

Merrimack Valley Region

Multi-Hazard Mitigation Plan Update 2016

Appendices

Appendix A – Project Start Up & Community Outreach

Appendix B - Regional Public Involvement

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Appendix D – Existing Protections Questionnaire

Appendix E – CZM StormSmart Coasts Fact Sheets

Appendix F - Map Series: 14 Communities

Appendix G – Mitigation Plan Review Tool

Appendix H -- Sample Resolutions

With Assistance of
Merrimack Valley Planning Commission
160 Main Street
Haverhill, Massachusetts 01830



February 2016



APPENDIX A

Project Start-up and Community Outreach

1. Notice of Project Start-up to Municipal Officials, Staff, and Other Interested Community Stakeholders – February 8, 2012
2. Merrimack Valley Multi-Hazard Mitigation Plan “Kick-Off” Workshop – March 21, 2012
 - Workshop Notice & Agenda
 - List of Attendees
 - MVPC Powerpoint Presentation
 - MEMA Powerpoint Presentation
 - COSTEP MA Powerpoint Presentation
 - Hazard Mitigation “Best Practices” Handouts – Melrose, Peabody, Tewksbury



Merrimack Valley Planning Commission

*plan * develop * promote*

TO: Merrimack Valley Chief Elected Officials, Town Managers and Administrators, Emergency Management Personnel, DPW Directors, City/Town Engineers, Conservation Agents, Health Agents, Building Inspectors, City/Town Planners, and Interested Community Stakeholders

FROM: Alan Macintosh, MVPC Asst. Director/Hazard Mitigation Program Manager

DATE: February 8, 2012

SUBJECT: *Updating of FEMA-Approved "Merrimack Valley Multi-Hazard Mitigation Plan"*

The Merrimack Valley Planning Commission (MVPC) has been awarded a Hazard Mitigation Program Grant from the Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA). Combined with matching funds from MVPC, the grant funds will be used by MVPC's Environmental and Geographic Information Systems staff to update the region's 5-year "**Merrimack Valley Multi-Hazard Mitigation Plan**." The current plan, prepared in 2008 in collaboration with 13 MVPC District communities (Andover, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, Newbury, North Andover, Rowley, Salisbury, West Newbury), is due to expire in February 2013.

By updating the regional Plan in conformance with applicable federal and state requirements, the communities will maintain their eligibility for federal hazard mitigation grants. These grants are used by municipalities to enhance local emergency preparedness and to mitigate future impacts to life and property from natural hazards such as floods, winter snow and ice storms, tornadoes, hurricanes, earthquakes, and coastal storm surges. Eligible projects include elevating or flood-proofing of critical infrastructure, replacing damaged or undersized culverts, and strengthening local codes.

As a first step in the Plan updating process, we respectfully request that each community reestablish its local hazard mitigation planning team (referred to by FEMA as "Local Hazard Mitigation Community Planning Team", or LHMCP). MVPC planners will meet with this team several times over the next 6-8 months to solicit local expertise and information for incorporation in the updated Plan. The composition of your local planning team is entirely at the discretion of your community, but typically includes the following individuals: Emergency Management Director, Police Chief, Fire Chief, Public Works Director, City/Town Engineer, Conservation Agent, Health Agent, Building Inspector, and City/Town Planner.

We are eager to begin the Plan updating process as soon as possible. To assist us in this effort, kindly email me the name, title, department affiliation, and contact information (mailing address, telephone and fax numbers, e-mail address) of your community's hazard mitigation team members. In March, MVPC will convene a regional meeting of the 13 local teams to formally launch the Plan updating project and to review the Plan development requirements and timetable.

The MVPC staff looks forward to working with your community to prepare this next iteration of the **Merrimack Valley Multi-Hazard Mitigation Plan**. If you have any questions about this project, please do not hesitate to contact me at 978-374-0519 or by email at amacintosh@mvpc.org.

THANK YOU!

160 Main Street, Haverhill, MA 01830

phone - 978-374-0519 • fax - 978-372-4890

Serving the communities of:

Amesbury Andover Boxford Georgetown Groveland Haverhill Lawrence Merrimac Methuen
Newbury Newburyport North Andover Rowley Salisbury West Newbury

WORKSHOP NOTICE

For: Merrimack Valley Mayors and Managers, Emergency Management Personnel, DPW Directors, City/Town Engineers, Building Inspectors, Planners

From: Alan Macintosh, MVPC Assistant Director/Envir. Program Manager



“Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018”

“Kick-Off” Workshop

When: Wednesday, March 21, 2012, 8:30—11:00 AM

Where: Northern Essex Community College, Technology Center
Room 103A, 100 Elliott Street, Haverhill, MA

Purpose: Preparing the ***“Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018”***, an updated regional plan to reduce or eliminate the long-term risks to human life and property from natural hazards

AGENDA

Light Refreshments

1. Welcome and Opening Remarks
2. Introduction of MVPC Project Staff and Municipal Representatives
3. Overview of Regional Multi-Hazard Mitigation Plan Contents & Plan Development Process
4. Inventorying and GIS Mapping of Natural Hazard Areas and Critical Facilities & Infrastructure at Risk
5. Development of Local Hazard Mitigation Strategies, Actions, and Projects
6. Roles and Responsibilities of MVPC and Communities in the Planning Process
7. Questions & Answers
8. Next Steps



This project is funded by a grant from the Massachusetts Emergency Management Agency (MEMA) in cooperation with the Department of Homeland Security - Federal Emergency Management Agency (FEMA). Matching funds are provided by the Merrimack Valley Planning Commission (MVPC).



For: Merrimack Valley Mayors and Managers, Emergency Management Directors, Fire and Police Chiefs, DPW Directors, City/Town Engineers, Conservation Agents, Health Agents, Building Inspectors, Planners

“Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018”

“Kick-Off” Workshop

When: Wednesday, March 21, 2012 — 9:30-11:30 AM

Where: Northern Essex Community College (*directions attached*)
100 Elliott Street, Haverhill, MA
Technology Center — Room TC103-A

Purpose: Updating of “*Merrimack Valley Multi-Hazard Mitigation Plan*”, the 5-year regional plan to help municipalities reduce long-term risks to human life and property from natural hazards

AGENDA


- 9:15 Coffee & Networking
- 9:30 Welcome and Opening Remarks—*Dennis DiZoglio, MVPC Executive Director*
- 9:45 Updating the Merrimack Valley Multi-Hazard Mitigation Plan: Plan Contents, Planning Process, and Players—*Alan Macintosh, MVPC Envir. Prog. Mgr.*
- 10:15 GIS Maps & Analyses in Support of Plan—*Jerrard Whitten, MVPC GIS Mgr.*
- 10:30 **BREAK—Refreshments & Networking**
- 10:45 Planning Tasks & Timelines (Local and Regional)—*Alan Macintosh, MVPC*
- 11:00 Hazard Mitigation Grant Opportunities—*Scott MacLeod, MEMA Hazard Mitigation Grants Coordinator*
- 11:15 Preserving Cultural Resources in Times of Disaster—*Lori Foley, HMGP Grant Coordinator, COSTEP MA*
- 11:25 Closing Remarks—*MVPC and MEMA Staff*



This project is funded by a grant from the Massachusetts Emergency Management Agency (MEMA) in cooperation with the Department of Homeland Security - Federal Emergency Management Agency (FEMA). Matching funds are provided by MVPC.



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✓	Baeslack	Brent	conservation@townofrowley.org	Conservation Agent	Conservation Dept.
✓	Barry	Thomas	mrmcmerrimac@yahoo.com	Highway Foreman	Merrimac Highway Dept.
✓	Bellavance	Curt	cbellavance@townofnorthandover.com	Community Development Director	Community Development
✓	Blanchette	Peter	peterblanchette@cityofflawrence.com	Bldg. Commissioner/Health Agent	Inspectional Services Dept.
✓	Borden	Richard	firechief@cityofflaverhill.com	Fire Chief	Haverhill Fire Department
✓	Bracey	Bob	bbracey@cityofnewburyport.com	Public Health Director	Newburyport Public Health Dept.
✓	Breen	Kevin	kbreen@ci.salem.nh.us	Fire Chief/EMD	Salem Fire Department
✓	Brennan	Paul			Lawrence General Hospital
✓	Broderick	James	firechief@rowleyfiredept.com	Fire Chief/Emergency Mgmt. Dir.	Rowley Fire Dept
✓	Carbone	Thomas	tcarbone@andoverma.gov	Director of Public Health	Health Division
✓	Clement	Lou-Ann	lclement@tewksbury-ma.gov	Public Health Director	Tewksbury Board of Health
✓	Colwell	Kathleen	kbcollwell@ci.methuen.ma.us	Planning Director	City of Methuen CD Dept.
✓	Comeau	Michael	michael.comeau@sec.state.ma.us	Director of Archives Operations	Massachusetts Archives
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✓	Durkee	Peter	pdurkee@georgetownma.gov	Highway Supervisor	Georgetown Highway Dept.
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✓	Gagnon			Fire Dept.	Newburyport Fire
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✓	Howard	Thomas	thoward@newburyportpolice.com	City Marshal	Newburyport Police

	Ketchen	Deborah	healthagent@townofmerrimac.com	Health Agent	Board of Health
	Loffredo	Jim		Lawrence	Lawrence General Hospital
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	McCarthy	Daniel	dmccarthy@cityofflawrence.com	City Planner	Planning Department
	McLeod	Carol	cmcleod@townofmerrimac.com	Town of Merrimac	Finance Director
	Moriarty	Brian	bfmorty@aol.com	Deputy Fire Chief	Haverhill Fire Department
	Mulligan	James	jmuligan@georgetownma.gov	Chief of Police	Georgetown Police Department
	O'Hanley	Robert	ss454truck@aol.com	Health Bd. Chair/Plng. Vice Chair	Town of Groveland
	Pearson	Lisa	lpearson@salisburyma.gov	Planning Director	Salisbury Planning
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	Shears	Eric		Chief of Police	Merrimac
	Spencer	Ralph	chief@merrimacfire.com	Fire Chief	Merrimac
	Stankovich	Michael	mstankovich@cityofhaverhill.com	DPW Director	DPW
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	Voto	John	jvoto@tewksbury-ma.gov	Deputy Chief of Police	Tewksbury Police Department
	Wall	Andrew	awall@cityofflawrence.com	City Engineer	Public Works
	Welch	Jennie	jwelch@tewksbury-ma.gov	Safety Officer	Tewksbury Police Department
	Willis	Eugene	gwillis@townofnorthandover.com	Director Engineering	Public Works
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	MVPC				
	DiZoglio	Dennis	ddizoglio@mvpc.org	Executive Director	
	Macintosh	Alan	amacintosh@mvpc.org	Asst. Director/Envir. Prog. Mgr.	

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Merrimack Valley Region Multi-Hazard Mitigation Plan 2013-2018



Merrimack Valley Region Natural Hazards Pre-Disaster Mitigation Plan



Updating
the
Current
5-Yr Plan

What is Hazard Mitigation?



"mit-i-gate"

1. to make less severe or painful
2. to cause to become less harsh or hostile



Hazard Mitigation

Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards and their effects.

Why Prepare an Updated Plan?

Disaster Mitigation Act of 2000:

Congress enacted the Disaster Mitigation Act of 2000 (DMA 2000) on October 10, 2000.

The law established a national program for pre-disaster mitigation, and streamlined the federal administration of disaster relief.

DMA 2000 requires all communities to have a FEMA-approved "Multiple Hazards Mitigation Plan" to qualify for FEMA funding under the Pre-Disaster Mitigation (PDM), Flood Mitigation Assistance (FMA), and Hazard Mitigation Grant Program (HMGP).



What is a Natural Hazard?

- An event or physical condition that has the potential to cause fatalities, injuries, property damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss.
- In the Merrimack Valley region, this includes: flooding, winter storms, severe thunderstorms, hurricanes (including coastal storm surges), tornadoes, earthquakes, wildfire, drought, etc.
- The updated Multi-Hazard Mitigation Plan will also consider the impacts of **climate change**.

Merrimack Valley Natural Hazards



Floods



Wildfire



Coastal Storms

Natural hazards are a part of the world around us. Their occurrence is natural and inevitable, and our capacity to control their frequency, intensity, and duration is limited.

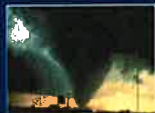


Winter Storms



Hurricanes

Natural hazards threaten the safety of our residents and visitors, and have the potential to damage or destroy public and private property, disrupt the local and regional economy, and diminish the overall quality of life of those who live and work in the region.



Tornadoes



Earthquakes



Heat Waves



Drought

While we cannot eliminate natural hazards, there is much we can do to lessen their impacts on our communities and citizens.

By reducing a hazard's impacts, we can decrease the likelihood that such an event will result in a disaster.

The concept and practice of reducing risks to people and property from known hazards is generally referred to as *hazard mitigation*.

Purpose of Plan

The purpose of the *Merrimack Valley Multi-Hazard Mitigation Plan* is to:



- Identify and characterize natural hazards that are common to the communities of the Merrimack Valley region;
- Determine specific locations, populations, and facilities that are vulnerable to these hazards; and
- Formulate mitigation strategies, both local and regional, to reduce the long-term risks and impacts associated with these hazards.

What are the Benefits of Hazard Mitigation?

- Breaks the repetitive, costly cycle of damage and reconstruction
- Reduces the loss of life, property, essential services and economic hardship
- Increases communication and cooperation within a community – and among communities – through the planning process
- Increases potential for state and federal grant funding for recovery and reconstruction projects

What are the Tools of Hazard Mitigation?

- Land use planning and regulation of development in hazard-prone areas (e.g., prohibiting construction in a floodplain)
- Strict enforcement of building codes and environmental regulations (e.g., local wetland regulations)
- Public safety measures, such as regular maintenance of roadways, culverts and dams
- Acquisition of properties at risk (e.g., removing buildings located in a flood zone)
- Retrofitting of structures and careful design of new construction (e.g., elevating a home above flood elev.)

Geographic Scope of Plan



The Merrimack Valley Planning region covers 267 square miles and includes 15 cities and towns with a combined resident population of 333,748 (U.S. Census 2010)

15 Key Planning Elements / (Primary Responsibility)

1. Host "Project Kick-off Workshop" at NECC (MVPC & Municipalities)
2. Conduct "Public Outreach & Involvement" (ongoing) – both Local (Municipalities) & Regional (MVPC)
3. Update "Critical Facilities Inventories" (Municipalities) & "Digital Maps" (MVPC)
4. Update "Natural Hazards Identification, Characterization & Digital Maps" (MVPC); update "Risk Assessment/ Vulnerability" (MVPC)
5. Update "Regional Profile" (MVPC); update "Community Profiles" (Municipalities & MVPC)
6. Update "Capability Assessment" – i.e., identify and evaluate existing local protection / mitigation measures (Municipalities)
7. Update "Mitigation Goals" (MVPC)
8. Update "Mitigation Strategies & Action Plans" – both Local (Municipalities) & Regional (MVPC)

Key Planning Elements / (Primary Responsibility)

9. Update "Plan Maintenance Procedures" (plan monitoring, evaluating & updating) (MVPC)
10. Update "Plan Appendices" (list of references, documentation of public planning process, completed "Crosswalk", etc.) (MVPC)
11. Prepare and submit Draft Plan to municipalities, MEMA & DCR, and FEMA for review & comment (MVPC)
12. Prepare and submit Final Plan to municipalities, MEMA & DCR, and FEMA (MVPC)
13. FEMA designates Final Plan as "Approvable Pending Adoptions"
14. Local adoption (Municipalities) & Regional adoption (MVPC) of Final Plan
15. FEMA officially approves Final Plan; notifies municipalities & MVPC

Hazards Identification & Mapping



➤ FLOOD-Related Hazards



➤ WIND-Related Hazards



➤ WINTER-Related Hazards

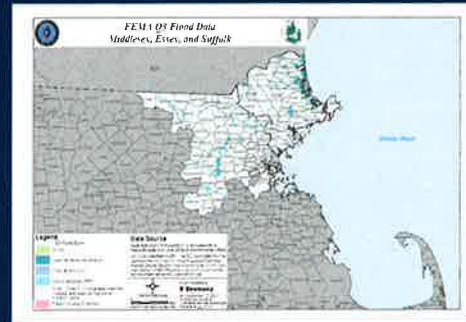


➤ FIRE-Related Hazards



➤ GEOLOGIC Hazards

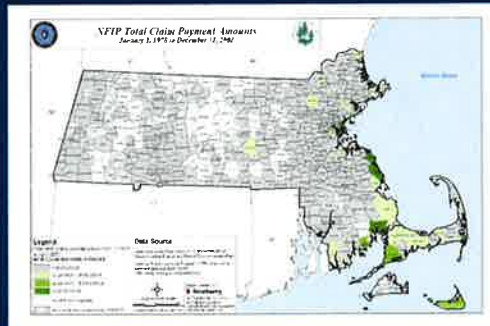
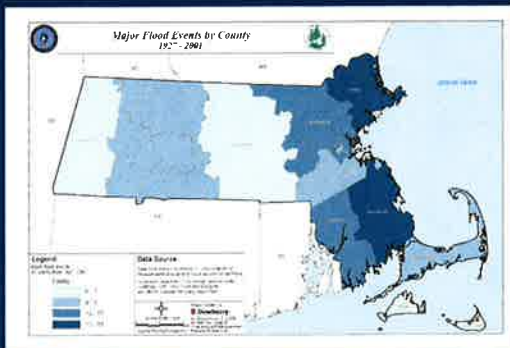
FLOODS...



LAWRENCE DAM at FLOOD HEIGHT - MARCH 1936



POST OFFICE SQUARE, HAVERHILL - MARCH 1936



Spicket River Flooding, Methuen – May 2006



Little River Flooding, Haverhill – May 2006



Shawsheen River Flooding, Lawrence – May 2006



Merrimack River at Bates Bridge, Groveland – May 2006



Destroyed Boat Slips – MacKenzie's Landing Marina, Amesbury



Shawheen River Flooding at Rt. 114



Surging Powow River at Millyard, Amesbury



Little River Flooding at Newman Road, Newbury



Coastal Storm Surge & Erosion – Salisbury Beach



Coastal Storm
Surge
&
Erosion
on
Plum Island

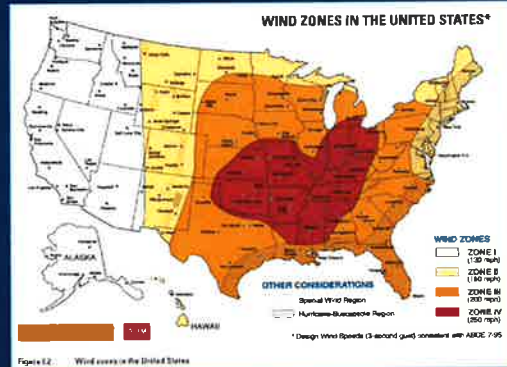


Spicket River Flooding, Lawrence – May 2006



Shawsheen River at Glenwood Ave., North Andover

WIND ...



WINTER NOR'EASTERS ...



Snow
Wind
Ice Damage

Merrimack Valley Snowfall

(Newburyport Water Treatment Plant)

Year	Snowfall (Inches)	Year	Snowfall (Inches)	Year	Snowfall (Inches)
2005	110.0	1989	46.8	1971	70.2
2004	33.0	1987	63.0	1970	79.0
2003	83.5	1986	29.3	1969	102.2
2002	45.0	1985	32.5	1968	48.5
2001	70.8	1984	59.0	1967	96.2
2000	28.8	1983	57.0	1966	73.2
1999	35.0	1982	44.5	1965	32.3
1998	17.5	1981	39.0	1964	69.5
1997	50.0	1980	26.3	1963	52.0
1996	82.5	1979	32.0	1962	46.2
1995	43.5	1978	84.8	1961	81.0
1994	60.5	1977	71.5	1960	60.0
1993	89.7	1976	52.0	1959	57.2
1992	24.3	1975	50.7	1958	51.8
1991	27.0	1974	38.3	1957	31.3
1990	42.0	1973	20.0	1956	120.5
1989	28.5	1972	84.2		

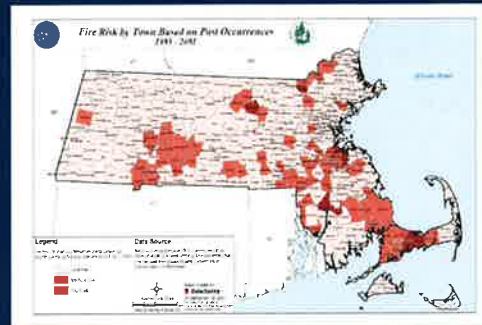
50-Year Annual Average – 55.4 Inches

WILDFIRE ...



Uncontrolled fire that spreads due to the presence of vegetative fuel. In 2002, over 3,000 wildfires burned more than 1,600 acres in Massachusetts (MEMA).

WILDFIRE ...



HURRICANES ...



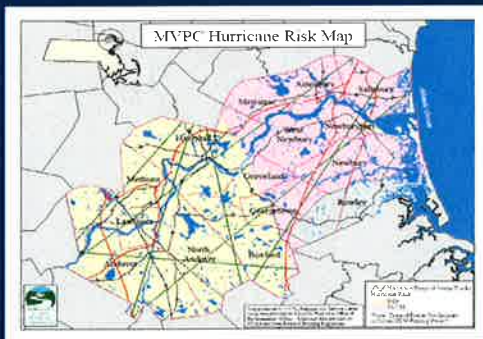
Hurricane Bob Damage, Wareham MA

Intense tropical storms with a well defined circulation and minimum sustained winds of 74 mph

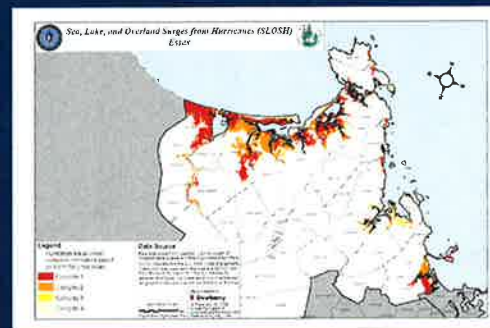
Hurricanes ...



HURRICANES ...



COASTAL STORM SURGES ...



TORNADOES ...

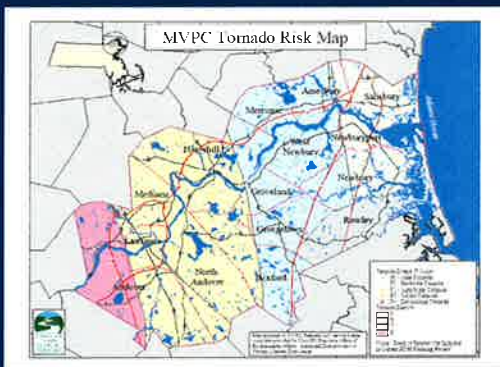


The WORCESTER TORNADO struck at 5:08 PM on July 9, 1953. Within one minute, more than 90 people were dead and over 1,300 injured. Damage estimates exceeded \$52 million.

Tornado of July 5, 1643

Governor John Winthrop recorded Essex County's (and New England's) first tornado when he wrote,

"There arose a sudden gust so violent for one-half hour as it blew down multitudes of trees. It lifted up their meeting house at Newbury, the people being in it. It darkened the air with dust, yet through God's great mercy it did no hurt, but only killed one Indian with the fall of a tree."



TORNADOES

On average, 6 tornadoes per year touch down somewhere in New England. Those most at risk include people in automobiles, anyone not in a secure structure, and residents of mobile homes.

The National Disaster Center evaluated tornado statistics from 1950-1995 by state. When compared with other states, Massachusetts ranked:

- 35th in the frequency of tornadoes
- 16th in the number of tornado-related deaths
- 21st in the number of injuries
- 12th in the cost of tornado-related damages.

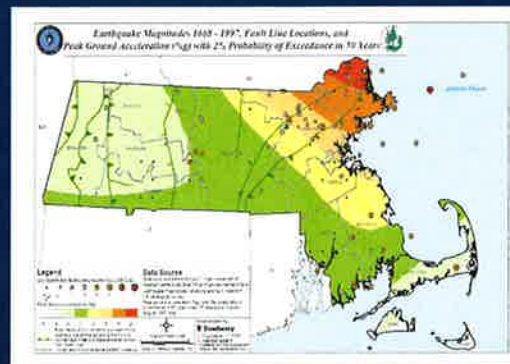
(Note: Above rankings skewed upward due to the enormous damage caused by the Worcester Tornado event relative to the state's small size.)

In Essex County, 14 tornadoes were recorded during the period of 1950-1995. Of these, the great majority (11) fell within the lower F0 to F2 windspeed and damage categories. Only one tornado, occurring on September 29, 1974, reached the F3 ("severe damage") level.

EARTHQUAKES ...



Report of North Shore Earthquake of 1727: "At Newbury, many stone walls and chimney bricks were shaken down ... firm land became quagmire, and marshes were dried up ... the rise and fall of the ground made it difficult to walk, and houses shook and rocked as if they would fall apart ... Felt from ships at sea ..."



Updating the "Regional Profile"

Socioeconomic data...

Merrimack Valley Population, Housing, and Employment (2010)

Community	Area (sq. mi.)	Population	Pop. Density (persons/sq. mi.)	Households	Employment
Amesbury	12.4	16,283	1,328	8,642	9,025
Andover	31.0	33,201	1,076	11,851	15,584
Bosford	24.0	7,965	338	2,688	3,916
Georgetown	12.9	8,183	638	2,937	4,113
Groveland	8.9	6,499	727	2,346	3,053
Haverhill	33.3	60,870	1,845	24,150	30,782
Lawrence	7.0	76,377	11,028	25,181	31,057
Merrimack	8.5	6,338	749	2,417	3,437
Mathews	22.4	47,255	2,124	17,529	22,847
Newbury	24.2	6,666	285	2,594	3,510
Newburyport	8.4	17,410	2,066	7,622	9,292
North Andover	26.7	28,352	1,070	10,516	13,643
Rowley	18.7	5,856	322	2,155	2,669
Salem	15.4	8,263	537	3,441	4,650
West Newbury	13.6	4,235	315	1,505	2,142
MVPC Region	287.3	333,748	1,294	129,577	160,270

Merrimack Valley Land Use By Community (1999)

Community	Forest	Residential	Commercial & Industrial	Agriculture	Wetlands & Water	Transportation	Other	Total
Area	%	Area	%	Area	%	Area	%	Area
Amesbury	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Andover	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Bosford	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Georgetown	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Groveland	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Haverhill	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Lawrence	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Merrimack	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Mathews	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Newbury	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Newburyport	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
North Andover	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Rowley	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
Salem	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
West Newbury	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111
MVPC Region	1,111	2,811	272	1,111	1.8	1,111	1.8	1,111

Transportation Data...



Route I-95



Lawrence Municipal Airport

Water Resources Data...



Updating the "Community Profile"

Critical Facilities & Infrastructure

- City/Town Offices
- Police and Fire Stations
- Emergency Operations Ctr's
- E911 Dispatch Centers
- Emergency Shelters
- Public Water Supplies
- Water Treatment Plants
- Sewage Treatment Plants
- Pumping Stations/Storage
- DPW Garages
- Public Libraries
- Solid Waste Transfer Stn's
- Courts
- Hospitals/Clinics
- Schools & Colleges
- Day Care Facilities (8+ Pupils)
- Nursing Homes / Elderly Housing / Senior Centers
- Rail Lines
- Bridges and Dams
- Transportation Hubs
- Electric Power Plants
- Power Substations
- Communications/Cell Towers
- Evacuation Routes
- Others?

Town of Rowley – Emergency Operations, Health & Nursing Facilities and Emergency Shelters

Facility Type	Comm. Name	Street Address	Health Facility Type	Avg. Daily Patient Capacity	Max. Capacity	Feeding Capacity	Emergency Generator
Emergency Operations Center	Rowley Fire Dept.	7 Hammond St.	N/A	N/A	N/A	N/A	YES
E911 Dispatch Center	Rowley Police Dept.	477 Haverhill St.	N/A	N/A	N/A	N/A	YES
Health & Nursing Facilities	Seaview Manor	50 Mansion Drive	Nursing Home	86	86	YES	YES
Emergency Shelters	Pine Grove Elem. School	191 Main Street	N/A	N/A	300-400	YES	NO

Critical Facilities in Flood Hazard Areas – Haverhill

Facilities in 100-Year Floodplain		
Facility Name	Parcel ID / Street Location	2007 Buildings Valuation
Haverhill Water Street Fire Station	207-2-21 131 Water Street	\$447,500
Merrimack Valley Reg'l Transit Auth.	712-654 8785 Railroad Avenue	\$1,455,400
Haverhill Park & Ride Lot	406-2-51 225 Lincoln Avenue	\$1,510,900 (land value)
Mass. Electric Company Substation	207-2-41 155 Water Street	\$834,200
Facilities in 500-Year Floodplain		
Facility Name	Parcel ID / Street Location	2007 Buildings Valuation
Haverhill Moody School	505-246-2759 Margin Street	\$1,354,400
Pennacook Plaza Nursing Home	207-1-21 150 Water Street	\$3,227,000
Bessent Day Care Facility	536-17-81 1035 Western Avenue	\$211,700
Phoenix Row Elderly Housing	308-1-81 12 Phoenix Row	\$725,400
Washington Square Elderly Housing	308-52-21 250 Washington Sq.	\$7,406,600
MVRTA Washington Sq. Bus Station	308-1-101 12 Washington Sq.	\$612,500
Marginal Sewage Pumping Station	308-1-101 12 Washington Sq.	\$162,200

Repetitive Loss Structures*

Town of Salisbury excerpt...

According to file data provided by the MA Department of Conservation and Recreation, there were twenty-one (21) repetitive flood loss sites in Salisbury as of May 2006.

Not surprisingly, a majority of the documented repetitive loss sites are located in the Salisbury Beach section of the community. The loss sites in Salisbury include a mix of property types: single-family homes, multi-family residences, and businesses.

Altogether, flood incidents at these 21 loss sites resulted in the payout of 62 National Flood Insurance Program (NFIP) claims totaling \$1,935,030 since 1978. This is the *highest number* of claims among the 15 communities in the Merrimack Valley Planning District, and the *second highest* claim amount. (Only the City of Lawrence, with 37 claims totaling \$3,100,888, exceeds the Salisbury claim amount.)

* An NFIP-insured structure that has had at least two paid flood losses of more than \$1,000 each in any 10-year period since 1978.

High Hazard and Significant Hazard Dams – Haverhill

Dam Name	Impoundment Name (maximum capacity in acre-feet)	Year Completed	Hazard Class	Last Inspection Date	Next Inspection Due
Milvate Reservoir Dam	Milvate Reservoir (95 acre-feet)	1906	High	Not Recorded	Not Recorded
Crystal Lake Dam	Crystal Lake (100 acre-feet)	1930	Significant	12/18/1999	12/26/2004*
Frye Pond Dam	Frye Pond (60 acre-feet)	Not Recorded	Significant	12/30/1999	12/26/2004*
Lake Pentucket Dam	Lake Pentucket (113 acre-feet)	1920	Significant	12/21/99	12/21/2004*
Little River Dam	Little River (25 acre-feet)	1879	Significant	12/21/99	12/21/2004*

* Inspection overdue, according to DCR/Office of Dam Safety spreadsheet record

Special Flooding Concerns – Lawrence

Lawrence public safety officials cite five recurring flooding problem areas that are of particular concern and warrant immediate attention in order to better protect public safety, private property, and municipal infrastructure. These problem areas are summarized below.

Shawheen River @ Merrimack Street Culvert

The Shawheen River flows below ground for approximately one eighth of a mile, passing beneath Merrimack Street, a public way, as well as a rail line and commercial parking lot, before exiting to the Merrimack River. During the 100-year flood, the Shawheen River backs up into a local neighborhood affecting several homes and streets.

Shawheen River @ Route 114 Bridge

The Shawheen River, during the 100-year flood, is backed up by the existing bridge structure, causing the river to overflow its banks and flood Route 114, effectively closing the busy public thoroughfare.

Spectet River @ Dairy Street Bridge

The Spectet River routinely backs up at the bridge, flooding Holly, Dairy, Spruce and Myrtle Streets. The City recently purchased 9 homes adjacent to this bridge using FEMA money, and along with land owned by Central Catholic High School created a recreational park with increased flood storage.

Spectet River @ Hampshire Street Bridge (currently being replaced)

The Spectet River routinely backs up at this bridge, flooding Hampshire Street and Marion Avenue.

Bloody Brook @ Intersection of Swan/Kings Streets and Jackson Street

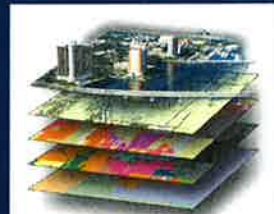
The Bloody Brook routinely backs up due to inadequately sized culverts and increased development upstream. Several homes in the flood area have been demolished and the property is now owned by the City of Lawrence.

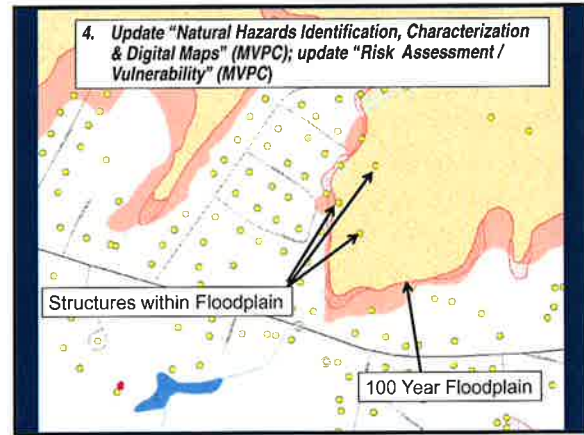
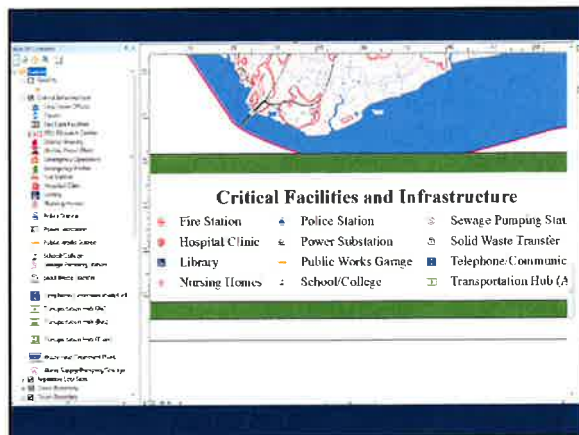
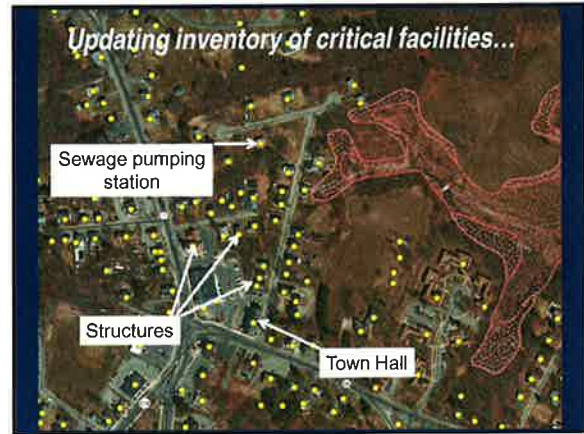
GIS Maps & Analyses in Support of Plan

Jerrard Whitten
MVPC GIS Manager

GIS Mapping and Analysis – updating the plan

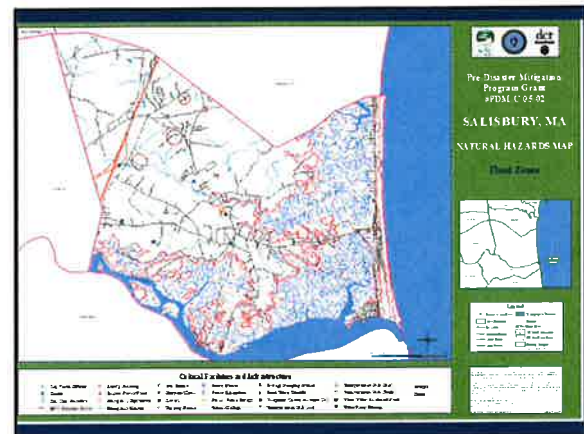
- Update "Critical Facilities Inventories" (Municipalities) & "Digital Maps" (MVPC)
- Update "Natural Hazards Identification, Characterization & Digital Maps" (MVPC); update "Risk Assessment / Vulnerability" (MVPC)





4. Update "Natural Hazards Identification, Characterization & Digital Maps" (MVPC); update "Risk Assessment / Vulnerability" (MVPC)

Town	Number of Structures	100 Year Floodplain					Total Assessed Value
		Residential	Commercial	Industrial	Mixed Use	Institutional	
Amherst	200	\$94,355,700	\$11,008,900	\$6,119,200			\$112,483,800
Andover	270	\$13,081,000	\$18,023,100	\$31,081,000			\$62,185,100
Barnstable	103	\$20,350,000					\$20,350,000
Beverly	150	\$17,153,000	\$528,500	\$4,840,800			\$22,522,300
Beverly Hills	122	\$18,396,400	\$7,094,700	\$4,133,300			\$29,624,400
Beverly Hills	727	\$36,098,700	\$79,251,300	\$4,055,400			\$120,405,400
Beverly Hills	393	\$55,816,400	\$27,397,000	\$37,943,017			\$121,156,417
Beverly Hills	79	\$11,583,100					\$11,583,100
Beverly Hills	414	\$42,378,200	\$8,145,200	\$11,583,300	\$5,427,000		\$67,533,700
Beverly Hills	293	\$15,150,000		\$1,056,700			\$16,206,700
Beverly Hills	121	\$18,011,700	\$3,189,900	\$7,554,200			\$28,755,800
Beverly Hills	353	\$110,203,000	\$19,362,400	\$38,034,100			\$167,599,500
Beverly Hills	94	\$1,418,600	\$612,100				\$2,030,700
Beverly Hills	1067	\$12,299,000	\$18,023,100				\$30,322,100
Beverly Hills	11	\$5,766,400					\$5,766,400
Beverly Hills	5401	\$42,350,000	\$18,023,100	\$18,023,100	\$5,427,000		\$83,823,200



Maps to be prepared:

1. Annual Snowfall
2. Earthquakes & Landslides
3. Flood Zones
4. Hurricanes & Tornadoes
5. Population Density
6. Potential Development
7. Composite of all datasets

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15-minute BREAK

**Refreshments
&
Networking**

**Planning Tasks
&
Timelines**

Alan Macintosh, MVPC

**Planning Tasks
&
Timelines**

Alan Macintosh, MVPC

Updating "Existing Protections Matrix"

Examples of Local Mitigation Measures...

	Wetlands Protection Regulation
	Regular Street Sweeping
	Tree-pruning around Utility Lines

Updating "Existing Protections Matrix"

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	Wetlands Protection Regulation
	Regular Street Sweeping
	Tree-pruning around Utility Lines

[illegible]

Town of Boxford – Mitigation Action Plan				
Category of Action	Description of Action	Implementation Responsibility	Timeline/Priority	Resources/Funding
Prevention	Review and update the town's disaster preparedness and response plan, including risk assessments, evacuation routes, and communication protocols. Conduct regular drills and training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Implement measures to protect critical infrastructure, such as water supply, power, and communication systems, from cyber threats and physical damage.	Utility Departments	2024-2025 Medium	Staff resources and external funding for assessment and mitigation measures.
Prevention	Develop and implement a comprehensive risk assessment framework to identify and evaluate potential hazards and vulnerabilities across the town.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for assessment and mitigation measures.
	Implement measures to reduce the risk of flooding, such as improving drainage systems, maintaining flood defenses, and raising awareness of flood risks.	Public Works Department	2024-2025 Medium	Staff resources and external funding for assessment and mitigation measures.
Prevention	Implement measures to reduce the risk of fire, such as enforcing fire safety regulations, conducting fire safety audits, and installing fire detection and alarm systems.	Fire Department	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive fire safety training program for staff and residents, including fire drills and fire safety education.	Fire Department	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of terrorism, such as conducting terrorism risk assessments, implementing security measures, and conducting terrorism training for staff and residents.	Police Department	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive terrorism risk management plan, including measures to prevent, protect, prepare, respond, and recover from terrorism incidents.	Police Department	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of chemical, biological, radiological, and nuclear (CBRN) threats, such as conducting CBRN risk assessments, implementing security measures, and conducting CBRN training for staff and residents.	Police Department	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive CBRN risk management plan, including measures to prevent, protect, prepare, respond, and recover from CBRN incidents.	Police Department	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of cyber threats, such as conducting cyber risk assessments, implementing security measures, and conducting cyber training for staff and residents.	Police Department	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive cyber risk management plan, including measures to prevent, protect, prepare, respond, and recover from cyber incidents.	Police Department	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of natural hazards, such as earthquakes, hurricanes, and tsunamis, such as conducting natural hazard risk assessments, implementing security measures, and conducting natural hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive natural hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from natural hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of human-induced hazards, such as climate change, land use change, and population growth, such as conducting human-induced hazard risk assessments, implementing security measures, and conducting human-induced hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive human-induced hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from human-induced hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of technological hazards, such as space weather, nuclear power, and nanotechnology, such as conducting technological hazard risk assessments, implementing security measures, and conducting technological hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive technological hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from technological hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of complex hazards, such as pandemics, cascading failures, and systemic risks, such as conducting complex hazard risk assessments, implementing security measures, and conducting complex hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive complex hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from complex hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of emerging hazards, such as artificial intelligence, quantum computing, and nanotechnology, such as conducting emerging hazard risk assessments, implementing security measures, and conducting emerging hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive emerging hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from emerging hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of unknown hazards, such as unknown pathogens, unknown chemical agents, and unknown physical agents, such as conducting unknown hazard risk assessments, implementing security measures, and conducting unknown hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive unknown hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from unknown hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of cascading hazards, such as cascading failures, cascading fires, and cascading floods, such as conducting cascading hazard risk assessments, implementing security measures, and conducting cascading hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive cascading hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from cascading hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of systemic hazards, such as systemic risks, systemic failures, and systemic collapses, such as conducting systemic hazard risk assessments, implementing security measures, and conducting systemic hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive systemic hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from systemic hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of global hazards, such as global climate change, global pandemics, and global conflicts, such as conducting global hazard risk assessments, implementing security measures, and conducting global hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive global hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from global hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of existential hazards, such as existential risks, existential threats, and existential crises, such as conducting existential hazard risk assessments, implementing security measures, and conducting existential hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive existential hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from existential hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.
Prevention	Implement measures to reduce the risk of total annihilation hazards, such as total annihilation risks, total annihilation threats, and total annihilation crises, such as conducting total annihilation hazard risk assessments, implementing security measures, and conducting total annihilation hazard training for staff and residents.	Emergency Management Committee	2024-2025 High	Staff resources and external funding for training and equipment.
	Develop and implement a comprehensive total annihilation hazard risk management plan, including measures to prevent, protect, prepare, respond, and recover from total annihilation hazard incidents.	Emergency Management Committee	2024-2025 Medium	Staff resources and external funding for training and equipment.

Summary of Key Tasks and Timeline

1. MVPC hosts "kick-off" Workshop at NECC - 3/21/12
2. Municipalities re-establish Local Hazard Mitigation Community Planning Teams (LHMCPTs) - by 3/31/12
 - Police Chief
 - Fire Chief
 - Emergency Management Director
 - Public Works Director
 - City/Town Engineer
 - Conservation Agent
 - Health Agent
 - Building Inspector
 - City/Town Planner
 - Other Stakeholders (e.g., community organizations, business reps, educational institutions, citizens)

Summary of Key Tasks and Timeline (continued)

3. Each LHMCPT holds 1st of two publicly-posted *working* meetings, facilitated by MVPC staff – by 4/30/12

Agenda

 - Introduction of LHMCPT members and MVPC project staff
 - Overview of Plan updating Tasks and Timelines
 - Review of existing "Community Profile" for completeness & accuracy; update as needed
 - Review of existing "Critical Facilities & Infrastructure" inventory and map for completeness and accuracy; update as needed
4. MVPC updates "Regional Profile" information - 5/31/12
(pop., housing, employment, land use, transportation, water resources, etc.)
5. MVPC completes GIS analyses and draft maps – 6/30/12

Summary of Key Tasks and Timeline (continued)

6. MVPC updates "Natural Hazards Identification, Characterization & Risk Assessment" information – 7/15/12
7. Each LHMCPT holds 2nd of two publicly-posted *working* meetings, facilitated by MVPC staff – 7/15/12

Agenda

 - Re-introduction of LHMCPT members and MVPC project staff
 - Overview of Plan updating Tasks and Timelines; work completed to date
 - Review of local "Existing Protections Matrix" for completeness and accuracy; update as needed
 - Review of existing Plan "Goals"; update as needed
 - Review of existing local "Mitigation Action Plan Matrix" for completeness and accuracy; update as needed
8. From local input, MVPC completes "Community Profiles", "Goals", and "Existing Protections" sections – 8/15/12

Summary of Key Tasks and Timeline (continued)

9. MVPC updates "Mitigation Strategy", "Mitigation Actions" (both local and regional), and "Plan Maintenance" sections – 9/15/12
10. MVPC updates Plan "Appendices" (list of references, documentation of local and regional plan development teams & meetings, list of state and federal hazard mitigation resources, mitigation plan "Crosswalk", etc.) – 9/30/12
11. MVPC packages Draft Plan & companion maps; submits to municipalities & MEMA/DCR for review and comment – 10/15/12
12. MVPC incorporates comments; submits Draft Plan & companion maps to FEMA for review and "conditional approval" – 11/30/12

Note: Final FEMA approval subject to local & regional Plan adoption

Roles & Responsibilities

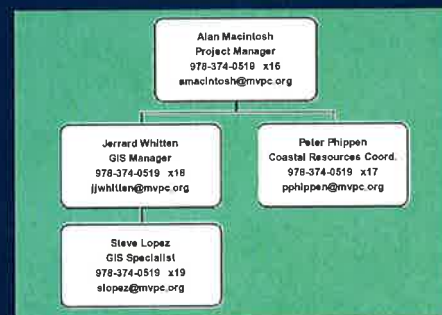
Merrimack Valley Planning Commission (MVPC)

- Overall Plan Coordination and Development
- GIS Mapping & Analyses (natural hazards, critical facilities, etc.)
- Regional/Public Involvement Program (MVPC Board, MPO, CEDS, etc.)
- Regional/Plan Adoption (by MVPC Board)
- Plan submittal to Municipalities, MEMA and FEMA for review and approval

15 Participating Communities

- Form Local Hazard Mitigation Community Planning Teams
- Assisted by MVPC, review and update "Community Profile", "Critical Facilities & Infrastructure", "Existing Protections Matrix" and "Action Plan Matrix"
- Local Public Involvement Program – minimum of 2 public meetings
- Local Plan Adoption (by municipal governing body)

MVPC Project Team





Questions ???



Hazard Mitigation Grant Opportunities

Scott MacLeod, MEMA Hazard Mitigation Grants Coordinator

Preserving Cultural Resources in Times of Disaster

Lori Foley, HMGP Grant Coordinator – COSTEP MA

Closing Remarks & Questions

MVPC and MEMA

HAZARD MITIGATION ASSISTANCE GRANTS

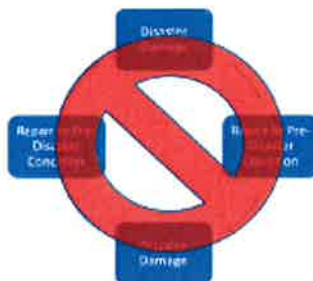


Intent of HMA Grant Programs

- Opportunity to protect individuals & property, and infrastructure from natural hazards while also reducing reliance on Federal disaster funds.
- HMA programs provide pre-disaster mitigation grant funds on an annual basis. Post-disaster HMGP too...
- Statutory origins of programs differ, but share common goal of reducing loss of life and property damage due to natural hazards...
- When in doubt – reference the FEMA program guidance;
- Don't get hung-up on different programs, focus on developing a good scope, budget & schedule...



Mitigation breaks the cycle...



Natural Hazard Mitigation results in long-term, cost-effective, and environmentally sound reduction of hazard vulnerability...



Is it long-term hazard mitigation?

- With implementation of the project, is there an increased level of protection from hazards?
 - Has the risk from the hazard been reduced?
- Build better, stronger, smarter – don't simply restore to pre-disaster condition;
- Avoid the 3-R's...Repair, Reconstruct & Rehabilitate;
- Different from "preparedness" – e.g. sandbagging (temporary/response) vs. floodwall (long-term);
- Does the solution (proposed project) address the source of problem (too much water – too fast) and not just a symptom (erosion)?



FEMA-funded Mitigation Grant Programs

- **Hazard Mitigation Grant Program (HMGP)**
 - Only available after a major/Presidential disaster declaration event;
 - Generally available statewide in MA (not nationally competitive)
 - All hazard mitigation planning and projects (flood, seismic, wind, etc.);
 - Word Document Application – available on MEMA website
- **Pre-Disaster Mitigation (PDM)**
 - Nationally competitive, annual program;
 - All hazard mitigation planning and projects (flood, seismic, wind, etc.);
 - Online Application – eGrants
- **Flood Mitigation Assistance (FMA)**
 - Projects that reduce or eliminate damage to structures insured under the National Flood Insurance Program (NFIP);
 - Online Application – eGrants
- **Severe Repetitive Loss (SRL)**
 - Only FEMA-denied Severe Rep Loss structures are eligible to be mitigated (+/- 175 individual properties in Massachusetts);
 - Homeowners and businesses are notified directly by FEMA if they are an "SRL" property;
 - Online Application – eGrants

Recent Mitigation Highlights...

- Haverhill – Bank Stabilization
- Greenfield – Property Acquisition
- Becket – Slope Stabilization
- Scituate/Quincy – Elevations & Retrofits
- North Reading – Public Safety Building Floodwall
- Melrose – Ell Pond Drainage Improvements
- Harwich – Wind Retrofit
- Other mitigation ideas...

Haverhill – Merrimack River Bank Stabilization to Protect Sewer Infrastructure

- Significant erosion from May '06 flood event
- Potential impact to 54" sewer interceptor in Riverside Ave. – major loss of function possible
- Near vertical slopes – unstable and complicated riverine situation – rare species habitat
- \$386,000 HMGP Grant Award
- Project completed Summer 2011

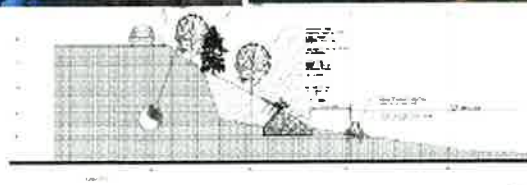


Haverhill – Merrimack River Bank Stabilization to Protect Sewer Infrastructure

- Significant coordination w/ permitting agencies for creative 'hard' & 'soft' solutions...
 - Improvements to "S00" of bank
 - Stone toe, re-grade for shallower bank, erosion control blankets w/ plantings, aquatic plantings & anchored tree stumps
- Project highlighted at Sept. 2011 DEP/Assoc. of MA Wetland Scientists workshop as a 'best practice' ...



Haverhill – Merrimack River Bank Stabilization to Protect Sewer Infrastructure



Greenfield – Property Acquisition

- October 2005 flood disaster;
- 14.8 acre parcel w/ 37 Mobile Homes; ~100 residents displaced;
- Convert to open space in perpetuity; connect w/ existing bike trail;
- Funding/Grant:
 - \$1.15M Total Cost
 - \$855,850 FEMA FMA Grant
 - Creative non-federal match (Urban Self-Help Grant)



Greenfield – Property Acquisition

Before...



After...



Becket – Brooker Hill Road/Slope Stabilization

- Emergency access route (road closed = major detours);
- Recurrent erosion issues;
- 'Wild & Scenic River' designation – NPS involved;
- Bio-engineered solution;
- FEMA '05 PDM Grant award: \$248,464 Total Cost
 - \$186,348 FEMA Grant
 - \$62,116 local share
- Completed Fall 2008



Becket – Road/Slope Stabilization



Structural Elevations...



North Reading – Public Safety Building Floodwall & Pump Station

- Public Safety facility (Police, Fire, 911) suffered repeated flooding from adjacent Ipswich River;
- Functional downtime of critical facility;
- Divert emergency resources to protect facility away from residents/community;
- HMGP grant award of \$217,326



Melrose – Ell Pond Drainage

- Significant flood impacts to major roads, High School, Towers Apt., DPW Yard;
- Culvert Upgrades, Upsize Drainage Pipe & Outlet Control Structure;
- '05 PDM Grant Award:
 - \$2.3M Total Cost
 - \$1.75M FEMA Award
 - \$582,000 Local Share



Melrose – Ell Pond Outlet Structure

Before:



After:



Harwich – Wind Retrofit Community Shelter

- Community shelter & cable access emergency station;
- Clear polycarbonate resin panels for all window openings;
- Annual drill (and O&M) for installation.
- \$53,900 total cost (\$40,425 HMGP grant);

Before:



After:



Other Mitigation Opportunities...



On-going mitigation activities in the MVPC region...

• Salisbury – Upgrade Town Creek Tidegate \$1,047,663

• Georgetown – culvert upgrades West St. @ Parker River \$340,000

• Georgetown – culvert upgrade at RT 97 at Penn Brook \$528,000



Future HM Grant Opportunities

- Anticipate FEMA Mitigation Grant Guidance issued approx. June 2012
- Formal mitigation grant briefings June thru September 2012
- Approx. \$8M post-disaster HMGP Available for “Halloween 2011 Snowstorm”
- Anticipated application deadline for all mitigation grant programs = November 2012
- Stay tuned for additional details...!



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Rich Zingarelli
Acting State Hazard Mitigation Officer
Department of Conservation & Recreation
Richard.Zingarelli@state.ma.us
(617) 626-1406



FEMA

Program Information

Mitigation

Hazard Mitigation Assistance

The Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance (HMA) programs present a critical opportunity to reduce the risk to individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds.

A COMMON GOAL

While the statutory origins of the programs differ, all share the common goal of reducing the risk of loss of life and property due to natural hazards.

FUNDING DISASTER RECOVERY EFFORTS

The Hazard Mitigation Grant Program (HMGP) may provide funds to States, Territories, Indian Tribal governments, local governments, and eligible private non-profits following a Presidential major disaster declaration.



HAZARD MITIGATION ASSISTANCE



HMA

GRANT PROGRAMS

The Unified Hazard Mitigation Assistance Grant Programs

Authorities and Purpose

The Hazard Mitigation Grant Program (**HMGP**) is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended (the Stafford Act), Title 42, United States Code (U.S.C.) 5170c. The key purpose of HMGP is to ensure that the opportunity to take critical mitigation measures to reduce the risk of loss of life and property from future disasters is not lost during the reconstruction process following a disaster. HMGP is available, when authorized under the Presidential major disaster declaration, in the areas of the State requested by the Governor. The amount of HMGP funding available to the



Applicant is based upon the total Federal assistance to be provided by FEMA for disaster recovery under the major disaster declaration.

The Pre-Disaster Mitigation (**PDM**) program is authorized by Section 203 of the Stafford Act, 42 U.S.C. 5133. The PDM program is designed to assist States, Territories, Indian Tribal governments, and local communities to implement a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on Federal funding from future major disaster declarations.

The Flood Mitigation Assistance (**FMA**) program is authorized by Section 1366 of the National Flood Insurance Act of 1968, as amended (NFIA), 42 U.S.C. 4104c, with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP).

The Repetitive Flood Claims (**RFC**) program is authorized by Section 1323 of the NFIA, 42 U.S.C. 4030, with the goal of reducing flood damages to individual properties for which one or more claim payments for losses have been made under flood insurance coverage and that will result in the greatest savings to the National Flood Insurance Fund (NFIF) in the shortest period of time.

The Severe Repetitive Loss (**SRL**) program is authorized by Section 1361A of the NFIA, 42 U.S.C. 4102A, with the goal of reducing flood damages to residential properties that have experienced severe repetitive losses under flood insurance coverage and that will result in the greatest amount of savings to the NFIF in the shortest period of time.



Additional HMA resources, including the HMA Unified Guidance may be accessed at

www.fema.gov/government/grant/hma/index.shtm

program comparisons

Cost Share Requirements

COST SHARE

In general, HMA funds may be used to pay up to 75 percent of the eligible activity costs. The remaining 25 percent of eligible costs are derived from non-Federal sources.

The table to the right outlines exceptions to the 75 percent Federal and 25 percent non-Federal share.

Programs	Mitigation Activity Grant (Percent of Federal/Non-Federal Share)
HMGP	75/25
PDM	75/25
PDM—subgrantee is small impoverished community	90/10
PDM—Tribal grantee is small impoverished community	90/10
FMA	75/25
FMA—severe repetitive loss property with Repetitive Loss Strategy	90/10
RFC	100/0
SRL	75/25
SRL—with Repetitive Loss Strategy	90/10

ELIGIBLE APPLICANTS AND SUBAPPLICANTS

States, Territories, and Indian Tribal governments are eligible HMA Applicants. Each State, Territory, and Indian Tribal government shall designate one agency to serve as the Applicant for each HMA program.

All interested subapplicants must apply to the Applicant. The table to the left identifies, in general, eligible subapplicants. For specific details regarding eligible subapplicants, refer to 44 CFR Part 206.434(a) for HMGP and 44 CFR Part 79.6(a) for FMA and SRL. For HMGP and PDM see 44 CFR Part 206.2(16) for a definition of local governments.

Eligible Subapplicants

✓ Subapplicant is eligible for program funding

	HMGP	PDM	FMA	RFC	SRL
State agencies	✓	✓	✓	✓	✓
Tribal governments	✓	✓	✓	✓	✓
Local governments/communities	✓	✓	✓	✓	✓
Private non-profit organizations (PNPs)	✓				

Individuals and businesses are not eligible to apply for HMA funds, however, an eligible subapplicant may apply for funding to mitigate private structures. RFC funds are only available to subapplicants who cannot meet the cost share requirements of the FMA program.

Available Funding

HMA programs are subject to the availability of appropriation funding or funding based on disaster recovery expenditures, as well as any directive or restriction made with respect to such funds.

HMGP funding depends on federal assistance provided for disaster recovery, while PDM, FMA, RFC, and SRL funding is appropriated annually by Congress.

program comparisons (continued)

Eligible Activities

ELIGIBLE ACTIVITIES

The table to the right summarizes eligible activities that may be funded by HMA programs. Detailed descriptions of these activities are found in the HMA Unified Guidance.



Eligible Activities	HMGP	PDM	FMA	RFC	SRL
1. Mitigation Projects	✓	✓	✓	✓	✓
Property Acquisition and Structure Demolition or Relocation	✓	✓	✓	✓	✓
Structure Elevation	✓	✓	✓	✓	✓
Mitigation Reconstruction					✓
Dry Floodproofing of Historic Residential Structures	✓	✓	✓	✓	✓
Dry Floodproofing of Non-residential Structures	✓	✓	✓	✓	
Minor Localized Flood Reduction Projects	✓	✓	✓	✓	✓
Structural Retrofitting of Existing Buildings	✓	✓			
Non-structural Retrofitting of Existing Buildings and Facilities	✓	✓			
Safe Room Construction	✓	✓			
Infrastructure Retrofit	✓	✓			
Soil Stabilization	✓	✓			
Wildfire Mitigation	✓	✓			
Post-disaster Code Enforcement	✓				
5% Initiative Projects	✓				
2. Hazard Mitigation Planning	✓	✓	✓		
3. Management Costs	✓	✓	✓	✓	✓

✓ Mitigation activity is eligible for program funding

Management Costs

For HMGP only: The Grantee may request 4.89 percent of HMGP allocation for management costs. The Grantee is responsible for determining the amount, if any, of funds that will be passed through to the subgrantee(s) for their management costs.

Applicants for PDM, FMA, RFC, or SRL may apply for a maximum of 10 percent of the total funds requested in their grant application budget (Federal and non-Federal shares) for management costs to support the project and planning subapplications included as part of their grant application.

Subapplicants for PDM, FMA, RFC, or SRL may apply for a maximum of 5 percent of the total funds requested in a subapplication for management costs.

General Requirements

All mitigation projects must be cost-effective, be both engineering and technically feasible, and meet Environmental Planning and Historic Preservation requirements in accordance with HMA Unified Guidance. In addition, all mitigation activities must adhere to all relevant statutes, regulations, and requirements including other applicable Federal, State, Indian Tribal, and local laws, implementing regulations, and Executive Orders.

program information

NFIP INFORMATION

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding.

Find out more about the NFIP and how it can help you protect yourself.

<http://www.floodsmart.gov>

MITIGATION ELECTRONIC GRANTS SYSTEM

For PDM, FMA, RFC, and SRL, FEMA has developed a web-based, Electronic Grants (eGrants) management system to allow States, Federally-recognized Indian Tribal governments, territories, and local governments to apply for and manage their mitigation grant application processes electronically.

National Flood Insurance Program (NFIP) Participation



NFIP Participation Requirement

There are a number of ways that HMA eligibility is related to the NFIP.

- **Subapplicant eligibility:** All subapplicants for FMA, RFC, or SRL must currently be participating in the NFIP, and not withdrawn or suspended, to be eligible to apply for grant funds. Certain non-participating political subdivisions (i.e., regional flood control districts or county governments) may apply and act as subgrantee on behalf of the NFIP-participating community in areas where the political subdivision provides zoning and building code enforcement or planning and community development professional services for that community.
- **Project eligibility:** HMGP and PDM mitigation project subapplications for projects sited within a Special Flood Hazard Area (SFHA) are eligible only if the jurisdiction in which the project is located is participating in the NFIP. There is no NFIP participation requirement for HMGP and PDM planning subapplications or project subapplications located outside of the SFHA.
- **Property eligibility:** Properties included in a project subapplication for FMA, RFC, and SRL funding must be NFIP-insured at the time of the application submittal. Flood insurance must be maintained at least through completion of the mitigation activity.

Mitigation Plan Requirement

All Applicants and subapplicants must have hazard mitigation plans meeting the requirements of 44 CFR Part 201.

Application Process

Applications for HMGP are processed through the National Emergency Management Information System (NEMIS). Applicants use the Application Development Module of NEMIS, which enables each Applicant to create project applications and submit them to the appropriate FEMA Region in digital format for the relevant disaster.

Applications for PDM, FMA, RFC, and SRL are processed through the Electronic Grants (eGrants) system. The eGrants system encompasses the entire grant application process and provides the means to electronically create, review, and submit a grant application to FEMA via the Internet. Applicants and subapplicants can access eGrants at <https://portal.fema.gov>.

eGrants
Electronic Grants System

program information



GovDelivery Notifications

Stay up to date on the HMA Grant Programs by subscribing to GovDelivery notifications.

Have email updates delivered to an email address or mobile device.

To learn more visit www.fema.gov or just click the icon below.



Email Updates

Application Deadline

The PDM, FMA, RFC, and SRL application period is anticipated to be from June 1, 2010, through December 3, 2010. Applicants must submit an FY11 grant application to FEMA through the eGrants system by December 3, 2010, at 3:00:00 p.m. Eastern Time.

The HMGP application deadline is 12 months after the date of the disaster declaration date and is not part of the annual application period.

Details can be found in the HMA Unified Guidance.

FEMA Review and Selection

All subapplications will be reviewed for eligibility and completeness, cost-effectiveness, engineering feasibility and effectiveness, and for Environmental Planning and Historical Preservation compliance. Subapplications that do not pass these reviews will not be considered for funding.

FEMA will notify Applicants of the status of their subapplications and will work with Applicants on subapplications identified for further review.

Contact Information

HMA Helpline: (866) 222-3580

hmagrantshelpline@dhs.gov

Contact information for FEMA Regional Offices is provided at:

<http://www.fema.gov/about/contact/regions.shtm>

Contact information for each State Hazard Mitigation Officer (SHMO) is provided at:

<http://www.fema.gov/about/contact/shmo.shtm>

Mitigation
Works

Preserving Cultural Resources in Times of Disaster

LORI FOLEY

HMGP GRANT COORDINATOR
COSTEP MA



COSTEP MA

Coordinated Statewide
Emergency Preparedness

Cultural resources can be found in:

Archives
Museums

Historical societies
Cemeteries

Historic buildings
Libraries

City archives
Zoos



American museums, libraries, archives, historical societies, and scientific research organizations are visited **2.5 billion** times a year.



Over **4.8 billion** artifacts are held in the public trust by more than **30,000** cultural heritage institutions in the U.S.



culturecount
NEW ENGLAND'S CULTURAL DATABASE

City or Town	Cultural Nonprofits	Cultural Businesses	Total	Total Local Economic Impact
Amesbury	27	8	35	
Andover	36	22	58	
Beverly	9	4	13	
Georgetown	9	2	11	
Groveland	5	1	6	
Haverhill	35	15	50	
Lawrence	46	17	63	
Merrimack	12	0	12	
Methuen	17	8	25	
Newbury	11	4	15	
Newburyport	47	21	68	
North Andover	31	8	39	
Rosley	5	2	7	
Salisbury	7	3	10	
West Newbury	9	2	11	

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culturecount
NEW ENGLAND'S CULTURAL DATABASE

Income Estimate

Selected Town: HAVERHILL

Selected Organizations: All Cultural Organizations

For fiscal year 2003, the organizations listed above spent a total of: **\$1,649,113**

As a result of this spending:

The organizations selected had the following economic impact on income in the community listed above:

Direct Impact of Cultural Non-Profit Spending:	\$1,649,113
Indirect Impact on Related Industries:	\$679,534
Induced Impact on All Sectors:	\$382,091
Total Local Economic Impact:	\$2,710,737

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NEW ENGLAND'S CULTURAL DATABASE

Income Estimate

Selected Town: LAWRENCE

Selected Organizations: All Cultural Organizations

For fiscal year 2003, the organizations listed above spent a total of: **\$1,745,400**

As a result of this spending:

The organizations selected had the following economic impact on income in the community listed above:

Direct Impact of Cultural Non-Profit Spending:	\$1,745,400
Indirect Impact on Related Industries:	\$727,363
Induced Impact on All Sectors:	\$394,112
Total Local Economic Impact:	\$2,866,875

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NEW ENGLAND'S CULTURAL DATABASE

Income Estimate

Selected Town: GROVELAND

Selected Organizations: All Cultural Organizations

The organizations selected had the following economic impact on income in the community listed above:

Total Local Economic Impact: \$240,040

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NEW ENGLAND'S CULTURAL DATABASE

City or Town	Cultural Nonprofits	Cultural Businesses	Total	Total Local Economic Impact
Amesbury	27	8	35	\$1,039,755
Andover	36	22	58	\$15,459,385
Bokford	9	4	13	\$795,699
Georgetown	9	2	11	\$381,116
Groveland	5	1	6	\$499,040
Haverhill	35	15	50	\$2,790,737
Lawrence	46	17	63	\$2,866,875
Merrimac	12	0	12	\$1,244,133
Methuen	17	8	25	\$1,059,866
Newbury	11	4	15	\$164,733
Newburyport	47	21	68	\$8,789,899
North Andover	31	0	39	\$1,686,202
Rowley	5	2	7	\$303,658
Salisbury	7	3	10	\$119,713
West Newbury	9	2	11	\$84,639

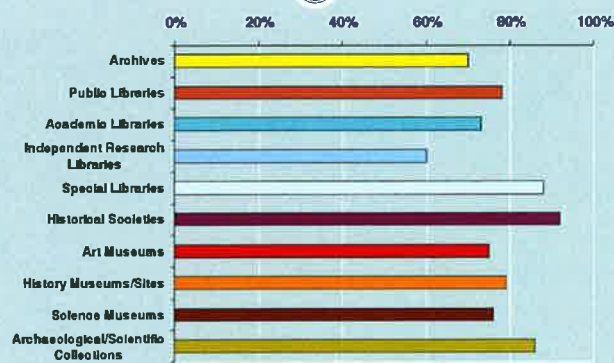
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Did you know?

80% of cultural heritage institutions in the U.S. do not have an emergency plan with staff trained to carry it out.



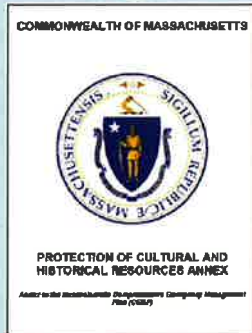
Institutions with No Emergency Plan with Staff Trained to Carry It Out



Collections are vulnerable, valuable, and sometimes irreplaceable.



Annex to the State CEMP



Mitigation for Memory

Objective 2:

Sponsor 6 – 8 half-day meetings with RPAs

- Work with 6 – 8 pilot communities
- Develop a framework for mitigation planning for cultural institutions

Mitigation for Memory

Objective 1:

Host at least 14 community meetings

- 1 in each regional planning jurisdiction
- At least 3 in each of MEMA's 4 regions
- Develop a meeting tool kit for participants

Mitigation for Memory

Objective 3:

Sponsor 4 risk assessment workshops

- 1 in each of MEMA's 4 regions
- Train-the-trainer workshops using Heritage Preservation's Risk Evaluation and Planning Program tools
- Evaluate all participating institutions



The Official Website of the Massachusetts Board of Library Commissioners (MBLC)

MBLC Home About Our History What Agencies Do What We Do Services

Mass.gov

COSTEP MA
Coordinated Statewide
Emergency Preparedness

Bringing the cultural and emergency management communities together to protect and preserve our Commonwealth's cultural heritage.

[Click for Emergency Assistance](#)

[The Culture of Community](#) | [The Emergency Management Community](#) | [About COSTEP MA](#) | [Resources](#) | [Forms & Documents](#) | [Contact](#)

COSTEP was developed by the Northeast Document Conservation Center in partnership with the Massachusetts Board of Library Commissioners and the Massachusetts Archives. COSTEP MA began as a pilot project and is now an ongoing partnership between the Commonwealth's cultural and emergency management communities. The program was made possible by a grant from the Institute of Museum and Library Services.

NORTHEAST DOCUMENT CONSERVATION CENTER
MASSACHUSETTS ARCHIVES

Coordinated Statewide Emergency Preparedness



Emergency managers work daily on mitigation, response, and recovery for life and property.

The Massachusetts Emergency Management Agency (MEMA) has identified hazards, conducted risk assessments, and has plans in place that can incorporate cultural collections. Through COSTEP MA, the Commonwealth's cultural community is establishing relationships with state and local emergency management agencies and is working to integrate cultural resources into existing emergency management processes.

Many partners are needed to protect the cultural collections and historic sites that represent our heritage. Collaborative planning and coordinated response will lessen the damaging effects of disasters and help speed recovery. But the partnerships essential to protecting cultural heritage need to be in place before a disaster strikes and that is what COSTEP MA is striving to achieve.

To learn more about the role each community plays in emergency preparedness and response—and how you can play a part—click on:

- [The Cultural Community](#)
- [The Emergency Management Community](#)



For the city & town planners



**Integrating Historic Property
and Cultural Resource
Considerations Into Hazard
Mitigation Planning**

State and Local Mitigation Planning How-to Guide

HMA 100-6 / May 2015



Thank you!

Lori Foley

HMGP Grant Coordinator

COSTEP MA

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781.259.8652


FEMA

Best practices

Disaster Mitigation Working in Massachusetts

New Drainage System Averts Flooding in Melrose



"The new drain system at Ell Pond saved our city."
—Ed Kelly, Director
Melrose Emergency Management Agency



Water surrounds the Melrose Towers Condominiums just north of Ell Pond during the Mother's Day Flood in 2006

Despite ten days of record-breaking flooding across northeastern Massachusetts in March 2010, the City of Melrose "dodged the bullet," thanks to the new drainage system for the city's Ell Pond.

Runoff from several previous storms, most recently the "Mother's Day Storm" in 2006, led to flood depths as high as six feet in buildings, yards, and streets to the north of Ell Pond. This Spring, the water barely topped the banks of the pond.

"The system worked almost flawlessly," said Bob Beshara, Melrose City Engineer and Superintendent of Public Works. "The new drainage system replaced part of the

existing system and enhanced our ability to move floodwaters rapidly through the city's central core area, while at the same time minimizing their impact."

Ell Pond, a natural body of water within the City of Melrose, is bordered by homes, streets, recreational fields and landscaped park strips. The 23-acre pond receives water from an 1,100-acre watershed, which includes parts of the towns of Stoneham and Wakefield. Water leaves the pond through an outlet at its southeastern corner and flows southward be-

neath city streets to ultimately discharge to Lower Spot Pond Brook.

The original outlet channel allowed water to begin draining from the pond only when it became nearly full, so that the water level could not be lowered in anticipation of large storms and the resulting runoff.

The Ell Pond Project changed all that, and while storm runoff can't be prevented, it can now be managed to reduce its effects. A 2001 study of flooding at Ell Pond identified alternatives for eliminating, or at least

minimizing the problem. In early 2005, city officials began to seek funding for the design and construction of what became known as the "Ell Pond Project."

With funding of \$1.75 million provided by the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation (PDM) program, supplemented by \$1 million in city funds, construction of the new drainage system was completed in time for its first real test by the recent rainfall and accompanying floods of early 2010.

The Ell Pond drainage project consists of a control gate structure at the southeastern corner of the pond and a 3,500-foot long, 48-inch pipe that extends from the control gate to the outlet at Lower Spot Pond Brook.

During periods of peak runoff following the storms of March 2010, the level of Ell Pond rose to as high as two feet above the top of the outlet pipe, and water was draining from the pond at a rate of 100 cubic feet (748 gallons) each second. Draining this much water this rapidly from Ell Pond reduced the extent and depth of inundation of areas around the pond compared to that in the March 2006 flood.

For instance, the West Knoll Soccer Field was flooded by 3 to 4 feet of water in March 2006; in March 2010, only the perimeter of the field was flooded. And the Cabbage Patch Park in front of the new middle school, which was covered by 2 to 3 feet of water in 2006, was not flooded at all this year.

"It's all about water-level management," said John Scenna, Deputy City Engineer and Project Manager for the Ell Pond work. "We can now adjust the level of the pond as conditions require, either raising it high enough to prevent wave action from eroding unvegetated parts of the shoreline or lowering it before storm runoff begins to enter. We did this in March, so the pond served as a temporary storage basin for at least part of that runoff."

The gate that controls the level of the pond is automatically activated to main-



Water enters the new drainage system through the crest gate at the southeast corner of Ell Pond

FEMA photo by Michael Moore

tain or adjust the water to desired, pre-selected elevations, but the mechanism can also be manually activated. The control gate structure incorporates a sturdy debris trapping "trash rack," and a high, level platform that provides a safe perch from which maintenance workers can remove trees and other woody debris that become lodged against the rack.

The construction phase of the new drainage system brought a year of inconveniences – such as torn up roads and temporary water hookups – to the citizens of Melrose. The rewards for their patience, in addition to a lessening of the flood risk to the areas around Ell Pond, were amenities such as new sidewalks and street paving along the construction route, beautiful landscaping around Ell Pond, a skate park, and new baseball and soccer fields.

"The new drain system saved our city," said Ed Kelly, Director of Melrose's Emergency Management Agency. "During earlier floods that inundated parts of central Melrose, large areas were underwater for as long as a week to 10 days. But in 2010, much smaller areas and only scattered depressions near Ell Pond were flooded to much lower depths than in those earlier floods, and the water drained away within a few hours to a few days at most. Now that's a success story."



FEMA

Federal Emergency Management Agency
Region I
Federal Insurance & Mitigation Division
99 High Street, 6th Floor
Boston, MA 02110

Telephone 617-832-4761
www.fema.gov

To learn more about FEMA mitigation grants, please contact:



Massachusetts Emergency Management Agency
400 Worcester Road
Framingham, MA 01702

Mitigation Grants Manager
Telephone 508-820-1445

www.mass.gov/mema



Massachusetts Department of Conservation and Recreation
251 Causeway Street, 8th Floor
Boston, MA 02114

State Hazard Mitigation Officer
Telephone 617-626-1406



dc
Massachusetts

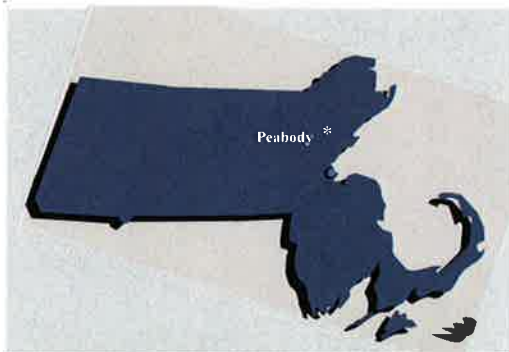


FEMA

Best practices

Disaster Mitigation Working in Massachusetts

Several Small Steps Lead to Safety



"The water goes down much more quickly now.....it gives us real peace of mind."

-Chris Tighe,
Peabody Director of Emergency Management



Photo—City of Peabody

A major contributor to the high water problems in Peabody was the large amount of debris that had accumulated in the local waterways

Flooding is the most common natural disaster threatening United States residents today.

While each state has its own set of hazards and risks to deal with, the majority of states count flooding as the most likely disaster citizens will have to face, and Massachusetts is no exception. In the past 20 years alone, there have been at least 16 major floods in Massachusetts, causing hundreds of millions of dollars in damages.

The City of Peabody, which lies about 15 miles northeast of Boston and three miles from the Massachusetts coast, has seen its share of those floods. Three streams – Goldthwaite, Strongwater and Proctor Brooks – converge in downtown Peabody to form the North River, which flows into the Atlantic Ocean.

"The problem with the hydrology here is that all the water is going to one place," said Chris Tighe, Peabody's Director of Emergency Management. "If we can get the water to the North River, we're going to be ok. Our best asset is low tide, when the ocean just drains all the water out of the system. The problem is,

when we get back-ups, there's no place for the water to go."

In May 2006, runoff from the famous "Mother's Day Storm" inundated downtown Peabody to depths of three to four feet, in some areas reaching as wide as a half-mile across. With no convenient means of egress, in some areas the water took as long as 48 hours to recede. In assessing the aftermath of the 2006 flood, Peabody officials realized they needed to make some changes to their drainage network to lessen effects of future floods, as well as upgrade several critical systems that had been threatened.

One of the first measures Tighe undertook was to secure funds to clean out the channels of several streams running throughout Peabody. To get the money needed to accomplish this considerable task, Tighe applied to the U.S. Department of Labor for a National Emergency Grant (NEG). NEGs allow communities to temporarily increase their workforce through the employment of individuals affected by

large, unforeseen economic events that cause significant job losses. Peabody qualified for such assistance and, through the Valley Works NEG Northeast Flood project, was awarded \$540,000 to conduct the stream cleanup.

Beginning in November 2006, Tighe and his crew canvassed more than 10 miles of waterways, clearing out debris and refuse. They discovered early on that a major contributor to the high water problems Peabody had suffered was the large amount of garbage that had accumulated in the channels through and around the city.

"As an example, we removed a mattress that had become wedged in one of our culverts," reported Tighe. "And as soon as we pulled it out, the water level immediately dropped drastically, probably as much as two to three feet."

The clean-up project took Tighe and his team almost two years to complete and ultimately resulted in the removal of more than twenty 44-cubic yard containers of recyclables, junk and organic material.

An unexpected benefit of the streambed cleanup came when the team discovered that a culvert running beneath a railroad track had sustained major damage over the years. Though the openings appeared normal, the interior of the culvert had collapsed due to the constant vibration from passing trains. The obstructed pipe turned out to be responsible for many back-ups and the consequent flooding, and thanks to the clean-up efforts, the Peabody Department of Public Works was able to identify the problem and repair the pipe. In addition to fixing the damaged railroad culvert, Peabody has sought grant assistance from a number of sources to improve several other culverts in the city to increase the overall efficiency of their drainage network.

Reducing future flood levels in Peabody has been only one step in the city officials' approach to mitigation. During the Mother's Day flooding in 2006, the ability of both the police and fire stations to respond to emergencies was nearly compromised. As the water rose in the basements of both buildings, it became clear that the city was in danger of losing several critical systems.

"We were within three inches of losing our 911 system," said Tighe. "The deputy police chief called and told me to get whatever I could to help, and that we were going to have to run our entire system from another community if we lost it."

In response to the risk posed by the high water, a decision was made to protect the utilities and services of both stations. To make the changes needed, Peabody officials applied for grant assistance from two of the Federal Emergency Management Agency's (FEMA) available grant programs.

The city received \$225,000 from FEMA's Flood Mitigation Assistance (FMA) program ⁽¹⁾ to redirect and upgrade the police station's electrical and 911 systems to protect them from future flood damage. In addition, a new generator was purchased, and new pumps were installed so that water levels could be managed more efficiently in future floods.

Peabody's fire station was built in the 1800s, and is one of the oldest headquarters stations in the country. In fact, the station harkens back to the days when fire trucks were pulled by horses. Like the police station, the fire department's systems had been installed in the basement. During the Mother's Day flood, the original pumps were incapable of dealing with the fast rising water.

"We had everything down there," said Joe DaSilva, a signal maintenance and electrician for



The Peabody fire station was built in the 1800s and is one of the oldest headquarters stations in the country.

the fire department. "Our electrical service, our meter, our main breakers, transfer switches and the entire communication system. In the 2006 flood, the water was about six inches away from shorting us out."

Peabody received a grant for \$101,250 from FEMA's Hazard Mitigation Grant Program (HMGP) ⁽²⁾ to upgrade their at-risk utilities. Due to the amount of equipment that needed to be elevated, and the limited space available on the fire station's first floor, the fire department decided to use part of the grant to construct a separate, elevated room on the exterior of the station. The rest of the grant was used to purchase a new, larger generator and to transfer the fire department's remaining utilities to the new room.

In March 2010, a series of major rainstorms over a short period caused record-setting floods throughout Massachusetts. Several communities in the eastern and central parts of the state received as much as 12 inches of rain, and major flooding was reported on many rivers and streams.

While Peabody still had to contend with high water and some flooding in March 2010, the situation they faced was much easier to handle thanks to the efforts taken following the 2006 Mother's Day Storm. Neighborhoods and private homes that previously would have been inundated did not flood. In the past, many of these houses would have had as much as six feet of water in their basement, but this year some had less than a foot, and most were not flooded at all.

"The water goes down much more quickly now," said Tighe. "Instead of taking two days, it goes down in one cycle of the ocean. If we hadn't made these drainage improvements, our streets would have been closed for a longer

period, possibly as long as 48 hours or more. And there would have been a lot more damage. In addition, the upgrades we made to the police and fire stations' systems allowed us to keep operating with no interruption of service. It gives us real peace of mind."

1. *Flood Mitigation Assistance (FMA) grants provide funds to assist States and communities to implement measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program.*
2. *The Hazard Mitigation Grant Program (HMGP) allows local governments to apply to their State government for federal grant assistance to implement long-term hazard mitigation measures after a major disaster declaration.*



FEMA

Federal Emergency Management
Agency
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Federal Insurance & Mitigation
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99 High Street, 6th Floor
Boston, MA 02110

Telephone 617-832-4761
www.fema.gov

To learn more about FEMA mitigation grants, please contact:



Massachusetts Emergency
Management Agency
400 Worcester Road
Framingham, MA 01702

Mitigation Grants Manager
Telephone 508-820-1445

www.mass.gov/mema



Massachusetts Department of
Conservation and Recreation
251 Causeway Street, 8th Floor
Boston, MA 02114

State Hazard Mitigation Officer
Telephone 617-626-1406

**FEMA**

Best practices

Disaster Mitigation Working in Massachusetts

New Culvert Works: No Flooding at East Street



“East Street remained open to traffic throughout the flood. For a while, it was the only direct route into and out of town.”

- Brian Gilbert, Superintendent of Public Works, Tewksbury, MA



Upstream side of new culverts at East Street during stormwater runoff in March 2010

Photo courtesy of Coughlin Environmental Services

Flooding and the closure of East Street, just east of the town center in Tewksbury, Massachusetts, has been an annual – and in some years an even more frequent – event.

Yet, when heavy rains in March 2010 brought record-breaking flows to streams across eastern Massachusetts, the floodwaters of Strongwater Brook topped out below the East Street roadway, thanks to recent improvements in the drainage system there.

“The backup of floodwaters at the East Street-Strongwater Brook crossing has long been a problem,” said Brian Gilbert, Superintendent of Public Works in Tewksbury. “So it was good to finally get that resolved last summer (2009).”

Over the past several decades, flooding along the Shawsheen River and its tributary, Strongwater Brook, has overtopped stream crossings on major through streets in Tewksbury. Parts of the town were

temporarily isolated, requiring the detour of traffic to alternate routes that quickly became congested, which also severely limited access for emergency response vehicles.

In an effort to mitigate the extent and duration of the disruptions caused by flooding of at least one of these streets, town officials proposed to install new, larger culverts at the East Street-Strongwater Brook crossing.

Prior to the reconstruction of the crossing, the brook passed through two old granite culverts, each with an opening of approximately 3 feet by 4 feet. During periods of high flow, the old culverts could not carry all the water, which then backed up and eventually overtopped the roadway.

The two new concrete box culverts, each 5 feet high by 10 feet wide, together provide an opening four times larger than the old culverts. As extra insurance against future flooding across East Street, the existing roadway was raised by three feet, so that it is now higher than the elevation of the 1-percent-annual-chance flood (known as the 100-year flood) at the crossing.

Because this reach of Strongwater Brook lies within a wetland, proposed drainage improvements had to consider wetlands issues. These include the maintenance of natural water levels and velocities, their fluctuations during periods of low flow, and the accommodation of high flood flows.

This dual requirement was resolved by incorporating two features into the design and installation of the new culverts. First, the bottoms of the culverts were set at one foot below the natural channel of the brook and then backfilled to establish a natural channel within the culverts. Secondly, the culverts were sized so that during a flood, water would back up and be temporarily stored in the large wetland area on the upstream side of the roadway. Under such conditions, the water would rise above the tops of the culverts, but not high enough to overtop East Street.

"Completion of the culvert upgrade on East Street last summer made it a lot easier on us during this spring's (2010) floods," said Gilbert. "While Main and Shawsheen Streets were flooded and temporarily



Views to west along East Street at the Strongwater Brook Crossing under non-flood and flood conditions before culvert upgrade

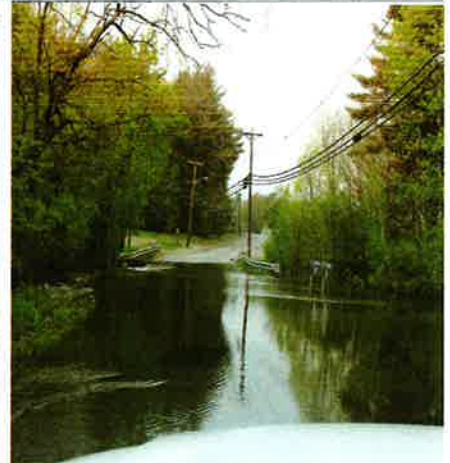


Photo courtesy of Coughlin Environmental Services

closed, East Street remained open to traffic throughout the flood. For a while, it was the only direct route into and out of town."

Drainage improvements at East Street and Strongwater Brook were made possible by a grant from the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP). The HMGP provides 75 percent of the total cost of implementing long-term hazard mitigation measures following major disaster declarations.

For the East Street culvert upgrade project, HMGP provided \$281,250 of the total cost of \$375,000. The \$93,750 remainder of the project cost was the responsibility of the Town of Tewksbury.

Evidence of a former railroad crossing that coincides with the present-day East Street crossing of Strongwater Brook can still be seen at the site, lending a sense of history to the project. A small part of the granite block abutment for the rail crossing is exposed on the downstream side of East Street, and pieces of granite from the old culverts and the abutment have been placed for erosion protection on the embankments on both sides of the street adjacent to the new culverts.



FEMA

Federal Emergency Management
Agency
Region I
Federal Insurance & Mitigation
Division
99 High Street, 6th Floor
Boston, MA 02110

Telephone 617-832-4761
www.fema.gov

To learn more about FEMA mitigation grants,
please contact:



Massachusetts Emergency
Management Agency
400 Worcester Road
Framingham, MA 01702

Mitigation Grants Manager
Telephone 508-820-1445

www.mass.gov/mema



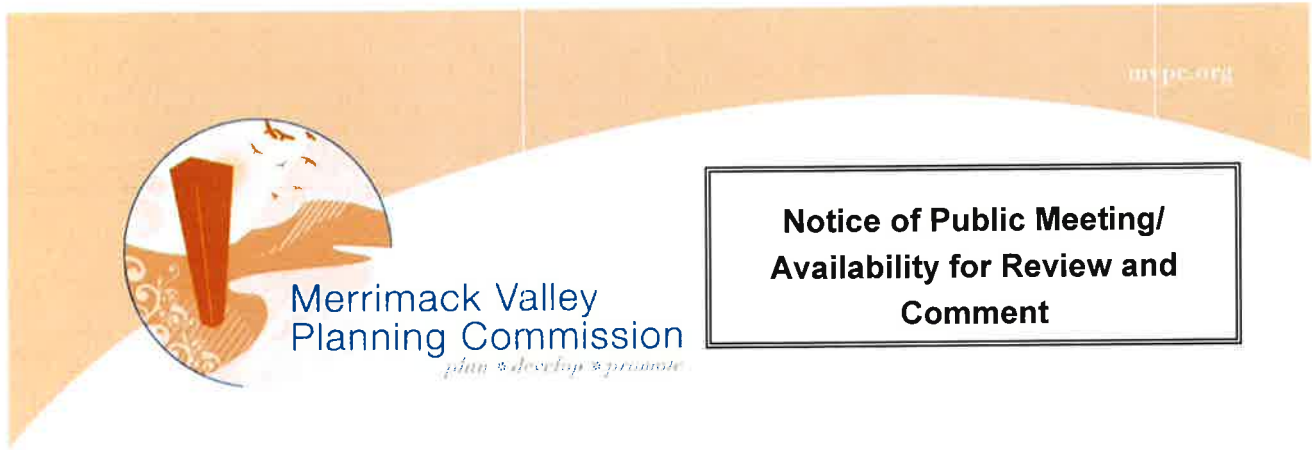
Massachusetts Department of
Conservation and Recreation
251 Causeway Street, 8th Floor
Boston, MA 02114

State Hazard Mitigation Officer
Telephone 617-626-1406

APPENDIX B

Regional Public Involvement

1. MVPC Commission/Regional Hazard Mitigation Planning Team Meetings
2. MVPC Local Planning Directors Network Meetings
3. Merrimack Valley Metropolitan Planning Organization Meeting
4. Merrimack Valley DPW Directors Network Meeting
5. Merrimack Valley Mayors & Managers Coalition Meeting
6. Great Marsh Symposium: *Helping Communities Prepare for Sea Level Rise* – November 8, 2012
 - Symposium Notice
 - Symposium Agenda
 - List of Attendees
 - MVPC Powerpoint Presentation
7. PIE Rivers Restoration Partnership Conference: *Roads, Runoff, and Water Management in Northeastern MA* – April 11, 2013
 - Conference Notice
 - Conference Agenda
 - List of Attendees
8. Greater Newburyport Sea Level Rise Group Meeting: *Sea Level Rise and Coastal Impacts* – April 18, 2013



MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE

Notice is hereby given of the Availability of the 2015 Update of the Merrimack Valley Region Multi-Hazard Mitigation Plan is available for public review and comment.

Meeting of the Regional Hazard Mitigation Planning Team is scheduled for **10 A.M. Friday, March 6th, 2015** at the Merrimack Valley Planning Commission Conference Room, 160 Main Street, Haverhill MA. Purpose of the meeting is to complete plan review and preliminarily adopt the plan for submittal to the Massachusetts Emergency Management Agency (MEMA) and the Federal Emergency Management Agency (FEMA)

The plan documents including community & region risk and vulnerability assessments, natural hazards mitigation strategy, mitigation action plans and inventory maps are available for review at the Merrimack Valley Planning Commission web site project page at <http://mvpc.org/programs/environment/natural-hazards-mitigation-planning/>

Participating communities are: Town of Andover, Town of Boxford, Town of Georgetown, Town of Groveland, City of Haverhill, City of Lawrence, Town of Merrimac, City of Methuen, Town of Newbury, City of Newburyport, Town of North Andover, Town of Rowley, Town of Salisbury, and Town of West Newbury.

Public review comments are welcomed and can be submitted by e-mail to jcosgrove@mvpc.org or by U.S. Postal Service to:

Joseph Cosgrove, Transportation Program Manager
Merrimack Valley Planning Commission
160 Main Street
Haverhill, MA 01830

Notice: The above meeting location is accessible to people with disabilities. The MVPC provides reasonable accommodations and/or language assistance free of charge upon request (including but not limited to interpreters in American Sign Language and languages other than English, open or closed captioning for videos, assistive listening devices and alternate material formats, such as audio tapes, Braille and large print), as available. For accommodation or language assistance, please contact Todd Fontanella at 978-374-0519 extension 29 or by email, tfontanella@mvpc.org (email). Requests for accommodation or language assistance should be made prior to the meeting.

The Merrimack Valley Planning Commission (MVPC) operates its programs, services and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of **race, color or national origin** (including **limited English proficiency**) be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, the Federal Transit Administration, or both prohibit discrimination on the basis of **age, sex and disability**. These protected categories are contemplated within MVPC's Title VI Program consistent with federal interpretation and administration. Additionally, MVPC provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

MVPC also complies with the Massachusetts Public Accommodation Law, M.G.L. Chapter 272, Sections 92a, 98, and 98a prohibiting making any distinction, discrimination, or restriction in admission to or treatment in a place of public accommodation based upon **race, color, religious creed, national origin, sex, sexual orientation, disability, or ancestry**. Likewise, MVPC complies with the Governor's Executive Order 526, Section 4 requiring that all of its programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for shall be conducted without unlawful discrimination based upon **race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status** (including Vietnam-era veterans), or **background**.

Additional Information: To request additional information regarding Title VI and related federal and state nondiscrimination obligations, please contact:

Title VI Program Coordinator
Merrimack Valley Metropolitan Planning Organization
c/o Merrimack Valley Planning Commission
160 Main Street
Haverhill, MA 01830-5061
(978) 374-0519, extension 29
tfontanella@mvpc.org

Aviso: si necesita esta informacion en otro idioma, por favor contacte al Título VI Coordinador de Programa de MVPC al (978) 374-0519, extension 29.

MERRIMACK VALLEY MULTI-HAZARD MITIGATION PLAN
REGIONAL PLANNING TEAM

AGENDA

MEETING OF MARCH 6TH, 2015

Merrimack Valley Planning Commission Conference Room

160 Main Street, Haverhill, MA

1. Introductions
2. Plan Overview Presentation
3. Plan Adoption Process & Timeline
 - a. Region Plan Team: Vote To Endorse Draft
 - b. MEMA review
 - c. Local Team reviews/endorsements--Schedule
4. Questions & Answers

March 6th, 2015 Meeting of Regional Planning Team: Merrimack Valley Multi-Hazard Plan

10 A.M. MVPC Conference Room, 160 Main Street, Haverhill MA

COMMUNITY	NAME	TITLE	E-MAIL/PHONE
ANDOVER	Pat Kerk	Chief of Police	PKer@Andover.net
	Charlie Heselton	XO AD, ASST EM	CHE@Andover.net
BOXFORD	Ross Povenmire	CONSERVATION/PLANNING	RPOVENMIRE@TOWN.BOXFORD.MA.US
GEORGETOWN	Don Connor	Chief of Police	DCONNOR@GEORGETOWN.MA.GOV

March 6th, 2015 Meeting of Regional Planning Team: Merrimack Valley Multi-Hazard Plan

10 A.M. MVPC Conference Room, 160 Main Street, Haverhill MA

COMMUNITY	NAME	TITLE	E-MAIL/PHONE
GROVELAND	Jeff Gillen	Deputy chief / EMS	jgillene@grovelandpolice.com
HAVRHILL			
LAWRENCE	John Marsh	Fire Chief	jmarsh@cityoflawrence.com

March 6th, 2015 Meeting of Regional Planning Team: Merrimack Valley Multi-Hazard Plan

10 A.M. MVPCC Conference Room, 160 Main Street, Haverhill MA

COMMUNITY	NAME	TITLE	E-MAIL/PHONE
MERRIMAC			
METHUEN			
NEWBURY			

March 6th, 2015 Meeting of Regional Planning Team: Merrimack Valley Multi-Hazard Plan

10 A.M. MVPC Conference Room, 160 Main Street, Haverhill MA

COMMUNITY	NAME	TITLE	E-MAIL/PHONE
NEWBURYPORT	Jon Eric White	CITY ENGINEER	JEWHITE@CITYOFNEWBURYPORT.COM
NORTH ANDOVER			
ROWLEY	Brent Bueslack	Conservation Agent	on file

10 A.M. MVP Conference Room, 160 Main Street, Haverhill MA

4pearson@salisburyma.gov
9784632066



Meeting Notice

mvpcc.org

Merrimack Valley
Planning Commission
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Monthly Meeting of February 16, 2012
7:00 p.m.
160 Main Street
Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of December Minutes
4. Warrant for December & January
5. Chairman's Report
6. Director's Report
7. Contracts/Proposals
 - a. CICG Application (CMMS Software)
 - b. CZM Application
 - c. Great Island Design
8. Finance Committee Report
 - a. FY'12 Budget Update
 - b. Adoption of FY'13 Budget #1
 - c. Adoption of FY'13 Local Assessment Rate
9. Comprehensive Planning Program Update
 - a. DLTA Solicitation
 - b. Citizen Planner Training Collaborative Conference
 - c. Energy Plan Update
 - d. EDA Grant Possibilities – Haverhill and Lawrence
10. Environmental Program Update
 - a. Regional Brownfields Assessment and Cleanup Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018
11. Transportation Report Update
 - a. Upcoming 'Complete Streets' Workshop
 - b. Update on MPO Activities
 - c. New Federal Traffic Sign Regulations
 - d. Review of Milk St./Pleasant Valley St. Intersection Study
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees : February 16, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Groveland	Robert O'Hanley
Haverhill	Joseph Sullivan, Chairman
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell, Assistant Treasurer
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers
Salisbury	Jerry Klima
West Newbury	Brian Murphey
Rep-at-Large	Brad Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Assistant Director, Environment Program Manager
Mike Parquette, Comprehensive Planning Manager
Todd Fontanella, Sr. Transportation Planner
Nancy Lavalley, Office Administrator
Jen Dunlap, Finance Administrator

Barry Pett, Senator Tarr Representative



Meeting Notice

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Merrimack Valley
Planning Commission
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MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of March 15, 2012

7:00 p.m.

160 Main Street

Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of February Minutes
4. Warrant for February
5. Chairman's Report
6. Director's Report
7. Contract(s)
 - a. Transit Planning Contract with MassDOT
8. Citizen Trainer Planner Program
9. Comprehensive Planning Program Update
10. Environmental Program Update
 - a. Brownfields Assessment & Cleanup Program
 - b. Multi-Hazard Mitigation Plan 2013-2018
11. Transportation Report Update
 - a. MBTA Fare Increase/Service Reduction Proposals
 - b. Rocks Village Bridge Project Update
 - c. Storey Avenue Traffic Issues
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees : March 15, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Georgetown	Howard Snyder
Haverhill	Joseph Sullivan, Chairman
Lawrence	Dan McCarthy
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers
Rowley	Robert Snow, Treasurer
West Newbury	Brian Murphey
Rep-at-Large	Brad Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Assistant Director, Environment Program Manager
Mike Parquette, Comprehensive Planning Manager
Todd Fontanella, Sr. Transportation Planner
Nancy Lavalley, Office Administrator
Jen Dunlap, Finance Administrator



Meeting Notice

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Merrimack Valley
Planning Commission
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MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of April 19, 2012

7:00pm

160 Main Street

Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of March Minutes
4. Warrant for March
5. Chairman's Report
6. Director's Report
7. Contract
 - a. Peregrine Contract Renewal
8. Appointment of Nominating Committee
9. Comprehensive Planning Program Update
10. Environmental Program Update
 - a. Regional Brownfields Program
 - b. Hazard Mitigation Study Kick-Off
 - c. Coastal Program
11. Transportation Report Update
 - a. FFY 2013-2016 TIP
 - b. FFY 2013 UPWP
 - c. Border to Boston Rail Trail Update
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees : April 19, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Groveland	Robert O'Hanley
Haverhill	Joseph Sullivan, Chairman
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers
Rowley	Robert Snow, Treasurer
Salisbury	Lou Masiello
West Newbury	Brian Murphey

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Mike Parquette, Comprehensive Planning Manager
Todd Fontanella, Sr. Transportation Planner
Nancy Lavallee, Office Administrator
Jen Dunlap, Finance Administrator



Meeting Notice

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MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of May 17, 2012

7:00pm

160 Main Street
Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of April Minutes
4. Warrant for April
5. Chairman's Report
6. Director's Report
7. Contracts
 - a. Lawrence Brownfields Revolving Loan Grant
 - b. Methuen Brownfields Revolving Loan Grant
8. Election of Officers
9. Comprehensive Planning Program Update
10. Environmental Program Update
 - a. Regional Brownfields Assessment and Cleanup Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018
 - Updating Critical Facilities & Infrastructure Inventories and Maps
 - Updating Natural Hazards and Vulnerability Assessments
11. Transportation Report Update
 - a. FFY 2013-2016 TIP
 - b. FFY 2013 UPWP – Climate Change
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees: May 17, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Groveland	Robert O'Hanley
Haverhill	Joseph Sullivan, Chairman
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers
Rowley	Robert Snow, Treasurer
Salisbury	Jerry Klima
West Newbury	Brian Murphey

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager
Mike Parquette, Comprehensive Planning Manager
Todd Fontanella, Sr. Transportation Planner
Nancy Lavalley, Office Administrator
Jen Dunlap, Finance Administrator

Visitors

Representative Marcos Devers (Lawrence)
Franklin Fernandez



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Planning Commission**
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Meeting Notice

MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of June 21, 2012

7:00pm

160 Main Street

Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of May Minutes
4. Warrant for May
5. Chairman's Report
6. Director's Report
7. Contracts
8. Comprehensive Planning Program Update
9. Environmental Program Update
 - a. Regional Brownfields Assessment & Cleanup Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan
10. Transportation Report Update
 - a. FFY 2013-2016 TIP
 - b. FFY 2013 UPWP
 - c. I-93 Corridor
 - HOV/BOS Study Status
 - NHDOT Transportation Demand Management Task Force
 - d. Update on Bridge Projects
11. Local and Regional Issues
12. Other
13. Adjourn

Attendees : June 21, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Groveland	Robert O'Hanley
Haverhill	Joseph Sullivan, Chairman
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers
Salisbury	Lou Masiello
West Newbury	Brian Murphey
Rep-at-Large	Brad Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager
Mike Parquette, Comprehensive Planning Manager
Todd Fontanella, Sr. Transportation Planner
Nancy Lavalley, Office Administrator
Jen Dunlap, Finance Administrator



Merrimack Valley Planning Commission

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Meeting Notice

Monthly Meeting of September 20, 2012

7:00pm

160 Main Street
Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of June Minutes
4. Warrants for June, July, August
5. Chairman's Report
6. Director's Report
7. Merrimack Valley Regional Energy Plan
8. Contracts
 - US EDA - \$106,000
 - Town of Newbury - \$2,800
 - City of Newburyport - \$9,300
 - Town of Andover - \$5,000
 - MassGIS/ITD - \$50,045
 - EEA/CZM - \$60,000
 - EPA National Brownfields Assessment - \$200,000
 - MassDOT - \$2,682,668
9. Comprehensive Planning Program Update
10. Environmental Program Update
 - a. Regional Brownfields Assessment & Cleanup Program
 - New EPA Assessment Grant Kick-Off Meeting – October 9
 - Status MVPC Brownfields Cleanup RLF Projects
 - b. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018
 - Inventorying and Mapping of Critical Facilities
 - Updating of Mitigation Goals and Strategies
 - Updating of Mitigation Action Plans
11. Transportation Report Update
 - a. County Road Discontinuance in Amesbury
 - b. Route 28 Traffic Study in Methuen
 - c. Regional Mobility Plan
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees : September 20, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Georgetown	Howard Snyder
Haverhill	Robert Driscoll
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers, Chairman
Rowley	Robert Snow
Salisbury	Lou Masiello
West Newbury	Brian Murphey
Rep-at-Large	Heather McMann (Alternate)

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Ma
Alan Macintosh, Environmental Program Manager
Mike Parquette, Comprehensive Planning Manager
Nancy Lavallee, Office Administrator
Jen Dunlap, Finance Administrator



Meeting Notice

mvp.org

Merrimack Valley
Planning Commission
planning the future

DATE: October 18, 2012
TIME: 7:00pm
PLACE: Merrimack Valley Planning Commission
160 Main Street, Haverhill, MA

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of September Meeting Minutes
4. Warrant for September
5. Chairman's Comments
6. Director's Report
7. Contracts
 - a. CIC Grant Reauthorization
9. Adoption of the Merrimack Valley Clean Energy Action Plan – 2012
10. Comprehensive Planning Program Update
11. Environmental Program Update
 - a. Brownfields Assessment and Clean Up Program
 - b. Multi-hazard Mitigation Plan
 - c. Coastal Program/Eight Towns & The Great Marsh
12. Transportation Report Update
 - a. Discontinuance of River Road in Merrimac
 - b. Results of Redistribution of FHWA Funding for FFY 2012
 - c. MassDOT Public Information Meeting on October 23
13. Local and Regional Issues
14. Other
15. Adjourn

160 Main Street, Haverhill, MA 01830

phone: 978-374-0519 • fax: 978-372-4890

Robert Favore
Chairman

Joseph Sullivan
Vice Chairman

Rob Phillips
Secretary

Maribella Evangelista
Asst. Secretary

Robert Snow
Treasurer

David Powell
Asst. Treasurer

Dennis DeZoglio
Executive Director

Merrimack
Valley
Means
Business
mvmdbiz

Attendees : October 18, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers, Chairman
Rowley	Robert Snow
Salisbury	Lou Masiello
West Newbury	Brian Murphey
Rep-at-Large	Brian Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager
Mike Parquette, Comprehensive Planning Manager
Nancy Lavallee, Office Administrator
Jen Dunlap, Finance Administrator



Meeting Notice

mvpcc.org

Merrimack Valley
Planning Commission
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DATE: November 15, 2012
TIME: 7:00pm
PLACE: Merrimack Valley Planning Commission
160 Main Street, Haverhill, MA

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of October Meeting Minutes
4. Warrant for October
5. Chairman's Comments
6. Director's Report
7. Contracts - None
8. Personnel Committee
9. Environmental Program Update
 - a. Brownfields Assessment and Clean Up Program
 - b. Multi-hazard Mitigation Plan
 - c. Coastal Program/Eight Towns & The Great Marsh
10. Transportation Report Update
 - a. Transportation LTA Activities
 - b. Upcoming TIP Changes/Amendments
 - c. October 23 MassDOT Listening Session Summary
 - d. Coastal Trails Coalition Video
11. Local and Regional Issues
12. Other
13. Adjourn

Attendees : November 15, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Haverhill	Robert Driscoll
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers, Chairman
Rowley	Robert Snow
West Newbury	Brian Murphey
Rep-at-Large	Brian Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager
Nancy Lavallee, Office Administrator
Jen Dunlap, Finance Administrator



**Merrimack Valley
Planning Commission**
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Meeting Notice

MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of Thursday, December 13, 2012



JOIN US FOR SOME HOLIDAY CHEER

6 – 7pm

(meeting to follow)



AGENDA

1. Call to Order
2. Roll Call
3. November Minutes
4. Warrant for November
5. Chairman's Comments
6. Director's Report
7. Contracts
 - a) Atty. Carol McGravey – Citizen Planner Training Program
8. Comprehensive Planning Program Update
9. Environmental Program Update
 - a) Regional Brownfields Assessment & Cleanup Program
 - b) Merrimack Valley Multi-Hazard Mitigation Plan
 - c) Coastal Program Initiatives
10. Transportation Program Update
 - a) Update on Valley Bridge Projects
 - b) Proposed Discontinuance of a Section of River Road in Merrimac
 - c) Review of Lafayette Square Road Safety Audit
11. Local and Regional Issues
12. Other
13. Adjourn

Attendees : December 13, 2012 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers, Chairman
Salisbury	Lou Masiello
West Newbury	Brian Murphey
Rep-at-Large	Brad Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager
Nancy Lavallee, Office Administrator
Jen Dunlap, Finance Administrator
Mike Parquette, Comprehensive Planning Program Manager
Jim Terlizzi, Sr. Transportation Engineer
Betsy Goodrich, Sr. Transportation Planner



Meeting Notice

mvpc.org

Merrimack Valley
Planning Commission
get on • get off • get it right • get it done

DATE: February 21, 2013
TIME: 7:00pm
PLACE: Merrimack Valley Planning Commission
160 Main Street, Haverhill, MA

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of January Meeting Minutes
4. Warrant for January
5. Chairman's Comments
6. Director's Report
7. Contracts
 - a. Newburyport - \$6,000 (for parcel update and operation of in-house and public MIMAP)
 - b. Salisbury - \$1,700 (for parcel update)
 - c. Amesbury - \$2,000 (in addition to the use of 18 hours of LTA time for the annual parcel update)
8. Finance Committee Report
 - a. FY'13 Budget Update
 - b. Adoption of FY'14 Budget #1
 - c. Adoption of FY'14 Local Assessment Rate
9. Comprehensive Planning Update
10. Environmental Program Update
 - a. Brownfields Assessment and Clean Up Program
 - b. Multi-hazard Mitigation Plan
 - c. Coastal Program/Eight Towns & The Great Marsh
 - d. Stormwater General Permit
11. Transportation Report Update
 - a. River Road Discontinuance Update
 - b. Status of FFY 2013-2016 TIP Projects
 - c. MassDOT's *The Way Forward: A 21st Century Transportation Plan*
12. Local and Regional Issues
13. Other
14. Adjourn

Attendees : February 21, 2013 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Groveland	Robert O'Hanley
Haverhill	Robert Driscoll
Lawrence	Dan McCarthy
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Bonnie Sontag
North Andover	Richard Byers, Chairman
Rowley	Joe Perry
Salisbury	Jerry Klima
West Newbury	Brian Murphey

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Nancy Lavalley, Office Administrator
Jen Dunlap, Finance Administrator
Mike Parquette, Comprehensive Planning Program Manager
Todd Fontanella, Sr. Transportation Planner

Guests: Barry Pett, Senator Tarr's Office



Meeting Notice

mvpc.org

Merrimack Valley
Planning Commission
plan • develop • preserve

DATE: March 21, 2013
TIME: 7:00pm
PLACE: Merrimack Valley Planning Commission
160 Main Street, Haverhill, MA

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of February Meeting Minutes
4. Warrant for February
5. Chairman's Comments
6. Director's Report
7. Contracts
 - a. CICG Grant
 - b. Rowley Parcel Mapping & MIMAP (\$2600)
8. Comprehensive Planning Update
9. Environmental Program Update
 - a. Regional Brownfields Assessment and Clean Up Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan
 - c. Massachusetts Small MS4 (Stormwater) General Permit
 - d. MVPC FY14 Coastal Program Application and Work Plan
10. Transportation Report Update
 - a. New Funding Targets for FY 2014-2017 TIP
 - b. March 6 Forum on Transportation Funding
 - c. Route 1/Merrimack Street Intersection Study in Newburyport
11. Local and Regional Issues
12. Other
13. Adjourn

Attendees : March 21, 2013 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Andover	Joan Duff
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell
North Andover	Richard Byers, Chairman
Rowley	Robert Snow
West Newbury	Brian Murphey

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Assistant Director/Environmental Program Manager Mike Parquette,
Comprehensive Planning Program Manager
Todd Fontanella, Sr. Transportation Planner
Jen Dunlap, Finance Administrator



Meeting Notice

Merrimack Valley
Planning Commission
planning • development • progress

DATE: April 18, 2013
TIME: 7:00pm
PLACE: Merrimack Valley Planning Commission
160 Main Street, Haverhill, MA

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of March Meeting Minutes
4. Warrant for March
5. Chairman's Comments
6. Director's Report
7. Contracts
 - a. Andover - \$4,000 (for GIS Mobile Services)
8. Comprehensive Planning Update
9. Environmental Program Update
 - a. Regional Brownfields Assessment and Clean Up Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan
 - c. Coastal Program Initiatives
10. Transportation Report Update
 - a. Highlights of MPO Certification Review
 - b. Bicycle/Pedestrian Community Assessment Workshop
 - c. Potential Studies/Analyses for FFY2014 UPWP
 - d. Merrimack Valley MPO TIP
 - Amendments to 2013-2016 TIP
 - Status FFY 2014-2017 TIP
11. Local and Regional Issues
12. Other
13. Adjourn

Attendees : April 18, 2013 Commission Meeting

Commissioners

Andover	Joan Duff
Methuen	Kevin Hagerty
Newbury	David Powell
Newburyport	Ed Ramsdell
North Andover	Richard Byers, Chairman
Rowley	Robert Snow
Salisbury	Lou Masiello
West Newbury	Brian Murphey
Rep-At-Large	Brad Buschur

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Mike Parquette, Comprehensive Planning Program Manager
Todd Fontanella, Sr. Transportation Planner
Jen Dunlap, Finance Administrator



Meeting Notice

Merrimack Valley
Planning Commission
planning the future together

MERRIMACK VALLEY PLANNING COMMISSION

Monthly Meeting of May 16, 2013

7:00pm

160 Main Street

Haverhill, MA 01830

AGENDA

1. Call to Order
2. Roll Call
3. Adoption of April Minutes
4. Warrant for April
5. Chairman's Report
6. Director's Report
7. Contracts
8. Election of Officers
9. CEDS Goals & Objectives
10. Comprehensive Planning Program Update
11. Environmental Program Update
 - a. Regional Brownfields Assessment and Cleanup Program
 - b. Merrimack Valley Multi-Hazard Mitigation Plan
 - c. Coastal Program Highlights
12. Transportation Report Update
 - a. FFY 2014-2017 TIP
 - b. FFY 2014 UPWP
 - c. Rocks Village Bridge/Whittier Bridge Projects
 - d. Salisbury Rail Trail Connector
13. Local and Regional Issues
14. Other
15. Adjourn

Attendees : May 16, 2013 Commission Meeting

Commissioners

Amesbury	Robert Lavoie, Vice Chairman
Groveland	Robert O'Hanley
Merrimac	John Thomas
Methuen	Kevin Hagerty
Newbury	David Powell, Assistant Treasurer
Newburyport	Ed Ramsdell, Secretary
North Andover	Richard Byers, Chairman
Rowley	Robert Snow, Treasurer
Salisbury	Lou Masiello
West Newbury	Brian Murphey

Staff

Dennis DiZoglio, Executive Director
Anthony Komornick, Transportation Program Manager
Alan Macintosh, Environmental Program Manager/Assistant Director
Mike Parquette, Comprehensive Planning Program Manager
Todd Fontanella, Sr. Transportation Planner
Jen Dunlap, Finance Administrator
Nancy Lavalley, Office Administrator/Executive Assistant

Guest: Barry Pett, Representative for Senator Tarr



MVPC Local Planning Directors Network Meeting

January 19, 2012

12:00 Noon (Lunch will be served)

MVPC Offices, 160 Main Street, Haverhill MA

Agenda

- 1. Introductions**
- 2. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018**
 - Plan updating requirements and planning process (including public outreach)
 - Re-establishment of regional and local hazard mitigation planning teams
 - Overview of plan contents and proposed development timeline
- 3. Computerized Maintenance Management System (CMMS) & CICG Application**
- 4. Sustainable Neighborhood Road Design / Complete Streets**
- 5. Merrimack Valley Priority Growth Strategy**
 - Sustainable Communities Grant (HUD)
 - MassWorks Infrastructure Program
- 6. Regional Clean Energy Action Strategy**
 - Energy Needs Assessment Survey
 - "Brightfields" Update / Regional Renewable Energy Manager
- 7. Regional Transportation Issues**
- 8. Other Regional Discussions**

Attendees

Curt Bellevance, Community Development Director, North Andover

Judy Tymon, Town Planner, North Andover

Paul Materazzo, Director of Planning, Andover

Ross Povenmire, Planning and Conservation Director, Boxford

Kathleen Colwell, Assistant Planning Director, Methuen

Leah Hill, Assistant Planning Director, Salisbury

Dennis DiZoglio, Executive Director, MVPC

Alan Macintosh, Asst. Director/Envir. Prog. Mgr., MVPC

Tony Komornick, Transportation Program Manager, MVPC

Mike Parquette, Comprehensive Planning Manager, MVPC

Betsy Goodrich, Senior Transportation Planner, MVPC

Ted Semesnyei, Economic Development Planner, MVPC

Todd Fontanella, Senior transportation Planner, MVPC



**Merrimack Valley
Planning Commission**
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MVPC Local Planning Directors Network Meeting

April 23, 2012

12:00 Noon (Lunch will be served)

MVPC Offices, 160 Main Street, Haverhill MA

Agenda

- 1. Introductions**
- 2. Victoria Maguire: EOHED's "Planning Ahead for Growth Strategy" and the Merrimack Valley Priority Growth Strategy**
- 3. MVPC Citizen Planner Training Program**
- 4. Regional Buildout Analysis**
- 5. Pictometry Imagery**
- 6. Regional Planning Day: May 21, Haverhill Country Club**
- 7. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018**
- 8. Other Regional Discussions**

Attendees

Victoria Maguire, EOHED
Jessica Casey, EOHED
Judy Tymon, Town Planner, North Andover
Paul Materazzo, Director of Planning, Andover,
Lisa Pearson, Planning Director, Salisbury

Leah Hill, Assistant Planning Director, Salisbury
Martha Taylor, Town Planner, Newbury
Ross Povenmire, Planning and Conservation Director, Boxford
Dennis DiZoglio, Executive Director, MVPC
Alan Macintosh, Asst. Director/Envir. Prog. Mgr., MVPC
Mike Parquette, Comprehensive Planning Manager, MVPC
Tony Komornick, Transportation Program Manager, MVPC
Jerrard Whitten, GIS Manager, MVPC
Betsy Goodrich, Senior Transportation Planner, MVPC
Ted Semesnyi, Economic Development Planner, MVPC



**Merrimack Valley
Planning Commission**
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MVPC Local Planning Directors Network Meeting

September 26, 2012

12:00 Noon (Lunch will be served)

MVPC Offices, 160 Main Street, Haverhill MA

Agenda

- 1. Introductions**
- 2. "Planning Ahead for Growth Strategy" and the Merrimack Valley Priority Growth Strategy**
- 3. MVPC Citizen Planner Training Program**
- 4. MassWorks 2012 Applications**
- 5. MVPC Citizen Planner Training Workshops**
- 6. Regionalbestpractices.org Website and Guide**
- 7. Pictometry On-line**
- 8. Merrimack Valley Clean Energy Plan**
- 9. Regional Brownfields Assessment and Cleanup Program**
- 10. Merrimack Valley Multi-Hazard Mitigation Plan 2013-2018**
 - Updating of Plan Goals**
 - Critical Facilities & Infrastructure**
 - Mitigation Strategies & Actions**
- 11. Other Regional Discussions**

Attendees

Katrina O'Leary, Town Planner, Rowley
Judy Tymon, Town Planner, North andover
Martha Taylor, Town Planner, Newbury
Lisa Pearson, Planning Director, Salisbury
Leah Hill, Asst. Planning Director, Salisbury
Howard Snyder, Town Planner, Georgetown
Paul Materazzo, Director of Planning, Andover
Bill Buckley, Economic and Community Development Director, Methuen
Dennis DiZoglio, Executive Director, MVPC
Mike Parquette, Comprehensive Planning Manager, MVPC
Alan Macintosh, Asst. Director/Envir. Prog. Mgr., MVPC
Tony Komornick, Transportation Program Manager, MVPC
Jerrard Whitten, GIS Manager, MVPC



U.S. Department
of Transportation

Federal Highway Administration
Massachusetts Division
55 Broadway 10th Floor
Cambridge, MA 02142-1093
617-494-3657
617-494-3355 (fax)

Federal Transit Administration
Region I
55 Broadway Suite 920
Cambridge, MA 02142-1093
617-494-2055
617-494-2865 (fax)



Boston Transportation Management Area
Transportation Planning Certification Review
Merrimack Valley MPO

160 Main Street Haverhill, MA 01830
April 4, 2013

AGENDA

- | | |
|--|------------------------|
| 1. Welcome and Introductions | 8:45 – 9:00 am |
| 2. Kick-off Review | 9:00 – 9:30 am |
| 3. Follow-up on Previous Recommendations | 9:30 – 10:00 am |
| 4. Transportation Improvement Program | 10:00 – 11:00 am |
| BREAK | 11:00 – 11:15 am |
| 5. Climate Change and Livability <ul style="list-style-type: none"> • Integrating Transportation System Issues & Information into Regional Multi-Hazard Mitigation Plan and Local Stormwater Management Plans | 11:15 – 12:15 pm |
| WORKING LUNCH <ul style="list-style-type: none"> • Presentation of Priority Growth Strategy by MVMPO Staff | 12:15 – 1:00 pm |
| 6. Public Participation | 1:00 – 2:00 pm |
| BREAK | 2:00 – 2:15 pm |
| 7. Title VI, Environmental Justice, Limited English Proficiency / ADA | 2:15 – 3:15 pm |
| 8. Advancing Transit Priorities in The MPO Planning Process | 3:15 – 4:15 pm |
| Wrap-up and Adjourn | 4:15 – 4:30 pm |
-

Please Note: A separate opportunity for members of the public to provide comments on the Metropolitan Transportation Planning Process will take place at the Merrimack Valley Planning Commission between 6:00 and 7:00 pm.

**MERRIMACK VALLEY
METROPOLITAN PLANNING ORGANIZATION
PLANNING CERTIFICATION REVIEW
SIGN-IN SHEET**



Merrimack Valley
Planning Commission

MVPC Offices – April 4, 2013
8:45 a.m.

Name	Community/Organization	Telephone #	Email
Paul Maloney	FHWA - MA	617-494-3610	Paul.Maloney.dot.gov
David Chandler	FHWA - MA	617 494-2542	david.chandler@dot.gov
FRANK SCSZYNSKI	MASSDOT D-9	781-641-8474	FRANK.SCSZYNSKI@STATE.MA.US
Sheri Warrington	MassDOT-Planning	857-368-8837	sheri.warrington@state.ma.us
Joe Lyzala	MASSDOT-CIVIL RIGHTS	857-388-8704	JOHN.LYZALA@STATE.MA.US
Greg Sobczak	MASSDOT ODCR	857-368-8750	greg.sobczak@state.ma.us
Constance Raphael	MassDOT-DCI	781-641-8468	Constance.Raphael@state.ma.us
William Gordon	FTA	617 494 3514	William.gordon@dot.gov
Michael Chong	FHWA	617-494-3275	Michael.A.Chong@dot.gov
Rodd Fontanella	MVPC	978-374-0519x29	rfontanella@mvpc.org
Jim Terlizzi	MVPC	978-374-0519	jterlizzi@mvpc.org
NOAH BERGER	FTA	617-494-2100	noah.berger@dot.gov
Betsy Goodrich	MVPC		
Mary K. Beninati	MVPC	978-374-0519	mkbeninati@mvpc.org
Ned Codd	MassDOT Planning	857-368-8846	ned.codd@state.ma.us
Christine Chilingirian	Conservation Law Foundation		cchilingirian@CLF.org
Dennis D. Zolner	MVPC		
Tony Komornick	MVPC	978-374-0519	AKomornick@mvpc.org
Alan Marinakis	MVPC	978-374-0519	ammarinakis@mvpc.org



**Merrimack Valley
Planning Commission**
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Merrimack Valley DPW Directors Network Meeting

May 1, 2013

MVPC Offices, 160 Main Street, Haverhill

AGENDA

1. Welcome and Introductions
2. CMMS Status: Brief Update
3. Stormwater Management & Climate Change: Presentation and Discussion
 - Overview of Pending NPDES MS4 General Permit Requirements
 - MA State Stormwater Standards and Best Management Practices
 - Low Impact Development (LID) Practices and Case Studies
 - Projected Climate Change/Sea Level Rise - Impacts on Flooding & Infrastructure
 - Integrating Stormwater Management and Climate Change Adaptation Strategies into Regional Multi-Hazard Mitigation Plan and Local Stormwater Management Programs - Discussion and Next Steps
4. Other Public Works Issues of Interest
5. Adjourn

Attendees

Municipal DPWs:

Rob DesMarais, Amesbury
Sandy Gerraughty, Andover
Peter Durkee, Georgetown
Mike Stankovich, Haverhill
John Isensee, Lawrence
Michael Herbert, Lowell
Steve Gagnon, Methuen
Andrew Lafferty, Newburyport
Scott Leavitt, Rowley
Gary Bill, West Newbury

Horsley Witten Group:

Scott Horsley
Ellie Baker
Dave Ouellette

MVPC Staff:

Dennis DiZoglio
Alan Macintosh
Jerrard Whitten
Mary Kay Beninanti
Mike Parquette
Jim Terlizzi



**Merrimack Valley
Planning Commission**
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Merrimack Valley Mayors & Managers Coalition Meeting

June 12, 2013

MVPC Offices, 160 Main Street, Haverhill

AGENDA

1. Welcome and Introductions
2. Energy Aggregation RFP: Status Report
3. Stormwater Management & Climate Change: Presentation and Discussion
 - Overview of Pending NPDES MS4 General Permit Requirements
 - MA State Stormwater Standards and Best Management Practices
 - Low Impact Development (LID) Practices and Case Studies
 - Projected Climate Change/Sea Level Rise - Impacts on Flooding & Infrastructure
 - Integrating Stormwater Management and Climate Change Adaptation Strategies into Regional Multi-Hazard Mitigation Plan and Local Stormwater Management Programs - Discussion and Next Steps
4. Medical Marijuana
5. Quick Updates: 311 Call-in-Center, CMMS, Virtual Net Metering, Regional Planning Day, DPW Mobile Device Demonstration, Regional ESCO, Regional Renewable Energy Manager
6. Adjourn

Attendees

Mayors & Managers:

Mayor Thatcher Kezer, Amesbury
Mayor James Fiorentini, Haverhill
Andrew Maylor, Town Mgr, N. Andover
Neil Harrington, Town Mgr, Salisbury

Horsley Witten Group:

Scott Horsley
Ellie Baker

MVPC Staff:

Dennis DiZoglio
Alan Macintosh
Jerrard Whitten
Mike Parquette

THE GREAT MARSH COALITION INVITES YOU
TO JOIN FELLOW COASTAL DECISION MAKERS FROM
THE REGION TO EXPLORE, IDENTIFY, AND DISCUSS THE
POTENTIAL IMPACTS OF SEA LEVEL RISE ON THE GREAT
MARSH AND HELP TO IDENTIFY STRATEGIES TO ADDRESS
ISSUES OF PARTICULAR IMPORTANCE TO THIS AREA

WHAT: The Great Marsh Symposium: *Helping Communities Prepare for Sea Level Rise*

HOSTED BY: The Great Marsh Coalition

WHERE: The Great House at The Trustees of Reservations' Crane Estate in Ipswich

WHEN: Thursday, November 8, 2012, from 8:30 a.m. until 2:30 p.m.

BONUS: An optional "tour" of the Great Marsh from the roof of the Great House will immediately follow the workshop

COST: Free to state and local officials, \$10 for the general public

COFFEE AND LUNCH WILL BE PROVIDED

TO LEARN MORE AND TO REGISTER, go to www.greatmarsh.org

FOR QUESTIONS, contact Kathryn Glenn at the North Shore Office of Coastal Zone Management at (978) 281-3972 or kathryn.glenn@state.ma.us



PHOTO: *Stephan Gersh*

Great Marsh Symposium



Great Marsh Coalition 2012 Symposium The Great House at the Crane Estate in Ipswich, MA November 8, 2012

Agenda

8:30 Registration and coffee

9:00 Welcome and Introduction

Ed Becker, Executive Director, Essex County Greenbelt Association

9:05-9:15 Importance of Sea Level Rise Adaptation for the Great Marsh

Bruce Tarr, Senate Minority Leader Representative Brad Hill

9:15-9:35 Overview of the State's Coastal Climate Change Adaptation Strategies

Bruce Carlisle, Director, Massachusetts Office of Coastal Zone Management (CZM)

9:35-9:45 Keypad Polling Questions

9:45-10:15 Potential Sea Level Rise Impacts to the Great Marsh

10:15-10:45 Coastal Inundation Mapping

Julia Knisel, Coastal Shoreline and Floodplain Manager, CZM

10:45-11:30 Infrastructure Impacts to Great Marsh Communities

Peter Phippen, Coastal Coordinator, Merrimack Valley Planning Commission (MVPC)

Sam Cleaves, Senior Regional Planner, Metropolitan Area Planning Council (MAPC)

Lisa Pearson, Planning Director, Salisbury

Michelle Rowden, Conservation Agent, Salisbury

11:30-12:30 LUNCH—Posters in Hall

12:30-1:30 Local Adaptation Case Studies

1. Hull Freeboard Incentive
Anne Herbst, Town of Hull, Conservation Administrator
2. Scituate, Marshfield, and Duxbury Adaptation Planning Project
Paul Halkiotis, Town of Marshfield, Town Planner
3. Using the COAST Tool to Evaluate Strategies to Reduce Loss
Julie LaBranche, Rockingham Planning Commission

1:30-2:00 Panel Discussion on Resources and Next Steps

Kathryn Glenn (moderator), CZM, North Shore Regional Coordinator

Ed Becker, Essex County Greenbelt Association

Peter Phippen, MVPC

Sam Cleaves, MAPC

Julia Knisel, CZM

2:00-2:10 Concluding Keypad Poll

2:10-2:20 Wrap-ups: Technical Assistance and Other Resources

2:20 Visual Tour of the Great Marsh from the Roof of the Great House (optional)

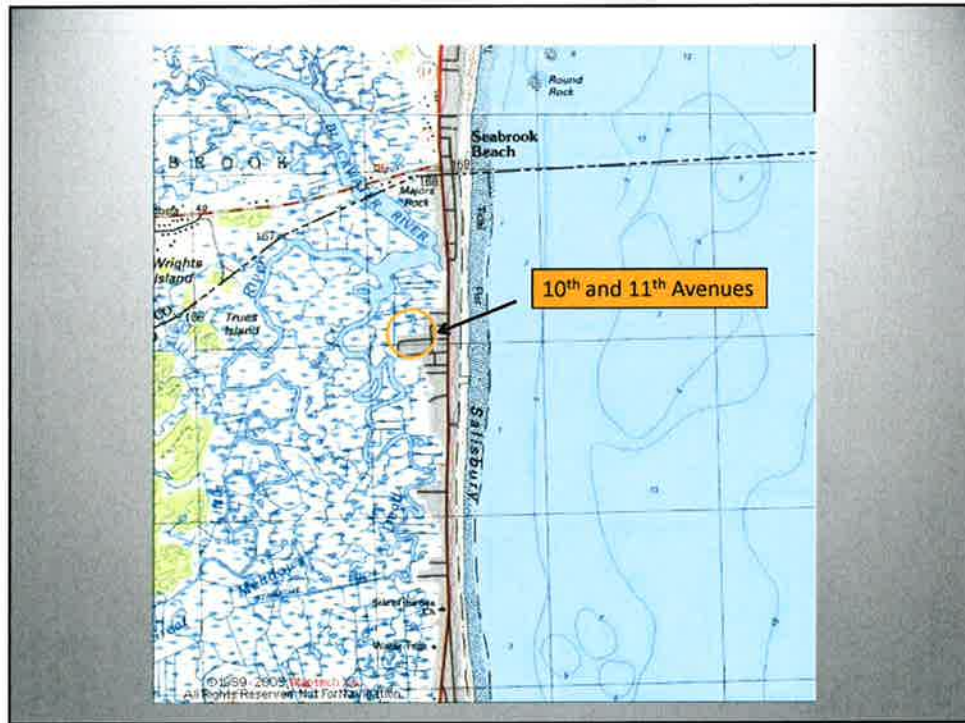
Garry Dow, The Trustees of Reservations, Field Educator

Great Marsh Sea Level Rise Symposium – Nov. 2012

Attendance List

Antczak, Dorothy	Halkiotis, Paul	Parsons, Katharine
Balf, Thomas	Halloran, John	Pearson, Lisa
Becker, Edward	Haney, Rebecca	Phippen, Peter
Berry, Jim	Harris, Annie	Powell, David
Brayton, Linda	Harrison, Adrienne	Purinton, Tim
Brayton, Linda	Herbst, Anne	Riley, Cory
Brengle, Andrew	Holton, William	Rimmer, David
Britt, Carolyn	Howe, Arthur	Robinson, Scottie
Brooks, Priscilla	Hughes, Jennifer	Rockwell, John
Buchanan, Jill	Hydren, Richard	Rowden, Michelle
Buchsbaum, Robert	Kastorf, Karl	Santomenna, David
Cademartori, Gregg	Kelder, Brian	Sargent, Bill
Carlisle, Bruce	Kelly, Maureen	Simon, Agi
Carullo, Marc	Knisel, Julia	Smith, Jan
Castonguay, Wayne	Kovach, Adrienne	Standley, David
Cleaves, Sam	LaBranche, Julie	Stout-Saunders, Linda
Crosbie, Roberta	Leland, Catherine	Style, James
Curley, Dolores	Lockwood, Lucy	Sullivan, Emily
Day, Kate	Lockwood, Lucy	Taormina, Susan
DeGasperis, Brian	Losonci, Ildiko	Taylor, Martha
Devine, Tom	Macintosh, Alan	Thomson, Sally
Dow, Garry	McHugh, Kevin	Walsh, Jennifer
Drauszewski, Frank	McNally, Patrick	Warren, Barbara
Duff, Elizabeth	Moore, Gregg	Weis, John
Eliot, Lawrence	Mountain, David	Wennemer, Jay
Falco, Geralyn	Newhall, Becca	Wheeler, Candace
Giblin, Anne	Nichols, Ann	Wheeler, Margaret
Gravino, Bob	O'Donnell, Lisa	Williamson, Mary
Gravino, Kathy	O'Neill, Brian	Woolford, Nancy
Grubbs, Kristen	Packer, Doug	Zschau, Beth





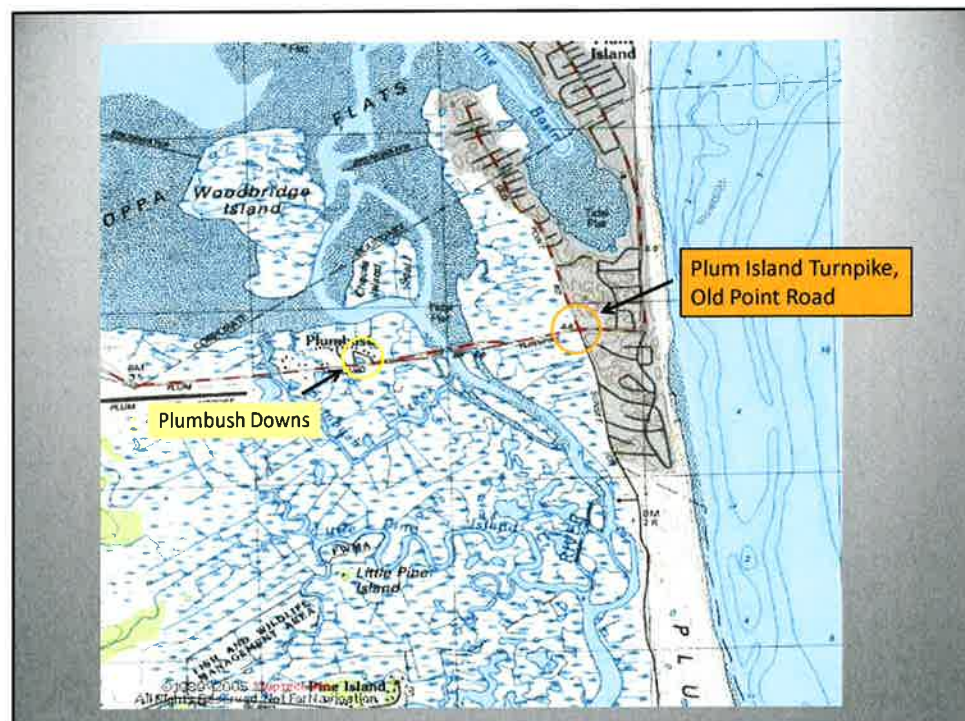
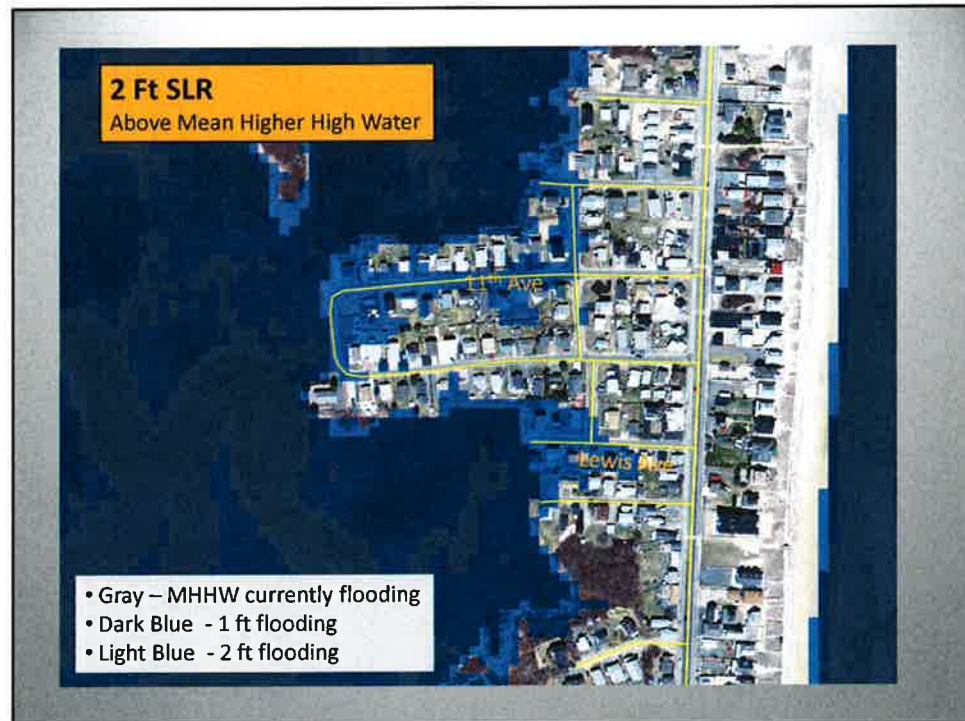
10th Avenue

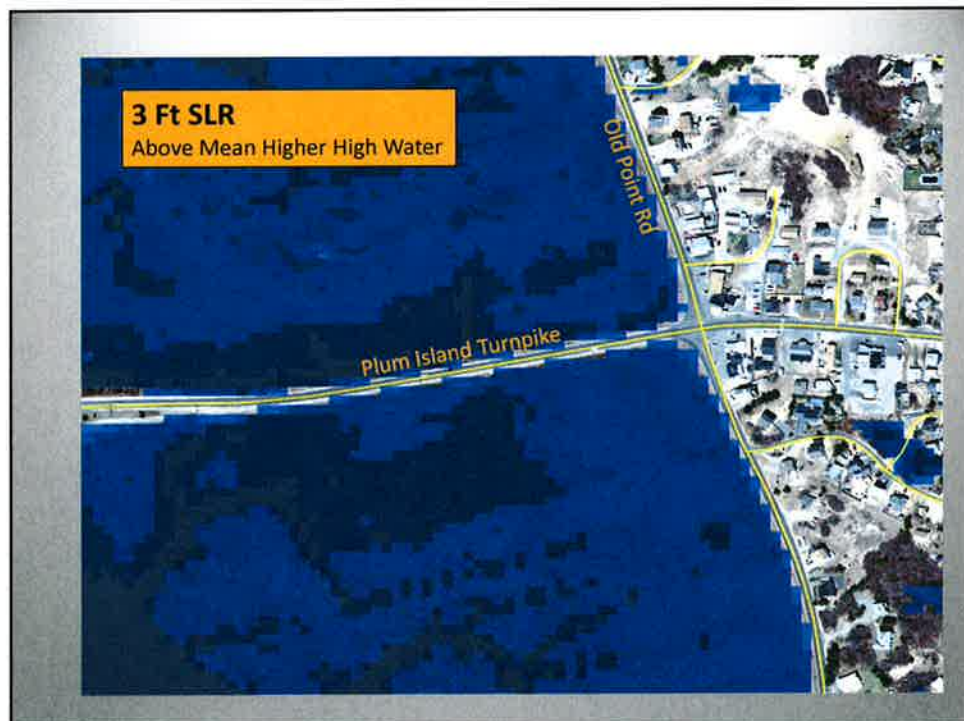
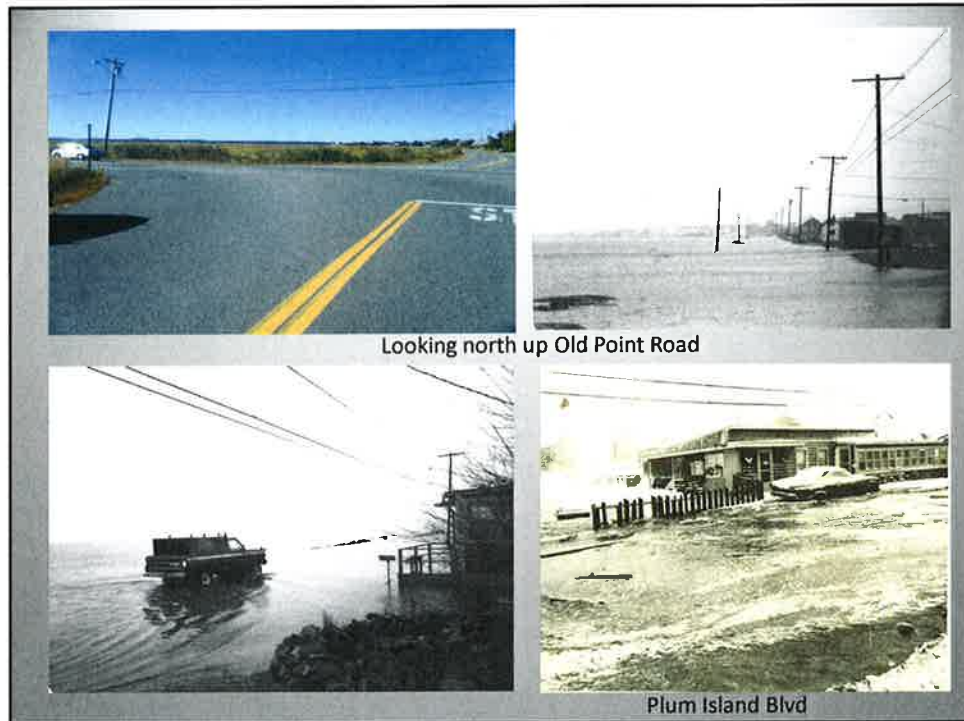


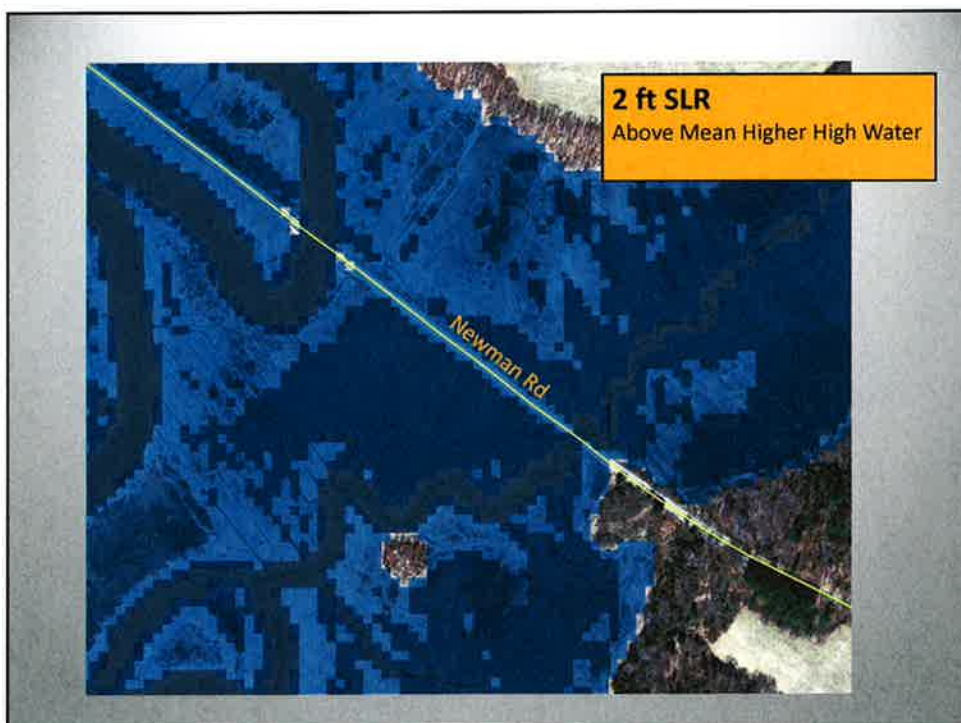
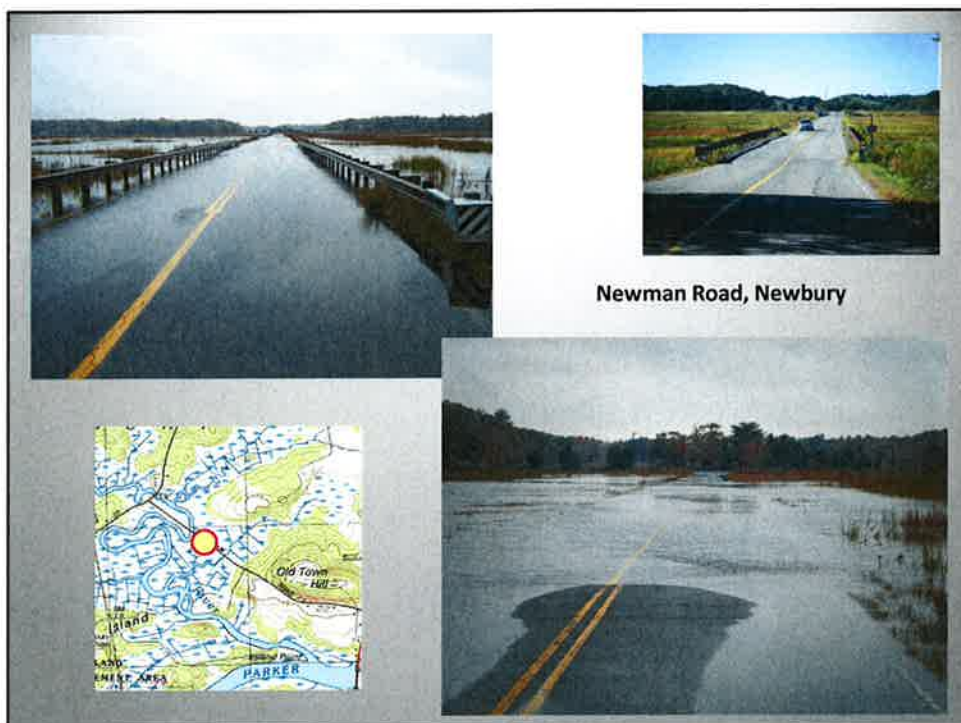
Sand Bag Levy

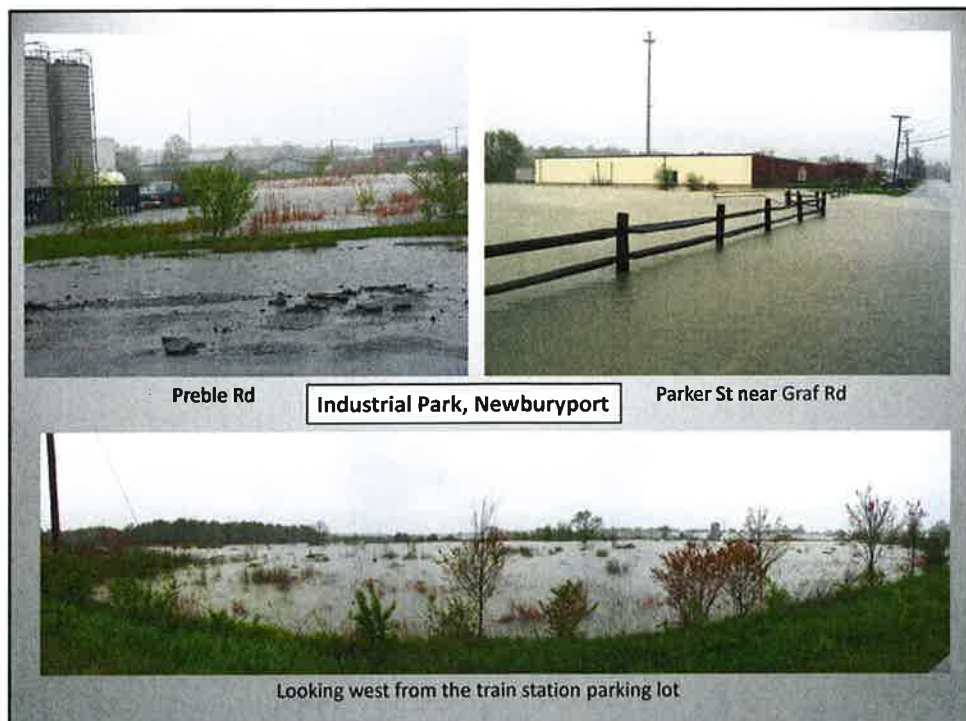
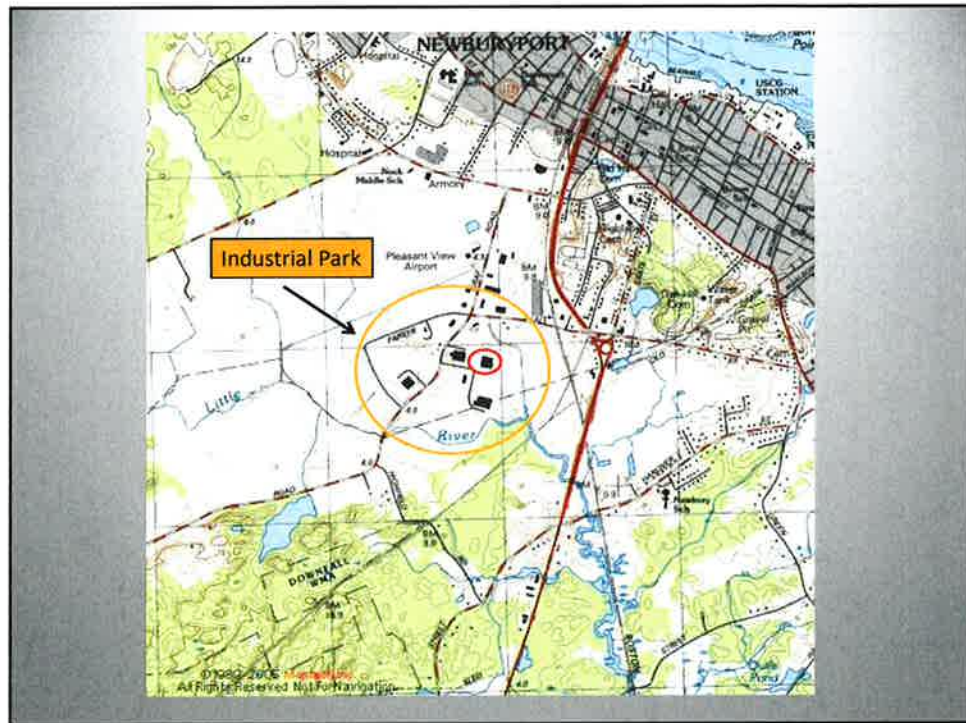


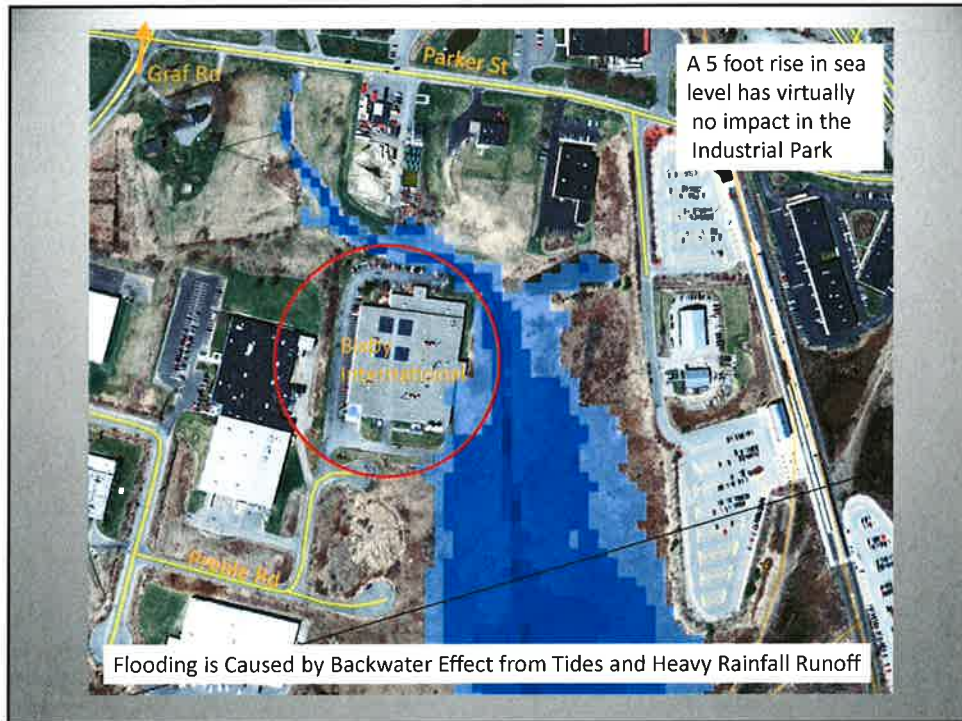
11th Avenue

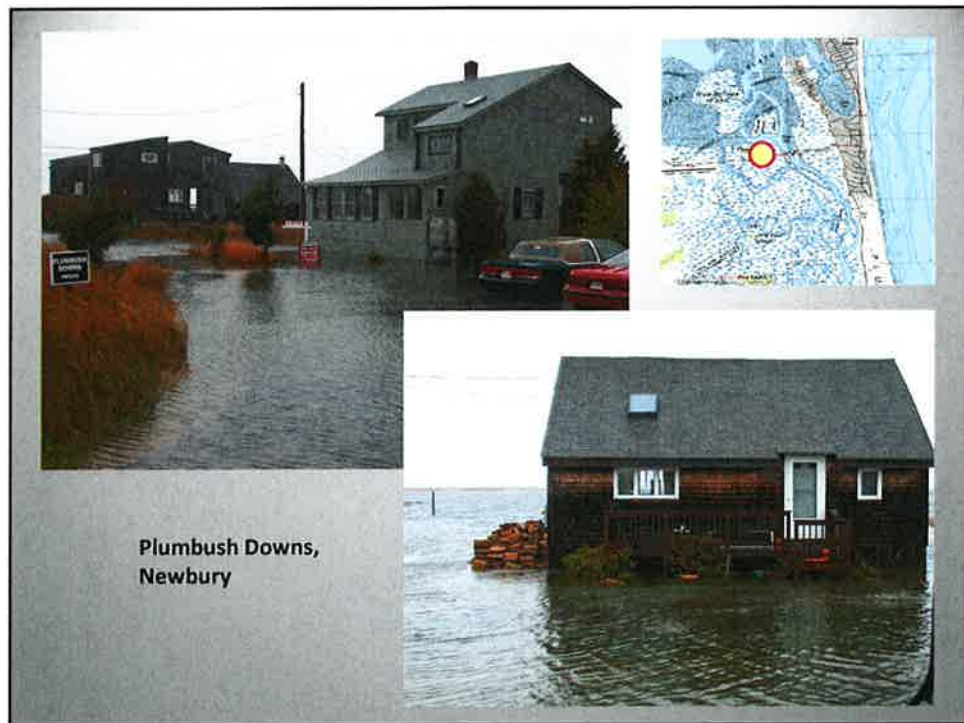












Interesting Thoughts, a New Paradigm?

- **Mean Higher High Water (MHHW) occurs on several occasions in most months**
- **MHHW is probably around 9 foot high tide in the Great Marsh (not an unusual high tide)**
- **Next year (2013) there will be 7 months with at least a 10+ foot high tide 2 or more times in the month**
- **The other 5 months of 2013 will have several high tides of at least 9+**

- **A 2 foot SLR (conservative prediction) on top of the MHHW will mean in the future many high tides per year will be 11+ and 12+ foot tides**
- **As an example: in many locations in the Great Marsh, Hurricane Sandy flat water storm surge in the marsh was probably equivalent to the current MHHW plus 3 or so feet**
- **Climate Change models predict more frequent large inland and coastal storms (Nor'easters)**

Roads, Runoff and Water Management in Northeastern, MA

A Free Conference in the Areas of Stormwater Management , Water Conservation & Road-Stream Crossings

Helping Towns Navigate the New Water Rules with Cost Effective, Sustainable Solutions

Thursday, April 11th
8:30 am to 1 pm
Lunch provided

Workshop Description

This conference will explore the current science and emerging regulatory requirements in the areas of **Water Conservation, Stormwater Management** and **Road-Stream Crossings** (bridges and culverts) and provide cost-effective tools to respond to the new regulations in these areas. Expert speakers will focus on ways that municipalities can work proactively toward meeting the new requirements while protecting the environment.

Topics & Speakers

- **Water Resources in the Region:**
The structure and function of our coastal watersheds and how local actions affect the broader region
~ *Anne Giblin, Marine Biological Laboratory*
- **Stormwater Management & New Regulations:**
Overview of stormwater management including changes to stormwater and water management regulations
~ *Scott Horsley, Horsley Witten Group*
- **Implementing Water Conservation:**
Water conservation and leak detection measures from the perspective of a municipal water department
~ *Greg Krom, Topsfield Water Department*
- **Roads, Rivers and Stream Crossing Standards:**
Opportunities to design bridges and culverts that improve public safety and watershed health while saving money
~ *Amy Singler, American Rivers*



Who should attend

- Municipal highway, planning, water supply and DPW staff, Town Managers, conservation agents, planners and other municipal officials.
- Municipal board members including conservation commissions, planning boards, road commissions and water commissions

Location

Coolidge Hall, Topsfield Fairgrounds
207 Boston Street, Route 1
Topsfield, MA

Registration

Pre-registration is required. Please register by emailing Cynthia at cingelfinger@ipswichriver.org or call 978-412-8200 by April 1st, 2013.

Presenting Sponsors

Cy Pres Anti-Trust Settlement funds
Jessie B. Cox Trust
Sheehan Family Foundation

Hosted by the Ipswich River Watershed Association
and the Parker-Ipswich-Essex Rivers Restoration Partnership
<http://pie-rivers.org/>



**IPSWICH RIVER
WATERSHED
ASSOCIATION**
The Voice of the River

Roads, Runoff and Water Management in Northeastern MA - April 11, 2013

A Conference in the Areas of Stormwater Management, Water Conservation & Road-Stream Crossings

**Helping Towns Navigate the New Water
Rules with Cost Effective, Sustainable Solutions**

Agenda

8:30 am: Sign in/Coffee

8:50 am: Welcome/ Introduction:

~ *Special Guest Bruce Tarr, Massachusetts Senate*

9:15 am: Water Resources in the Region:

The structure and function of our coastal watersheds and how local actions affect the broader region

~ *Anne Giblin, Senior Scientist, The Ecosystems Center, Marine Biological Laboratory*

9:50 am: Stormwater Management & New Regulations:

Overview of stormwater management including changes to stormwater and water management regulations

~ *Scott Horsley, President, Horsley Witten Group*

10:25 am: Coffee Break

10:35 am: Implementing Water Conservation:

Water conservation and leak detection measures from the perspective of a municipal water department

~ *Greg Krom, Superintendent, Topsfield Water Department*

11:10 am: Roads, Rivers and Stream Crossing Standards: Opportunities to design bridges and culverts that improve public safety and watershed health while saving money

~ *Amy Singler, Associate Director, River Restoration Program, American Rivers.*

11:45 am: Wrap Up and Discussion

~ *Hunt Durey, Deputy Director, Massachusetts Division of Ecological Restoration*

~ *Ipswich River Watershed Association staff*

12:15 - 1pm: Lunch and Socialize

~ *Assorted sandwiches, salads, drinks and desserts from Henry's Market in Beverly, MA*

Presenting Sponsors

Cy Pres Anti-Trust Settlement funds; Jessie B. Cox Trust; Sheehan Family Foundation

Hosted by the Ipswich River Watershed Association
and the Parker-Ipswich-Essex Rivers Restoration Partnership
<http://pie-rivers.org/>



Decisions made in the upstream watersheds of the Parker, Ipswich and Essex Rivers have a profound influence on the Great Marsh Ecosystem shown above. Photo: A. Borsari.

**Conference resources and
supplemental materials related
to today's program will be
available at
pie-rivers.org/resources**



**IPSWICH RIVER
WATERSHED
ASSOCIATION**
The Voice of the River

Roads, Runoff and Water Management Conference

Name	Title	Town/Affiliation
Adams, Rolan	GIS & stormwater coordinator	Beverly
Aldrich, Trish	Development Director	
Baeslack, Brent	Conservation Agent	Rowley
Baker, Ellie	Horsley Whitten Group	Newburyport
Baker, Nancy	MA DEP	
Barry, Tom	Highway forman	Merrimac
Basbanes, Leah	Conservation Commission	North Reading
Boivin, Bill	Con Comm	Burlington
Bond, David	DPW Director	Topsfield
Bertoni, Christine	Cons Comm	Beverly
Buswell, Yvonne	PRCWA, Newbury Stormwater Committee	Newbury
Buchsbaum, Robert	MA Audubon	
Byers, Richard	Merrimack Valley Planning Commission- Chairman	North Andover
Cademartori, Emilie	Planning & Conservation Coordinator	Wenham
Cain, Josh	UNH, Earth and Environmental Science	Durham, NH
Caprarerra, Tom	Engineering Department	North Andover
Carnevale, Richard	DPW Director	North Reading
Castonguay, Wayne	Executive Director	Ipswich
Cheng, Debbie	Assistant Engineer	Newburyport
Clark, Rick	DPW Director	Ipswich
Cleary, Linda	Conservation Agent	Andover
Clemence, Byron		Boxborough
Comiskey, George	Parker River Watershed	Georgetown
Day, Kate	Senior Planner	Danvers
Desmarais, Robert	DPW Director	Amesbury
Douglas, Robert	Director of Conservation	Andover
Durey, Hunt	Acting Deputy Director, DER	<i>Conference Speaker</i>
Evangelista, Tillie	Planning Board	Georgetown
Farr, Kristan		Danvers
Folliott, Sissy	Conservation Commission	Ipswich
Gagnon, Anne	Dept. of Fish & Game Land Agent	
Gandt, Dick	selectman	Topsfield

Giblin, Ann	Marine Biological Laboratory	
Glenn, Kathryn	North Shore CZM	Gloucester
Hamilton, Laura	Business Manager, Water Department	Rowley
Hankin, Jim	Conservation Commision Coordinator	Hamilton
Holton, Will	Open Space Committee	Ipswich
Horsley, Scott	Horsley Whitten Group	<i>Conference Speaker</i>
Howard, Edwin	Planning Board member	Hamilton
Hughes, Jen	Conservation Administrator	North Andover
Ingelfinger, Cynthia	Outreach Coordinator	Ipswich
Jolley, Cheryl	Conservation Commission	Topsfield
Kastorf, Karl	Conservation Commission	Ipswich
Keeley, John	Conservation Administrator	Burlington
Kelder, Brian	Restoration Program Manager	
Krom, Greg	Water Superintendent	Topsfield - <i>Conf. Speaker</i>
Lasher, Miriam	Ipswich River Board	
Lobao, Joseph	Assistant Superintendent Water & Sewer Dept	Wilmington
Lopez, John	Conservation Agent	Amesbury
Luther, Holger	Conservation Commission	Topsfield
Macintosh, Alan	MVPC Asst. Director	Haverhill
Manor, Peter	City Engineer	Amesbury
Martin, Karen	Environmental Compliance Coordinator DPW	Andover
McAllister, Maureen	MassHousing	Ipswich
McDavitt, Bill	Conservation Commission	Ipswich
McDougall, Jim	Ipswich River staff	Topsfield
Michaud, Brian		Beverly
Morgan, Kathy	Conservation Commission	North Reading
Morse, Nathaniel	UNH	Durham, NH
Neal, Larry	Conservation Commission	Rockport
O'Connell, John	Planning Board, ConCom, Stormwater Chair	Newbury
O'Donnell, Lisa	Board of Selectmen, ACEC committee	Essex
O'Donnell, Ryan	Programs Coordinator	Ipswich
O'Neill, Brian	Conservation Commission	Ipswich
Onusseit, Don		Wilmington

Paluzzi, Anthony	Conservation Commission	Beverly
Pancoast, David	Conservation Agent	Ipswich
Paulitz, William	City Engineer	Peabody
Phippen, Peter	MVPC Coastal Coordinator, 8 Towns & GM	Haverhill
Piper, Bruce		Peabody
Povenmire, Ross	Conservation Agent	Boxford
Rimmer, Mary	Rimmer Environmental Consulting	
Sandulli, Chris	Ipswich River Board	
Santomenna, Dave	ECGA	Essex
Schneider, Judy		Middleton
Schmitz, Judy	Conservation Agent	Middleton
Singler, Amy	American Rivers	<i>Conference Speaker</i>
Sinibaldi, Bob	DPW Director	Merrimac
Synder, Gina	EPA - New England Assistance and Pollution Prevention	
Snyder, Howard	Town Planner	Georgetown
Soraghan, Michael	Town Engineer	North Reading
Spillman, Lana	Conservation Administrator	Topsfield
Standley, David	Conservation Commission	Ipswich
Sullivan, Suzanne	Ipswich River Board	
Svahn, Eric	Planning Board	Newbury
Talbot, Roger	Chairman, Con Comm	Middleton
Taylor, Martha	Town Planner	Newbury
Tirone, Charles	Conservation Administrator	Reading
Tyack, Bill	DPW	Wenham
Ventimiglia, Frank	Director of Operations, DPW	Ipswich
Viselli, Lynn	Conservation Administrator	Andover
Ward, Will	conservation agent	Dover
Wennemer, Jodie	Conservation Assistant	Burlington
Whittaker, Kenneth	Partner, Bernkopf Goodman LLP	Boston
Wilbur, Cricket	ECGA	
Willett, Tom	Engineering Department	North Andover
Williams, Dave	Ipswich River Board	Reading
Willis, Eugene	Director of Engineering	North Andover
Woods, Michael	Superintendent Water & Sewer Dept.	Wilmington

Duff, Liz	Education Coordinator (Mass Audubon)	
Tarr, Bruce	State Senator	<i>Conference Speaker</i>
Carroll, Jim	Conservation Commission	Topsfield
Squibb, Bill	Conservation Commission	Beverly

Sea-Level Rise and Coastal Impacts

Meeting of CZM and Greater Newburyport SLR Group

Thursday, April 18, 2013

6:30-8:00 p.m.

Mass Audubon Joppa Flats Education Center

MEETING PURPOSE:

To (1) share information and perspective on coastal resilience-building priorities and options for the Greater Newburyport area, (2) identify key areas for collaboration, and (3) agree on initial steps.

PARTICIPANTS:

Deborah Carey, Amesbury Representative, 8 Towns and the Great Marsh

Kathryn Glenn, North Shore Regional Coordinator, Massachusetts Office of Coastal Zone Mgmt

Julia Knisel, Coastal Shoreline and Floodplain Manager, Massachusetts Office of Coastal Zone Mgmt

David Frick, Town of Amesbury Planning Board

David M. Larson, Education and Science Coordinator, Joppa Flats Education Center, Mass Audubon

Alan Macintosh, Asst. Director, Merrimack Valley Planning Commission

Elizabeth Marcus, Newburyport Open Space Committee

Ron Martino, lead convener of Newburyport SLR Group, retired high-tech executive

Mike Morris, Plum Island Erosion.com

Dave Mountain, Town of Newbury Selectman

Erika Spanger-Siegfried, Senior Analyst, Union of Concerned Scientists

Heidi Spinella, Project Management Consultant, Principal Practical PM

Mike Strauss, MIT, Chair of the Newburyport Energy Advisory Committee

Sheila Taintor, Newburyport Tree Commission

Graham Taylor, US Fish and Wildlife Service, Parker River

Joe Teixeira, Newburyport Conservation Commission Chair

Tentative:

Molly Ettenborough, Sustainability Coordinator, City of Newburyport

Jim O'Brien, Geologist, Newburyport Conservation Commission

Town of Salisbury representative

PROPOSED AGENDA:

- | | |
|------------------|---|
| 6:30-6:40 | Opening (Ron)
Welcome, meeting purpose, and agenda check |
| 6:40-6:45 | Introductions (All) |
| 6:45-7:00 | Intro to local SLR group (Ron, Elizabeth) <ul style="list-style-type: none">• Origins – what it is and how it's working• Priorities – key concerns, needs, and ideas |
| 7:00-7:15 | Intro to CZM and StormSmart Coasts (Julia, Kathryn) <ul style="list-style-type: none">• Overview – what is CZM and how does StormSmart Coasts work with communities• Resources – initial thoughts on how StormSmart Coasts could support our local efforts/priorities |
| 7:15-7:45 | Discussion: How to collaborate for local coastal resilience-building (All, Heidi) <ul style="list-style-type: none">• Facilitated discussion |
| 7:45-8:00 | Wrap up and next steps (Heidi, Ron, CZM) |



YOU ARE INVITED
to the official launch of

Storm Surge
The Merrimack Valley Coastal Adaptation Work Group
September 19, 2013, 12:00 Noon
at Cashman Park

The launch will include a demonstration of how far above high tide the river will rise in future years, and how much a storm surge might effect low-lying lands, such as Cashman Park, and impact our shores.

Introduction to the Organization

Purpose: We exist to encourage and support our communities to prepare for the impacts of sea level rise, extreme weather events and other effects of long-term climate change.



Cashman Park Ball Field – April 16, 2007

Geographic Scope: The following coastal and the tidal communities of the Merrimack River system that stand to be affected by higher storm surge from storms that are expected to increase in intensity in the coming years:

- Amesbury
- Ipswich
- Merrimack
- Newbury, including Plum Island
- Newburyport
- Rowley
- Salisbury
- West Newbury

Our Vision for 2018

In 2018, *Storm Surge* has become a widely known resource center for information that has aided area cities and towns to prepare for threatening and extreme coastal storm conditions; organizing solid educational and public awareness programs; supporting the development, funding and use of strategic resilience and adaptation plans; fostering government collaboration; increased participation by all stakeholders; and closer interaction with regional, state, federal and international entities.

Storm Surge is acknowledged to be a major asset in achieving annual objectives of benefit to the people it serves, all in response to sea level rise and climate change.



The Great Marsh Coalition invites you

TO JOIN FELLOW COASTAL DECISION MAKERS FROM THE REGION
TO EXPLORE, IDENTIFY, AND DISCUSS THE VALUE OF NATURAL
SYSTEMS IN MITIGATING SEA LEVEL RISE
IMPACTS IN GREAT MARSH COMMUNITIES

WHAT: The Great Marsh Symposium: *The Value of Natural Systems in Protecting Great Marsh Communities*

HOSTED BY: The Great Marsh Coalition

WHERE: The Great House at The Trustees of Reservations' Crane Estate in Ipswich

WHEN: Thursday, November 14, 2013, from 8:30 a.m. until 2:45 p.m.

BONUS: An optional "tour" of the Great Marsh from the roof of the Great House will immediately follow the workshop

COST: FREE

Coffee and lunch will be provided

GENEROUSLY SUPPORTED THROUGH CONTRIBUTIONS BY
THE GALILEAN FUND OF THE BOSTON FOUNDATION AND
THE MERRIMACK VALLEY PLANNING COMMISSION

TO LEARN MORE AND TO REGISTER, go to www.greatmarsh.org
FOR QUESTIONS, contact Kathryn Glenn at the North Shore Office of
Coastal Zone Management at (978) 281-3972 or kathryn.glenn@state.ma.us



Great Marsh Coalition 2013 Symposium
The Value of Natural Systems in Protecting Great Marsh Communities
Great House at the Crane Estate in Ipswich MA
November 14, 2013

Agenda

- 8:30** **Registration sign-in and coffee**
- 9:00** **Welcome and Introduction**
Ed Becker, Executive Director, Essex County Greenbelt Association
- 9:05-9:15** **Continued Importance of Sea Level Rise Adaptation for the Great Marsh**
Bruce Tarr, Senate Minority Leader (invited)
Representative **Brad Hill** (invited)
- 9:15-9:35** **Keynote—Loring Schwarz**, Director, Climate Change Program, MassAudubon
- 9:35-9:45** **Keypad Polling Questions**
- 9:45-10:30** **How Natural Systems Function for flood/pollution control and storm Damage prevention and How Human Alterations Affect This—Georgeann Keer**, Massachusetts Division of Ecological Restoration
- 10:30-10:45** **Break**
- 10:45-11:15** **How might SLR and other Climate Change indicators exacerbate these issues?**
Julia Knisel, Coastal Shoreline and Floodplain Manager, and **Kathryn Glenn**, North Shore Regional Coordinator, Massachusetts Office of Coastal Zone Management
- 11:15-11:20** **Coastal Education Program, Liz Duff**, Mass Audubon
- 11:20-11:30** **Recap of morning and prelude to afternoon sessions**
- 11:30-12:30** **LUNCH—Posters in Hall**
- 12:30-1:10** **Lessons from Sandy, Adam Whelchel**, Director of Science, The Nature Conservancy in Connecticut
- 1:10-1:35** **Lessons from Irene--Inland flooding issues related to increased intensity/frequency of storm events and effects of development, Scott Horsley**, Horsley and Witten Group



- 1:35-1:50 Impacts to Neighborhoods/Infrastructure/Transportation**
Sam Cleaves, Metropolitan Area Planning Commission
- 1:50-2:20 Group Discussion and Q&A**
- 2:20-2:30 Concluding Keypad Poll**
- 2:30-2:45 Wrap-up—Next Steps**
- 2:45 Visual Tour of the Great Marsh from the Roof of the Great House (optional)**
Dorothy Antczak, The Trustees of Reservations

**Generously supported through contributions by the Galilean Fund of the Boston Foundation and
the Merrimack Valley Planning Commission**



APPENDIX C

Local Public Involvement

Local Hazard Mitigation Planning Teams (LHMPTs)

Local Hazard Mitigation Planning Team Meetings

City of Amesbury
Town of Andover
Town of Boxford
Town of Georgetown
Town of Groveland
City of Haverhill
City of Lawrence
Town of Merrimac
City of Methuen
Town of Newbury
City of Newburyport
Town of North Andover
Town of Rowley
Town of Salisbury
Town of West Newbury

LOCAL HAZARD MITIGATION PLANNING TEAMS (LHMPTs)

	Title	Department	Email Address
Amesbury			
John Morris	Regional Health Dir.	Public Health	morrisj@amesburyma.gov
Jonathan Brickett	Fire Chief	Fire	jonathan@amesburyma.gov
Robert DesMarais	Director	Public Works	rob@amesburyma.gov
John Lopez	Agent	Conservation	lopezj@amesburyma.gov
Peter Manor	Engineer	Engineering	manorp@amesburyma.gov
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Don Swenson	Director	Emergency Management	swensond@amesburyma.gov
Robert Lavoie	Councilor	City Council	councilorlavoie@amesburyma.gov
Andover			
Reginald Stapczynski	Town Manager	Town Offices	rstapczynski@andoverma.gov
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Paul Materazzo	Director	Planning	pmaterazzo@andoverma.gov
Thomas Carbone	Director	Health	tcarbonate@andoverma.gov
Christopher Cronin	Acting Director	Public Works	ccronin@andoverma.gov
Michael Mansfield	Fire Chief	Fire/Public Safety	mman@andoverps.net
Brian Moore	Engineer	Water Treatment	bmoore@andoverma.gov
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Boxford			
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Robert Hazaelwood	Police Lieut./EMD	Police	rhazelwood@town.boxford.ma.us
Alan Benson	Town Administrator	Selectmen	abenson@town.boxford.ma.us
John Dold	Director	Public Works	jdold@town.boxford.ma.us
Robert Comacho	Building Inspector	Building/Inspectional Svcs Services	rcomaco@tow.boxford.ma.us

	Title	Department	Email Address
Georgetown			
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Howard Snyder	Town Planner	Planning Dept.	hsnyder@georgetownma.gov
Deborah Rogers	Health Director	Health	drogers@georgetownma.gov
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Groveland			
Nancy Lewandowski	Admin. Asst.	Selectmen	nlewandowski@grovelandma.com
Robert Arakelian	Road Commissioner	Highway Dept.	rarakelian@grovelandma.com
John Clement	Fire Chief	Fire Dept.	Chief.clement@comcast.net
Robert Kirmelewicz	Police Chief	Police Dept.	Chief@grovelandpolice.com
Deborah Ketchen	Health Agent	Board of Health	healthagent@grovelandma.com
Jeffrey Gillen	Deputy Chief/EMD	Police Dept.	jgillen@grovelandpolice.com
Thomas Cusick, Jr.	Superintendent	Water & Sewer Dept.	tcusick@grovelandma.com
Pat Schena	Building Inspector		
Lori Felch	Conservation Agent	Conservation Commission	
Robert O'Hanley		Planning Board	ss454truck@aol.com
Haverhill			
Brian Moriarty	Deputy Fire Chief	Fire Dept.	bfmorty@aol.com
Paul Malone	Police Deputy Dir./EMD	Police Dept.	pmalone@haverhillpolice.com
David Van Dam	Chief of Staff	Mayor's Office	dvandam@cityofhaverhill.com
James Michitson	Chemist	Water & Wastewater Dept.	jmichitson@cityofhaverhill.com
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Karen Jarrett	Sr. Engineer	Engineering Dept.	kjarrett@cityofhaverhill.com
William Laliberty	Deputy Fire Chief	Fire Dept.	wlaliberty@haverhillfire.com
Roland Goudreault	Foreman	Highway Dept.	DPW@cityofhaverhill.com

	Title	Department	Email Address
Lawrence			
Patrick Blanchette	Director	Economic Development	patrickblanchette@cityoflawrence.com
Andrew Wall	Engineer	Public Works	awall@cityoflawrence.com
Peter Blanchette	Commissioner	Building	peterblanchette@cityoflawrence.com
John Isensee	Acting Director	Public Works	jisensee@cityoflawrence.com
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James Barnes	Director	Community Development	jbarnes@cityoflawrence.com
John J. Romero	Police Chief	Police	jromero@lawpd.com
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Brad Buschur	Project Manager	Groundwork Lawrence	bbuschur@groundworklawrence.org
Merrimac			
Ralph Spencer	Fire Chief/EMD	Fire Dept.	Chief@merrimacfire.com
Robert Sinibaldi	Inspector/ Commissioner	Building Dept.	commissioner@townofmerrimac.com
Thomas Barry	Foreman	Public Works	mrmcmerrimac@yahoo.com
Jay Smith	Agent	Conservation	Jburton.smith@yahoo.com
Eric Shears	Police Chief	Police	shears@townofmerrimac.com
Deborah Ketchen	Agent	Health	healthagent@townofmerrimac.com
Methuen			
Ken Bourassa	Consultant		
William Buckley	Director	Economic and Community Development	wjbuckley@ci.methuen.ma.us
Joseph Giarrusso	Conservation Officer	Conservation	jgiarrusso@ci.methuen.ma.us
Steven Buote	Fire Chief	Fire Dept.	sbuote@ci.methuen.ma.us
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Newbury			
William Pearson	Fire Chief	Fire	Bdf1@byfieldfd.com
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Douglas Packer	Agent	Conservation	conscom@townofnewbury.org
Tim Leonard	Director	Public Works	highway@townofnewbury.org

	Title	Department	Email Address
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Sam Joslin	Bldg Inspector/ Commissioner	Building	buildinginspector@townofnewbury.org
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Newburyport			
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Stephen Cutter	Fire Chief/EMD	Fire Public Safety	scutter@cityofnewburyport.com
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Edward Ramsdell	Plng Board member	Planning Board	ed@ramsdell.com
North Andover			
Curt Bellavance	Director	Community Development	cbellavance@townofnorthandover.com
JudyTymon	Town Planner	Planning	itymon@townofnorthandover.com
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Gene Willis	Town Engineer	DPW/Engineering	gwillis@townofnorthandover.com
Gerald Brown	Building Inspector	Building Dept.	gbrown@townofnorthandover.com

Susan Sawyer	Health Director	Health Dept.	ssawyer@townofnorthandover.com
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Deboral Rillahan	Public Health Nurse	Health Dept.	drillahan@townofnorthandover.com
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Rowley			
Brent Baeslack	Agent	Conservation	conservation@townofrowley.org
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Frank Machegiani	Coordinator	Public Health	health@townofrowley.org
Kenneth Ward	Inspector	Building	ken.ward@townofrowley.org
Robert Barker	Police Chief	Police	chief@rowleypolice.com
Deborah Eagan	Administrator	Selectmen	debbie@townofrowley.org
Robert Snow	Chairman	Selectmen	selectmen@townofrowley.org
Salisbury			
Robert Cook	Director	Emergency Management	sema@salisburyma.gov
David Lovering	Inspector	Building	dloving@salisburyma.gov
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Jerry Klima	Selectmen	Board of Selectmen	jerryklima@hotmail.com
West Newbury			
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Paul Sevigny	Health Agent	Board of Health	psevigny@wnewbury.org
Lisa Holmes	Chief of Police	Police	chief@westnewburysafety.org
Gary Bill	Director	Public Works	gbill@westnewbury.org
Brian Murphy	Vice-Chair	Planning Board	brmurphy@comcast.net



Dept. of Public Works

Highway, TPC (Tree/Park/Cemetery), Water, Sewer,
Engineering, Refuse, Recycling & Snow/Ice Divisions

Robert L. Desmarais, P.E., Dir. of Public Works

Department of Public Works

Town of Amesbury

9 School St., 2nd Floor

Amesbury, MA 01913

NOTICE OF MEETING

For: City of Amesbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Thursday August 23, 2012 at 9:00am

Meeting Location: Town Hall Auditorium

Background

The City of Amesbury's Local Hazard Mitigation Community Planning Team (LHMCPT) is holding the 1st of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to integrate the City's draft local hazard mitigation plan into the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, the region's participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Amesbury hazard mitigation team members and MVPC project staff
2. General overview of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process
3. Overview of community-specific plan updating tasks and timelines
4. Review and updating of Amesbury's existing "Critical Facilities & Infrastructure" inventory
5. Review and updating of Amesbury's existing "Community Profile" information and "Hazard Vulnerability Assessment"
6. Setting agenda and scheduling of Working Group Meeting #2

Office Hours:

Monday – Friday: 8:30 a.m. – 3:00 p.m.

Denise Toleos, Administrative Assistant

denise@amesburyma.gov 978-388-8116

Laurie Pierce, Administrative Assistant

laurie@amesburyma.gov 978-388-8119

978-388-1769 Fax

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Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Robert Desmarais	DPW Director	DPW	Rob@amesburyma.gov
Peter Maras	CITY ENGINEER	DPW	marasp@amesburyma.gov
Phil Mearns	Asst. Director	MUPC	cmearns@amesburyma.gov
Mark Gagnon	Police Chief	Police	MARKG@AMESBURYMA.GOV
Nipun Jain	City Planner	Planning	nipun@amesburyma.gov
Jonathan Brickell	FIRE CHIEF/EMA	FIRE/EMA	jonathane@amesburyma.gov



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Bus. (978) 475-0411

Fax (978) 623-8468

Fax (978) 475-1942



NOTICE OF MEETING

For: Town of Andover Local Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: September 20, 2012 at 1:30pm

Meeting Location: Police Department Chief's Conference Room

Purpose of Meeting

The Town of Andover's Hazard Mitigation Planning Team is holding the 1st of two working group meetings with the Merrimack Valley Planning Commission (MVPC) for the purpose of updating the Andover components of the regional ***Merrimack Valley Natural Hazards Pre-Disaster Mitigation Plan 2008-2013***. The current regional plan is available for viewing and downloading at the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The current plan is due to expire in February 2013. By updating this plan every 5 years in accordance with FEMA guidelines, Andover will retain its eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Andover Hazard Mitigation Team members and MVPC project staff
2. General overview of the Merrimack Valley multi-hazard mitigation plan, the plan updating process, and community-specific tasks and timelines
3. Review of the Plan's "Mitigation Goals"
4. Review and updating of Andover's existing "Critical Facilities & Infrastructure" inventory and map
5. Review and updating of Andover's existing "Community Profile" information, including risk vulnerability assessment and special flooding concerns
6. Review and updating of Andover's "Existing Protections Matrix"
7. Setting of agenda and date for Working Group Meeting #2

MERRIMACK VALLEY MULTI-HAZARD MITIGATION PLAN
ANDOVER PLANNING TEAM

AGENDA

MEETING OF MARCH 12TH, 2015 – 9 A.M.

ANDOVER PUBLIC SAFETY BUILDING

1. Introductions
2. Plan Overview Presentation
3. Local Planning Team Vote to Endorse Draft Plan
4. Next Steps

Town of Andover

Multi-Hazard Mitigation Local Planning Team Meeting

Andover Public Safety Building
March 12th, 2015 – 9 A.M.

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Pat Keefe	Chief of Police / END	Andover PD	pk@andoverps.net
Mike Munsterbuhl	Fire Chief	Andover Fire	mmun@andoverps.net
Edwin Attide	Deputy Director	plant + facilities	EAAttide@AndoverMA.GOV
PAUL SZYMANSKI	Asst. Superintendent	School Dept	PSZYMANSKI@APS1.NET
Thomas Carbone	Health Director	Health	t-carbone@andoverma.gov
Joe Casgrave	Env Mgr	MVPC	jcasgrave@mvpc.org
Joanne Martel	Asst Health Director / Director MRC	Health	joanne@andoverma.gov
AL DeI Datto		Andover FIRE	ade@andoverps.net
Kevin Connors		Andover Fire	kcon@andoverps.net
Keith Weightman	Deputy	Fire	kwei@andoverps.net
Sandy Geraghty	Bus Manager	Municipal Services	sgeraghty@andoverma.gov

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

[illegible]

Hazard Mitigation Planning Team Meeting #2

Boxford Town Hall – Oct. 18, 2012

[illegible]

MEETING NOTES

BOXFORD LOCAL MULTI-HAZARD PLAN TEAM MEETING

MARCH 31ST, 2015/11:30 A.M.—Public Safety Building Meeting Room

Meeting opened with introductions. See attendance sheet attached

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information:

- Table 5.2-1: Add comfort stations available and used in emergency incidents: These are at both fire stations (each 50 capacity with kitchens and emergency generators) and at police stations (30 capacity) with kitchen & generator
- Committee wanted to emphasize concern re. condition at Lowe Pond Dam. Add wording Town regards this dam in its current condition as highest priority dam for repair and capacity improvement. Flood conditions in 2006 and 2010 required installation of sandbags at the dam.
- Table 5.2-2 Note Stiles Pond Dam was replaced in 1996 and major repair in 2014

Committee had no additional projects for inclusion in Table 9.

Motion by Ross Povenmire; Seconded by Chief Murphy to endorse draft plan with edits discussed. Unanimous Vote. Mr. Cosgrove to circulate revised draft and follow up on next steps with MEMA & FEMA reviews required before formal resolution of approval by the Board of Selectmen.

Meeting adjourned approximately 12:15 P.M.

Town of Boxford

Multi-Hazard Mitigation Local Planning Team Meeting

Town Hall

March 31st, 2015 – 11:30 A.M.

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Jack Coscarelli	Emergency Manager	MUPC	JackCoscarelli@town.boxford.ma.us
Mimi Murray	Police Chief	Police	mimimurray@town.boxford.ma.us
John C. Dold	DPW Supt	DPW	jdold@town.boxford.ma.us
Ram Blaquiere	Com Director	COA	rbblaquiere@town.boxford.ma.us
Kendell Longo	Health Agent	Health	klongo@town.boxford.ma.us
Bob Hazelwood	LT./E.M.D.	Police	rhazelwood@town.boxford.ma.us
Berry Stuckney	Fire Chief	Fire	bstuckney@town.boxford.ma.us
Alex Benson	Town Administrator		abenson@town.boxford.ma.us
Ross Povenmire	Conservation/Planning		rpovenmire@town.boxford.ma.us

NOTICE OF MEETING



For: Town of Georgetown Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Wednesday, October 23, 2013, 9:30 AM

Meeting Location: Georgetown Town Hall, 1 Library Street

2nd Floor Meeting Room

Background

The Town of Georgetown's Hazard Mitigation Planning Team (HMPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the Town's sections of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC and member communities in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan expired in February 2013 and is now being updated. By updating the plan every 5 years in accordance with federal guidelines, Georgetown and the region's other participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Georgetown hazard mitigation team members and MVPC project staff
2. Review of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process and timeline
3. Discussion and finalizing of Georgetown plan section updates, including:
 - Community Profile
 - Selected Critical Facilities
 - Surface Waters and Flood Prone Areas
 - Special flood Hazard Concerns
 - Hazard Potential of Dams
 - Natural Hazards Risk Analysis
 - Existing Protections Matrix
 - Mitigation Action Plan
4. Discussion of plan implementation roles and procedures
5. Discussion of plan monitoring, evaluating, and updating process

Town of Georgetown

Hazard Mitigation Planning Team Meeting #1

Georgetown Town Hall – May 2, 2012

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Deborah Rogers	Director/Health Agent	BOH	drogers@georgetownma.gov
Howard Snyder	Town Planner	Planning Board	hsnyder@georgetownma.gov
JAMES E. MULLIGAN	POLICE CHIEF	POLICE	j.mulligan@georgetownma.gov
David Thomson	Police Lieutenant	Police	dthomson@georgetownma.gov
Tom DeSoy	Asst. E.M.D.	Police	tdejoy@georgetownma.gov
Don Connor	Police Lieutenant	Police	dconnor@georgetownma.gov
Al Beardsley	FIRE CHIEF	FIRE	abardsley@georgetownma.gov
Glenn F. Smith	SUPERINTENDENT	WATER	gsmith@georgetownma.gov
Wayne Snow	Manager	Georgetown High	georgetownlight&concert.net
Mike Farrell	Town Admin	Georgetown	mfarr@georgetownma.gov
Jon Metivier	Building Inspector	Building	JonMetivier@
Peter Dorker	Highway Surveyor	Highway	peterdorker@georgetownma.gov

Town of Georgetown

Hazard Mitigation Planning Team Meeting #2

Georgetown Town Hall – October 23, 2013

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Alan Macintosh	Asst. Director	MPC	amacintosh@mvpcc.org
Steven Przyjemski	ConCom Agent	Georgetown	sprzymst@georgetownMA.gov
Al Beardsley	FIRE Chief	Georgetown	abeardsley@georgetownma.gov
Mike Farrell	T.A.	Admin	mfarrell@georgetownma.gov
Lou Mammollette	G.M.	Water Dept.	lmammollette@georgetownma.gov
Peter Dukee	Highway Surveyor	Highway	Pdukee@georgetownma.gov
Howard Snyder	Town Planner	Planning	hsnyder@georgetownma.gov
Donaco Curran	Chief of Police	Police Dept.	dcurran@georgetownma.gov
Dan Schofield	Light Plant Manager	G.M.D.	D.Schofield@georgetownlight.com

NOTICE OF MEETING

MAR 10 2015 -8:45 AM

For: Town of Georgetown Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Thursday, March 12th, 2015, 10:00 AM

Meeting Location: Georgetown Town Hall, 1 Library Street, Third Floor

Background

The City/Town of Georgetown Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional Merrimack Valley Multi-Hazard Mitigation Plan Update available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff.
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process.
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan.

Multi-Hazard Mitigation Local Planning Team Meeting

**1 Library Street Town Hall Third Floor
Thursday, March 12th, 2015 10:00 A.M.**

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Dan Curran	Chief of Police	Police Dept.	DCurran@GeorgetownMA.gov
Peter Dukece	Highway Surveyor	Highway	Pdukece@georgetownma.gov
Joe Cosgrave	Env Mgr.	MVPC	josgrue@mvpc.org
Steve Pryjenski	Con Com	ConCom Agent	spryjenski@GeorgetownMA.org
Al Beardsley	Fire Chief	Fire Dept	abeardsley@georgetownma.gov
Mike Farrell	Town Admin	Admin	mfarrell@georgetownma.gov
Lou Mammollette	General Manager	Water Dept.	lammollette@georgetownma.gov

Town of Georgetown



Planning Board
1 Library Street
Georgetown, MA 01833

Phone: (978) 352-5713
Fax: (978) 352-5725

MEETING MINUTES HAZARD MITIGATION PLANNING COMMITTEE Wednesday, March 12th, 2015 Memorial Town Hall – 3rd Floor 10:30a.m.

{Sign in Sheet recorded attendance.}

Introduction of Working Group:

Joe Cosgrove: Representative from MVPC. 2008 approved plan for 5 years. Expired 2013. This is the 2012 update to that plan. The recent draft submitted to MEMA in February of this year. Expect comments in two weeks.

Howard Snyder: Fall 2014 Georgetown made the updates to the 2014 Action Plan. Five year cycle on projects. There are three active projects in the queue for FEMA grants.

Joe Cosgrove: Those grants are more competitive.

Chief Cudmore: This committee should meet twice a year to evaluate and update the Action plan.

Joe Cosgrove: That would be good. Show FEMA and MEMA that this Committee is not static.

Mike Farrell: Two discretionary grants are held up. They were first denied, then weight listed then off that list and the Town is now accepting general contractor bids. These projects are for the school.

Chief Cudmore: Motion for the Georgetown Multi-Hazard Mitigation Committee to accept the Multi-Hazard Mitigation Plan as prepared by MVPC as presented.

Steve Przyjemski: Second.

Vote: 6-0; Unanimous.

Chief Cudmore: Motion to adjourn.

Chief Beardsley: Second

Vote: 6-0; Unanimous.

Next Meetings: September 17th, 2015.

Any person with a disability who wishes to attend this public meeting and needs a reasonable accommodation, please contact the ADA Coordinator at 978-352-5755 or mfarrell@georgetownma.gov.

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
William Jackson	Foreman	Electric	W. Jackson 6ELD@coxnet.net
John Clement	Fire Chief	Fire Dept.	Chief, Clement@coxnet.net
Robert Kirmsewicz	Police Chief	Police Dept.	CHIEF@GROVELANDPOLICE.COM
Jeffrey Gillen	Deputy Chief	Police Dept	JGillen@grovelandpolice.com
Robert P. Arakelian	Road Commissioner	Highway Dept.	arakelian@grovelandma.com
Deborah A. Ketchen	Health Agent	Board of Health	healthagent@grovelandma.com
Nancy Lewandowski	Admin. Asst.	Board of Selectmen	nlewandowski@grovelandma.com
Thomas D. Cicich	Public Works Supervisor		tcicich@grovelandma.com

Town of Groveland

Fire Station Meeting Room

March 30th, 2015 – 10 A.M.

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Jeffrey Gillen	Deputy chief / EMD	PD / Emv. Management	J.gillenn@grovelandpolice.com
Denise Dembroski	Finance Director	Town / Finance / Bos	ddembroski@grovelandma.com
ROBERT CHANLEY	HEALTH & PLANNING	PLANNING BOARD	55 4474 TRUCK @ AOL - COM
Robert P. Arakelian	Road Commissioner	DPW Highway	arakelian@grovelandma.com
Michael Cloutier	Light Dept. Manager		m.cloutiergeld@comcast.net
ROBERT LAY	FIRE CHIEF	FIRE	GROVELANDFIRECHIEF @ GMAIL.COM
JIM FREER	PLANNING BOARD		CAPTMINUTTA@AOL.COM
Joe Cosgrove	NVP	Emv Pwgr Mgr.	Jcosgrove@mpc.org

MEETING NOTES

GROVELAND LOCAL MULTI-HAZARD PLAN TEAM MEETING

MARCH 30TH, 2015/ 10 A.M.—Fire Department Meeting Room

Meeting opened with introductions. See attendance sheet attached

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information:

- Team confirmed Bagnall School is primary shelter. Secondary site is Pentucket gym. Add warming stations available at Housing Authority Senior Community Center Room, capacity of 50 with feeding, generator; Also warming station at Fire Station: capacity 50, with generator, feeding; and additional warming station center at Town Hall meeting room capacity 100; feeding and generator available.
- Dams—Bob Arakelian confirmed that dam most in need of repair is Johnson's Creek Dam. Town has conceptual plan of improvements and has hired engineering firms to undertake design/permitting. Dam repair project to be added to action plan. Cost estimate will be developed, but according to DPW is expected to be high cost initiative.
- Also in Action Plan: Add Drainage Improvements including outfall replacement at Main/School Street area. Cost estimate is \$150k...Project is high priority.

Motion by Jeff Gillen; Seconded by Jim Freer to endorse draft plan with edits discussed. Unanimous Vote. Mr. Cosgrove to circulate revised draft and follow up on next steps with MEMA & FEMA reviews.

Meeting adjourned approximately 10:40 A.M.

NOTICE OF MEETING

For: City of Haverhill Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Tuesday September 3, 2013 9:30am

Meeting Location: Haverhill Police Station 40 Bailey Blvd.

Background

The City of Haverhill's Local Hazard Mitigation Planning Team (LHMPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the City's sections of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC and member communities in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan expired in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Haverhill and the region's other participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Haverhill hazard mitigation team members and MVPC project staff
2. Review of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process and timeline
3. Further discussion and finalizing of Haverhill plan section updates, including:
 - Community Profile
 - Selected Critical Facilities Table
 - Surface Waters and Flood Prone Areas
 - Special Flood Hazard Concerns
 - Hazard Potential of Dams
 - Natural Hazards Risk Analysis
 - City of Haverhill Existing Protections Matrix
 - City of Haverhill Mitigation Action Plan
4. Discussion of plan implementation
5. Discussion of plan updating every 5 years

City of Haverhill

Hazard Mitigation Planning Team Meeting #1

September 19, 2012 – 10:00 AM

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Paul Malone	Police Deputy Director Emergency Management	Haverhill Police	PMalone@HaverhillPolice.com
David Van Dam	Chief of Police	Mayor's Office	DavidVanDam@CityofHaverhill.com
MICHAEL WREN	Police Captain	Haverhill PD	MWREN@HAVERHILLPOLICE.COM
Douglas Brown	Deputy Fire Chief	Haverhill Fire Dept.	DBrown@HaverhillFire.com
William LaLiberty	Deputy Fire Chief	HFD	WLaLiberty@HaverhillFire.com
Roland Gaudreault	Foreman	Highway	RG@CityofHaverhill.com
Richard Osborne	Building Engr.	Inspectional	ROSBORNE@CityofHaverhill.com
Jim Michitson	Water/Wastewater Consultant	Water/Wastewater	Jmichitson@HaverhillWater.com
Karen Jarrett	Engr. in Charge Engineering	Engineering	KJARRETT@CityofHaverhill.com
Alan Wentworth	Asst. Director/Program	MVPC	awentworth@mvpc.org

City of Haverhill

Hazard Mitigation Planning Team Meeting #2

Haverhill Police Department – September 3, 2013 @ 5:10 PM Follow-up
MTG

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Alan Macintosh	Asst. Director	MVPC	amacintosh@mvpc.org
Paul Malone	Deputy Director Emergency Management	Haverhill Police	Pmalone@haverhillPolice.com
John Pettis	City Engineer	City of Haverhill	jpettis@cityofhaverhill.com
Richard O'Brien	Building Insp	"	rob@cityofhaverhill.com
Rob Moore	SITE PLANNING 9/10/13 Env Health Tech	Conservation	rmore@cityofhaverhill.com
Paul deppel	Site Plan Meter collector - Dept. Plan Sec	WCTP	deppel@haverhillwater.com
William Caliberty	Deputy Fire Chief (Site Plan 9/10/13)	Fire Dept	Wcaliberty@haverhillfire.com
Robert E. DeMarin	Comptroller	Mayor's off.	med@townofhaverhill.net

Hazard Mitigation Planning Team Meeting #3

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Alan Macintosh	Asst. Director	mvpc	amacintosh@mvpc.org
Robert Moore	Env. Health Tech	HAN CONSERVATIONS	rmoore@cityofhaverhill.com
John D'Aust	WTP Manager	Haverhill Water	jdoust@haverhillwater.com
William LeLiberty	Deputy Chief	Fire Dept.	WLeLiberty@HaverhillFire.com
Richard Osborne	Building Insp.	City of Haver	r.osborne@City of Haverhill.com
LES GODIN	HEALTH DEPT.	Bldg/HEALTH Insp.	LGODIN@CITYOFHAVERHILL.COM
John Pettis	City Engineer	HAVERHILL	jpettis@cityofhaverhill.com

City of Haverhill

Multi-Hazard Mitigation Local Planning Meeting

March 24th, 2015 – 10:00 A.M.
Haverhill City Hall

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Paul Malone	Deputy Director Emergency Mgmt.	Haverhill Police	PaulMalone@HaverhillPolice.com
LES GODIN	HEALTH DEPT.	INSPECTION	LGODIN@CITYOFHAVERHILL.COM
William LaLiberty	Deputy Chief / FD	Haverhill Fire	WLaLiberty@haverhillfire.com
Paul Sessel	collection system supervisor	HAVERHILL WATERS	psessel@haverhillwater.com
Richard Osborne	Bldg Eng	Haverhill Eng	rosborn@cityofhaverhill.com
John Pettis	City Engineer	Hav Engineering	jpettis@cityofhaverhill.com
Robert Moore	ENV. HEALTH TECH.	HAV. CONSERVATIONS	RMOORE@CITYOFHAVERHILL.COM
John D'Aur	WTP MANAGER	Haverhill Water	jdaur@haverhillwater.com
GRANT F. SMITH	WATER MAINT. SUPERVISOR	"	gsmith@haverhillwater.com
Joe Cosgrove	Env. Program Mgr.	MUPC	josgrove@mupc.org

MEETING NOTES

HAVERHILL LOCAL MULTI-HAZARD PLAN TEAM MEETING

MARCH 24TH, 2015—CITY HALL, 3RD FLOOR ENGINEERING OFFICE CONFERENCE ROOM, 10 A.M.

John Pettis opened meeting with introductions.

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information in Bridges...add information regarding ongoing reconstruction of MBTA rail bridge over Merrimack River, \$100 million project multi-year being done with state and federal TIGER monies.

Also suggested adding new project to Action Plan for bank repair/stabilization at Kenoza Lake. Area has been subject of severe erosion with silt impact to the City's Kenoza Lake water supply. City DPW has capital funding request in current budget of \$70k for design/permit. Construction funding is estimated to be \$350,000.

Question was raised about DCR FireWise program. Deputy Chief Laliberty indicated City had looked into but no action or interest to participate.

No additional projects noted at this time. Working group members asked to submit any edits, additional Action Plan priorities by Tuesday, March 31st to John Pettis who will get info to Joe Cosgrove at MVPC.

Motion made by John Pettis, seconded by Paul Jessel to endorse the draft plan as revised with edits/project additions noted. Unanimous vote.

Meeting adjourned 10:45 A.M.

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Daniel McCarthy	Land Use Planner	Planning Dept	dmccarthy@cityoflawrence.com
Cibrian Conway	Lt	Law PD	seconway@lawpd.com
JACK BERGERON	FIRE CHIEF / EMS	LAWRENCE FIRE	jbergeron@cityoflawrence.com
Andrew Wall	City Engineer	DPW	awall@cityoflawrence.com
Zulma Lirio	Admin. Assistant	Planning Dept.	zmartinez@cityoflawrence.com
James Barnes	C-D Director	C-D Dept	jbarnes@cityoflawrence.com

City of Lawrence

Hazard Mitigation Planning Team Meeting #2

Community Development Conf. Rm, 225 Essex St. – Oct. 24, 2012

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
GREGORY S. ALEXANDIS	LOCAL BUILDINGS INSPECTOR	INS. SERVICES	G.ALEXANDIS@CITYOFLAWRENCE.COM
Andrew Wall	City Engineer	Public Works	Awall@cityoflawrence.com
Gilda Duran	Neighborhood Planner	CDD	gduran@cityoflawrence.com
TIMOTHY CARON	FACILITY MANAGER	LAWRENCE SCHOOLS DEPT	TIM.CARON@LAWRENCEK12.MA.US
JACK BERGERON	FIRE CHIEF	LAWRENCE FIRE	jbergeron@cityoflawrence.com
Frank O'Connor	Community Dev. Dept.		FOconnor@CityofLawrence.com
Dan McCarthy	Planner	City of Lawrence	dmccarthy@cityoflawrence.com
FRANKLIN ARIAS	CUSTODIAN	LIBRARY	H0R000552@AOL.COM
PAUL GARDNER	WATER INS.P.	WATER DEPT	PGARDNER@CITYOFLAWRENCE.COM
James Barnes	Community Dev Director	CDD	jbarnes jbarnes@cityoflawrence.com
Shawn Conway	L. Police Dept	C PD	sconway@lapd.gov

NOTICE OF MEETING

City of Lawrence_Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Date & Time:03/26/2015 @ 10 a.m.

Location: Community Development Conference room #301

Background

The City of Lawrence Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional ***Merrimack Valley Multi-Hazard Mitigation Plan Update*** available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

City of Lawrence

Multi-Hazard Mitigation Local Planning Meeting

March 26th, 2015 – 10:00 A.M.

Community Development Dept – Conference Room 301

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
De Cosgrove	Eng. Program Mgr.	MUPC	jcosgrove@wista.com
John Moriarty	City Engineer	City of Lawrence	tearara@cityoflawrence.com
Brion Moriarty	Fire Chief	F.D.	Bmoriarty@cityoflawrence.com
Pascual A Ruiz	Director	ISD	pruiz@cityoflawrence.com
Peter M Blanchette	Building Comm	ISD	Peter.Blanchette@cityoflawrence.com
John Isensee	DPW Director	DPW	JIsensee@cityoflawrence.com
Dan McCarthy	Land Use Planner	Planning	dmccarthy@cityoflawrence.com
Tom Cuddy	Special Asst to Chief	LPD	TCuddy@ lawrence lawrence.com



City of Methuen, Massachusetts

OFFICE OF THE MAYOR

The Searles Building, 41 Pleasant Street, Suite 306

Methuen, Massachusetts 01844

Telephone: 978-983-8505 Fax: 978-983-8973

E-mail: snzanni@ci.methuen.ma.us

Stephen N. Zanni
Mayor

For: City of Methuen Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: November 1, 2012 @ 11:00 AM

Meeting Location: 41 Pleasant Street, Searles Building, Second Floor Conference Room

Background:

The City of Methuen's Local Hazard Mitigation Planning Team (LHMPT) is holding the 1st of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC). The purpose is to update the Methuen components of the regional "**Merrimack Valley Region Natural Hazards Pre-Disaster Mitigation Plan** (Feb. 2008). The current plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in partnership with regional communities. It prescribes a series of mitigation actions the communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Methuen will retain its eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda:

Introduction of Working Group members and MVPC Project Staff

General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process

Overview of Community-specific Plan Updating Tasks and Timelines

Review and Updating of Methuen's Existing "Critical Facilities & Infrastructure" Inventory

Review and Updating of Methuen's Existing "Community Profile" Information

Review and Updating of Methuen's "Existing Protection Measures Matrix"

Scheduling and Agenda for Working Group Meeting #2

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
William Buckley	DIRECTOR	CD	wjbuckley@ci.methuen.ma.us
MICHAEL PAPPALARDO	LT. DEPEM. DIRECTOR	POLICE	mppappalar@ci.methuen.ma.us
JOSEPH SALOMON	CHIEF / E.M. DIRECTOR	POLICE	jsolomon@ci.methuen.ma.us
Brian LeGrasso	Health Director	Health Dept	bj-legrasso@ci.methuen.ma.us
STEVEN BUOTE	FIRE CHIEF	F.D.	sibuote@ci.methuen.ma.us
Joseph Giarrusso	Conservation Officer	Conservation	jtggiarrusso@ci.methuen.ma.us
Kathleen Colwell	Asst. Dir. Planning	CD	kcolwell@ci.methuen.ma.us



City of Methuen, Massachusetts

OFFICE OF THE MAYOR

The Searles Building, 41 Pleasant Street, Suite 306

Methuen, Massachusetts 01844

Telephone (978) 983-8505 Fax (978) 983-8973

E-mail: snzanni@ci.methuen.ma.us

Stephen N. Zanni

Mayor

NOTICE OF MEETING

For: City of Methuen Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Thursday, November 15, 2012, 11:00 AM - Noon

Meeting Location: Methuen City Hall, 2nd Floor Conference Room

Background

The City of Methuen's Hazard Mitigation Planning Team (HMPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the city's sections of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC and member communities in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Methuen and the region's other participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

Introduction of Methuen hazard mitigation team members and MVPC project staff

Review of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process and timeline

Discussion and finalizing of Methuen plan section updates, including:

- Community Profile (text)

- Selected Critical Facilities Table and Critical Facilities inventory and map

- Surface Waters and Flood Prone Areas (text)

- Special Flood Hazard Concerns (items in shaded box)

The City of Methuen is an Equal Opportunity / Affirmative Action Employer in its Programs and Activities

Hazard Potential of Dams (text and table)
Natural Hazards Risk Analysis (text)
City of Methuen Existing Protections Matrix
City of Methuen Mitigation Action Plan

Discussion of plan implementation strategy and plan monitoring

Discussion of plan updating procedures (every 5 years)

City of Methuen

Hazard Mitigation Planning Team Meeting #2

Methuen City Hall – November 15, 2012

ATTENDANCE

[illegible]

City of Methuen

Multi-Hazard Mitigation Local Planning Meeting

March 25th, 2015 – 9:00 A.M.

Methuen City Hall-Searles Building

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Amy Ewing	Public Health Nurse	Health Dept.	aeving@ci.methuen.ma.us
Brian Labrosse	Health Director	Health Dept.	bjlabrosse@ci.methuen.ma.us
Joe Solomon	Police Chief	Police	jsoloman@cityofmethuen.net
Mike Pappalardo	Police Lt.	Police	MJPappalardo@ci.methuen.ma.us
Nora McManamon	Patrol	Police	nmcmanamon@ci.methuen.ma.us
Tim Shreeby	Fire Capt.	Fire	ITimShreeby@yahoo.com
Kathleen Collwell	Community Development	Planner	kbcollwell@ci.methuen.ma.us
STEVE GAGNON	CHIEF ENGINEER	DPW	STGAGNON@CI.METHUEN.MA.US
John Gibney	Building Comm.	Inspections	jgibney@ci.methuen.ma.us
Bill Buckley	DIRECTOR OF PLAN + COMM DEV	DECD	wjbuckley@ci.methuen.ma.us
Joe Cosgrove	Env. Program Mgr.	MRPC	jcosgrove@mrpc.org

NOTICE OF MEETING

For: Town of Newbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Monday, April 30, 2012, 1:30 p.m.

Meeting Location: Newbury Town Hall, 25 High Road, Newbury, MA 01951

Background

On **Monday, April 30, 2012 at 1:30 p.m.**, the Town of Newbury Multi-Hazard Mitigation Planning Team is holding the 1st of two working group meetings with the Merrimack Valley Planning Commission (MVPC) staff for the purpose of updating the Newbury components of the regional ***Merrimack Valley Multi-Hazard Mitigation Plan 2008-2013***. The plan is available for viewing at:

http://mvpc.org/wp-content/uploads/MEMA_PDM_Complete4.11.2011.pdf

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The current plan is due to expire in February 2013. By updating the plan every 5 years in accordance with FEMA guidelines, Newbury will retain its eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).



Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Overview of Community-specific Plan Updating Tasks and Timelines
4. Review and Updating of Newbury's Existing "Critical Facilities & Infrastructure" Inventory
5. Review and Updating of Newbury's Existing "Community Profile" Data and Text
6. Scheduling of and Agenda for Working Group Meeting #2

Please contact Martha Taylor, Newbury Town Planner, by phone at 978-465-0862, ext. 312, or by e-mail at planningboard@townofnewbury.org with questions or for additional information.

Town of Newbury

Hazard Mitigation Planning Team Meeting #1

Newbury Town Hall – April 30, 2012

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
MARTHA TAYLOR	TOWN PLANNER	PLANNING	planningboard@townofnewbury.org
Michael Reilly	Police Chief/EMD	Public Safety	chiefreilly@newburypolice.com
Sam Joslin	Building Commissioner	Building	Build inspect@Townofnewbury.org
James Sarette	Foreman	Highway	
DOUG PACUTER	com-com Agent	comcom	comcom@TOWNOFNEWBURY.ORG
Peter Chippen	INTEC/Moss Bay		pphippen@nupc.org

NOTICE OF MEETING

For: Town of Newbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: Tuesday, September 25, 2012
2:00 to 3:00 p.m.

Meeting Location: Newbury Town Hall
25 High Road
Newbury, MA 01951

RECEIVED
12 SEP 19 AM 10:19
NEWBURY TOWN CLERK

Background

The Town of Newbury's Local Hazard Mitigation Planning Team (LHMPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the Town's sections of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC and member communities in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Newbury and the region's other participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Newbury hazard mitigation team members and MVPC project staff
2. Review of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process and timeline
3. Discussion and finalizing of Newbury plan section updates, including:
 - Community Profile (text)
 - Selected Critical Facilities Table 5.9-1
 - Surface Waters and Flood Prone Areas (text)
 - Special flood Hazard Concerns (bulleted items in shaded box)
 - Hazard Potential of Dams (text)
 - Natural Hazards Risk Analysis (text)
 - Table 6-9. TOWN OF NEWBURY Existing Protections Matrix
 - Table 9-10. TOWN OF NEWBURY Mitigation Action Plan
4. Discussion of plan implementation
5. Discussion of plan updating every 5 years



NOTICE OF MEETING

For: Town of Newbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Date & Time: Monday, March 30, 2015
2:15 p.m.

Location: Newbury Town Hall
25 High Road
Newbury, MA 01951

Background

The Town of Newbury Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional **Merrimack Valley Multi-Hazard Mitigation Plan Update**, available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

Town Hall

March 30th, 2015 – 2:15 P.M.

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Joe Coscarelli	EW Regional MVP		jcoscare@nyc.gov
James Saffell	Director	Highway	Highway @ Town of Newbury.org
Doug Pachter	Cons - Comm	Cons - Comm	conscomm@townofnewbury.org
Sam Joslin	Bldg Commission	Inspector	Bldg.inspect@TownofNewbury.org
Mike Reilly	Police Chief / EMT		m.reilly@newburyplace.com
Deborah Rogers	Health Agent / B08		boardofhealth@townofnewbury.org
MARTHA TAYLOR	TOWN PLANNER	PLANNING	planningboard@townofnewbury.org

MEETING NOTES

NEWBURY LOCAL MULTI-HAZARD PLAN TEAM MEETING

MARCH 30TH, 2015/2:15 P.M.—Town Hall

Meeting opened with introductions. See attendance sheet attached

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information:

- Table 5.9-1 Note Newburyport EOC is backup center for Newbury Emergency Operations; According to Chief, Triton is designated as mass inoculation center for health emergencies; Governor's Academy has been offered for use as shelter and is available; Newbury Town Hall is available for use as warming station. Add also as warming station, Plum Island Taxpayers Hall (PITA), capacity of 50 with kitchen, generator.
- Note in Special Flood Hazard Concerns, #10 add reference to flooding at bridge & dam
- Add in Section 6 reference to Newbury/Newburyport/Salisbury partnership in the Merrimack River Beach Alliance....Through this partnership, communities have coordinated planning and implementation including beach replenishment 150 cubic yards on Plum Island in 2009; South Jetty repair in 2014; and planned North Jetty repair in 2015; and through the Army Corps of Engineers Section 103 Program ongoing sand replenishment and embankment stabilization.

Motion by Sam Joslin; Seconded by Doug Packer to endorse draft plan with edits discussed. Unanimous Vote. Mr. Cosgrove to circulate revised draft and follow up on next steps with MEMA & FEMA reviews.

Meeting adjourned approximately 2:50 P.M.



CITY OF NEWBURYPORT
DEPARTMENT OF PUBLIC SERVICES
16A PERRY WAY
NEWBURYPORT, MA 01950

ANTHONY J. FURNARI, DIRECTOR
ANDREW LAFFERTY, DEPUTY DIRECTOR

PHONE: 978-465-4463
FAX: 978-465-1623

NOTICE OF MEETING

For: City of Newburyport Multi-Hazard Mitigation Planning Team
& Interested Stakeholders

Meeting Date & Time: September 13, 2012, 3PM

Meeting Location: City Hall Auditorium

Background

The City of Newburyport's Local Hazard Mitigation Community Planning Team (LHMCPT) is holding the 1st of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to integrate the City's local hazard mitigation plan into the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, the region's participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Newburyport hazard mitigation team members and MVPC project staff
2. General overview of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process
3. Overview of community-specific plan updating tasks and timelines
4. Review and updating of Newburyport's existing "Critical Facilities & Infrastructure" inventory
5. Review and updating of Newburyport's existing "Community Profile" information and "Hazard Vulnerability Assessment"
6. Setting agenda and scheduling of Working Group Meeting #2

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
JOHN-ERIC WHITE	CITY ENGINEER	CITY	JEWHITE@CITYOFNEWBURYPORT.COM
ANTHONY FUENAGI	DPS DIRECTOR	DPS	AFUENAGI@CITYOFNEWBURYPORT.COM
Debbie Cheng	Assistant Engineer	DPS	dcheng@cityofnewburyport.com
Andrew Lafferty	DPS DEPUTY DIRECTOR	DPS	alafferty@cityofnewburyport.com
STEVE BERGLUND	DIR OF FACILITIES	SCHOOLS	SBERGLUND@NEWBURYPORT.K12.MA.US
Paul Hogg	Harbormaster	CITY	phogg@cityofnewburyport.com
Thomas Howard	City Marshal	Police Dept	thoward@newburyportpolice.com

NOTICE OF PUBLIC MEETING

For: City of Newburyport Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Date & Time: March 18, 2015 @ 10am

Location: City Hall Mayor's Conference Room

Background

The City of Newburyport Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional ***Merrimack Valley Multi-Hazard Mitigation Plan Update*** available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

NEWBURYPORT
PUBLIC MEETING 3/18/15 10AM

MULTI HAZARD MITIGATION PLAN 2015

SIGN IN SHEET

<u>NAME</u>	<u>DEPT/POSITION</u>	<u>EMAIL</u>
JON-ERIC WHITE	CITY ENGINEER	JEWHITE@CITYOFNEWBURYPORT.COM
WAYNE AMARA	DEPUTY DIRECTOR DPS	WAMARA@CITYOFNEWBURYPORT.COM
JOE COSGROVE	MUPL Env. Mgr.	JCOSGROVE@MUPL.ORG
Christopher LeClaire	Fire Chief	clelaire@cityofnewburyport.com
Ann Orsmond	NBPT Chamber	aorsmond@newburyportchamber.org
Joe Dugan	Wastewater Plant	JDugan@cityofnewburyport.com
STEVE BERGHOLM	SCHOOLS	SBERGHOLM@NEWBURYPORT.K12.MA.US
Donna Holaday	mayor	mayor@cityofnewburyport.com

Town of North Andover

Hazard Mitigation Planning Team Meeting #1

North Andover Town Hall – April 26, 2012

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
CURT BELLAVANCE	CD DIR.	COM. DEVELOPMENT	cbellavance@townofnorthandover.com
Felipe Schwarz	AVP. External Affairs	Merrimack College	schwarzf@merrimack.edu
Lucky Dymon	Town Planner	Planning	jdymon@townofnorthandover.com
Jennifer Hughes	Conservation Admin	Conservation	jrhughes@townofnorthandover.com
Susan Sawyer	Health Dir.	Health	ssawyer@townofnorthandover.com
Debra Ralston	Public Health Nurse	Wealth	DrRalston@townofnorthandover.com
PAUL GALLAGHER	Police Chief	Police	PGALLAGHER@NAPD.US
Andy Merrimak	Fire Chief	FIRE	amerrimak@townofnorthandover.com
Gerald Brown	Insp. of Bldgs	Building Dept	gbrown@townofnorthandover.com
JEFF COCO	E.M.D.	Emergency Management	cocojeff@northandover.com
Henry Fink	concerned resident		
Gene Willis	Town Engineer	DPW/Engineering	

NOTICE OF MEETING

For: Town of North Andover Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Date & Time: Wednesday, March 25th, 2015 @ 2 P.M.

Location: Community Development Conference Room, 1600 Osgood Street, North Andover, MA

Background

The Town of North Andover Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional ***Merrimack Valley Multi-Hazard Mitigation Plan Update*** available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

March 25th, 2015 – 2:00 P.M.
Community Development Dept – 1600 Osgood St.

Name	Title	Dept. Affiliation	E-mail Address
DAN ENRIGHT	Asst. Director Community	Community Development	jenright@townofnorthandover.com
ERIC KENNY	Dir. Community & Econ. Dev.	Community & Econ. Dev.	ekenny@townofnorthandover.com
Gene Willis	Dir. Engineering	DPW	gwillis@TownofNorthAndover.com
Charles Gray	Operations Lieutenant	Police	CGRAY@NADPO.Us
Susan Sawyer	Health Dir.	Health	ssawyer@townofnorthandover.com
Jennifer Hughes	Conservation Admin	Conservation	jhughes@townofnorthandover.com
Joe Cosgrove	MUPC		jcosgrove@nupc.org
Gerald A. Brown	Insp. Bldgs	Building	gabrown@townofnorthandover.com

MEETING NOTES

NORTH ANDOVER LOCAL MULTI-HAZARD PLAN TEAM MEETING

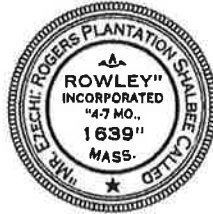
MARCH 25TH, 2015/ 2 P.M.—COMMUNITY DEVELOPMENT CONFERENCE ROOM, 1600 Osgood Street

Meeting opened with introductions.

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information:

- Boston Hill Senior Housing is now named **Brightview Senior Care**.
- Units planned at Osgood Landing total 530 (not 600)
- Table 5.11-1 Edits
 - Fire Station to be completed and operations Fall 2015. Will have an emergency generator.
 - Add Fire Station #2/9 Salem Street.....**Does this have generator???**
 - Address for new Police Station constructed in 2011 is 1475 Osgood St. (It has generator)
 - Heritage House is now Ashland Farms
 - Add Brightview North Andover, 1275 Turnpike St. (Sue Sawyer to confirm #'s, capacity)
- Keep emergency shelters as listed. Some discussion of North Andover High School...but not currently suited as shelter because no emergency power for heat.
- Flood Prone Areas....Add fourth area, per Jeff Coco, EM Director, of 90 Sutton St. area at confluence of Shawsheen & Merrimack rivers.
- Special Flooding Concerns: note grammatical corrections 3rd para.
- Rewrite last paragraph: "The Town of N.A. is seeking funding to finance capacity upgrades as structural solutions to the recurring surcharge problems at Rae's Pond and Winter Street lift



ROWLEY
TOWN OF ROWLEY
TOWN CLERK
12 JUN -4 PM 1:45

Town of Rowley

Massachusetts 01969

BOARD OF SELECTMEN
139 Main Street • PO Box 275
Rowley, MA 01969
Phone (978) 948-2372
Fax (978) 948-8202
selectmen@townofrowley.org

TOWN ADMINISTRATOR
139 Main Street • PO Box 275
Rowley, MA 01969
Phone (978) 948-2705
Fax (978) 948-8202
debbie@townofrowley.org

NOTICE OF MEETING

For: Town of Rowley Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: June 12, 2012 at 1:30 p.m.

Meeting Location: Selectmen's Office, Rowley Town Hall

Background

The Town of Rowley's Local Hazard Mitigation Community Planning Team (LHMCPT) is holding the 1st of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff for the purpose of updating the Rowley components of the regional **Merrimack Valley Multi-Hazard Mitigation Plan 2008-2013**. The current plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Rowley will retain its eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Overview of Community-specific Plan Updating Tasks and Timelines
4. Review and Updating of Rowley's Existing "Critical Facilities & Infrastructure" Inventory
5. Review and Updating of Rowley's Existing "Community Profile" Information
6. Scheduling of Working Group Meeting #2

Hazard Mitigation Planning Team Meeting #1

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Ken Ward	Inspector of Building Inspection	Town of Rowley	ken.ward@townofrowley.org
Scott Gerritt	Highway Surveyor	Highway	highway@townofrowley.org
Frank Marchegiani	Health Service Coordinator	Health	health@townofrowley.org
Deborah Eagan	Town Administrator		debbie@townofrowley.org
James C. Broderick	Fire Chief / EMD	Fire Emergency Management	firechief@rowlesfiredept.com
Brent Baeslack	Conservation Agent	Conservation	conservation@TownofRowley-086

NOTICE OF MEETING

SEP 17 PM 12:39

For: Town of Rowley Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: September 19, 2012 1:30 p.m. to 2:30 p.m.

Meeting Location: Town Hall

Background

The Town of Rowley's Local Hazard Mitigation Planning Team (LHMPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the Town's sections of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC and member communities in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, Rowley and the region's other participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Rowley hazard mitigation team members and MVPC project staff
2. Review of the Merrimack Valley Multi-Hazard Mitigation Plan and plan updating process and timeline
3. Discussion and finalizing of Rowley plan section updates, including:
 - Community Profile (text)
 - Selected Critical Facilities Table 5.11-1
 - Other Critical Facilities & Infrastructure (per Map Legend)
 - Surface Waters and Flood Prone Areas (text)
 - Hazard Potential of Dams (text and Table 5.11-3)
 - Natural Hazards Risk Analysis (text)
 - Table 6-11. TOWN OF ROWLEY Existing Protections Matrix
 - Table 9-12. TOWN OF NEWBURY Mitigation Action Plan
4. Discussion of plan implementation
5. Discussion of plan updating every 5 years

Hazard Mitigation Planning Team Meeting #2

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Ken Ward	BS	Inspection	ken.ward@townofrowley.org
Katrina O'Leary	Town Planner	Planning	katrina.oleary@townofrowley.org
Brens Baeslach	Conservation Agent	Conservation	on file
James C. Bradeside	Fire Chief	Fire Dept.	firechief@rowleyfiredept.com
Deborah Eagan	Town Administrator	Selection	debble@townofrowley.org
Scott Leavitt	Highway Surveyor	Highway	highway@townofrowley.org
Frank Marchegiani	Health Dept	Health	health@townofrowley.org
Robert R. Barker	Chief of Police	Police	chief@rowleypolice.com

ROWLEY BOARD OF SELECTMEN

MEETING AGENDA

March 23, 2015

6:00 p.m., Town Hall

RECEIVED
TOWN OF ROWLEY
TOWN CLERK

15 MAR 19 PM 12:02

CALL MEETING TO ORDER

6:00 p.m. JOINT MEETING BOARD OF WATER COMMISSIONERS

6:00 p.m. EXECUTIVE SESSION

- To discuss the discipline or dismissal of an employee pursuant to G.L. c. 30A, §21(a)(1)
- Collective Bargaining Strategies – AFSCME Council 93 Local 2905

PLEDGE OF ALLEGIANCE

CITIZEN QUERY* 7:05 p.m. – 7:10 p.m.

APPOINTMENTS AND HEARINGS

7:00 p.m. Appointment* - Town Accountant Sue Bailey to discuss FY 16 budget

7:15 p.m. Street Layout Hearing - Wild Pasture Lane, Oak Ledge Circle and Arrowhead Circle

7:30 p.m. Public Hearing – Multi-Hazard Mitigation Plan

7:45 p.m. Appointment* – Mo Levasseur to discuss Eiras Park playground

GENERAL BUSINESS

1. Request from Board of Cemetery Commissioners to lift hiring freeze for seasonal laborer
2. Letter from Fire Chief James Broderick re: email of appreciation from Christopher Vatalaro
3. Letter from Friends of the Rowley Public Library re: placing of Book Sale signs

NEW BUSINESS

1. Letter from Board of Cemetery Commissioners regarding vacancy on Cemetery Board

OLD BUSINESS

1. Discuss FY 16 Water Department Budget
2. Discuss Annual and Special Town Meeting warrant articles
3. Discuss and evaluate Lease of Camp Area proposals

FY 16 BUDGETS

1. Finance Committee
2. Agricultural Commission
3. Harbormaster
4. Shellfish Constable and Shellfish Commission
5. Whittier Voc-Tech
6. Essex Agricultural School
7. Cemetery
8. Board of Health
9. Veterans
10. Historical Commission and Historic District Commission
11. Debt

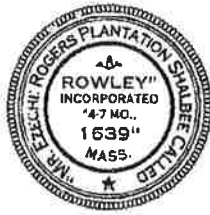
ANNOUNCEMENTS

- Central Street Proposed Reconstruction Public Hearing with Highway Surveyor Patrick Snow and Norman Brown of Bayside Engineering is scheduled for March 30, 2015 at 7:30 p.m.
- The Town has the following vacancies:
 - a. **Fence Viewer** – three positions;
 - b. **Wood, Lumber & Bark Inspector**; and
 - c. **Zoning Board of Appeals Associate** - two open seats
 - d. **Historical Commission-Historic District Commission** – two seats
 - e. **Parks and Recreation Committee** – two seats
 - f. **Open Space Committee** is seeking membersFor more information on these positions, please contact the Selectmen's Office at 948-2372.
- Rowley Food Pantry is in need of donations. The Food Pantry is open Tuesdays from 10:00 a.m. to 12:00 p.m. and Thursdays from 5:30 p.m. to 7:00 p.m.
- Town Meeting is scheduled for May 4, 2015 at 7:30 p.m. at the Pine Grove School
- Rowley Recycles – Sat. April 4 8:30 a.m. to 11:30 a.m. Textiles/Books/CDs
- Check out the Library's website and Rowley Community Media for news on the Rowley Reads Program

ADJOURN

**Indicates approximate time*

Rowley Planning Board
P.O. Box 714
39 Central Street
Rowley, MA 01969



Phone (978) 948-5549
Fax (978) 948-7196
planning@townofrowley.org
www.town.rowley.ma.us

PLANNING BOARD
TOWN OF ROWLEY
MASSACHUSETTS 01969

MEMORANDUM

TO: HONORABLE BOARD OF SELECTMEN
FROM: KIRK BAKER, TOWN PLANNER
SUBJECT: 2015 MULTI-HAZARD MITIGATION PLAN FOR FEMA REVIEW
DATE: 3/23/2015
CC: DEBBIE EAGAN, TOWN ADMINISTRATOR

The Planning Department has reviewed the Multi-hazard Mitigation Plan and I offer the following minor revisions to the table on plan page 210 under the section entitled "Recent Development Activity in Rowley":

1. The subdivision Residences at Rowley Country Club consists of 18 residential townhome duplex buildings for a total of 36 residential units rather than the 45 units cited by the table.
2. The subdivision Wild Pasture Estates consists of 28 rather than 29 single-family residential units. (The site plan depicts 30 total lots. However, there were two pre-existing residential dwellings currently located at 15 and 20 Wild Pasture Lane respectively that were previously accessed by a shared driveway. As part of the OSRD plan, these two parcels were incorporated into the plan with each being situated on a new parcel located off the newly created Wild Pasture Lane.)

Beyond the above-cited revisions, I find the document to be satisfactory from a planning perspective.

MINUTES OF THE BOARD OF SELECTMEN MEETING

March 23, 2015

Meeting held at Town Hall

MEMBERS PRESENT: Chairman Robert Merry, Vice Chairman Joseph Perry, Clerk Robert Snow (Town Administrator Deborah Eagan, Assistant Town Administrator Amy Lydon) David Petersen - ABSENT

PUBLIC ATTENDEES: Bill DiMento - Harbormaster; Susan Bailey - Town Accountant; James Georgoulakos - Wild Pastures Estates; Laura Tilan - Regante Stuart and Osborne LLC for Wild Pastures Estates; Lawrence White - Finance Committee; Rhonda Ward; Jordan Ward; Patrick Snow - Highway Surveyor; Bill Jack; Matthew Carter - Wild Pastures Estates; Greg Bowden - Wild Pastures Estates; Chris Laird - Wild Pastures Estates; Brent Baeslack - Conservation Agent; Alan Roscoe - Cammet Engineering - Wild Pastures Estates; Joseph Cosgrove - MVPC

CALL MEETING TO ORDER

Chairman Robert Merry called the meeting to order at 6:05 p.m. He said the meeting is being audio and video recorded digitally.

Chairman Merry called for a motion to go into Executive Session for the following purposes: to discuss strategies with respect to collective bargaining because an open meeting may have a detrimental effect on the bargaining position of the Town; and to return to open session. Bob Snow so moved, Joseph Perry second, all in favor – roll call vote: Robert Snow – aye, Robert Merry – aye. Joseph Perry – aye. David Petersen – ABSENT

Executive session opened at 6:06 p.m.

Executive session closed and open session resumed at 6:41 p.m.

Bob Snow made a motion to recess until 7:00 p.m., Joseph Perry second, all in favor - aye (3-0). Dave Petersen - ABSENT

Meeting resumed at 7:02 p.m.

PLEDGE

Bill Dimento led the Pledge of Allegiance.

and Arrowhead Circle, situated on Wethersfield Street and shown on a plan titled "Street Acceptance Plan Wild Pastures Estates A Definitive Open Space Residential Development off Wethersfield Street, Rowley, Ma" to be recorded herewith, this being the roadway shown on a plan titled "Wild Pasture Estates a Definitive Open Space Residential Development, Wethersfield Street, Rowley, Ma." recorded with Essex South Registry of Deeds as Plan 75 in Plan Book 386; and to authorize the Board of Selectmen to acquire by gift or deed, the land, easements, and rights therein located with the above-referenced Wild Pasture Lane, Oak Ledge Circle and Arrowhead Circle," Bob Snow second, all in favor - aye (3-0). Dave Petersen - ABSENT.

The Selectmen signed the motion.

7:30 p.m. Public Hearing - Multi-hazard Mitigation Plan

Chairman Merry read the following:

We need to hold a public hearing on the final draft of the Town's portion of the Multi-Hazard Mitigation Plan. We have been working with the Merrimack Valley Planning Commission on this plan for the past several years. It is finally ready to be sent into FEMA.

Conservation Agent Brent Baeslack will provide an overview of the plan.

We have a memo from Town Planner Kirk Baker that points out that two subdivisions – Residences at Rowley Country Club and Wild Pastures Estates needs to be updated.

Health Services Coordinator Frank Marchegiani has sent an email on the plan.

Joseph Cosgrove from the Merrimack Valley Planning Commission said the regional multi-hazard mitigation plan was done in 2008, which expired in 2013. He said in 2012/2013 they started updating it and it was just completed, which incorporates comments received during process. He said this is important because it makes communities eligible for FEMA / MEMA funds which is important, especially during a winter like this one. He said there are fourteen communities covered by the plan and it is important to get this approved given the damage from this winter. Conservation Agent Brent Baeslack said the local process involves various department heads to review areas that had storm damage, flooding and smaller natural disasters. He said we need to look at the bylaws and operations when responding and not just the paper plan, and the facilities and equipment need to be looked at. Cosgrove said the plan reviewed local communities and state emergency management, and once they approve with comments, which he expects in the next month, they submit it to FEMA once approved. He said they will go back to the local authorities for final approval and that will start the five year eligibility period.

Merry read the memos from Health Agent Frank Marchegiani and Town Planner Kirk Baker. Cosgrove said the suggested changes can be made easily. Eagan said there is

an email from Police Chief Barker endorsing the plan. Baeslack said he wishes the Board to consider voting to submit the draft. Snow thanked Cosgrove and Baeslack for their work on this project.

Joseph Perry made a motion to accept the draft Multi-hazard Mitigation Plan, Bob Snow second, all in favor - aye (3-0). Dave Petersen - ABSENT.

7:45 p.m. Appointment: Mo Levasseur to discuss Eiras Park playground

Tim Southall spoke on behalf of Mo Levasseur who couldn't be present tonight because of a sick friend in the hospital. He said since 2010, Solstice for Stephanie has worked hard to update and clean-up Eiras Park playground in memory of Stephanie Jenkins, who was the original planner of the playground. He said since 2010, Solstice has spent \$50,000 on the renovations which include adding to the structures, cleaning up, improving the safety and handicapped accessibility. He said many structures need to be replaced and some posts are starting to rot. He said this will cost \$30,000, which is beyond the means of Solstice for Stephanie. He said they are looking for the Town to add this to the capital plan and the structure will be built by volunteers. He said this is a great community effort, and the Town's support is needed for the next phase.

Merry said the capital planning team reviews requests and we hope to get this on the spring special town meeting warrant so the funds will be available soon. Eagan said this has been added to the schedule, along with the work on the baseball diamond, and the Selectmen will finalize the capital plan next week.

GENERAL BUSINESS

1. Request from Board of Cemetery Commissioners to lift hiring freeze for seasonal laborer

Chairman Merry read the letter from the Board of Cemetery Commissioners.

Bob Snow made a motion to lift the hiring freeze so a seasonal laborer for the Cemetery can be hired, Joseph Perry second, all in favor - aye (3-0). Dave Petersen - ABSENT.

2. Letter from Fire Chief James Broderick re: email of appreciation from Christopher Vatalaro

Chairman Merry read the emails from Broderick and Vatalaro. Merry said it is nice to hear people's appreciation for the first responders.

Bob Snow made a motion to send letters of appreciation to the parties involved, Joseph Perry second, all in favor - aye (2-0). Dave Petersen - ABSENT. Bob Merry - ABSTAINED

Town of Salisbury

Hazard Mitigation Planning Team Meeting #1

Salisbury Town Hall – April 26, 2012

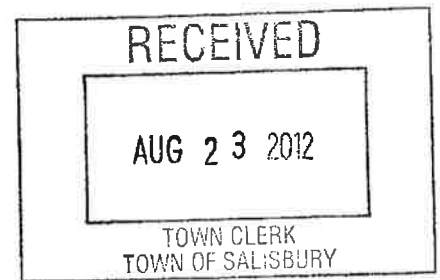
ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Leah Hill	Asst. Planner	Planning Dept.	lhill@salisburyma.gov
Michelle Rowden	Cons. Agent	Conservation	conservation@salisburyma.gov
DAVID LOVERICK	BUILDING INSPECTOR	INSPECTION	dloverick@salisburyma.gov
JACK MORRIS	Director of Public Health	HEALTH DEPT	jmorris@salisburyma.gov
ROBERT ROY	Chief of Police	Police Dept	RRoy@salisburypolice.com
CHRISTINE HARRISON	Dispatch Supervisor	Police Dept	
CHRISTINE HARRISON	Assistant Emergency Manager	Emergency Management	CHARR16223@aol.com
Harvard Cole	P.W. Supervisor	P.W.	
Lisa Pearson	Planning Director	Planning	lpearson@salisburyma.gov
Rick Sadiotis	Fire Chief	Fire	fireschief@salisburyma.gov

Lisa Pearson
Director of Planning and
Development
lpearson@salisburyma.gov
phone: 978-463-2266
fax: 978-462-3915



Town of Salisbury
5 Beach Road
Salisbury, MA 01952



NOTICE OF MEETING

For: Town of Salisbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Meeting Date & Time: September 6th, 2012, at 2:00 pm

Meeting Location: Town Hall, 5 Beach Road

Background

The Town of Salisbury's Local Hazard Mitigation Community Planning Team (LHMCPT) is holding the 2nd of two Working Group meetings with the Merrimack Valley Planning Commission (MVPC) staff to update the Town's components of the regional **Merrimack Valley Multi-Hazard Mitigation Plan**. The current regional plan is available for viewing on the MVPC website (www.mvpc.org).

This 5-Year Plan was prepared by MVPC in 2008 and describes a series of mitigation actions that communities can take to reduce risks to public safety and property from floods, storms, wildfire, and other natural hazards.

The existing regional plan is due to expire in February 2013. By updating the plan every 5 years in accordance with federal guidelines, the region's participating communities will retain their eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Working Group Meeting #2 Agenda

1. Introduction of Salisbury's hazard mitigation team members and MVPC's project staff
2. Brief overview of the Merrimack Valley Multi-Hazard Mitigation Plan, plan updating process, and community-specific tasks and timelines
3. Review of plan's "Mitigation Goals"
4. Updating of Salisbury's existing "Critical Facilities & Infrastructure" inventory and map
5. Updating of Salisbury's existing "Community Profile" information and "Hazard Vulnerability Assessment", with special reference to "Special Flooding Problems/High Hazard Concerns" section
6. Review and updating of Salisbury's "Existing Protections Matrix"
7. Review and Updating of Salisbury's "Mitigation Action Plan"

Hazard Mitigation Planning Team Meeting #2

ATTENDANCE

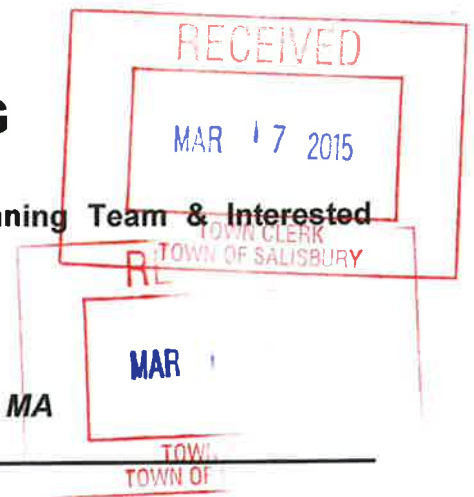
Name	Title	Dept. Affiliation	E-mail Address
Donna Levesque	Director	Public Works	clevesque@salisburyma.gov
Richard Savittis	Fire Chief	Fire	firechief@salisburyma.gov
Michelle Bouden	Conservation Agent	Conservation	conservation@salisburyma.gov
Jeann Kline	Selectman	Selectman	jeann.kline@hotmail.com
Tom Fowler	Police Chief	Police	TFOWLER@SALISBURYPOLICE.COM
Lisa Pearson	Planning Director	Planning	lpearson@salisburyma.gov

NOTICE OF MEETING

For: Town of Salisbury Multi-Hazard Mitigation Planning Team & Interested Stakeholders

Date & Time: Friday March 20, 2015 at 10:00 AM

Location: Salisbury Town Hall, 5 Beach Road, Salisbury, MA



Background

The Town of Salisbury Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional **Merrimack Valley Multi-Hazard Mitigation Plan Update** available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

Town of Salisbury

Multi-Hazard Mitigation Local Planning Team Meeting

Location
Date/Time

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Michelle Borden	Conservation Agent	Conservation	Conservation@salisburyma.gov
Jerry Kima	Moderator		jerrykima@hotmail.com
Donald B. Haggard	DPAW DIRECTOR	DPAW	dhaggard@salisburyma.gov
Tom Fowler	Chief of Police	PD	TFOWLER@SALISBURYPOLICE.COM
Scott Vandewalle	Building Inspector	Building	blginsp@salisburyma.gov
Leah Hill	Asst. Planner	Planning	lhill@salisburyma.gov
Robert Cook	EMD	Emergency Mgt.	SEMA@SALISBURYMA.GOV
Jack Morris	Dir. of Public Health	Health Dept	jmorris@salisburyma.gov
Lisa Pearson	Planning Director	Planning	Lpearson@salisburyma.gov
Richard Sordetis	Fire Chief	Fire	firechief@salisburyma.gov

NOTICE OF MEETING

For: Town/City of West Newbury Multi-Hazard Mitigation Planning Team
& Interested Stakeholders

Date & Time: March 31, 2015 9:30 am

Location: Public Safety Complex 401 Main Street, West Newbury

Background

The City/Town of West Newbury Multi-Hazard Mitigation Local Planning Team is holding this working group meeting for the purpose of finalizing and endorsing the regional **Merrimack Valley Multi-Hazard Mitigation Plan Update** available for review at www.mvpc.org.

This 5-Year Plan was prepared by MVPC in partnership with the region's communities, and prescribes a series of mitigation actions the communities can take to reduce our risks from floods, storms, wildfire, and other natural hazards.

By updating the plan every 5 years in compliance with FEMA guidelines, Merrimack Valley communities will maintain eligibility for various hazard mitigation grants offered through the Massachusetts Emergency Management Agency (MEMA).

Meeting Agenda

1. Introduction of Working Group members and MVPC Project Staff
2. General Overview of the Multi-Hazard Mitigation Plan and Plan Updating Process
3. Local Plan team endorsement of Final Draft Multi-Hazard Plan

Multi-Hazard Mitigation Local Planning Team Meeting

**Public Safety Complex/401 Main Street
March 31st, 2015 – 9:30 A.M.**

ATTENDANCE

Name	Title	Dept. Affiliation	E-mail Address
Joe Cosgrove	Env Program Mgr.	WUPC	jcosgrove@nupc.org
Lee Anne DeLo	West Newbury EMA		ema@westnewbury.safety.org
Lisa Holmes	Chief of Police		Chief@westnewbury.safety.org
GARY Bill	D.P.W. Director		G-Bill@www.bury.org

MEETING NOTES

WEST NEWBURY LOCAL MULTI-HAZARD PLAN TEAM MEETING

MARCH 31ST, 2015/9:30 A.M.—Public Safety Building Meeting Room

Meeting opened with introductions. See attendance sheet attached

Joe Cosgrove, MVPC provided brief outline of planning process and distributed copies of Section 5 community profile/risk assessment and Section 9 Action Plan. Plan is in review by MEMA and purpose of this meeting is to confirm final edits, update with any additional projects/info and confirm local team endorsement.

Suggested edits/information:

- Page 238: Note per Brian Murphy, update with deletion of references to Dunn Well land Andreas Well as that well expansion project not advanced.

Committee had no additional edits or projects for inclusion in Table 9.

Motion by Chief Holmes; Seconded by Gary Bill to endorse draft plan with edit discussed. Unanimous Vote. Mr. Cosgrove to circulate revised draft and follow up on next steps with MEMA & FEMA reviews.

Meeting adjourned approximately 10 A.M.

APPENDIX D

Existing Protection Measures Questionnaire*

*Used as a tool to promote information gathering and generate discussion at local planning team meetings

Merrimack Valley Multi-Hazard Mitigation Plan

Existing Local Protections/Mitigation Measures Questionnaire

I. Planning and Zoning

Flood Protection Measures

1. Does the community participate in the National Flood Insurance Program (NFIP)?
2. Does the community participate in the Community Rating System? If so, what measures have been adopted as part of this program such as a flood mitigation plan?
3. Does the community have floodplain zoning, and if so, how effective is it? Is there a need for better enforcement? Is the geographic coverage adequate? What zones are covered?
4. Do the subdivision and building regulations adequately address stormwater runoff and erosion control issues? Is there a need to upgrade these regulations or provide additional training to enforcement staff?

Other Natural Hazards

5. Do zoning and subdivision ordinances have mitigation provisions that relate to other natural hazards (e.g., high winds, tornadoes, hurricanes, winter storms, wildfires)?
6. Is there a separate zoning bylaw for communication and wireless communication towers? Are there provisions that relate to tower height, siting, anchoring?
7. Are there zoning provisions that relate to development on steep slopes or other sensitive environmental areas?
8. Are there zoning restrictions on mobile home parks? Does the community have an existing mobile home park(s)? If so, is there a history of wind or storm damage?

II. Conservation Commission

1. Are there special overlay districts such as a local wetlands bylaw/ordinance or aquifer protection district? Is this more restrictive than state law? Is enforcement of the ordinance effective? Is there a need for more training of staff?
2. Does it /do they cover development in sensitive environmental areas, including provisions regarding wetland alteration, replication, or impervious surface limitations? Is there a need for improvements, better enforcement, training, or changes in the areas covered?

3. Does the community's most recent Open Space Plan target the protection or acquisition of open space parcels specifically for the purpose of natural hazard mitigation such as protecting the 100-year floodplain, ground water aquifer protection, or other hazards?

III. Public Works and Town Engineer

1. **Capital Improvement Programs:** Does the community have a Capital Improvement Program, and if so, does it specifically target projects that have a goal of natural disaster mitigation, such as flood control structures, dam repairs, elevation of sewer or water pumps in flood prone areas, etc.?
2. **Stormwater Controls:** Does the community have a stormwater bylaw or does the zoning have stormwater provisions that limit impervious surfaces, limit discharge of stormwater from new developments, require adoption of best management practices, or other restrictions that reduce stormwater and hence reduce flooding? If so, are the provisions adequately enforced? Is there a need for more staff training?
3. **CSO Related Flooding** (Haverhill and Lawrence only): What is being done to address localized flooding and sewer backups that occur during storm events as a result of outdated or inadequate combined storm/sanitary sewers?
4. **Dams:** Are there any dams within or upstream of the community that are known to be a hazard to the community? – that is, *high hazard* or *significant hazard* dams that are in poor condition, that are structurally unsound, or that otherwise pose risks in your opinion? Are there emergency plans associated with these dams? What is being done to repair the poor condition dams?
5. **Flood Control Works/Structures:** Does the town own or maintain any flood control works or structures? Are there any that the town would like to build or improve?
6. **Problem bridges:** Are there any low bridges that are flooded easily or that cause flooding and that block roads or access?
7. Are there any other facilities (e.g., freight rail lines) that block key access roads?
8. **Failing/failed Septic Systems:** During flood events failed septic systems can contribute substantial pollution to streams, pond, and wetlands. What regulations and/or programs does the town have in place to address failing/failed septic systems?

Public Works Operations / Flood Prevention / Other Hazards

1. Does the community maintain drainage swales, retention or detention basins, culverts and ponds within its jurisdiction and control? Is there routine clearing of drainage facilities (including streams and dams) under municipal control?
2. Does the community have a program to sweep streets regularly, clean out catch basins, clean inlet screens to culverts, and clean out blocked culverts as a flood prevention method?
3. **Hazardous tree limb removal:** Does the community have a program to trim trees within the public rights-of-way and remove dead and hanging branches that may damage power lines,

property, or persons? If so how frequently and what is the geographic coverage? Does the program need improvement?

IV. Building Commissioner / Inspector

Effective enforcement of the State Building Code provides for a level of protection against natural hazards by setting load standards for wind loads, snow loads on the roof and seismic loads. Hence, it is important that the building inspection program have adequate resources and training to carry out its mission.

1. Has the Insurance Services Organization recently rated the community's building inspection program utilizing the "Building Code Effectiveness Grading Schedule"? If so, were there any recommendations for improvement? Are the staffing levels and training sufficient to accomplish the mission and goals of the building department or are more resources needed to meet needs?

V. Fire Department / Brush Fires

1. On average, how many brush fires does the fire department respond to annually? Where and when do these typically occur?
2. Are there any parts of the community that contain or are adjacent to large forested areas that are in danger of being affected by wildfires? If so, are there any efforts to ensure that building roofs in that area are fireproofed?
3. Are there any attempts to remove or thin brush or accumulated debris in forested areas that may pose a hazard if threatened by a wildfire?
4. Is there a system in place to notify residents during drought conditions of potential wildfire hazard?

VI. Public Information / Outreach / Education Programs

In addition to specific programs and practices related to flooding issues, are there any other public information, outreach, or education programs in place to inform the public of natural hazard risks and measures to mitigate these risks?

APPENDIX E

CZM StormSmart Coasts Fact Sheets 1 – 6

Fact Sheet #1: Introduction to No Adverse Impact Land Management in the Coastal Zone

Fact Sheet #2: No Adverse Impact and the Legal Framework of Coastal Management

Fact Sheet #3: Case Study – A Cape Cod Community Prevents New Residences in Floodplains

Fact Sheet #4: Case Study – Massachusetts Communities Reduce Storm Risk in Developed Areas

Fact Sheet #5: Raise Your Home, Lower Your Monthly Payments

Fact Sheet #6: Landscaping to Protect Your Coastal Property from Storm Damage and Flooding



Introduction to No Adverse Impact (NAI) Land Management in the Coastal Zone

A legally sound way for municipalities to protect people and property

What Is NAI?

No Adverse Impact (NAI) is a forward-thinking, fair, and legally defensible approach to coastal land management. In its broadest sense, it is a set of “do no harm” principles to follow when your community is planning, designing, or evaluating public and private development activities and storm-damage prevention measures.

NAI protects the rights of residents, businesses, and visitors in your community by requiring that public and private projects be designed and completed in such a way that they do not: 1) pose a threat to public safety, 2) increase flood or storm damage to public or private property, and/or 3) strain municipal budgets by raising community expenditures for storm-damage mitigation, stormwater management, emergency services, and disaster recovery efforts.

NAI: Local and Comprehensive

Careful management of coastal floodplains is critical to protect people and property, and to reduce the financial strain on businesses, private property owners, and municipal budgets. While the Commonwealth of Massachusetts has passed regulations to help prevent storm damage, ultimately most of the authority and tremendous responsibility to manage floodplains is entrusted to local governments.

Accurately evaluating the potential effects of proposed activities can be challenging, and requires looking both on and off site, since damage often isn't confined to the parcel(s) under review. For example, the construction of a home may change stormwater flow and increase erosion (removal of sediment by water or wind) to surrounding properties. Similarly, new parking lots, roads, and buildings may redirect stormwater onto other properties instead of allowing it to be reabsorbed into the ground.

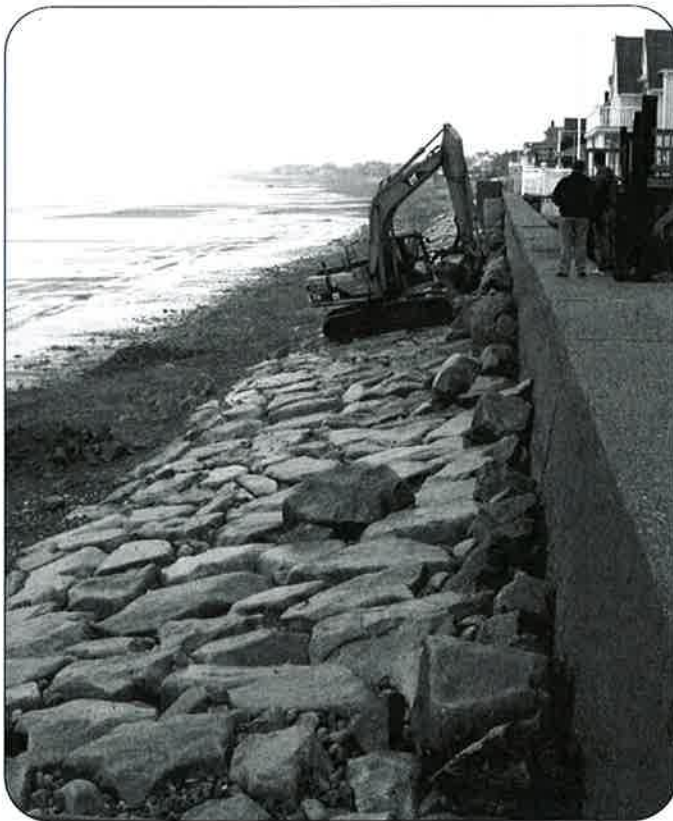


Photo: Massachusetts Office of Coastal Zone Management.

While seawalls and other structures can sometimes provide storm protection, they generally require regular expensive upkeep and often lead to other problems (including beach erosion). Marshfield, Massachusetts.



In addition to being costly to repair, roads damaged by storms can become hazards for rescue personnel and others. This road in Rockport, Massachusetts, was destroyed by a 2007 nor'easter.

Since each permit might be considered to set a precedent, it is critical that communities consider the potential cumulative effects of their decisions—a number of seemingly insignificant projects can collectively cause substantial damage. The NAI approach clarifies that community leaders not only have the legal right to consider the cumulative impacts of their permitting decisions, they have the legal responsibility. Increasingly, communities that permit projects that result in flooding or storm damage to other properties end up in land court. (See the StormSmart Coasts Fact Sheet 2, *No Adverse Impact and the Legal Framework of Coastal Management*). Adopting the NAI approach also gives your community the chance to clearly articulate a “do no harm” goal for all future land use.

The NAI Approach

The Association of State Floodplain Managers (ASFPM), a national organization of professional flood hazard specialists from all levels of government, the research community, the insurance industry, and technical fields, identifies three different levels of floodplain management strategies: **Basic**, **Better**, and **NAI**.

- **BASIC:** Approaches typically used to meet minimum federal or state requirements for managing floodplains and coastal areas to minimize flood losses.
- **BETTER:** Activities that are more effective than the basic level because they: 1) are tailored to specific situations, 2) provide protection from

larger floods, 3) allow for uncertainty in storm magnitude prediction, and 4) serve multiple purposes.

- **NAI:** Tools and techniques that go further than the measures defined as “better” by ensuring that private development, public infrastructure, and planning activities do not have direct or indirect negative consequences on the surrounding natural resource areas, private property, or other communities.

A “NO DEVELOPMENT” POLICY?

By adopting the NAI approach, your community is not saying “no” to new development, it is only clarifying that developers will be required to find solutions to the potential problems that their projects may cause. This clear and predictable approach lets businesses to do what they do best—find solutions.

ASFPM has created seven NAI Building Blocks, which can help communities to maintain and enhance flood protection. These building blocks—hazard identification and mapping; planning; regulations and development standards; mitigation; infrastructure siting and design; emergency services; and public outreach and education—are briefly introduced in the table on the next page. For more information, see ASFPM’s *Coastal NAI Handbook* at www.floods.org, or the StormSmart Coasts website at www.mass.gov/czm/stormsmart.

NAI Building Blocks

NAI Building Block	Basic	Better	NAI
Hazard Identification and Mapping	Use FEMA Flood Insurance Rate Maps for land use decisions.	Gather and use detailed coastal hazard data (e.g., historic erosion rates, actual observed extents of floodwaters) for land use decisions.	Incorporate coastal hazard data (e.g., erosion rates, vulnerability of environmentally sensitive areas, and sea-level rise rates and impacts) into community-wide planning maps and regulations.
Planning	Use land use planning and zoning through a community master plan.	Develop floodplain management plans that include stormwater management and hazard mitigation measures. Promulgate detailed guidance focusing on reducing flood damage.	Design special area management plans to: protect storm damage and flood control functions of natural resources, promote reasonable coastal-dependent economic growth, and improve protection of life and property in hazard-prone areas.
Regulations and Development Standards	Follow Federal Emergency Management Agency National Flood Insurance Program regulations.	Adopt conditions for siting new development. Regulate cumulative, substantial improvements. Revise regulatory tools for addressing erosion along shorelines including: relocation of threatened buildings, building setbacks, beach nourishment and bio-engineering, and stabilization of eroded areas.	Preserve sensitive areas through bylaws and regulations that may: establish maximum densities for development, restrict structures between the shoreline and the setback line, mandate vegetative coastal buffers rather than manmade structures (bulkheads, seawalls, or groins), minimize impervious cover, and preserve stream corridor and wetland buffers. Regulate placement of fill.
Mitigation	Use common practices, such as flood proofing existing structures.	Elevate or relocate buildings. Acquire land. Encourage non-structural methods for shoreline protection.	Stabilize shorelines with vegetation. Prohibit construction in especially damage-prone areas. Prevent filling of wetlands and other lowlands. Nourish beaches where appropriate. Protect watersheds. Monitor corrective efforts. Regulate construction of shore-protection structures.
Infrastructure Siting and Design	Respond to storm events as they occur. After a storm, rebuild/repair to previous condition.	Upgrade damaged facilities to more hazard-resistant standards. Inventory hazard risks of all public buildings. Insure buildings for all hazards (as appropriate). Identify, and if possible, relocate or protect "critical facilities."	Prohibit major public infrastructure investments in special flood hazard areas. Ensure that roads, sewer lines, and utility upgrades don't encourage development in hazard-prone areas. Zone to prohibit construction in high-hazard areas. Locate new critical facilities above 500-year floodplain.
Emergency Services	Create and use generic hazard response plan.	Create and test community-wide hazard plans that involve all local boards and departments.	Create plans to ensure that all people who want or need to be evacuated can be moved to safe shelters, and post-disaster plans that improve community flood resistance through: willing land acquisition, determining which structures are "substantially damaged," and ensuring that appropriate reconstruction meets code requirements. Establish mutual aid agreements with neighboring communities.
Public Outreach and Education	Answer questions and provide information as requested by public.	Periodically inform residents of coastal hazards, vulnerability, and mitigation techniques through public workshops, and in forums after storm recovery.	Create comprehensive education and outreach programs using expertise of state and federal agencies (when needed) to encourage community-wide proactive storm preparation. Establish coastal hazard disclosure requirements for property sales.

The Benefits of NAI

While NAI strategies require investment in planning and implementation, they offer real benefits for your community. NAI can . . .

- **Save money:** Less damage means lower post-storm community cleanup costs, fewer demands on public officials' limited time, and reduced strain on public resources.
- **Decrease litigation:** NAI principles have been judicially tested and courts have shown immense deference to regulations that seek to prevent harm (for an example, see the StormSmart Coasts Fact Sheet 3, *A Cape Cod Community Prevents New Residences in Floodplains*). NAI can also help your community avoid potential litigation over ineffectual flood management practices that result in future damage or loss of life. (See Fact Sheet 2, *No Adverse Impact and the Legal Framework of Coastal Management*.)
- **Reduce conflicts with property owners:** NAI doesn't say "no." It says "yes, if . . ." It is a common-sense approach that seeks to protect everyone's property by only allowing projects that eliminate or mitigate their impacts.
- **Reduce risk to people and public and private property:** Better planned and designed development and public infrastructure is less likely to cause and suffer damage. An NAI approach can help protect the beaches that are critical to many communities' economies.
- **Lower flood insurance rates:** The Community Rating System (CRS) is a Federal Emergency Management Agency (FEMA) program that decreases flood insurance rates for communities with effective hazard mitigation strategies. Many NAI strategies qualify for CRS credits. For more information see the CRS Resource Center at training.fema.gov/EMIWeb/CRS/.

- **Increase your capacity to bounce back after a storm:**

Reduced storm damage means less downtime and less costly clean up for local businesses, which is especially important for small, locally owned businesses that may otherwise struggle to stay solvent during frequent or prolonged closures.

- **Clarify your land use objectives:** By adopting NAI principles, your community can articulate the overarching goals that help bring consistency and predictability to permitting.

- **Preserve quality of life:** With NAI you can help make your community safer while preserving quality of life for your citizens now and in the future. An NAI approach can help ensure that your community resources, including beaches, public parks, and other open spaces, are there to be enjoyed by future generations.

For More Information . . .

- For more on the theory of NAI and its application in coastal areas, see the Association of State Floodplain Managers website (www.floods.org), especially their *Coastal NAI Handbook*. Also see the StormSmart Coasts website at www.mass.gov/czm/stormsmart.
- For more on the legal issues surrounding coastal management, see the StormSmart Coasts Fact Sheet 2, *No Adverse Impact and the Legal Framework of Coastal Management*.
- For an example of NAI-type regulations at work, see the StormSmart Coasts Fact Sheet 3, *A Cape Cod Community Prevents New Residences in Floodplains*.
- For a more detailed look at the legal theory behind this and similar cases involving land management in hazardous areas, see the Association of State Floodplain Managers' *No Adverse Impact Floodplain Management and the Courts* by attorneys Jon Kusler and Ed Thomas, at www.floods.org.



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No Adverse Impact and the Legal Framework of Coastal Management

How communities can protect people & property while minimizing lawsuits

Managing coastal floodplains is a challenging endeavor that sometimes is incorrectly thought to put local government's duty to protect people and property in direct conflict with property rights. Most local officials want to reduce the harm and costs associated with coastal storms, and recognize that unwise development can worsen the situation. Unfortunately, as our society has grown more litigious, it may seem harder for municipal governments to stay out of land court when preventing or conditioning development projects, even when there is good evidence that these projects may create problems for others. However, the No Adverse Impact (NAI) approach to land use management is an appropriate way to protect people, property, and property rights. (To learn more about NAI, see the StormSmart Coasts Fact Sheet 1, *Introduction to No Adverse Impact (NAI) Land Management in the Coastal Zone*.)

While nothing can prevent all legal challenges, following the NAI approach can help to: 1) reduce the number of lawsuits filed against local governments, and 2) greatly increase the chances that local governments will win legal challenges to their floodplain management practices. The legal system has long recognized that when a community acts to prevent harm, it is fulfilling a critical duty. The rights of governments to protect people and property have been well recognized by the legal system since ancient times. Courts from the Commonwealth of Massachusetts to the U.S. Supreme Court have consistently shown great deference to governments acting to prevent loss of life or property, even when protective measures restrict the use of private property. This "prevention of harm" principle is the foundation of the NAI approach. The goal of this fact sheet is to provide local officials with information on how to use the NAI tools to confidently protect people and property in a fair and effective way, while avoiding lawsuits (even those alleging takings).

Two key points:

1. **Communities have the legal power to manage coastal and inland floodplains.**
2. **Courts may (and often do) find that communities have the legal responsibility to do so.**



These Sandwich homeowners proactively protected their property by planting beach grass. Vegetating dunes and banks can reduce erosion and slow floodwaters without adversely impacting other properties.

Photo: Massachusetts Office of Coastal Zone Management.

HOW NAI CAN HELP YOUR COMMUNITY AVOID LAWSUITS

The best way to avoid losing in court is to stay out of court. One of the strengths of the NAI approach is that its clear goal (the prevention of harm) fosters and encourages cooperation between landowners and regulators as they work together to try to find solutions to the problems associated with proposed projects. Such collaboration is a great way to stay out of land court.

When avoiding court isn't possible, following the NAI approach can greatly increase the chances that local governments will win in lawsuits arising from their floodplain management practices. The most common and historically problematic challenges that local officials face while trying to regulate use of private property are allegations of "constitutional takings."

Takings background: This fact sheet summarizes a complex body of law under the so-called "Takings Clause" of the Fifth Amendment to the U.S. Constitution. This summary is not

“Not all the uses an owner may make of his property are legitimate. When regulation prohibits wrongful uses, no compensation is required.” – The Cato Institute

intended to be legal advice for any particular situation, and may not be relied upon as such. To determine whether a particular regulation would cause a taking, communities should consult with an attorney. Property owners file takings cases when they believe regulations violate their constitutional property rights. The legal basis for these arguments can be found in the Fifth Amendment of the U.S. Constitution, which prohibits the government from taking private property for public use without compensation. The interpretation of the courts through the years has clarified that the Fifth Amendment encompasses more than an outright physical appropriation of land. In certain situations, the courts have found that regulations may be so onerous that they effectively make the land useless to the property owner, and that this total deprivation of all beneficial uses is equivalent to physically taking the land. In such a situation, courts may require the governing body that has imposed the regulation to either compensate the landowner or repeal the regulation.

Needless to say, with local budgets strapped and coastal land values skyrocketing, it is rarely economically feasible for local governments to compensate landowners when, for example, prohibiting a house on a solid foundation in an area known to flood, or preventing the construction of a seawall to protect a home on an eroding bluff.

NAI to the Rescue: It is critical that management decisions respect property rights and follow general legal guidelines (see the “Legal Dos and Don’ts of Floodplain Management” text box). The courts have made it very clear that property rights have limits. For example, both Commonwealth of Massachusetts and federal laws acknowledge that property owners do not have the right to: be a nuisance, violate the property rights of others (for example, by increasing flooding or erosion on other properties), trespass, be negligent, violate reasonable surface water use and riparian laws, or violate the public trust.

THE FOUR TYPES OF REGULATORY TAKINGS

The best way to understand how the NAI approach helps to prevent takings challenges is to look specifically at what the courts have decided may constitute a regulatory taking. In 2005, the U.S. Supreme Court ruled on a precedent-setting case (*Lingle v. Chevron*), which clearly established regulatory taking guidelines. In their unanimous decision, the Court determined that there are

four ways for a regulation to be a taking. **Each way is briefly discussed below, with a non-technical explanation of how they are relevant to an NAI approach.** (For a more detailed legal explanation of these cases, see the latest edition of *No Adverse Impact Floodplain Management and the Courts*, published by the Association of State Floodplain Managers at www.floods.org.)

1. A physical intrusion. Governments may not, without compensation, place anything on private property against the wishes of the owner. The case discussed (*Loretto v. Teleprompter Manhattan*) involved a New York City requirement that building owners allow the cable company to install a small cable box and cables on all residential buildings. **Because the NAI approach doesn’t generally promote structural solutions, this type of regulatory taking is unlikely to apply. However, if a community’s NAI plan involves the placement of structures (culverts, for example) on private property, this ruling makes it clear that the community may be required to obtain the permission of the landowner or pay compensation.**

WHY NAI IS LEGALLY SOUND

NAI doesn’t take away property rights—it protects them.
NAI prevents one person from harming another’s property.

NAI is not an arbitrary or inflexible “no” to construction.
It is a performance-based standard. It is neither pro- nor anti-development.

Courts consistently favor public entities performing their fundamental function of protecting people. The NAI approach can help communities create fair and legally strong regulations.

2. A total or near-total regulatory taking. If a regulation restricts property rights to such a degree that it eliminates all or essentially all economically viable uses of a piece of property, this may constitute a taking. The case reviewed (*Lucas v. South Carolina Coastal Council*) was filed by a landowner who was prohibited from building a home on a barrier beach. **In their opinion, the Court clearly states that regulations aimed at preventing nuisance don’t constitute takings. It warns, though, that governing bodies arguing that specific regulations are designed to prevent nuisances will need to demonstrate how they are addressing similarly situated nuisances (i.e., regulations may not be**

applied arbitrarily). The NAI approach can help your community to consistently articulate how potentially harmful projects are nuisances. When designing land use regulations, your community should always try to ensure that the owner retains at least some economically beneficial uses. This is both fair and helps establish the legal reasonableness of your regulations. Note that land uses that harm others are not legal or beneficial, and that beneficial uses don't necessarily include building residences or other structures, especially in hazardous areas. Where new regulations, even hazard-based regulations, could sharply decrease the market price of property, consider allowing the transfer of development rights to areas where your community would like growth to occur. To learn about transferable development rights, see www.mass.gov/envir/smart_growth_toolkit/pages/mod-tdr.html.

3. A significant, but not near-total regulatory taking. Courts hearing takings arguments should consider three factors that have “particular significance” - a) the magnitude of the economic impact, b) how severely the regulation affects “investment-backed expectations,” and c) the character of the government in action. The central case discussed (*Penn Central v. City of New York*) concerned a denied expansion of Grand Central Station in New York City. **The historic preservation regulation reviewed in this case seeks to protect neighborhood character—not to prevent physical harm.** These are two very different things in the eyes of the law. The U.S. legal system sometimes requires governments to compensate landowners when property rights are compromised for community improvement, but less frequently when they prevent potential harm. **There is no property right to use or develop land in a way that harms others, even if that use maximizes the particular site's economic potential. There is no constitutional or legal right to a good return on investments.** Unfortunately, some people invest in land with erroneous ideas about what they are legally allowed to do with it, and when forbidden to do as they wish, may argue that regulations have devalued their property. The courts have made it clear that while regulations designed to prevent harm may reduce the market value of a piece of property, they do not decrease its true value, and hence NAI-based regulations cannot trigger this aspect of a taking test. A 2005 Massachusetts Supreme Judicial Court decision upheld a coastal town's regulation prohibiting new residences in its coastal floodplain because the town successfully established that this regulation was designed to prevent harm and did not render the land valueless.

LEGAL DOS AND DON'TS OF FLOODPLAIN MANAGEMENT

Do clearly relate regulations to hazard prevention.

Do help landowners to identify economic uses.

Do apply identical principles to government activities.

Don't neglect your duty to manage the floodplain. (A hands-off approach is the surest way to be successfully sued.)

Don't apply regulations inconsistently or arbitrarily.

Don't interfere with landowners' rights to exclude others.

Don't deny all economic uses. Consider the use of transferable development rights in valuable, heavily regulated areas.

For more information, see the StormSmart Coasts Fact Sheet 3, *A Cape Cod Community Prevents New Residences in Floodplains*.

4. Insufficient relationship between the requirement and the articulated government interest. If a community conditions a permit, the requirements it exacts from the landowner must be related to the goals of the regulation and must be “roughly proportional” to the predicted impacts of the proposed development. In the two cases, *Nollan v. the California Coastal Commission* and *Dolan v. City of Tigard*, landowners were required to provide a public right of way as a permit condition, even though the proposed developments did not reduce public access. The NAI approach avoids this type of taking by tightly binding regulations to the specific goal of preventing harm.

With these and other decisions, the courts have made it clear that governments may regulate land without compensation if they do so with the intent of preventing harm. **Fairly applied No Adverse Impact regulations make the “takings issue” a non-issue.**

From the property rights perspective, it's worth noting that the Cato Institute, which advocates for limited government, individual liberty, and free markets, agrees that preventing landowners from causing harm to others does not constitute a taking:

“Owners may not use their property in ways that will injure their neighbors. Here the Court has gotten it right when it has carved out the so-called nuisance exception to the Constitution's compensation requirement. Thus, even in those cases in which regulation removes all value from the property, the owner will not receive compensation if the regulation prohibits an injurious use.”

—Roger Pilon, Senior Fellow and Director
Cato Institute (to the U.S. House of Representatives, 2/10/95)

“The takings clause was never intended to compensate property owners for property rights they never had.”

– Massachusetts Supreme Judicial Court

WHY YOU SHOULD MANAGE YOUR FLOODPLAINS

Protecting people and property is a fundamental duty of all levels of government. One of the most effective ways that local governments protect people and property is through the permitting process. Here, local officials can and should do what they can to reduce the likelihood that the development or use of property will cause harm.

Communities should also be aware that in a growing number of states, courts are favoring plaintiffs that sue local governments for permitting projects that later cause damage to property (for example, permitting the construction of roads that back-up streams and increase flooding in the community). For more information on this trend, see *No Adverse Impact Floodplain Management and the Courts* (available at www.floods.org), where the authors found that a community is vastly more likely to be successfully sued for allowing improper development that causes harm than for prohibiting it.

The take-home lesson: As a local official, you have been given the responsibility and the legal rights to manage coastal and inland floodplains. If you do so in a way that expressly seeks to prevent harm, the courts will support you.

FOR MORE INFORMATION . . .

This is not and cannot be legal advice. To answer specific legal

questions please see an attorney licensed in your jurisdiction.

To learn more about the general legal framework of NAI-based floodplain management see:

- *No Adverse Impact Floodplain Management and the Courts* for an excellent overview of the case history of NAI at www.floods.org. While this document is designed for attorneys, it is useful for anyone working in floodplain management.
- The StormSmart Coasts Fact Sheet 3, *A Cape Cod Community Prevents New Residences in Floodplains*, which examines a community's successfully defended NAI-type bylaw.
- The *Coastal NAI Handbook* at www.floods.org.
- The NAI section of the Association of State Floodplain Managers website at www.floods.org.
- The Institute for Local Government's one-page publication, *10 Tips for Avoiding Takings Claims*, at cacies.org/index.jsp?displaytype=11&zone=ilsg§ion=land&sub_sec=land_property&tert=&story=20219.
- The American Planning Association's 1995 *Policy Guide on Takings* at www.planning.org/policyguides/takings.html.
- The StormSmart Coasts website at www.mass.gov/czm/stormsmart.



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Case Study - A Cape Cod Community Prevents New Residences in Floodplains

Lessons learned from Chatham's legally successful conservancy districts

In a landmark 2005 ruling, the highest court in Massachusetts decisively affirmed the authority of municipalities to regulate or even prevent residential or other high-risk development in flood-prone areas without financial compensation to the property owners, so long as the regulation does not render the land entirely valueless.

The case arose from the town of Chatham's refusal to permit the construction of a new home in a flood zone because the local zoning bylaw prohibited new residential units in the town's mapped floodplains. After multiple appeals by the landowner, the Massachusetts Supreme Judicial Court ruled on July 26, 2005, that the zoning bylaw was based on reasonable public interest,

and did not render the lot economically worthless. Therefore, no compensation was due. The decision was not appealed.

THE ZONING BYLAW

Chatham's zoning bylaw designates "conservancy districts" encompassing all land in the town's 100-year floodplain as mapped in its most recent town-approved Flood Insurance Rate Maps. The goal of the bylaw is to protect people, property, and resources (see "Chatham Conservancy District Purposes" sidebar). The bylaw clearly delineates three types of activities in designated conservancy districts—permitted uses, special permit uses, and prohibited uses—examples are shown in the table below.

Examples from Chatham's Zoning Bylaw

Permitted uses

Fishing, cultivation, and harvesting of shellfish (including excavation of areas for cultivation and harvesting of marine foods); various horticulture activities

Outdoor recreation activities, provided that related structures do not destroy beneficial character of district

Floats

Maintenance of existing raised roadways

Installation of utilities

Agriculture

Government dredging of navigation channels

Construction and maintenance of town landings and public boat launching ramps; nourishment of town beaches

Mosquito control by Cape Cod Mosquito Control Project

Maintenance of existing channels and marine facilities

Special permit uses

Construction of certain structures, including catwalks, piers, ramps, stairs, boat shelters, tennis courts

Construction of structures or buildings used in conjunction with a marina or boatyard

Construction and maintenance of driveways or roadways of minimum legal length and width

Construction and maintenance of private boat launches and beaches

Installation of submerged pipes or cables used for swimming pools or commercial fishing operations

Prohibited uses

Filling of land

Draining of land

Discharging of hazardous substances, treated sewage, or thermal effluent

Construction of residential units or use of houseboats or barges as dwellings

Building of any structure in V and V1-30 Zones

Construction of pipelines to carry crude oil or unprocessed natural gas

Actions that destroy natural vegetation, alter existing tidal flow, or otherwise alter the character of the land

Destruction of natural growth that prevents erosion or storm damage

Draining, damming, or relocating water courses except for aquaculture, agriculture, or flood or mosquito control

“The takings clause was never intended to compensate property owners for property rights they never had.” – Massachusetts Supreme Judicial Court

THE CASE

The lawsuit concerned a 1.8-acre parcel located in Chatham’s mapped floodplain (and therefore, in a conservancy district). In 1998, the owner of the lot received an offer of \$192,000 for the parcel, contingent upon the ability of the purchaser to obtain the permits necessary to build a home. The proposed home was to be elevated on open piles above the mapped 100-year flood elevation.

Because the lot is located within a conservancy district, the town’s Zoning Board (the district permitting authority) denied the building permit application. The owner of the lot responded by filing one suit against the Selectmen and Zoning Board and another against the town’s Conservation Commission (the construction would have also violated a local wetlands bylaw), each suit alleging that the bylaws violated the owner’s constitutional property rights, and that the town had thereby effectively “taken” her property (for more on constitutional takings, see StormSmart Coasts Fact Sheet 2, *No Adverse Impact and the Legal Framework of Coastal Management*). A Superior Court judge combined the two suits. After a two-day trial, which included testimony on the flood history of the property, the risks and impacts of its potential development, and the difficulty in safely evacuating the area, the Superior Court found insufficient evidence to support the plaintiff’s claims that the bylaws had resulted in a regulatory land taking, and upheld the town’s decision.

When the plaintiff appealed the decision, the Massachusetts Appeals Court affirmed the Superior Court’s decision. While acknowledging that the bylaw did severely constrict the possible uses of the lot, the Appeals Court noted that “a land-use regulation may deprive an owner of a beneficial property use—even the most beneficial such use—without rendering the regulation an unconstitutional taking.” The Appeals Court further noted that:

“As a matter of Massachusetts law, restricting residential development within the path of floodwater, the flood plain, is a direct, logical, and reasonable means of safeguarding persons and property from those hazards occasioned by a flood and

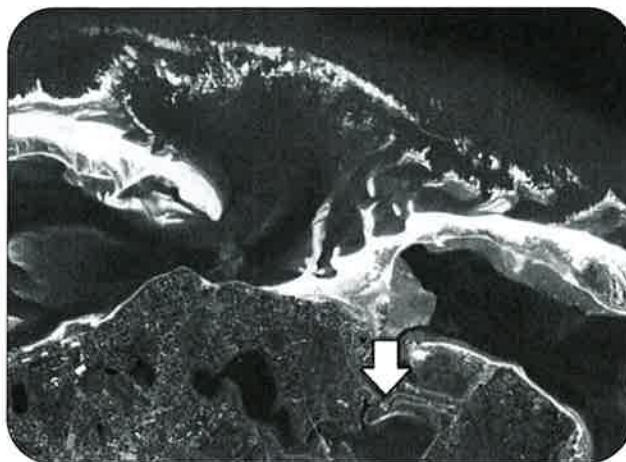


Photo: Google Earth

The arrow indicates the approximate location of the proposed home site. This satellite photograph also shows the breach in the barrier beach from 1987. The breach greatly increased the exposure of the lot and surrounding properties to wave and storm surge.

advances a substantial State interest, that is, the health, safety, and welfare of the general public as well as that of its individual members.”

The plaintiff then appealed to the Massachusetts Supreme Judicial Court, which, after reviewing the case, upheld the lower courts’ rulings, citing a recent U.S. Supreme Court decision that had rendered zoning bylaws and ordinances valid under the U.S. Constitution so long as their application bears a “reasonable relation to the State’s legitimate purpose” (such as protecting people and property).

The decision also noted that while the regulation may have indeed reduced the market value of the property, the prevention of one potential use for a piece of property did not constitute a total taking. A witness for the plaintiff estimated that with the bylaw, the lot was worth at least \$23,000—a substantial reduction but still more than a “token” interest, according to the decision which cited a (2001) case where the U.S. Supreme Court ruled that no compensation was due when a regulation reduced the appraised value of a parcel from \$3,150,000 to \$200,000.

Finally, the decision noted that there was ample evidence showing that the construction of a home on the lot could have severe adverse impacts on the surrounding community. The plaintiff’s expert testified that the proposed house could be



A Nauset Beach home destroyed by a 2007 storm. As was noted in the Massachusetts Supreme Judicial Court's ruling, damaged structures like the one in this photo can create debris that may threaten other structures.

picked up off its foundation and floated away by a severe storm, potentially damaging neighboring homes. The defendant offered testimony that efforts to evacuate the home during a flood would pose risks to rescue workers, as well as the home's occupants.

The Massachusetts Supreme Judicial Court concluded that no compensation was due to the property owner, because: "The taking clause was never intended to compensate property owners for property rights they never had."

The decision was not appealed.

WHY CHATHAM WON THE CASE

1. The zoning bylaw had the clear goals of protecting people and property.
2. While the bylaw prevents construction of new homes, it leaves property owners with many alternative uses. The land retains more than a "token" value.
3. The law was fair, and applied to identifiable, mapped areas (i.e., wasn't "spot zoning," which unfairly prevents one individual property owner from using property in a certain way).
4. The town's emergency management experts testified that evacuation of the areas would put rescue workers at risk.
5. The town was willing to legally defend its position.



Top: The erosional beach near the proposed home site is prone to flooding and storm damage.

Bottom: An area of Chatham in the floodplain where flooding can make evacuation difficult.



FOR MORE INFORMATION . . .

- For an overview of the legal framework of coastal management in Massachusetts, see the StormSmart Coasts Fact Sheet 2, *No Adverse Impact and the Legal Framework of Coastal Management*.
- For the text of the decision, see www.sociallaw.com/slip.htm?cid=15382.
- For a copy of the bylaw see www.chatham-ma.gov/Public_documents/chathamma_CommDev/Zbylaw2005.pdf.
- For a more detailed look at the legal theory behind this and similar cases involving management of land in hazardous areas, see the Association of State Floodplain Managers' *No Adverse Impact Floodplain Management and the Courts*, by attorneys Jon Kusler and Ed Thomas at www.floods.org.
- The Massachusetts StormSmart Coasts webpage: www.mass.gov/czm/stormsmart.

As coastal areas of Massachusetts continue to change in response to erosion and storms, the relative risks to properties do too. While the risk to these homes near a new breach is obvious, homes on the mainland that were once protected by the shifting barrier island also face increased exposure. (Photo: Nauset Beach, Chatham.)

CHATHAM CONSERVANCY DISTRICT PURPOSES

- Preserve and maintain the groundwater supply on which the inhabitants depend.
- Protect the purity of coastal and inland waters for the propagation of fish and shellfish and for recreational purposes.
- Protect public health and safety.
- Protect persons and property from the hazards of flood and tidal waters that may result from unsuitable development in or near swamps, ponds, bogs, and marshes; along water courses; or in areas subject to flooding, extreme high tides, and the rising sea level.
- Preserve the amenities of the town and conserve natural conditions, wildlife, and open space for the education and general welfare of the public.



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Case Study: Massachusetts Communities Reduce Storm Risk in Developed Areas

While reducing potential storm damage to existing development can be challenging, coastal communities are busy disproving the assumption that once an area has been developed, it's too late to reduce risk. This case study presents the stories of two Massachusetts communities that are using federal funds to make existing homes safer.

QUINCY

Located within the greater metro-Boston area, much of Quincy's floodplain has been densely developed for decades. The city's mapped floodplain, which stretches from the Blue Hills to Boston Harbor, is crowded with more than 4,400 structures. Historically, flood damage in Quincy has been both common and expensive. From 1978 to 2003, there were only three years without approved flood insurance claims in the city; and from 1978 to November 2007, National Flood Insurance Program participants in Quincy received more than \$5 million in claims.

The city is actively working to reduce flood damages. Since 1993, Quincy has been using federal money from two Federal Emergency Management Agency (FEMA) programs to help property owners elevate either utilities or entire homes above mapped flood elevations (see FEMA Flood Mitigation Programs box on following page). Quincy has created a program where funding from FEMA's Pre-Disaster Mitigation and Flood Mitigation Assistance grant programs are used to pay for up to half of the engineering fees and three-quarters of the total costs of these elevation projects. The maximum award per property is \$20,000, with the remainder paid by the property owner. Between 2003 and 2007 alone, Quincy received almost \$1 million in federal funds to reduce storm damage risk at 46 properties.

The timing and logistics of the Quincy program differ from year to year, based on funding levels and the budget cycle for the FEMA grants. In general, the city places advertisements in local newspapers in October, announcing that funding may be available to help protect properties from flood damage (see example advertisement on following page). Additionally, every other year the



This small addition, built with FEMA assistance, holds a Quincy home's utilities and appliances above projected floodwaters. Thanks to innovative braces, the addition doesn't increase the building's footprint.



Photos: City of Quincy

city sends program announcements directly to owners of repetitive-loss properties (properties that have received flood insurance claim payments greater than \$1,000 twice in any 10-year period). Interested property owners are encouraged to contact Quincy's Office of Housing Rehabilitation, which manages the city's storm damage prevention efforts.

Municipal officials work together with interested property owners to determine the best means of reducing potential damage at each property. Quincy's Program Manager of Housing Rehabilitation visits the site and discusses options with the owner. The city's Assistant Planner helps the homeowner fill out a preliminary application that provides figures for a benefit-cost analysis required by FEMA.

About 90 percent of the time, the city and homeowner agree that the most cost-effective approach is to elevate the home's utilities and appliances (rather than the entire structure). In areas where only stillwater flooding is predicted, elevating utilities is a less expensive option that is relatively easily implemented when space is available on upper floors for relocating water heaters and circuit boxes. When upper-floor space is unavailable, the city works to find other creative solutions, including small additions to hold elevated utilities (see photographs on previous page). Whenever possible, additions are designed within the home's existing

FEMA FLOOD MITIGATION PROGRAMS

Flood Mitigation Assistance (FMA) funds efforts that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program.

Pre-Disaster Mitigation (PDM) provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.

Hazard Mitigation Grant Program (HMGP) provides grants to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

Severe Repetitive Loss Program (SRL) provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive-loss structures insured under the National Flood Insurance Program.



ATTN: QUINCY RESIDENTS FEMA GRANT APPLICATION TO PREVENT FLOOD DAMAGE

The City of Quincy is in the process of preparing an application to the Federal Emergency Management Agency (FEMA) for a Pre-Disaster Mitigation (PDM) and Flood Mitigation Assistance (FMA) grant. Residential projects may include, but are not limited to, elevating utilities, elevating entire residential structures, or constructing new utility rooms. If your property has suffered from repetitive flood losses, you may be eligible to apply for one of these FEMA grants. For more information, please call the City's Office of Housing Rehabilitation at 617-376-1054 or email alosordo@ci.quincy.ma.us.

A newspaper advertisement that Quincy ran to promote their program.

footprint, minimizing environmental impact and greatly simplifying permitting. The Quincy Conservation Commission is happy with the work because it's mostly inside homes and does not increase building footprints. This less expensive approach also maximizes the number of homes that Quincy can cover with available funding.

When the city finalizes plans with all interested homeowners, it gives the bundled applications to the Massachusetts Emergency Management Agency (MEMA), which reviews them before sending them on to FEMA for final processing. Waiting for FEMA to make a funding decision can be challenging, especially if the waiting coincides with bad weather. The city tries to discourage anxious homeowners from starting projects before they have FEMA's explicit approval—if they begin without it, the owner forfeits any chance of financial assistance.

The payoff, though, generally proves worthwhile. Elevated utilities, appliances, and homes are less likely to be damaged during floods. The FEMA funds offset thousands of dollars that would otherwise be the responsibility of the property owner. One program participant wrote a letter to the Mayor praising the program, saying that without the city's help there was no way she could have done the work. Perhaps even more telling of the program's appeal is how quickly it spreads through a neighborhood. Once one home on a street participates, others often quickly follow.



Photo: Massachusetts Office of Coastal Zone Management.

Overwash rushes under elevated homes in Humarock during the Patriot's Day Storm of April 2007. In this setting, elevating only utilities would be insufficient.

SCITUATE

With approximately 18,000 people, Scituate has only about a quarter of Quincy's population, but still has enormous flood challenges. Scituate's long, open coastline is more exposed to coastal storms than Quincy's more sheltered shore. In areas like Humarock, waves flow underneath homes during even moderate storms, and some low-lying properties flood during strong tides. These and other factors combine to give Scituate 500+ repetitive-loss properties—more than any other community in Massachusetts.

Many repetitive-loss property owners were unaware that multiple flood insurance claims had been filed on their property, reported Scituate's Town Planner and coordinator for the town's FEMA-funded elevation efforts. Massachusetts law doesn't require property sellers to disclose past storm damage or flood

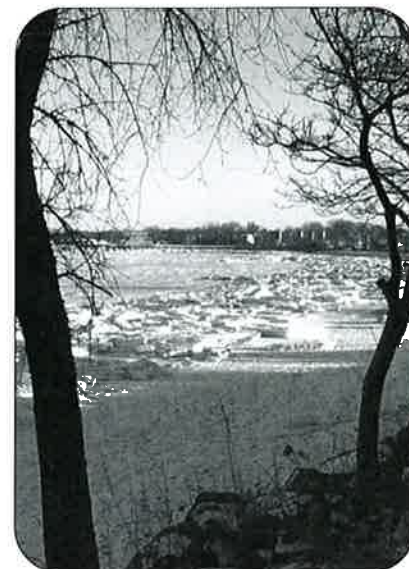
insurance claims, so many property owners purchase property without understanding their risk and storm-damage history.

To address this issue, in 2006, Scituate sent out letters to all of their repetitive-loss properties announcing their new program to help people protect their homes. In this program, FEMA funding pays up to 75 percent of the costs of elevation projects, not to exceed \$40,000 for any property. Because many properties in Scituate are exposed to open ocean waves, most of the projects involve elevating entire structures—not just utilities—hence the higher upper limit of funding.

The response to the letters was strong, and as of 2008, the town has used federal dollars to help elevate approximately 50 homes.

GENERAL MITIGATION GRANT PROCESS

1. Municipality designs a program with assistance from MEMA
2. Municipality advertises to find interested property owners
3. Municipality works with each applicant to find best mitigation option & assembles joint application
4. Municipality submits application to MEMA, where it is reviewed and sent to FEMA
5. FEMA determines whether or not project will be funded
6. Selected projects are funded



Coastal communities like Quincy and Scituate are finding creative and effective ways to protect seaside properties from storm damage.

FOR MORE INFORMATION...

- FEMA programs in Massachusetts are administered by MEMA, www.mass.gov/mema, and the Department of Conservation and Recreation (DCR), www.mass.gov/dcr. If your community would like to receive FEMA mitigation grants, contact DCR's Acting State Hazard Mitigation Officer Richard Zingarelli at (617) 626-1406 or Richard.Zingarelli@state.ma.us, or MEMA's Mitigation Grants Manager Scott MacLeod at (508) 820-1445 or Scott.MacLeod@state.ma.us.
- The four most popular FEMA mitigation grant programs are:
 - Hazard Mitigation Grants - www.fema.gov/government/grant/hmgp/index.shtm.
 - Flood Mitigation Grants - www.fema.gov/government/grant/fma/index.shtm.
 - Pre-Disaster Mitigation Grants - www.fema.gov/government/grant/pdm/index.shtm.
 - Severe Repetitive Loss Grants - www.fema.gov/government/grant/srl/index.shtm.
- For questions on Quincy's efforts, contact Tony Losordo, Program Manager for the Quincy Housing and Rehabilitation Program in the Planning and Community Development Department, at (617) 376-1054.
- For examples of documents filed by Quincy, see the StormSmart Coasts website at mass.gov/czm/stormsmart.
- For more information on funding projects in Massachusetts coastal areas, see the StormSmart Coasts funding page at mass.gov/czm/stormsmart/other/funding.htm.



Executive Office of Energy and Environmental Affairs
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Commonwealth of Massachusetts
Deval L. Patrick, Governor
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Massachusetts Office of Coastal Zone Management
Deerin Babb-Brott, Director
Bruce K. Carlisle, Assistant Director

This fact sheet was developed through CZM's StormSmart Coasts program, which supports community efforts to manage coastal floodplains.
For further information on StormSmart Coasts, visit www.mass.gov/czm/stormsmart.

Author: Wes Shaw, National Oceanic and Atmospheric Administration (NOAA) Coastal Management Fellow * **Designer:** Arden Miller, CZM * **Editor:** Anne Donovan, CZM

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Raise Your Home, Lower Your Monthly Payments

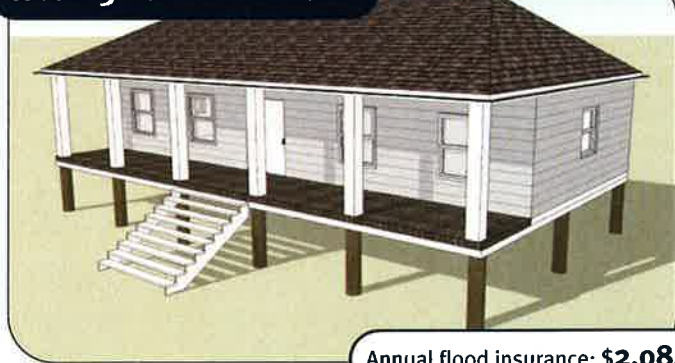
Protect buildings and reduce monthly expenses with freeboard

Without Freeboard



Annual flood insurance: **\$5,499**

With 3' of Freeboard



Annual flood insurance: **\$2,084**

Elevating a home a few feet above legally mandated heights has very little effect on its overall look, yet it can lead to substantial reductions in flood insurance, substantially decrease the chances the home will be damaged by storms and flooding, and help protect against sea level rise.

What Is Freeboard?

Freeboard is elevating a building's lowest floor above predicted flood elevations by a small additional height (generally 1-3 feet above National Flood Insurance Program [NFIP] minimum height requirements). Elevating a home a few feet above legally mandated heights has very little effect on its overall look, yet it can lead to substantial reductions in flood insurance, significantly decrease the chances the home will be damaged by storms and flooding, and help protect against sea level rise.

What Are the Benefits of Freeboard?

Increased protection from floods and storms. Storm waters can and do rise higher than shown on Flood Insurance Rate Maps (FIRMs). Freeboard helps protect buildings from storms larger than those that FIRMs are based on, and provides an added

margin of safety to address the flood modeling and mapping uncertainties associated with FIRMs.

Better preparation for ongoing sea level rise. Massachusetts has experienced a relative sea level rise of approximately 1 foot over the past 100 years. Since elevations on FIRMs do not include sea level rise, freeboard will help keep structures above floodwaters as storm surge elevations increase.

Greatly reduced flood insurance premiums. Recognizing that freeboard reduces flood risk, the Federal Emergency Management Agency (FEMA, which administers the NFIP) provides substantial (sometimes more than 50 percent) reductions in flood insurance premiums for structures incorporating freeboard. These savings can rapidly accumulate, especially over the life of a normal mortgage.

Example of savings on NFIP premiums¹ with freeboard

V Zone ²	Annual savings in NFIP premiums		Savings over 30-year mortgage	A Zone ³	Annual savings in NFIP premiums		Savings over 30-year mortgage
	1' freeboard	2' freeboard			1' freeboard	2' freeboard	
	\$1,360 (25%)	\$2,730 (50%)	\$40,800		\$502 (41%)	\$678 (55%)	\$15,060
	\$2,730 (50%)	\$3,415 (62%)	\$81,900		\$678 (55%)	\$743 (60%)	\$20,340
	\$3,415 (62%)		\$102,450		\$743 (60%)		\$22,290

¹ **NFIP premiums** based on May 2007 rates for a one-floor residential structure with no basement built after a FIRM was issued for the community (post-FIRM rates differ from pre-FIRM rates). \$500 deductible/\$250,000 coverage for the building/\$100,000 for contents.

² **V zones:** This Flood Insurance Rate Map (FIRM) designation refers to coastal areas that are subject to the highest levels of wave energy and flooding.

³ **A zones:** Also a FIRM designation, coastal A zones are subject to flooding but with less wave energy than V zones (i.e., wave heights less than 3 feet).

What Are the Costs of Freeboard?

The expense of incorporating freeboard into new structures is surprisingly low, generally adding only about 0.25 to 1.5 percent to the total construction costs for each foot of added height, according to a 2006 FEMA-commissioned study (*Evaluation of the National Flood Insurance Program's Building Standards*). The minor resulting increase in monthly mortgage payments is generally more than offset by savings on NFIP premiums. Consequently, adding freeboard typically saves homeowners money.

Consider, for example, a proposed one-story building in the V zone² that will cost \$250,000 to build at minimum legal standards (the NFIP requires that all homes in the floodplain be elevated to at least the base flood elevation [BFE], mapped on FIRMs). According to the study cited above, adding each foot of freeboard to a home on piles or piers adds about 0.4 percent to total construction costs (about \$1,000 a foot in this example). If the owner takes out a mortgage at 6.5 percent APR for the total construction costs, he or she will have lower monthly payments (mortgage plus NFIP premiums) with 3 feet of freeboard, even though the construction costs are higher.

Home at minimum legal height

Monthly mortgage payments	\$1,580.17
Monthly flood insurance	+ \$458.25
Total monthly cost	= \$2,038.42

Home with 3' of freeboard

Monthly mortgage payments	\$1,599.13	(+\$18.96)
Monthly flood insurance	+ \$173.67	(-\$284.58)
Total monthly cost	= \$1,772.80	(-\$265.62)

In this example, adding 3 feet of freeboard saves the homeowner \$265.62 per month, or \$95,623.67 over a 30-year mortgage. Benefits in A zones³ are generally less dramatic, but still substantial. To determine NFIP premiums for a specific property, see a licensed insurance agent.

Who Can Benefit from Freeboard?

Nearly everyone building in floodplains can better protect themselves and their property and save on flood insurance by including freeboard into their construction and reconstruction projects. Additional benefits include:

- **Homeowners** - Whether or not you live in the house year-round, having it elevated increases the chances that

it will weather storms safely, decreasing your worry and protecting your investment. If you're building a new home, or doing a renovation, ask your builder/designer about incorporating freeboard.

- **Builders/contractors** - Freeboard provides a competitive edge over other builders, allowing you to market the benefits of reduced flood insurance and flood risk to potential buyers. When doing retrofits (especially those requiring bringing structures up to current NFIP standards), explain the benefits of freeboard to your clients.
- **Municipalities** - Encourage the use of freeboard in appropriate private and public construction throughout your community's floodplain. (NOTE: The Massachusetts Attorney General's office has recently rejected bylaws requiring freeboard, but municipalities may promote its use.)
- **Businesses** - Freeboard helps: protect your buildings, important records, and inventory from flooding; drastically decrease your recovery/clean-up time after storm; and potentially save your business. The Institute for Business and Home Safety reports that more than 25 percent of businesses that close due to storm damage never reopen.

For More Information . . .

- For technical details on costs of using different flood-resistant building techniques (including freeboard), see the American Institutes for Research's *Evaluation of the National Flood Insurance Program's Building Standards* 2006 study at www.fema.gov/library/viewRecord.do?id=2592.
- For general information on the National Flood Insurance Program, see www.FloodSmart.gov.
- For specific questions on flood insurance rates, see a licensed insurance agent.
- Communities looking for more information on the National Flood Insurance Program can contact Richard Zingarelli, Massachusetts NFIP Coordinator: (617) 626-1406, Richard.Zingarelli@state.ma.us.
- For general information on how Massachusetts communities can protect themselves from storms, see the StormSmart Coasts website at mass.gov/czm/stormsmart.
- Businesses looking to prepare for storms and other catastrophic events should visit the Institute for Business and Home Safety's website at www.ibhs.org.



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Landscaping to Protect Your Coastal Property from Storm Damage and Flooding

The Massachusetts coastline is a dynamic system—beaches and dunes constantly move in response to wind and wave action, coastal banks erode, and storms and hurricanes shift large amounts of sediment. Rainwater and snowmelt carry away the soils left exposed by the wind and waves, compounding erosion problems. The right landscaping approach can help counter the forces of wind, waves, and runoff and protect property against erosion caused by storms and flooding.

Wind and waves; salt spray; and shifting, parched, sandy, and nutrient-deficient soils make the coastline an inhospitable place for most plant species. However, there are plants that are well adapted to this niche—with characteristics that make them fit to survive the elements. And these plants that are resilient to harsh coastal conditions are one of the best remedies against the forces that cause erosion and destabilization of dunes, banks, and bluffs along the coast. For example, trees, shrubs, and smaller plants have root systems that structurally reinforce and support slopes (similar to rebar reinforcing concrete in building construction), bind soils, and reduce their susceptibility to erosion from wind or rain. In addition, by taking up the water directly from the ground, absorbing it through their leaves, and breaking the impact of raindrops or wave-splash, plants slow down the rate and quantity of water runoff that can lead to erosion.

Landowners can mimic nature by planting native coastal plants to protect property from storm damage and flooding. Using native coastal plants also enhances the visual appeal of coastal property, protects property values, preserves the



Photo: Michael J. DeRosa

Carefully planned coastal landscaping helps reduce erosion and storm damage, while improving the property's visual appeal.

natural character of the coastal environment, provides habitat for wildlife, and helps to filter pollution.

Before performing any landscape activities along the coast, contact the local Conservation Commission to determine if a permit is necessary. Where landscaping work is directly in a bank, dune, or other coastal resource area,¹ an approved Order of Conditions (or local permit) may be required. Within the 100-foot buffer zone to the resource area, a Determination of Applicability may be all that is necessary if the work is minimal and won't cause excessive land disturbance. If undertaking planting or restoration activities in threatened or endangered species habitat, you will need to follow specific guidelines (see *Guidelines for Barrier Beach Management* at www.mass.gov/czm/hazards/beach/barrierbeach.htm).

¹A resource area is defined under the Massachusetts Wetlands Protection Act Regulations as a bank, freshwater wetland, coastal wetland, beach, dune, flat, marsh, or swamp bordering on the ocean, an estuary, a creek, a river, a stream, a pond, or a lake. Resource areas also include land under any of the waterbodies listed above; land subject to tidal action, flooding, or coastal storm flowage; and riverfront areas.

PLANTING TO HELP STABILIZE COASTAL BANKS

The stability of coastal banks that are made of loose materials—such as sand, rocks, or soils—can be greatly improved by plants. A thickly planted area can prevent the surface runoff of rainwater or snowmelt from creating gullies or ruts in the bank. Plants also absorb rainfall and groundwater, reducing the seepages within a bank that could cause landslides, slumps, or a bank collapse. A strip of dense shrubs, perennials, and/or deep grasses along the top of a coastal bank can also limit access and foot traffic that may otherwise aggravate erosion or be a safety concern.

Selecting Plants for Coastal Banks

Native grasses that are extremely tolerant of salt spray and exposure to wind and waves, such as American beachgrass (*Ammophila breviligulata*), can help build up windblown sediments on the face of banks or bluffs and effectively bind the soil with their thick, fibrous root systems. The roots of beachgrass can establish themselves quickly, while allowing other plants to take hold. Other native grasses, such as little bluestem (*Schizachyrium scoparium*), and smaller, low-growing shrubs, such as bearberry (*Arctostaphylos uva-ursi*), creeping juniper (*Juniperus horizontalis*), and shore juniper (*Juniperus conferta*), can be grown on the slopes of the banks and bluffs—their root structure and surface area provide stability. In fact, rows of thick drought-tolerant grasses planted across the face of the slope will not only prevent erosion, but will slow water runoff and allow sediment to be deposited—creating a buildup of the bank. (Be sure to avoid planting rows of plants in such a way that they channel the water downhill and increase erosion.) Larger shrubs, such as bayberry (*Myrica pensylvanica*) and beach plum (*Prunus maritima*), are also good choices for exposed areas of a coastal bank since they are hardy and tolerant of salt spray and drought. Native trees, such as black cherry (*Prunus serotina*), pitch pine (*Pinus rigida*), and Eastern red cedar (*Juniperus virginiana*), may be beneficial for stability since their root structures are either deep or spreading, but locating trees on banks should be done carefully to ensure that their weights do not contribute to bank instability. In general, trees should be placed on lower slopes or set back from steep slopes. For stabilizing slopes that are steep, rocky, or difficult for planting, live cuttings or stakes (branch cuttings from dormant woody plants) can be inserted by hand or driven into the soils to take root, grow shoots, and become established.

Plants versus Engineered Structures

For property experiencing serious erosion, consider planting a protective cover of native plants, such as beachgrass and

creeping and shore junipers, on the bank rather than installing hard engineered structures (such as seawalls, riprap, and bulkheads). In most cases, engineered structures are prohibited in Massachusetts because they stop the movement of sediment in the overall system and reflect waves, both of which can damage other properties. Plantings, however, can buffer wave energy while maintaining natural sediment transport. Plantings are also substantially less expensive and more aesthetically appealing than structural measures. And while any form of bank stabilization affects the natural processes of erosion, plants are a more natural stabilizer. But, effective protection requires live plants—brush, vegetative debris, discarded Christmas trees, and other materials act to limit the natural growth and establishment of plants and do not help bind soils.

PLANTING TO HELP BUILD AND STABILIZE DUNES

Coastal beaches and dunes are highly dynamic and migratory systems—sand, gravel, and cobble are eroded, deposited, and reworked by wind and waves. Homeowners who attempt to maintain lawns and ornamental gardens in or adjacent to dunes and beaches will find that they are covered with sand after storms, or routinely damaged by the salt spray. Rather than working against nature, the better strategy is to plant natural communities of beach and dune plants that thrive in this environment, and that offer substantial benefits in return. Plants help to build up the dunes and maintain their form, so that in major storms, the dunes will act as a buffer against waves and flooding.

Selecting Plants for Fronting Dunes

In beach and dune systems, the pioneer plants that grow at the wrack line (the line of seaweed and debris deposited by waves and tides) trap windblown sand and allow the dune to build. Meanwhile, the roots of plants such as American beachgrass, dusty miller (*Artemisia stelleriana*), beachpea (*Lathyrus japonicus*), and seaside goldenrod (*Solidago sempervirens*) act like “glue” that holds the dune together. The dune will continue to build up as long as the plants are there to catch and hold the sand. For property that is experiencing erosion from wave and wind activity, planting beachgrass can help build and stabilize the dune and provide protection to landward areas. American beachgrass is the optimal choice for the fronting sand dunes (the dune closest to the beach), because of its fast growing subsurface rhizomes (stems) and roots, which spread beneath the sand and give rise to many new plants, helping to colonize the species in dune environments. Although woody vines and trees may look more stable, beachgrass can more quickly and effectively stabilizes large areas of coastal dunes

and banks. Beachgrass is also tolerant of salt spray, exposure to wind and waves, and frequent over-topping by sand. In fact, the wind-blown sand promotes a healthier and more rigorous stand of beachgrass by providing nutrients, forcing new rhizomes to sprout, and avoiding the buildup of unhealthy thatch. For more healthy plant stands, a mix of beach and dune grasses and other plants can be used to create a varied resistance to disease, pests, and local climatic conditions.

Selecting Plants for Secondary Dunes

Secondary dune systems (those landward of the fronting dunes) that are beyond the reach of regular wave action but are still exposed to salt spray, wind, or storm waves are habitat for hardy plants such as beach heather (*Hudsonia tomentosa*), lowbush blueberry (*Vaccinium angustifolium*), bayberry, beach plum, Japanese black pine (*Pinus thunbergii*), pitch pine, and Eastern red cedar. Due to their adaptation to dry, sandy, loamy, sometimes acidic and nutrient-poor soils, and their tolerance to salt spray, these plants are particularly useful for re-vegetating or stabilizing coastal dunes. They are also a good choice for gardens and yards that are exposed to wind and waves where little else will grow successfully. Saltmeadow cordgrass (*Spartina patens*) can also effectively colonize dune areas, particularly in troughs between dunes. Saltmeadow cordgrass, typically a salt-marsh plant, is dominant in these areas because most other sand dune species cannot tolerate wet- to saturated-soil conditions.

OTHER BENEFITS OF COASTAL LANDSCAPING

Landscaping property with native plants adapted to the coastal environment will not only help stabilize soils and prevent erosion (thereby protecting property and property values), but the plants will offer many other benefits, such as providing a buffer for pollution, creating wildlife habitat, establishing a natural character and aesthetic, and minimizing maintenance requirements.

Pollution Buffer

Coastal landscaping can help keep your local bay or harbor clean. Excess sediments washed to coastal waters can smother eelgrass beds and other habitats, and can also reduce water quality. Nutrients from pet wastes, septic systems, or fertilizers (that are not absorbed by plants) can lead to nuisance plant or algae growth, and bacteria from pet wastes and septic systems can lead to closed shellfish beds and swimming areas. Oils and greases washed from roadways and driveways can also pollute water bodies. Plants offer a natural defense—capturing and filtering many of these pollutants before they reach coastal waters.

Wildlife Habitat and Natural Beauty

Trees, shrubs, groundcovers, and grasses growing along the coast—particularly native species—provide shelter, nesting areas, and food for wildlife. These plants also beautify the land, preserve the natural character of the shoreline, and provide privacy. In contrast, extensive lawns do not provide stability against erosion (their roots are relatively shallow) or value for wildlife. In addition, fertilizers and pesticides used on lawns (especially with the quantities needed in sandy soils) can degrade water quality and may be hazardous to human health and wildlife.

Minimized Maintenance Requirements

Native plants are adapted to local conditions, and as a result require less maintenance, watering, fertilizer, and pest control than introduced species. Because certain natives thrive in coastal conditions, they may also out compete and control unwanted invasive species, such as multiflora rose (*Rosa multiflora*), oriental bittersweet (*Celastrus orbiculatus*), and Japanese knotweed (*Polygonum cuspidatum*)—all of which tend to take over and require a lot of pulling and weeding to keep a tidy appearance. When selecting plants, always be sure to avoid invasive species by checking the Invasive Plant Atlas of New England (nbii-nin.ciesin.columbia.edu/ipane).



Beachgrass and goldenrod growing on the dunes help build and stabilize the sand and sediments and protect landward areas.

TIPS FOR LANDSCAPING A COASTAL PROPERTY

- **Plant a buffer area** of native trees, shrubs, and deep-rooted grasses between maintained areas of the property and the shore to help stop or slow shoreline erosion, to filter sediments and pollutants, and to beautify the area. Do not mow right up to the edge of the dune, bank, beach, or marsh. **Keep the lawn area as small as possible.**

- **Grade property to direct stormwater away from the shoreline and toward planted areas** to reduce erosion of banks, dunes, and beaches and to prevent contaminants from entering the bays, harbors, and ocean.

Note: In areas that are frequently inundated with standing stormwater, plant species that are tolerant of both wet and dry conditions in a “rain garden.” Appropriate herbaceous plants include swamp milkweed (*Asclepias incarnata*), Joe Pye weed (*Eupatorium purpureum*), cardinal flower (*Lobelia cardinalis*), yarrow (*Achillea* spp.), and Stella de Oro daylily (*Hemerocallis 'Stella de Oro'*). Shrubs or small trees include arrowwood viburnum (*Viburnum dentatum*), winterberry (*Ilex verticillata*), highbush blueberry (*Vaccinium corymbosum*), Virginia sweetspire (*Itea virginica*), and serviceberry (*Amelanchier* spp.). For more plant species suitable for rain gardens, see the UMass Extension's fact sheet on rain gardens: www.umassgreeninfo.org/fact_sheets/plant_culture/rain_gardens_07.pdf.

- **Plant an area around driveways to slow stormwater and trap sediments and pollutants**, and replace impervious driveways or install new driveways with pervious material (crushed stone, shells, gravel) to allow water to infiltrate slowly into the ground.



Photo: Massachusetts Office of Coastal Zone Management

INSTALLATION AND MAINTENANCE

- Do not use heavy equipment and machinery on a dune, bank, or other resource area (or even next to them) without the proper permits and professional installation advice from a certified landscaper. Generally, plantings can be accomplished by a landowner with a shovel, rake, trowel, and wheelbarrow, but be sure to check with your Conservation Commission to see if a permit is necessary.

- Prepare the soils with a layer of organic material (e.g., compost, peat moss) to make nutrients available to the plants and to increase the soil's water retention capacity. A topping of mulch (e.g., bark, composted leaves and grass, nut shells, seaweed) will also provide nutrients and help retain water in the soils while keeping weeds at bay. If fertilizers are necessary for plant growth, use only an organic, slow-release, water-insoluble fertilizer at the recommended dose.

- For good plant establishment, newly planted vegetation will need approximately 1 inch of water per week during the growing season from April through October. If nature does not provide the 1 inch, temporary irrigation (such as drip tubing on a timer) may be used for initial plant establishment. Permanent irrigation systems adjacent to a dune or bank generally worsen erosion problems and should not be used.

- On steep slopes where erosion is threatening property, biodegradable erosion fabric, such as coconut fiber or coir mesh, may be used to provide temporary erosion control while plants take root.

FOR MORE INFORMATION

The Massachusetts Office of Coastal Zone Management (CZM) Coastal Landscaping website (www.mass.gov/czm/coastal_landscaping) provides homeowners and local officials with more information on plant selection and the benefits and “how tos” of coastal landscaping to help slow erosion and protect landward areas from storm damage and flooding, provide wildlife habitat, and prevent pollution. **See also the StormSmart Coasts website (www.mass.gov/czm/stormsmart) for additional information.**



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Publication Date: January 2009. This information is available in alternate formats upon request.

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LOCAL MITIGATION PLAN REVIEW TOOL

Merrimack Valley Region Multi-Hazard Mitigation Plan Update 2016

Andover, Boxford, Georgetown, Groveland, Haverhill, Lawrence, Merrimac, Methuen, Newbury, Newburyport, North Andover, Rowley, Salisbury, and West Newbury

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdictions: See above	Title of Plan: Merrimack Valley Region Multi-Hazard Mitigation Plan Update 2016	Date of Plan: February 2015 Resubmittal Nov. 2015 & Feb. 2016
Single or Multi-jurisdiction plan? Multi-jurisdiction	New Plan or Plan Update? Update	
Regional Point of Contact: Joe Cosgrove Title: Environmental Program Manager Agency: Merrimack Valley Planning Commission Phone Number: 978-374-0519 ext. 16 E-Mail: JCosgrove@mvpcc.org	Address: 160 Main Street Haverhill, MA 01830	

State Reviewer: Marybeth Groff	Title: Hazard Mitigation Planner marybeth.groff@MassMail.state.ma.us	Date: March 16, 2015
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FEMA Reviewer: Scott Sevakco Caroline Williams Brigitte Ndikum-Nyada	Title: STARR Community Planner, RSV Community Planner	Date: 5/4/2015 7/2/2015 7/6/2015
Date Received in FEMA Region I	3/16/2015;	
Plan Not Approved	Required revisions 7/6/2015	
Plan Approvable Pending Adoption		
Plan Adopted by participating Jurisdictions		
Plan Approved		

SECTION 1: REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT A. PLANNING PROCESS				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))		Sect 2, pp. 6-21; Appendix, A-D	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))		Sect 2, pp. 22-26; Appendix, A-D	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))		Sect 2 pp. 7-16; amended to incorporate public review comment/feedback by community Appendix, A - D		X
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))		Sect 2, pp. 7-21; Sect 4, pp. 46-98; Appendices A-B, D-E	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))		Sect 10, pp. 399-400	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))		Sect 10 & 11, pp.399-402	X	

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT A: REQUIRED REVISIONS				
A3. Although the plan documents how the public was notified of the planning meetings and given the opportunity to comment on the plan, it does not explain what comments were received and how they were incorporated as stated in the plan. The plan must document how their feedback was incorporated into the plan. Clearly state in the Plan how any public input, comments or feedback were incorporated into the Plan. If no input or comments were received, the plan must state this. In revised Feb. 2016 version, See Section 2 changes in particular community feedback/comments rec'd pp.10-16 and noting how/where changes incorporated into plan.				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Sect 4, pp. 46-98; Sect 5.1-5-14, pp. 102-259; Sect 7.1-7.3, pp. 291-297 ;Appendix F	X		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Sect 4, pp. 46-98; Sect 5.1-5-14, pp. 102-259; Sect 7, pp.291-299	X		
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Sect 5.1-5-14, pp. 102-259; Sect 7.1, pp.291-299	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Sect 4.1, p. 49; Sect 5.1-514: pp. 109, 117, 131, 138, 147, 159, 167, 178, 190, 207-208, 222, 229, 243, 256.	X		
ELEMENT B: REQUIRED REVISIONS				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Sect 5.1-5.14 pp.102-259; Sect 6.1-6.14 pp. 261-290; Sect 9.1-9.14 pp. 304-390; Sect 11, p. 404-407;	X		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Sect 4.1, pp. 43-44; Section 5, pp. 102 – 259; Sect 6.1-6.14 pp. 261-290; Section 9 pp. 304-390; Section 11, pp. 404-405	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Sect 2.5, p. 19-20; Sect 8.1, pp.300-303	X		
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Sect 6.1 - 6.14 pp. 261-290; Sect 9.1 - 9.14 pp. 304-398 Action plan matrices for all 14 communities updated to clarify mitigation scope/status/purpose of projects;		X	

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))		Sect 9.1 – 9.15 pp.304-390 Sect 11, pp. 404-407 Action plans updated w cost est./priority/schedule/next steps for mitigation action implementation		X
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))		Sect 9, pp. 304-401 Sect 11 & 12, pp. 404-413 Action plan amended to note funding sources; next steps needed		X

1. REGULATION CHECKLIST

Regulation (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
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ELEMENT C: REQUIRED REVISIONS

C4. Identify a comprehensive range of mitigation actions (physical projects or regulations/processes for long term risk reduction) for each jurisdiction to address vulnerabilities to the natural hazards that the jurisdiction determine are most important to the community. These mitigation actions must reduce risk to existing structures, and to new development or redevelopment.

- 1) Each jurisdiction has at least one action for new and existing structures. *However*, the “ongoing” ‘timeframes’ indicate many town/city mitigations actions may be existing capabilities or projects already underway – and not new activities.
- 2) Items described as “Continue to” are typically normal municipal operations/capabilities already in place and are not considered mitigation actions, unless there are new additions.
- 3) Many local items fall short of being mitigation either as a physical project or regulatory process. Such vague items may be described as to “encourage”, “explore”, “develop recommendations”, “work cooperatively”, “work with”, “analyze”, “develop”, “study”, “seek”, “promote”, “prioritize”, and “identify”. (In some cases, these could be initial steps within a more fully developed mitigation activity that could be added to the plan.) For example, **Newbury** does not identify the type of project or regulation that are the “appropriate corrective and preventive measures” to address Plum Island beach erosion and flooding. Further, this item simply says to “pursue funding and evaluate/implement.”

Accurately label actions for natural hazard mitigation. Hazard mitigation is a sustained action taken to reduce or eliminate *long-term* risk to human life and property from hazards. A large number of plan actions in Tables 9-1 to 9-14 are misidentified as mitigation when these are instead for **maintenance, plan implementation, normal town operations, preparedness, or response**. An item is maintenance when a structure is repaired or replaced in-kind without improvements to reduce risk.

Suggestions:

- List a timeframe for each mitigation action with a beginning and end within the 5-year plan cycle. (“Ongoing” indicates this is an existing city/town capacity and not a proposed action.)
- Provide more details for proposed structural projects that are currently vaguely described and nonspecific as to location, type and/or design details. Explain how the activity will reduce potential risks.
- Provide sufficient details for each proposed regulatory process, so that it is clear what changes or improvements will be carried out.
- Correctly identify mitigation actions and distinguish these from maintenance, normal town operations, preparedness, or response strategies, and from plan development and implementation. At a minimum, use clear labeling; a further improvement would be to **separate** non-mitigation items from real mitigation actions. (Non-mitigation items can be left within a HM plan, but are not considered in meeting plan requirements.)
- **Footnote:** FEMA’s Hazard Mitigation Assistance Programs are not intended as a source of funding for repair, replacement or deferred maintenance activities, but are designed to assist sub-applicants in implementing long-term, cost effective improvements that will reduce, minimize or eliminate risk to people and property from the effects of natural hazards. Projects

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)				
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Sect 3, pp22-29 ; Sect 5-pp. 103-104; 114; 122-124; 134-135; 141-142; 152;162-163; 170-171; 183-185; 200-201; 215-216; 225; 232-233; 254. Section 7.4 pp. 297-299			X
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Sect 6.1–6.14, pp. 262-287; Sect 9 pp. 304-306; 9.1 – 9.15, pp. 305-395 Completed & deleted projects identified in separate spreadsheets; Project progress status column noted.			X
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Sect 9.1 – 9.15, pp. 313-398 Changes in priorities, implementation obstacles noted in Project status column of action plans and summarized pp306-312.			X

1. REGULATION CHECKLIST	Location in Plan (section and/or page number)	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)	Met	Met
<p>ELEMENT D: REQUIRED REVISIONS</p> <p>D1. Not Met. The changes in development do not address “that have occurred in hazard prone areas and increased or decreased the vulnerability ... since the last plan was approved. ...” Local planning team assessment/review of new development change impact on community vulnerability risk added to each community annex section.</p> <p>D2. Great job discussing mitigation success stories in the MVPC Region 2015 HM Plan. The statuses of the previous actions from the past approved plan need to be clarified. Simply stating ‘YES’ that action was included in the 2008 Plan is insufficient. Some of 2008 actions are included as completed (while some completed actions (i.e. Haverhill) are not included) in the action Plan - Tables 9.1 to 9.14. No statement is made, or listing shown, that indicates if there were other actions from the 2008 plan, or if the provided information covers all prior actions as either completed or included in the 2015 plan. It is not clear what the statuses for the actions from 2008 Plan are. There is no statement indicating whether some were deleted or carry over etc... Suggest adding another column showing the actions’ statuses and whether they are completed, deferred, carried over to this plan, or deleted. If the mitigation action(s) is not completed then it must either describe whether the action is no longer relevant or be included with this plan update. Suggestion: Identify incomplete 2008 actions which are not part of the 2015 plan describing why these are no longer relevant – <u>or</u> clearly state if <u>all</u> prior actions are either completed or included in the updated 2015 plan. To do this correctly, list all the actions from the 2008 for the communities... Haverhill had 14 actions in 2008, in 2015 Plan, only 11 are listed (plus one listed as a success story).</p> <p>D3: Describe if and how any priorities changed, since the 2008 approved plan. The establishment of priorities under the 2015 plan is discussed on pages 287-288, but does not describe if the process changed, or if it did, provide an explanation how or why. Also discuss whether any changes were made to the priorities or what they may have been. Process described pp. 304-307. Changes outlined in Community Projects Completed matrix and Project Progress Status column.</p> <p>Looking at all of the participating communities actions, Boxford’s action titled (and other communities’) “<i>Explore participation in the NFIP’s Community Rating System to enhance floodplain management, reduce flood risks and losses, and educate public,</i>” this action was not carried over to this update plan. Was it because priorities changed or what? Section 9, pp 307-312 summarizes changes in mitigation priorities for each of the participating communities. Action plan matrix includes separate spreadsheets for Projects Completed Since 2008; Deleted Projects and Active Projects in Development.</p> <p>There is no discussion of how individual action’s priorities did or did not change – only a sentence mentioning many of the 2008 plan’s actions continue to be a priority for the region (page 288). The tables of regional and local actions indicate if an action was in the 2008 plan, but not whether the action’s priority changed. See pp. 307-312</p>		
ELEMENT E. PLAN ADOPTION		

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Section 10, pp. 399-400 Appendix H			X
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Section 10, pp.402-403; Appendix H (Only for Georgetown)			X
ELEMENT E: REQUIRED REVISIONS <p>Two different Plan's title referenced on the adoption resolution document. The word "Update" must be incorporated into the plan's title. Consider some of the language on the sample copy of the adoption resolution document inserted to the last page of this review tool.</p> <p>Plan title revised and consistently referenced throughout. Copies of draft resolutions from all 14 participating communities included in Appendix H.</p> <ol style="list-style-type: none"> 1. <i>Submit a copy of the proposed (unsigned) Adoption Resolution along with the revised plan for FEMA review. This will ensure the local resolution meets required guidelines for plan adoption.</i> 2. <i>On receipt of FEMA Approval Pending Adoption (APA), the revised plan should be adopted by the municipality.</i> 3. <i>The final plan must then be resubmitted to FEMA with the signed local adoption resolution.</i> <ul style="list-style-type: none"> - <i>The final plan submitted electronically to FEMA should be complete, including any attachments such as Appendices and maps.</i> - <i>Ensure that "DRAFT" notations are removed from the document.</i> - <i>Please adjust the plan date to reflect the final submission.</i> <p><i>Any other modifications to the final plan that received Approvable Pending Adoption notice may require the plan to be reviewed and adopted again.</i></p>				
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)				
F1.				
F2.				
ELEMENT F: REQUIRED REVISIONS				

This is a Sample Adoption Resolution for consideration:

(LOCAL COMMUNITY) MASSACHUSETTS
RESOLUTION NO. _____

CERTIFICATE OF ADOPTION
(CITY/TOWN OF _____, MASSACHUSETTS
CITY COUNCIL/BOARD OF SELECTMEN
A RESOLUTION ADOPTING THE
MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015-2020

WHEREAS, the City/Town of _____ established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the (City/Town) components of the **Merrimack Valley Region Multi-Hazard Mitigation Plan Update 2015-2020** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the City/Town of _____ has historically experienced damages from natural hazards and it continues to be vulnerable to the effects of those natural hazards profiled in the Plan, resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the City/Town of _____, has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its Hazard Mitigation Plan under the requirements of 44 CFR 201.6; and

WHEREAS, public and committee meetings were held between _____ and _____ regarding the development and review of the Multi-Hazards Mitigation Plan Update 2015; and

WHEREAS, the Plan specifically addresses hazard mitigation strategies and Plan maintenance procedure for the City/Town of -----; and

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the City/Town of -----, with the effect of protecting people and property from loss associated with those hazards; and

WHEREAS, adoption of this Plan will make the City/Town of ----- eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by the City Council/Board of Selectmen:

1. The Plan is hereby adopted as an official plan of the City/Town of -----
2. The respective officials identified in the mitigation strategy of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;
3. Future revisions and Plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
4. An annual report on the progress of the implementation elements of the Plan shall be presented to the City Council/Board of Selectmen by (_____).

Adopted this day, the ____ of ____, 2015 by the **(City Council/Board of Selectman, of (XYZ), Massachusetts.**

(Name of CEO) John Doe, Chairman of Board of Selectmen- (Name of CEO) Sue Smith, Town Planner.

Signature of CEO

Signature of CEO

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and the corporate seal of the City/Town on this day, ____, (year)

SECTION 2: PLAN ASSESSMENT

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths:

- The plan includes meeting attendees for all plan meetings as well as supplemental materials (i.e., meeting documentation, announcements, etc.).

Opportunities for Improvement:

- Consider using more diverse methods of participation (i.e., surveys, questionnaires, or workshops, etc.) to solicit feedback.
- Consider holding meetings (or additional meetings) during evening hours to encourage more public involvement.
- For the plan update, indicate if the previous monitoring and evaluation process were effective. If not, describe if and how the process was revised for the update.
- List specifically where public comments were incorporated into the plan as stated.

Element B: Hazard Identification and Risk Assessment

Plan Strengths:

- The plan includes human-influenced hazards (e.g., infrastructure failure, hazardous material spills, etc.) that could potentially impact the region.
- The plan addresses climate change and describes the possibility of increased frequency and intensity for many of the identified hazards.
- The plan was prepared with the understanding that a single hazard effect maybe caused by multiple hazard events (e.g., flooding occurring from a hurricane or dam failure as a result of an earthquake) in order to better identify current vulnerabilities and potential mitigation strategies.
- The plan provides several maps that detail precise locations of buildings and infrastructure for several of the identified hazards and illustrates evacuation routes that could potentially be affected.

Opportunities for Improvement:

- Although the plan provides a risk assessment for each community and uses a weighted method to assess regionally, define the general descriptions that explain probability (i.e., high risk, moderate risk, etc.). For example, provide a point scale that defines what 'moderate risk' represents as a percentage of likelihood of the hazard occurring.

- Consider using the MA Department of Conservation Recreation's Office of Dam Safety classification to show the hazard potential (e.g., Class I - High Hazard, Class II - Significant Hazard, etc.) for all dams represented on the maps in Appendix F.
- Consider using HAZUS to calculate potential losses to vulnerable buildings and infrastructure caused by floods, hurricanes and/or earthquakes. Describe the methodologies used to estimate these losses.

Element C: Mitigation Strategy

Plan Strengths:

- The plan includes new or current mitigation strategies that incorporate climate change/sea level rise adaptation consideration in future hazard mitigation and resiliency planning.

Opportunities for Improvement:

- Describe how each community plans to address the need for improvements in existing mitigations actions by seeking funding for additional resources/staff through their proposed actions.
- Provide a comprehensive range of different hazard mitigation actions to reduce risk to existing buildings and infrastructure as well as limit risk to new development and redevelopment. Also identify and include hazard mitigation alternatives that address the vulnerabilities to the hazards that the Town determine are most important. Include actions for all the repetitive loss properties that were identified in the plan.
- Include strategies and actions relating specifically to historic and cultural resources as well as vulnerable populations as referenced in the plan.
- Consider using the STAPLEE method for prioritizing new mitigation actions and strategies.

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Plan Strengths:

- The plan includes a section that identifies successful mitigation projects and activities that have taken place since the completion of the 2008 plan.

Opportunities for Improvement:

- If the *mitigation* actions are not completed (deleted) then the plan must either describe whether the actions are no longer relevant or if included this update plan provide the status.
- Although the plan assess future development, consider further analyzing development trends to determine where future development would most likely take place and how it could affect at-risk-areas areas.
- Describe changes in development that have occurred in hazard prone areas and increased or decreased the vulnerability of each jurisdiction since the 2008 plan was adopted.
- Provide comments from committee members describing the effectiveness of existing protections and policies.

B. Resources for Implementing Your Approved Plan

Consider a variety of sources for grants, guidance, and partnerships, including academic institutions, non-profit foundations, community organizations, and businesses, in addition to governmental agencies.

State Funds and Technical Assistance

The 2013 Massachusetts State Hazard Mitigation Plan addresses technical assistance for various mitigation activities as well as explaining the statewide approach to natural hazard mitigation. Section 17.6 identifies a number of potential funding sources for various mitigation activities.

The Massachusetts State Hazard Mitigation Officer (SHMO) and State Mitigation Planners can provide guidance regarding grants, technical assistance, available publications, and training opportunities.

Massachusetts Emergency Management Agency (MEMA)

<http://www.mass.gov/eopss/agencies/mema/hazard-mitigation/>

Department of Conservation and Recreation (DCR).

<http://www.mass.gov/dcr/stewardship/mitigate/index.htm>

Federal Funds and Technical Assistance

Federal agencies may support integrated planning efforts such as rural development, sustainable communities and smart growth, wildfire mitigation, conservation, etc.

Federal Grants resource center

<http://reconnectingamerica.org/resource-center/federal-grant-opportunities/>

Risk MAP: Technical assistance is available through Risk MAP to assist communities in identifying, selecting, and implementing activities to support mitigation planning and risk reduction; Attend any Risk MAP's discovery meetings that may be scheduled in the State (or neighboring communities with shared watersheds boundaries) in the future.

USDA, Natural Resources Conservation Service (NRCS)

Conservation Technical Assistance

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/cta>

Financial Assistance <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/>

Conservation Innovation Grant Programs

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs>

HUD

Sustainable Housing and Communities Initiative

http://portal.hud.gov/portal/page/portal/HUD/program_offices/sustainable_housing_communities

CDBG Disaster Recovery Assistance

http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/drsi

FEMA publications

FEMA 2013 Hazard Mitigation Guidance, HMA Guidance, FEMA requirements regarding HMGP, PDM, and FMA grants. <http://www.fema.gov/media-library/assets/documents/33634?id=7851>

[Mitigation Ideas, A Resource for Reducing Risk from Natural Hazards](#)

[Available upon request from FEMA Region 1](#)

Through Risk MAP, FEMA has developed and released this new resource for helping communities identify actions to improve their disaster resiliency! *Mitigation Ideas: A Resource for Reducing Risk from Natural Hazards* presents ideas for how to mitigate the impacts of different natural hazards, from drought and sea level rise, to severe winter weather and wildfire. The document also includes ideas for actions that communities can take to reduce risk to multiple hazards, such as incorporating a hazard risk assessment into the local development review process.

[Local Mitigation Planning Handbook](#), FEMA, March 2013

<http://www.fema.gov/media-library/assets/documents/31598?id=7209>

[Local Mitigation Plan Review Guide](#), FEMA, October 1, 2011

<http://www.fema.gov/media-library/assets/documents/23194>

The publications below can be downloaded from <http://www.fema.gov/library>. Search in the FEMA library by title/number or use the web links below.

[Managing Floodplain Development through the NFIP](#) provides guidance to municipal officials considering changes to local regulations and zoning. A copy can be downloaded from <http://www.fema.gov/library/viewRecord.do?id=2108>

FEMA P-762, [Local Officials Guide to Coastal Construction](#) assists building officials in understanding the connection between National Flood Insurance Program (NFIP) guidelines, the International Building Code, and the International Residential Code. The guide also explores building performance, real-life successes and failures following storm events while recommending design and construction “best practices”.

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3647>

FEMA P-55 [Coastal Construction Manual: Principles and Practices of Planning, Siting, Designing, Constructing, and Maintaining Residential Buildings in Coastal Areas](#) (4th ed.) at

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1671>

A 2-volume publication providing a comprehensive approach to planning, siting, designing, constructing, & maintaining homes in the coastal environment.

Volume I: hazard identification, siting decisions, regulatory requirements, economic implications, and risk management; audience- design professionals, officials.

Volume II: in-depth descriptions of design, construction, & maintenance practice; audience - design professional

FEMA B-797, [Hazard Mitigation Field Book – Roadways](#)

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=4271>

FEMA P-787, [Catalog of FEMA Wind, Flood & Wildfire Publications, Training Courses](#)

[& Workshops](#) (2012)

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3184>

[Flood Hazard Mitigation Handbook for Public Facilities](#)

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3724>

FEMA 386-6, [Mitigation Planning How To #6: Integrating Historic Property & Cultural Resource Considerations into Hazard Mitigation Planning](#), provides guidance regarding how to involve community-based organizations in mitigation planning.

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1892>

FEMA P-787, [Catalog of FEMA Wind, Flood & Wildfire Publications, Training Courses & Workshops](#) (2012)

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3184>

FEMA P-754, [Wildfire Hazard Mitigation Handbook for Public Facilities](#)

<http://www.fema.gov/media-library/assets/documents/16568?id=3723>

The following FEMA publications are especially useful in public information/outreach programs and can be ordered in hard copy for public distribution.

FEMA P-737, [Home Builder's Guide to Construction in Wildfire Zones](#)

<http://www.fema.gov/media-library/assets/documents/15962?id=3646>

FEMA 232, [Homebuilders' Guide to Earthquake-Resistant Design and Construction](#) provides seismic design and construction guidance for one- and two-family light frame residential structures that can be utilized by homebuilders, homeowners, and other non-engineers.

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=2103>

FEMA 347, [Above the Flood: Elevating your Flood-prone House](#)

This large publication (69 pages) could be placed in the reference section of a local public library or at a City or Town Hall for lending.

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1424>

Private non-profit information sources

[National Fire Protection Association \(NFPA\) Firewise Program](#)

<http://www.firewise.org>

[NFPA codes and standards](#)

www.nfpa.org/freeaccess

SECTION 3: MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET

#	Jurisdiction Name	Jurisdiction Type (city/borough/towns hip/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require- ments	
1	Town of Andover	Town	Chief Patrick Keefe	Andover Police Dept 32 North Main Street Andover, MA 01810	PKee@ andoverps.net	(978) 475-0411 x1041	N	Y	N	N		
2	Town of Boxford	Town	Ross Povenmire	7A Spofford Road Boxford, MA 01921	rhazelwood@town.boxford.ma.us	978-887-8135	N	Y	N	N		
3	Town of Georgetown	Town	Howard Snyder	1 Library Street Town Hall Georgetown, MA 01833	hsnyder@ georgetownma.gov	978-352-5713	N	Y	N	N		
4	Town of Groveland	Town	Jeff Gillen	Groveland Police Dept. 181 Main Street Groveland, MA 01834	jgillen@grovelandpolice.com	(978) 521- 1212	N	Y	N	N		

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification &	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require- ments
5	City of Haverhill	City	John Pettis	Engineering Div. Haverhill City Hall, 4 Summer St., Haverhill, MA 01830	JPettis@cityofhaverhill.com	978-374-2335	N	Y	N	N		
6	City of Lawrence	City	Dan McCarthy	225 Essex St. 3 rd Floor Lawrence, MA 01840	dmccarthy@cityoflawrence.com	978-620-3500	N	Y	N	N		
7	Town of Merrimac	Town	Ralph Spencer	Merrimac Fire Department 16 East Main Street Merrimac, MA 01860	Ralph.spencer@merrimacfire.com	978-346-8211	N	Y	N	N		
8	City of Methuen	City	William Buckley	Searls Bldg. City Hall, 41 Pleasant St., Methuen, 01844	wibuckley@ci.methuen.ma.us	(978) 983-8565	N	Y	N	N		
9	Town of Newbury	Town	Martha Taylor	Planning Dept., Newbury Town Hall, 25 High Rd. Newbury, MA 01951	planningboard@townofnewbury.org	(978) 465-0862 x312	N	Y	N	N		
10	City of Newburyport	City	Jon-Eric White	DPS Facility 16A Perry Way Newburyprt, MA 01950	Thoward @newburyportpolice.com	(978) 462-4411	N	Y	N	N		

MULTI-JURISDICTION SUMMARY SHEET

#	Jurisdiction Name	Jurisdiction Type (city/borough/township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification &	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Require- ments
11	Town of North Andover	Town	Jeff Coco	Town Hall, 120 Main St., North Andover, MA 01845	cocolema@luno.com	978-688-9500	N	Y	N	N		
12	Town of Rowley	Town	Deborah Eagan	Rowley Town Hall, 139 Main St., Rowley, MA 01969	debbie@townofrowley.org	978-948-2372	N	Y	N	N		
13	Town of Salisbury	Town	Lisa Pearson	Town Hall 5 Beach Rd. Salisbury, MA 01952	lpearson@salisburyma.gov	978-463-2266	N	Y	N	N		
14	Town of West Newbury	Town	Lee Ann Delp	401 Main St. West Newbury, MA 01985	ema@westnewbury-safety.org	978-363-1103	N	Y	N	N		

APPENDIX H

PLAN ADOPTION DOCUMENTATION

DRAFT RESOLUTIONS

- **Town of Andover**
- **Town of Boxford**
- **Town of Georgetown**
- **Town of Groveland**
- **City of Haverhill**
- **City of Lawrence**
- **Town of Merrimac**
- **City of Methuen**
- **Town of Newbury**
- **City of Newburyport**
- **Town of North Andover**
- **Town of Rowley**
- **Town of Salisbury**
- **Town of West Newbury**



Patrick E. Keefe
CHIEF OF POLICE

ANDOVER POLICE DEPARTMENT

Office of
CHIEF OF POLICE
ANDOVER, MASSACHUSETTS 01810
Bus. (978) 475-0411



CERTIFICATE OF ADOPTION **Town of Andover, Massachusetts**

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **Town of Andover** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Andover components of the multi-jurisdictional **Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Andover has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Andover; and

WHEREAS, public meetings and workshop by the Town of Andover and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Andover, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Andover eligible for funding to alleviate the impacts of future hazards.



ANDOVER POLICE DEPARTMENT

Office of

CHIEF OF POLICE

ANDOVER, MASSACHUSETTS 01810

Bus. (978) 475-0411



Patrick E. Keefe
CHIEF OF POLICE

NOW, THEREFORE BE IT RESOLVED by the Town of Andover Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Andover;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Andover .



TOWN OF BOXFORD

Office of the Board of Selectmen

7A Spofford Road

Boxford, MA 01921

Tel: (978) 887-6000 Ext. 502

www.town.boxford.ma.us

Fax: (978) 887-5361

CERTIFICATE OF ADOPTION

Town of Boxford, Massachusetts

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **Town of Boxford** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Boxford components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Boxford has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Boxford; and

WHEREAS, public meetings and workshop by the Town of Boxford and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Boxford, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Boxford

eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Boxford Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Boxford;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Boxford .

Town of Georgetown



Planning Board
1 Library Street
Georgetown, MA 01833

Phone: (978) 352-5713

Fax: (978) 352-5725

CERTIFICATE OF ADOPTION

Town of Georgetown, Massachusetts

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **Town of Georgetown** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Georgetown components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Georgetown has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies and recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Georgetown; and

WHEREAS, public meetings and workshop by the Town of Georgetown and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Georgetown, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Georgetown eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Georgetown Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Georgetown;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

Town of Georgetown



ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Georgetown.



Town of Groveland
Police Department

181 Main Street
Groveland, Massachusetts 01834
(978) 521-1212

Robert J. Kirmelewicz
Chief of Police

Jeffrey T. Gillen
Deputy Chief

CERTIFICATE OF ADOPTION
Town of Groveland, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION
PLAN UPDATE 2015**

WHEREAS, the **Town of Groveland** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Groveland components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Groveland has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Groveland; and

WHEREAS, public meetings and workshop by the Town of Groveland and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Groveland, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Groveland eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Groveland Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Groveland;

2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Groveland.



Haverhill

Engineering Department, Room 300
Tel: 978-374-2335 Fax: 978-373-8475
John H. Pettis III, P.E. - City Engineer
JPettis@CityOfHaverhill.com

CERTIFICATE OF ADOPTION **City of Haverhill, Massachusetts**

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **City of Haverhill** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the City of Haverhill components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the City of Haverhill has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies and recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the City of Haverhill; and

WHEREAS, public meetings and workshop by the City of Haverhill and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the City of Haverhill, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the City of Haverhill eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the City of Haverhill City Council:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the City of Haverhill;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation



Haverhill

Engineering Department, Room 300
Tel: 978-374-2335 Fax: 978-373-8475
John H. Pettis III, P.E. - City Engineer
JPettis@CityOfHaverhill.com

of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the City of Haverhill.



DANIEL RIVERA
MAYOR & CEO

CITY OF LAWRENCE
OFFICE OF THE MAYOR

City Hall • 200 Common Street • Lawrence, MA 01840
Tel: (978) 620-3010 • www.cityoflawrence.com

CERTIFICATE OF ADOPTION
City of Lawrence, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the **City of Lawrence** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the City of Lawrence components of the multi-jurisdictional *Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015* (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the City of Lawrence has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the City of Lawrence; and

WHEREAS, public meetings and workshop by the City of Lawrence and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the City of Lawrence, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the City of Lawrence eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the City of Lawrence City Council:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the City of Lawrence;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the City of Lawrence.



TOWN OF MERRIMAC
OFFICE OF THE BOARD OF SELECTMEN
4 School Street, Merrimac, MA. 01860
TEL: (978) 346-8862 / FAX: (978) 346-7832

CERTIFICATE OF ADOPTION
Town of Merrimac, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the **Town of Merrimac** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Merrimac components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Merrimac has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Merrimac; and

WHEREAS, public meetings and workshop by the Town of Merrimac and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Merrimac, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Merrimac eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Merrimac Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Merrimac;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will

periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Merrimac .



City of Methuen, Massachusetts

Office of the Mayor

The Searles Building, 41 Pleasant Street, Suite 306

Methuen, Massachusetts 01844

Telephone: 978-983-8505 Fax: 978-983-8973

Email: snzanni@ci.methuen.ma.us

Stephen N. Zanni
Mayor

CERTIFICATE OF ADOPTION

City of Methuen, Massachusetts

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **City of Methuen** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the City of Methuen components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the City of Methuen has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the City of Methuen; and

WHEREAS, public meetings and workshop by the City of Methuen and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the City of Methuen, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the City of Methuen eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the City of Methuen City Council:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the City of Methuen;

2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

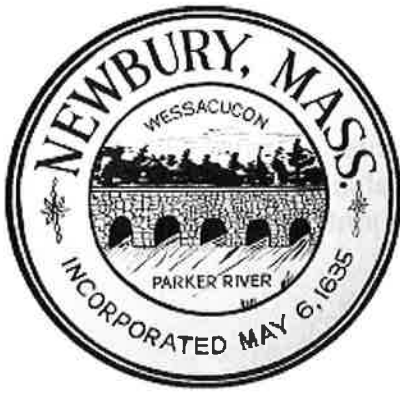
Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the City of Methuen.



Town Of Newbury
BOARD OF SELECTMEN
25 HIGH ROAD
NEWBURY, MA 01951-4799
Phone: 978-465-0862 X301
Fax: 978-465-3064

CERTIFICATE OF ADOPTION
Town of Newbury, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the Town of Newbury established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Newbury components of the multi-jurisdictional Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015 (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Newbury has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan, resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies and recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Newbury; and

WHEREAS, public meetings and workshops by the Town of Newbury and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Newbury, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Newbury eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Newbury Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Newbury;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.

3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Geoffrey H. Walker, Chair

Chuck Bear, Vice Chair

Damon Jespersen

J.R. Colby

Alicia Greco

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Newbury.



CITY OF NEWBURYPORT
OFFICE OF THE MAYOR
DONNA D. HOLADAY, MAYOR

60 PLEASANT STREET - P.O. BOX 550
NEWBURYPORT, MA 01950
978-465-4413 PHONE
978-465-4402 FAX

CERTIFICATE OF ADOPTION
City of Newburyport, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the **City of Newburyport** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the City of Newburyport components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the City of Newburyport has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the City of Newburyport; and

WHEREAS, public meetings and workshop by the City of Newburyport and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the City of Newburyport, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the City of Newburyport eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the City of Newburyport City Council:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the City of Newburyport;

2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the 15th of Oct., 2015

By:

Name(s): Donna D. Holaday

Title(s): mayor

Signature(s): Donna D. Holaday

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the City of Newburyport.



COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION

Building Conservation Health Planning Stevens Estate Zoning

CERTIFICATE OF ADOPTION

Town of North Andover, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the **Town of North Andover** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of North Andover components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of North Andover has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies and recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of North Andover; and

WHEREAS, public meetings and workshop by the Town of North Andover and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of North Andover, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of North Andover eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of North Andover Board of

Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of North Andover;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

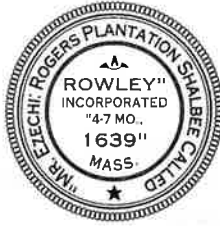
Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of North Andover.



Town of Rowley

Massachusetts 01969

BOARD OF SELECTMEN
139 Main Street • PO Box 275
Rowley, MA 01969
Phone (978) 948-2372
Fax (978) 948-8202
selectmen@townofrowley.org

TOWN ADMINISTRATOR
139 Main Street • PO Box 275
Rowley, MA 01969
Phone (978) 948-2372
Fax (978) 948-8202
debbie@townofrowley.org

CERTIFICATE OF ADOPTION Town of Rowley, Massachusetts

A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION PLAN UPDATE 2015

WHEREAS, the **Town of Rowley** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of Rowley components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Rowley has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of Rowley; and

WHEREAS, public meetings and workshop by the Town of Rowley and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Rowley, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of Rowley eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of Rowley Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Rowley;

2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Rowley.



Town of Salisbury
5 Beach Road
Salisbury, Massachusetts 01952
Board of Selectmen
(978) 462-8232 ext. 100

Freeman J. Condon, Chairman
Henry Richenburg
Ed Hunt
Wilma M. McDonald
Chuck Takesian

CERTIFICATE OF ADOPTION
Town of Salisbury, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD MITIGATION
PLAN UPDATE 2015**

WHEREAS, the **Town of Salisbury** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the **Town of Salisbury components of the multi-jurisdictional Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of Salisbury has **historically experienced damages from natural hazards** and continues to be vulnerable to the **effects of those natural hazards profiled in the Hazard Mitigation Plan** resulting in potential **losses of property and life, economic hardship, and threats** to public health and safety; and

WHEREAS, the Hazard Mitigation Plan **identifies recommends potential future activities and projects** aimed at mitigating potential **adverse impacts from floods, winter storms, and other** natural hazards in the Merrimack Valley region and the Town of Salisbury; and

WHEREAS, public meetings and workshop by the Town of Salisbury and the Merrimack Valley Planning Commission were held from **2012 through 2015** as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of Salisbury, **acting through its various municipal departments, boards, and commissions** is committed to **implementing these potential mitigation activities and projects** as future town funding and personnel **resources permit**; and

WHEREAS, adoption of this Hazard **Mitigation Plan** makes the Town of Salisbury eligible for funding to alleviate the impacts of future **hazards**.

NOW, THEREFORE BE IT RESOLVED by the Town of Salisbury Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Salisbury;
2. Future revision and plan **maintenance required by 44 CFR 201.6 and FEMA** are hereby adopted as a part of this resolution for a period of five (5) years from the date

of this resolution.

3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Name(s):

Title(s):

Signature(s):

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of Salisbury.



**TOWN OF WEST NEWBURY
BOARD OF SELECTMEN**

1910 TOWN OFFICE BUILDING

381 Main Street, West Newbury, Mass. 01985

Phone: 978-363-1100, Ext. 115

Fax: 978-363-1117

selectmen@wnewbury.org

CERTIFICATE OF ADOPTION

Town of West Newbury, Massachusetts

**A RESOLUTION ADOPTING MERRIMACK VALLEY REGION MULTI-HAZARD
MITIGATION PLAN UPDATE 2015**

WHEREAS, the **Town of West Newbury** established a local planning team to work with and assist the Merrimack Valley Planning Commission in the preparation of the Town of West Newbury components of the multi-jurisdictional ***Merrimack Valley Region Multi Hazard Mitigation Plan Update 2015*** (hereinafter, "Hazard Mitigation Plan"); and

WHEREAS, the Town of West Newbury has historically experienced damages from natural hazards and continues to be vulnerable to the effects of those natural hazards profiled in the Hazard Mitigation Plan resulting in potential losses of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Hazard Mitigation Plan identifies recommends potential future activities and projects aimed at mitigating potential adverse impacts from floods, winter storms, and other natural hazards in the Merrimack Valley region and the Town of West Newbury; and

WHEREAS, public meetings and workshop by the Town of West Newbury and the Merrimack Valley Planning Commission were held from 2012 through 2015 as part of the process of updating the Hazard Mitigation Plan; and

WHEREAS, the Town of West Newbury, acting through its various municipal departments, boards, and commissions is committed to implementing these potential mitigation activities and projects as future town funding and personnel resources permit; and

WHEREAS, adoption of this Hazard Mitigation Plan makes the Town of West Newbury eligible for funding to alleviate the impacts of future hazards.

NOW, THEREFORE BE IT RESOLVED by the Town of West Newbury Board of Selectmen:

1. The Hazard Mitigation Plan is hereby adopted as an official plan of the Town of West Newbury;
2. Future revision and plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.
3. Municipal departments and officials are authorized to pursue implementation of the recommended actions and in format available to the public will periodically report to the public on the progress of the implementation elements.

ADOPTED AND SIGNED this day, the _____ of _____, 2015

By:

Glenn Kemper, Chairman

Joseph Anderson

David Archibald

ATTEST:

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and corporate seal of the Town of West Newbury.
