER:
Data provided are for planning purposes only. The data are not intended for boundary determination or regulatory interpretation. The MMC cannot be responsible for how these data are used or interpreted by the end user.

Compiled by: Martha's Vineyard Commission, 11 South 8/28/13, at 505625-2433, www.mass.gov/mvc
Data: Town Boundary: MassGIS 2002; Roads: MR0/MassGIS 2005; Critical Facilities: Information: MR0/MassGIS 2013; Woodlands: MassGIS 2005 & MVC 2013; Vegetation: FNC 2005; Fire Lane: MassGIS 2011 (released 2013); Fire Lane: MVC 2005; Projection: StatePlane, MA NAD83, FAD83; Meters; The Village, CH, WMA, 2013; meet: Original as noted.



Town Center - No Critical Facilities Affected



Affected Critical Facilities

MVC ID	Site Name	Site Category	Inside Buffer or Pitch Pine
18	Chilmark Fire Department - North Rd	Fire Department	Buffer
120	Chilmark DPW Equipment	Public Works Equipment Storage	Buffer
129	Chilmark Spring Water	PW	Buffer

Wildland Urban Interface

Wildland-Urban Interface Vulnerability

Wildland-Urban Interface Vulnerability								
Developed Land					Undevel. Land			
Use	# People (other)	# People (July-Aug)	# Buildings	Approx. Value	# People (other)	# People (July-Aug)	# Buildings	Approx. Value
	2.16 per building	4.29 per building			2.16 per building	4.29 per building		
Residential	1162	2308	538	\$266,761,900	1419	2819	657	\$325,766,856
Commercial			2	\$2,537,000			6	\$7,611,000
Industrial			0	\$0			0	\$0
Municipal, Public, Non-profit			3	\$197,500			13	\$855,833

100 & 500 Year Flood Map

Chilmark, MA

Pre-Disaster Mitigation Plan

- Affected Structures
- Bridges
- Dams
- Low to Moderate Hazard
- Critical Facilities
- Affected
- Not Affected
- Flood Zones*
- 100 Year (VE Zone)
- 100 Year (AE Zone)
- 500 Year Zone
- Roads
- Primary Road
- Secondary Road
- Tertiary Road
- Critical Road Segment
- Town Boundary

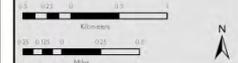
*Data provided by FEMA - Preliminary DFIRM June 2013

NOTES:
This map was produced by the Martha's Vineyard Commission for the Pre-Disaster Mitigation Project of 2012. Funding for the Pre-Disaster Mitigation Planning Grant was provided by the Massachusetts Emergency Management Agency.

The 100 year & 500 year flood areas represent a subset of the data available on the paper Flood Insurance Rate Maps (FIRM) as provided by the Federal Emergency Management Agency (FEMA). These data were developed by FEMA to support floodplain management and planning activities but do not replace the official paper FIRMs. These data are not suitable for engineering applications or site work, nor can the data be used to determine absolute delineations of flood boundaries. Instead the data should be used to portray zones of uncertainty and possible risks associated with flooding. These data do not replace the paper FIRMs which remain the official documents.

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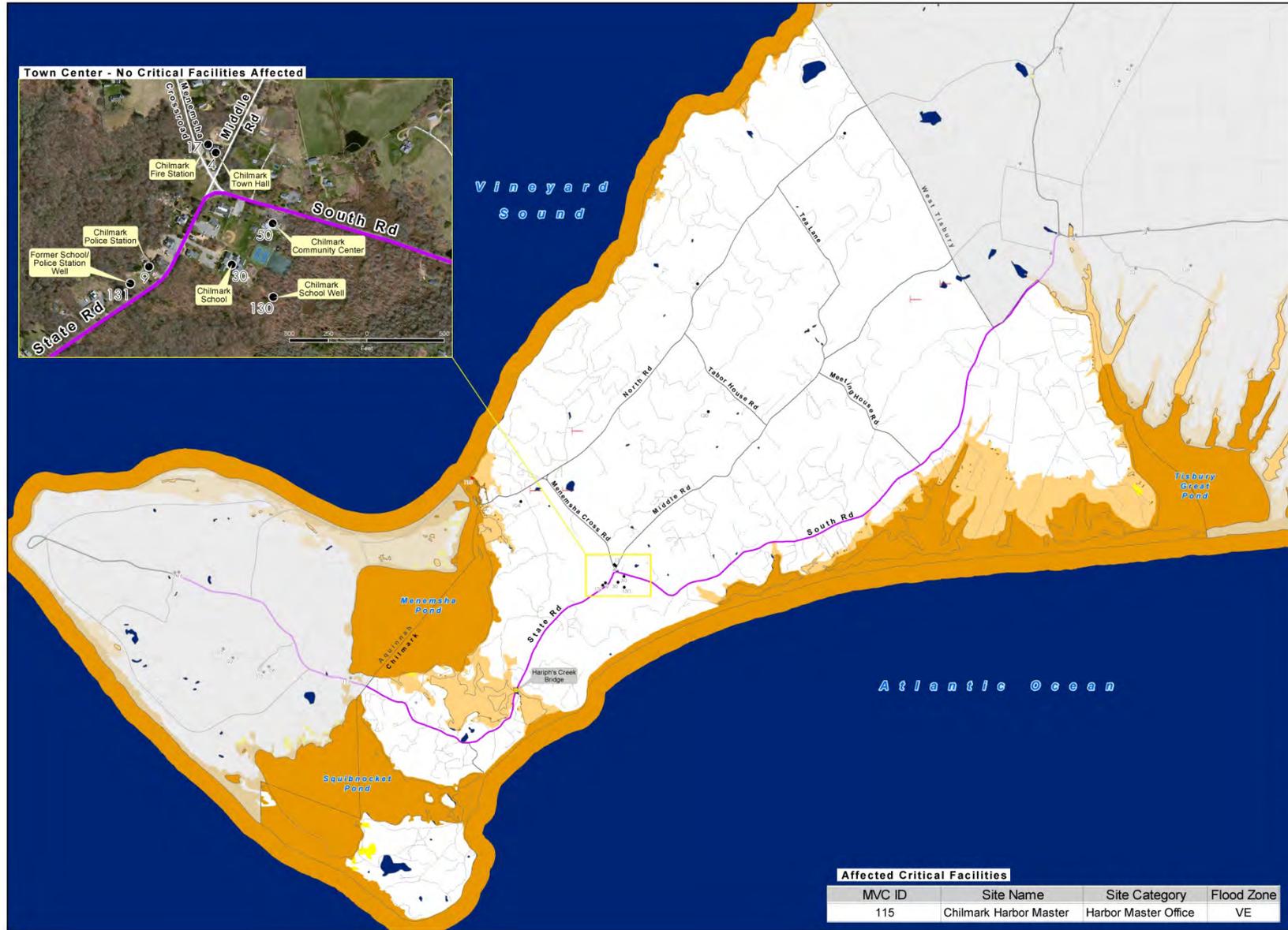
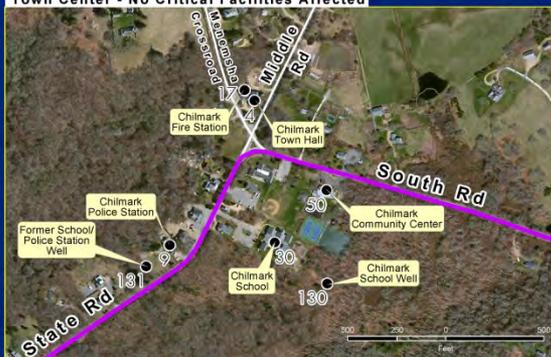
Compiled by Martha's Vineyard Commission, 13 Seaside, R/F 02543, MA, 508-455-0432, www.mvcommission.org
Data: Town Boundary: MARSH 2002; Roads: MMSU/MMSU/08 2003; Coastal Features & Infrastructure: MMSU 2008 & MMSU 2012; Flood Data: Preliminary DFIRM 100A, June 2013; Aerial Photo: 2011 Digital Globe All Rights Reserved; Shoreline: MMSU/08 2002; Update from 2011 aerial photos
Production: Stoneham, MA: Marland, NAD83; MassGIS
File: 06_pdm_ch_01FIRM_pdm_2013.mxd - Original w/extent



Affected Critical Facilities

MVC ID	Site Name	Site Category	Flood Zone
115	Chilmark Harbor Master	Harbor Master Office	VE

Town Center - No Critical Facilities Affected



Flood and Storm (FIRM)

Flood Vulnerability

Based on Preliminary Flood Data Released in June 2013

Developed Land

Flood Zone Category	Use	# People (other)	# People (July-Aug)	# Buildings	Approximate Value
		2.16 per building	4.29 per building		
100 Year	Residential	110	219	51	\$16,156,400
100 Year	Commercial			5	\$1,302,400
100 Year	Industrial			0	\$0
100 Year	Exempt (Municipal, Public, Non-profit)			0	\$0
Velocity Zone (also 100yr)	Residential	11	21	5	\$5,784,800
Velocity Zone (also 100yr)	Commercial			3	\$356,500
Velocity Zone (also 100yr)	Industrial			0	\$0
Velocity Zone (also 100yr)	Exempt (Municipal, Public, Non-profit)			2	\$70,300
500 Year	Residential	0	0	0	\$0
500 Year	Commercial			0	\$0
500 Year	Industrial			0	\$0
500 Year	Exempt (Municipal, Public, Non-profit)			0	\$0

Flood Vulnerability

Based on Preliminary Flood Data Released in June 2013

Potential Development

Flood Zone Category	Use	# People (other)	# People (July-Aug)	# Buildings	Approximate Value
		2.16 per building	4.29 per building		
100 Year	Residential	82	163	38	\$12,038,102
100 Year	Commercial			2	\$520,960
100 Year	Industrial			0	\$0
100 Year	Exempt (Municipal, Public, Non-profit)			0	\$0
Velocity Zone (also 100yr)	Residential	0	0	0	\$0
Velocity Zone (also 100yr)	Commercial			0	\$0
Velocity Zone (also 100yr)	Industrial			0	\$0
Velocity Zone (also 100yr)	Exempt (Municipal, Public, Non-profit)			0	\$0
500 Year	Residential	32	78	15	\$4,751,882
500 Year	Commercial			0	\$0
500 Year	Industrial			0	\$0
500 Year	Exempt (Municipal, Public, Non-profit)			2	\$0

Storm Surge

causes the most damage and loss of life in a hurricane.



Hurricane Surge Inundation and Hurricane Tracks Chilmark, MA

Pre-Disaster Mitigation Plan

- Affected Structures
- Bridges
- Dams
- Low to Moderate Hazard
- Critical Facilities
- Affected
- Not Affected
- FEMA 100 Year Flood Zone*
- Hurricane Surge Inundation (Flooding) Worst Case Scenario
- Category 1
- Category 2
- Category 3
- Category 4
- Roads
- Primary Road
- Secondary Road
- Tertiary Road
- Critical Road Segment
- Town Boundary

*Data provided by FEMA - Preliminary DIRM June 2013

NOTES:
This map was produced by the Martha's Vineyard Commission for the Pre-Disaster Mitigation Project of 2013. Funding for the Pre-Disaster Mitigation Planning Grant was provided by the Massachusetts Emergency Management Agency.

THE USACE:
Hurricane surge elevations were determined by the National Hurricane Center using the P22 SLOSH model basin, and assumed peak hurricane surge arising at mean high water.

The hurricane surge inundation areas shown on this map depict the inundation that can be expected to result from a worst case combination of hurricane landfall location, forward speed, and direction for each hurricane category.*

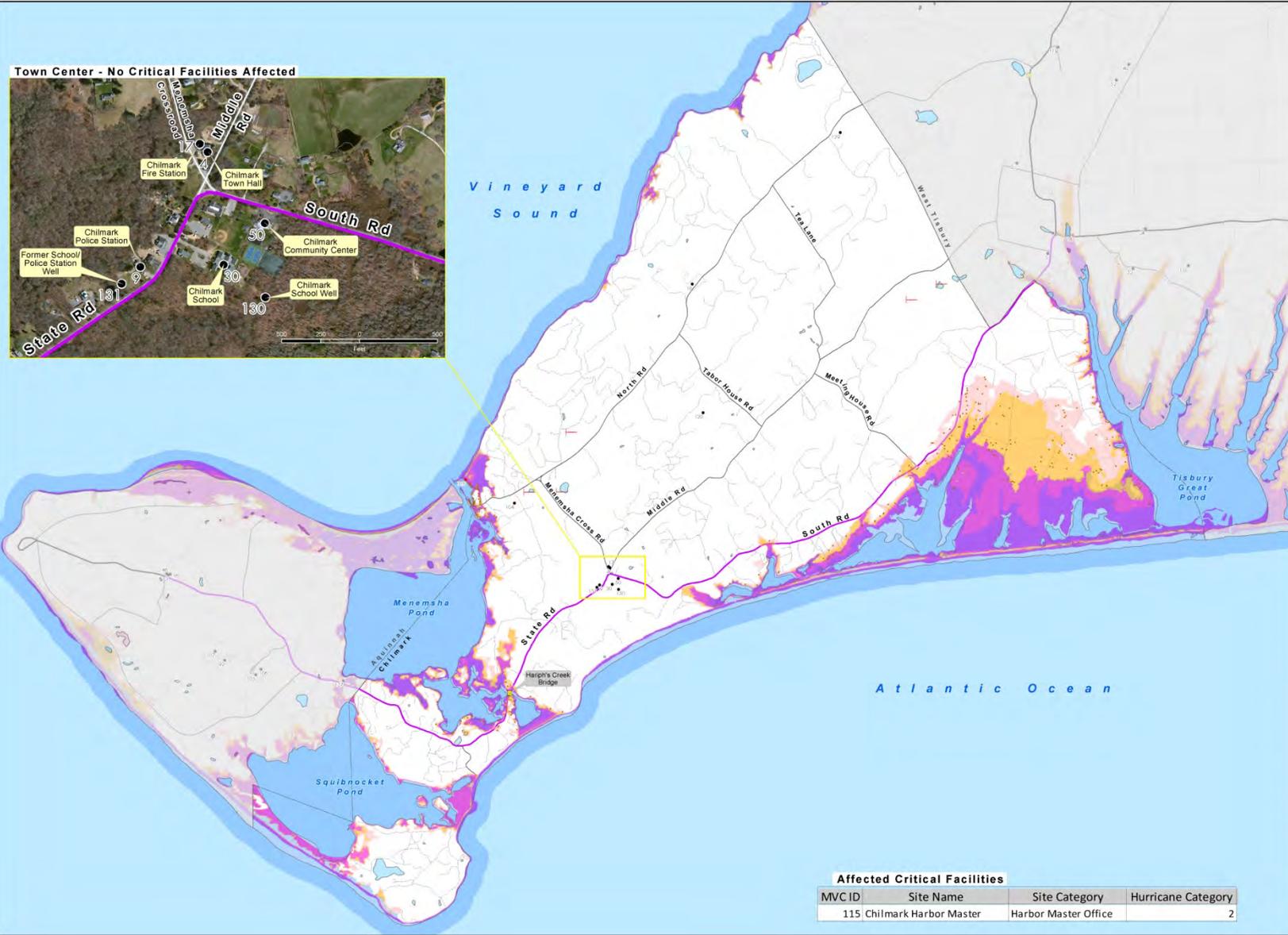
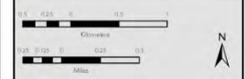
The primary elevation data source was LIDAR data collected from Nov 2009 to Feb 2010 by Camp Dresser and McKee. The data was supplemented with MassGIS Digital Terrain Model (DTM) files which were made available in April 2003.*

ACCURACY:
SLOSH Model Elevation Data +/- 0.50 percent
LIDAR Elevation Data +/- 0.30 vertical +/- 1ft horizontal
Shapefile Data: see source for LIDAR. Hence, discrepancies will be likely noticed when displayed together.

DISCLAIMER:
Data provided are for planning purposes only. The data are not adequate for boundary determination or regulatory interpretation. No absolute base data be considered an absolute representation and nothing which can be expected to be flooded by hurricane surge surge for a particular category. The MVC cannot be responsible for how these data are used or interpreted by the end user.

Copyright by Martha's Vineyard Commission, 03 South St., P.O. Box 113, 02543-0113, MA. 508-693-3423; www.mvccommission.org

Data: Town Boundary - MassGIS 2012; Roads - MassGIS/MassGIS 2012; Critical Facilities & Infrastructure - NSM 2008 and MIT 2012; Hurricane Areas - USACE 2013; Hurricane Track - NOAA; Flood Zone - FEMA Hurricane June 2013; Hurricane Track - NOAA; Projection - NAD83; Datum - NAD83; Units - Meters; File: s16_spln; CHU_HurSLOSH_2012_V2.mxd - Original in color.



Affected Critical Facilities			
MVC ID	Site Name	Site Category	Hurricane Category
115	Chilmark Harbor Master	Harbor Master Office	2

SLOSH – Hurricane Storm Surge

Hurricane Inundation Vulnerability (SLOSH)

Based on preliminary data Released by the USACOE New England District in March 2013

Developed Land

SLOSH cat.	Use	# People (other)	# People (July-Aug)	# Buildings	Approx. Value
		2.16 per building	4.29 per building		
1	Residential	17	34	8	\$3,563,000
1	Commercial			0	\$0
1	Industrial			0	\$0
1	Municipal, Public, Non-profit			0	\$0
2	Residential	82	163	38	\$13,584,100
2	Commercial			7	\$1,423,100
2	Industrial			0	\$0
2	Municipal, Public, Non-profit			2	\$70,300
3	Residential	121	240	56	\$21,785,900
3	Commercial			4	\$974,400
3	Industrial			0	\$0
3	Municipal, Public, Non-profit			2	\$606,100
4	Residential	140	279	65	\$39,997,400
4	Commercial			1	\$359,600
4	Industrial			0	\$0
4	Municipal, Public, Non-profit			1	\$198,300

Hurricane Inundation Vulnerability (SLOSH)

Based on preliminary data Released by the USACOE New England District in March 2013

Potential Development

SLOSH cat.	Use	# People (other)	# People (July-Aug)	# Buildings	Approx. Value
		2.16 per building	4.29 per building		
1	Residential	54	107	25	\$11,134,375
1	Commercial			0	\$0
1	Industrial			0	\$0
1	Municipal, Public, Non-profit			5	\$0
2	Residential	69	137	32	\$11,439,242
2	Commercial			0	\$0
2	Industrial			0	\$0
2	Municipal, Public, Non-profit			1	\$35,150
3	Residential	76	150	35	\$13,616,188
3	Commercial			0	\$0
3	Industrial			0	\$0
3	Municipal, Public, Non-profit			13	\$3,939,650
4	Residential	86	172	40	\$24,613,785
4	Commercial			0	\$0
4	Industrial			0	\$0
4	Municipal, Public, Non-profit			6	\$0

Sea Level Rise Projection

based on 2010 LiDAR elevation data & accounting for MHHW
Chilmark, MA

Pre-Disaster Mitigation Plan

Sea Level Rise Scenarios: 1.5ft and 5ft
Mean High High Water Present Average
Offset from NAVD88 Datum = +1.0ft

- Affected Structures
- Bridges
- Dams
- Low to Moderate Hazard
- Critical Facilities
- Affected
- Not Affected
- Sea Level Rise plus Mean High High Water Offset
- <= 2.5ft
- >2.5ft to 6.0ft
- Roads
- Primary Road
- Secondary Road
- Tertiary Road
- Critical Road Segment
- Town Boundary

A datum is a reference from which measurements are made. The datum indicates where zero is. For example, the top of a tree may be 20ft high from the ground but that same tree-top is only 1.0ft high from the top of the neighboring rooftop.

NOTES
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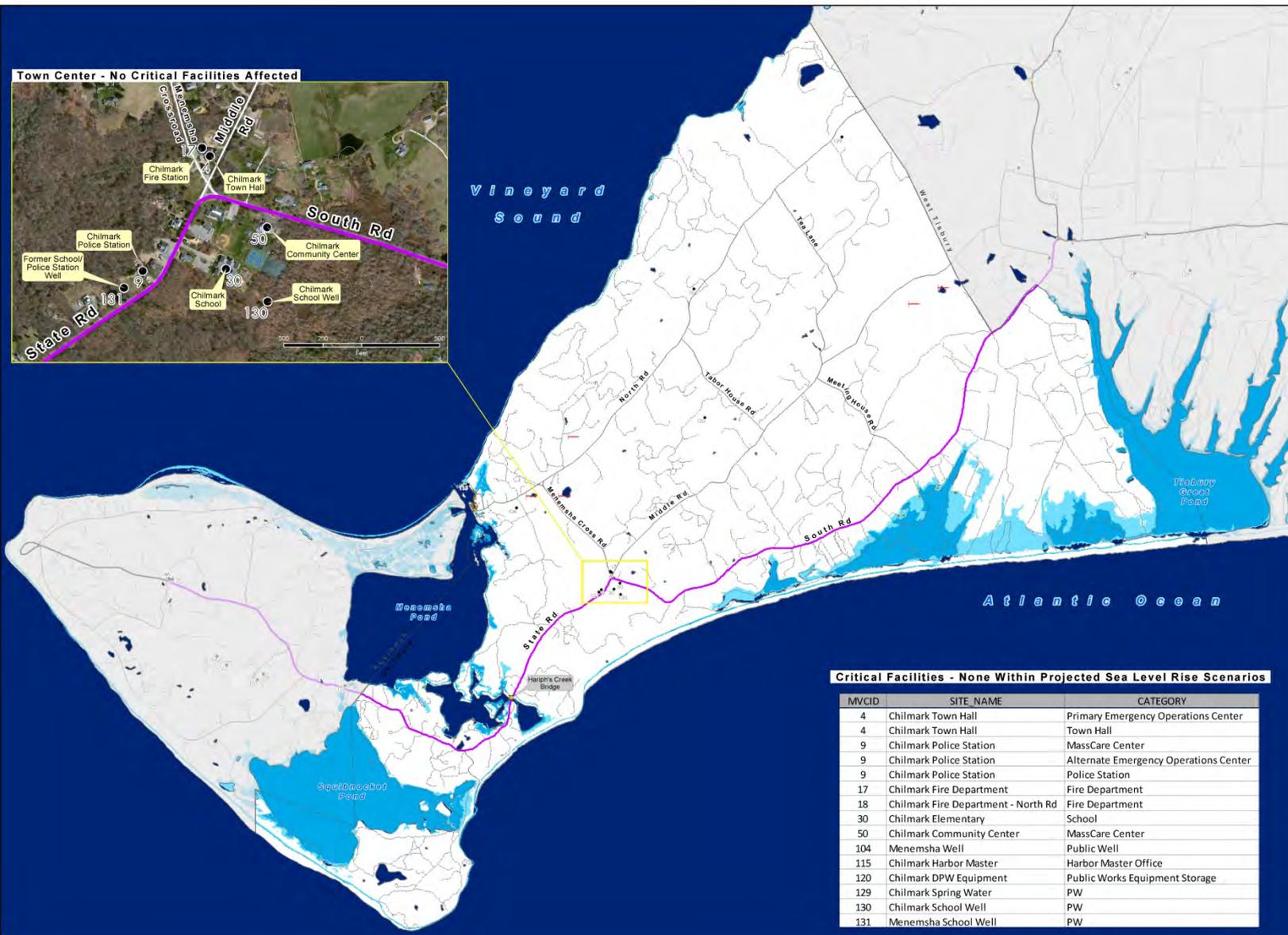
In 2010, LiDAR (Light Detection and Ranging) terrain data was collected along the coast of Martha's Vineyard and the Elizabeth Islands on behalf of FEMA. The data was processed by MassGIS into digital elevation models as geoTIFF format. The elevation points, collected at 2ft spacing and two decimal point precision have a vertical accuracy of 0.47ft. The data exceed the required 1.19ft accuracy for 2ft contour generation.

The average offset between the MHHW tidal datum and the NAVD88 datum was calculated for the island by the MHC. Values were reported by NOAA's Office of Sea, Tides & Currents page for three island tidal benchmarks: Menemsha, Vineyard Haven Harbor, and Edgartown Harbor. Based on those three sites, on average, MHHW is 1.06ft greater than NAVD88.

To account for this MHHW to NAVD88 offset, the MHC added an additional 1 foot to the sea level rise scenarios.

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Compiled by Martha's Vineyard Commission, CI-3088, 1/12/2013, pt. 208-292-2453, www.masscommission.org
Data: State Boundary: MassGIS 2002; Roads: North/MassGIS 2002; Critical Facilities & Infrastructure: FEMA 2005 and MHC 2013; GIS Feature Data: FEMA 2010 & MassGIS 2010; and the State GIS Digital Data All Rights Reserved; Structure: MassGIS 2013
Created on 2013 using ArcGIS
Written or Sourced: MA MassGIS, NAVD88, Mean High High Water, Ch. Seaside/MHWN, 2012 and 2013. Created in color.



Critical Facilities - None Within Projected Sea Level Rise Scenarios

MVCID	SITE_NAME	CATEGORY
4	Chilmark Town Hall	Primary Emergency Operations Center
4	Chilmark Town Hall	Town Hall
9	Chilmark Police Station	MassCare Center
9	Chilmark Police Station	Alternate Emergency Operations Center
9	Chilmark Police Station	Police Station
17	Chilmark Fire Department	Fire Department
18	Chilmark Fire Department - North Rd	Fire Department
30	Chilmark Elementary	School
50	Chilmark Community Center	MassCare Center
104	Menemsha Well	Public Well
115	Chilmark Harbor Master	Harbor Master Office
120	Chilmark DPW Equipment	Public Works Equipment Storage
129	Chilmark Spring Water	PW
130	Chilmark School Well	PW
131	Menemsha School Well	PW

Sea Level Rise – 1.5' by 2050, 5' by 2100

Sea Level Rise Vulnerability

SLR Scenarios: 1.5 ft and 5 ft

with MHHW adjustment (1 ft. ave. offset from NAVD Datum)

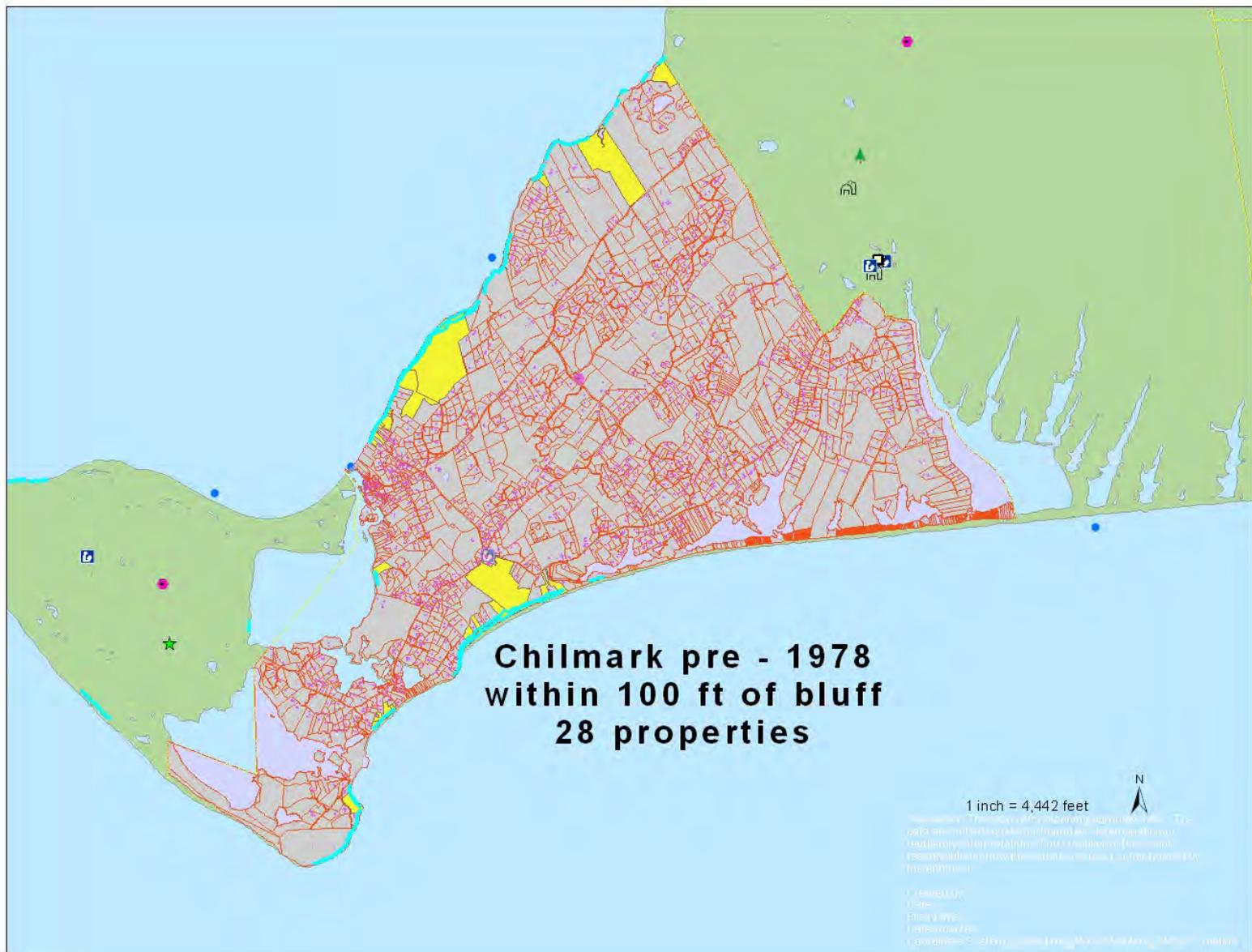
Developed Land

Rise Level	Use	# People (other)	# People (July-Aug)	# Buildings	Approximate Value
		2.16 per building	4.29 per building		
<= 1.5ft Rise	Residential	0	0	0	\$0
<= 1.5ft Rise	Commercial			0	\$0
<= 1.5ft Rise	Industrial			0	\$0
<= 1.5ft Rise	Exempt (Municipal, Public, Non-profit)			0	\$0
>1.5ft and <= 5ft Rise	Residential	17	34	8	\$2,879,900
>1.5ft and <= 5ft Rise	Commercial			1	\$192,900
>1.5ft and <= 5ft Rise	Industrial			0	\$0
>1.5ft and <= 5ft Rise	Exempt (Municipal, Public, Non-profit)			0	\$0

Coastal Erosion And Shoreline Change

Due to sea level rise and general subsidence of the land in our area, most of Dukes County shorelines are erosional.

Pre-1978 homes near bluffs are difficult for the towns to regulate (grandfathered under the Wetlands Protection Act).



**There are 28 pre-1978 homes in Chilmark
within 100' of a bluff**

3. Critical Facilities



Vulnerability of Critical Facilities

Flood	Flood Zone Category	Critical Facility Category	# Buildings	Approximate Value
	Velocity Zone (also 100yr)	Chilmark Harbor Master	1	\$3,000

Hurricane Inundation	SLOSH Category	Critical Facility Category	# Buildings	Approximate Value
	2	Chilmark Harbor Master	1	\$3,000

Sea Level Rise	NONE
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Wildland-Urban Interface		Critical Facility Category	# Buildings	Approximate Value
	In buffer area	Chilmark DPW Equipment	1	\$3,100
	In buffer area	CHILMARK FIRE DEPARTMENT	1	\$104,900
	In buffer area	Chilmark Spring Water	1	\$37,200

Vulnerability of Critical Facilities

ROADS	Town	Hazard	Length Intersected (ft)	Total Length of Road (ft)
South Road/State Rd	Chilmark	Wildfire Buffer Area	8368	40,870
		Pitch Pine/Shrub Oak	4560	
		AE 100 year flood zone	451	
		SLOSH Category 1	50	
		SLOSH Category 2	231	
		SLOSH Category 3	1632	
		SLOSH Category 4	4981	
State Road (Chi./Aq. Town line to Aquinnah Police Station)	Aquinnah	AE 100 year flood zone	51	10,328
State Road (Chi./WT town line to Edg-WT Rd)	West Tisbury	AE 100 year flood zone	96	2,212
		SLOSH Category 2	8	
		SLOSH Category 3	186	
		SLOSH Category 4	60	

BRIDGES	Town	Hazard*
Hariph's Bridge	Chilmark	AE 100 year flood zone & SLOSH Category 1

4. Goals and Actions (draft)



Community Goals and Actions (draft)

Overall Goal: To reduce the loss of or damage to life, property, infrastructure, and natural, cultural and economic resources from natural disasters.

Community Goals (draft)

- Protect critical public facilities and services from damage due to natural hazards.
- Ensure that critical infrastructure is protected from natural hazards.
- Promote strong natural shore defenses such as coastal beaches and dunes.
- Improve circulation for tidally restricted harbors, ponds and marshes.
- Develop programs and measures that protect residences and other structures from natural hazards.
- Reduce vulnerability to drought, by improving water supply infrastructure.

Community Goals (draft)

- Develop a mitigation strategy that considers area businesses, including marinas, and protects the economic vitality of the region.
- Protect and preserve irreplaceable cultural and historic resources located in hazard-prone areas.
- Implement a broad range of mitigation measures that protect the region's vulnerable population and infrastructure.
- Provide communities with information concerning hazard mitigation funding opportunities, and assist the communities in the identification and development of specific mitigation projects.
- Assess and consider climate change impacts in infrastructure planning and projects.

Town Actions (draft)

Chilmark Town Actions - (draft new)

- Relocation of Squibnocket Beach parking area, renegotiation of lease, removal of revetment
- Establish South Road as a critical facility from town line to town line and prioritize its storm protection and adaptation to rising sea level. Protect and possibly elevate the bridge adjacent to Stonewall Beach.
- Cooperate with and promote UCAOE effort to dredge Menemsha Pond and inlet, rebuild the jetties and breakwater.
- Rehabilitate Menemsha parking lot drainage.

Chilmark Town Actions - (draft new)

- Rehabilitate South Road stormwater drainage.
- Update subdivision regulations to keep drainage from private roads from flowing onto South Road.
- (Island-wide) Upgrade subdivision and other stormwater regulations to utilize 25-year calculations for volume rather than the usual 10-year storm, in adaption to climate change (more severe rainstorms). Incorporate 25-year calculations in planning for municipal stormwater projects.
- Use (w/MVC) the Coastal District to regulate armorment of pre-78 buildings otherwise exempt from the Wetlands Protection Act.

Chilmark Town Actions - (draft new)

- Install 8,000 gallon holding tank for Menemsha public water supply.
- Install dry hydrants to pump pond water for firefighting.

Chilmark Town Actions - (draft old)

- Beach nourishment, dredging and structural reconfiguration of inlets and inlet protections.
- Incorporate PDM plan proposals in other local and regional plans.
- Work with federal and state agencies and their contractors to update the FIRM maps (DONE).
- Review and possibly amend the Coastal District.
- Map stormwater collection areas and discharges.

Chilmark Town Actions - (draft old)

- Reduce flood impacts by identifying and correcting discharges from town and Commonwealth roadways where they cross streams, including: Mill Brook (Chilmark portion), Tiasquam (Chilmark portion), Fulling Mill Brook, Paint Mill Brook and Roaring Brook (all Chilmark) and unnamed stream flowing along portion of North Road that extends from the Menemsha Crossroad to Menemsha Village. The road surface at each crossing should be adjusted during repaving to divert as much runoff as possible into roadside vegetation before it reaches the road crossing.

Community Actions (draft)

Criteria for timeframe/prioritization

Projects categorized as “immediate” or “short-term” are those which can go forward with little or no cost, or for which a funding source or responsibility is easily identifiable. Immediate projects should go forward within one year; short term within 2-3 years. Projects identified as “long-term” are generally more costly or involve lengthy permitting processes or establishment of complex infrastructure prior to implementation; requiring about 4 years or more. “Ongoing” projects are those actions which will require application in everyday maintenance and decision-making

Community Actions (draft)

- Identify and prioritize capital/structural mitigation projects that are cost-effective and technically feasible. *(immediate)*
- Ensure that any new or existing critical facilities meet state building code for high winds, fire and snow loading.
(ongoing)
- Beach nourishment, dredging and structural reconfiguration of inlets and inlet protections to improve natural defenses and circulation, in order to minimize storm impacts.
- Develop standards for emergency shelters; require all new and existing shelters to comply with all requirements including provision of emergency generators or backup power. *(long term)*

Community Actions (draft)

- Incorporate PDM proposals in other local and regional plans – Island Plan, master plans, transportation plans, open space plans, capital improvement programs, harbor plans; and DRI and MEPA reviews (*on-going*)
 - Work with the Joint Transportation Committee to identify and prioritize TIP projects that will protect evacuation routes and lessen the impacts of natural hazards (*immediate*)
 - Work with the Joint Transportation Committee to include hazard mitigation in the next update of the Regional Transportation Plan (*immediate*)
 - **Work with the Joint Transportation Committee to make long-range plans for public roads vulnerable to Sea Level Rise**

Community Actions (draft)

- Flood-proof or relocate any critical facility sited in the floodplain (other than water-dependent uses). (*long term*)
- Review and possibly amend Coastal District and Floodplain District regulations for hazard mitigation. (*short term*)
- Establish an overall management plan for the State Forest, including establishment of specific procedures or Memoranda of Agreement regarding the transfer of land for new public water supplies and for easements to install water supply lines (D.C.R. and State Forest Advisory Committee). Continue to pursue the established proposal by the Town of Edgartown for a land transfer (Edgartown Water Department). Consider amendment to the Greenlands Management Plan to include more details regarding potential establishment of water supply wells for West Tisbury and for other towns (West Tisbury Conservation Commission). (*long term*)

Community Actions (draft)

- Upgrade protections associated with the Manuel F. Correllus State Forest and the Greenlands property (West Tisbury Conservation Commission and M.V.C.). Recommendations include amendments to the Greenlands Water Resource Protection District (West Tisbury Planning Board) and adoption of regulations for the State Forest District of Critical Planning Concern (M.V.C. and town boards). *(long term)*
- Establish plans for water supply needs to alleviate future drought emergencies (M.V.C. and town Water Departments and District). The Towns of Tisbury and Oak Bluffs, nearly at buildout, should focus their attention on redundancy plans in response to potential emergencies such as drought. The Town of Edgartown has much greater needs for water supply beyond the capacity of the existing Edgartown wells, in addition to needs for redundancy to be prepared for emergencies such as drought). *(short term, long term)*

Community Actions (draft)

- Consider potential need for and options to provide water supply to areas with a development pattern that may not be compatible with continued private well water supplies, which may not be adequate in the event of emergencies such as drought. Possible areas to evaluate include the Arbutus Park, Ocean Heights and southern Katama Plains areas (Edgartown boards and M.V.C.). *(short term, long term)*

Community Actions (draft)

- Encourage the incorporation of Low Impact Development Techniques in local subdivision regulations. *(short term)*
- Review and possibly revise local subdivision and building regulations for stormwater management to lessen the climate-change-induced increasing impacts of flooding from rainstorms.
Increase capacity in adaptation to climate change, by incorporating 25-year storm calculations rather than 10-year volume into regulations and public infrastructure planning *(short term)*.
- Work with federal and state agencies and their contractors to develop improved mapping and estimates of structures located within the 100-year flood plain. *(nearly complete)*
- Encourage MassHighway and the towns to routinely clean and maintain drainage infrastructure. *(ongoing)*

Community Actions (draft)

- Encourage the towns to revise local subdivision and building regulations to require fire-proof roofing materials in areas adjacent to forested land; and homeowners' association to include the same in covenants or in renewal of covenants, possibly including review by the Fire Chiefs. *(short term)*
- Encourage the towns to participate in the DCR/Fire Wise Program *(ongoing)*
- Partner with public and private landowners and homeowners' associations concerning techniques for defensible space to reduce the risk of wildfire, such as removing fuel in forested areas; also consider issues of access to and through the developments for fire-fighting.

County Actions - (draft)

- Establish an MOU with the public service entities of all island towns and the Wampanoag tribe to provide incident support, whereby the Dukes County Emergency Management Agency would provide the services of the vehicles, manpower, and emergency management computer program services etc. that are owned or managed by the Dukes County Emergency Management Agency (short-term)

County Actions - (draft)

- Continue to support the Martha's Vineyard Medical Reserve Corps in partnership with the Island town Boards of Health, the Martha's Vineyard Hospital, the Wampanoag Tribe of Gay Head, and the Cape & Islands Health Coalition and to continue to host the offices of the MVMRC (Immediate)
- Continue to work with the Island Boards of Health in their Emergency Dispensing Site and other program planning efforts for Pandemic outbreaks and other infectious disease outbreaks, both natural and man-made. (Immediate)

County Actions - (draft)

- Beach Nourishment for Joseph A. Sylvia State Beach (Immediate)
- Establish a Dukes County Citizens Academy for the education of Martha's Vineyard residents, both full time and part time, in the areas of family and individual emergency preparation and response to natural and man-made hazards, including but not limited to hurricane preparedness, flood awareness, and wildfire risks. (Immediate)

THE END