Board of Selectmen
Dennis P. Crowley Chair
John A. Foresto, Vice-Chair
Richard D'Innocenzo, Clerk
Glenn D. Trindade
Maryjane White

Medway Town Hall
155 Village Street
Medway, MA 02053
Phone (508) 533-3264
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TOWN OF MEDWAY

COMMONWEALTH OF MASSACHUSETTS

Board of Selectmen's Meeting

September 17, 2018 7:00 PM

Sanford Hall, Town Hall

155 Village Street

Agenda

7:00 PM

- Call to order; Recitation of the Pledge of Allegiance
- Public Comments

Other Business

1. Approval of Minutes: September 10, 2018
2. Appointment Consideration: Water and Sewer Commission Steve Burke
3. Discussion/Vote: Acceptance of Easement, Millstone Village, Cobblestone Trailhead Parking
4. Discussion: Charter Update
5. Discussion/Vote: Approval of Comcast Cable Television License
6. Vote: Designate Medway Cable Access to Receive Comcast Cable Quarterly Franchise Fee Payments per New License Section 6.4
7. Vote: Adoption of the Town of Medway Hazard Mitigation Plan 2018 Update
8. Discussion: November 19, 2018 Fall Town Meeting Warrant Articles
9. Approval: Special Event License with Medway Plaza for the Town Wide Yard Sale: 9/22/2018
10. One-day liquor License Applications:
    a. Jo Hunt & Karen Sibilio – Thayer Homestead – 10/13/2018
    b. Raj Tirur – Thayer Homestead – 11/3/2018
    c. Anne Marie Lynch – Thayer Homestead – 11/11/2018
11. Action Items from Previous Meeting
12. Town Administrator's Report
13. Selectmen's Reports

For more information on agenda items, please visit the Board of Selectmen's page at www.townofmedway.org

Upcoming Meetings, Agenda and Reminders

October 1, 2018 --- Regular Meeting

October 15, 2018 --- Regular Meeting

AGENDA ITEM #1

Approval of Minutes

Associated back up materials attached:

- *Draft Minutes of September 10, 2018*

Board of Selectmen's Meeting
September 10, 2018 – 7:00 PM
Sanford Hall
155 Village Street

Present: Dennis Crowley Chair; John Foresto, Vice Chair; Richard D'Innocenzo, Clerk; Glenn Trindade, Member; Maryjane White, Member.

Staff Present: Michael Boynton, Town Administrator; Allison Potter, Assistant Town Administrator; Barbara Saint André, Director of Community and Economic Development; Dave D'Amico, Director, Department of Public Services; Barry Smith, Deputy Director, Department of Public Services; Doug Havens, Affordable Housing Coordinator.

Others Present: Leo O'Rourke, Water & Sewer Commission; Ann Sherry, Chair, Affordable Housing Trust; Greg Eldridge, Haley and Ward Representative.

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At 7:01 PM Selectman Crowley called the meeting to order and led the Pledge of Allegiance.

Public Comments:
Carla Cataldo, Chair of the Medway Cultural Council provided an update on the Council's recent activities. It is time for the annual grant applications. Applications can be found on the Town's website and will be accepted until September fifteenth. Medway artists were encouraged to apply. Questions should be directed to Ms. Cataldo. She reported the State allocated more funding than in previous years. Ms. Cataldo noted a new item on their webpage is a Cultural Assets Inventory including photographers, dance and music schools, and arts related businesses. She requested anyone not represented on the inventory to contact her to be added. Lastly, Ms. Cataldo detailed their fundraiser called Project "M" noting this involved decorating M's. Non-profit organizations can participate for $20 and other businesses for $50. Completed M's will be displayed in a storefront on Route 109 and in the Medway Library. All who participate will automatically be entered into their prize drawing which will be drawn mid-November and is a Sundae Bar for ten at TC Scoops. For information on this fundraiser, please contact MisforMedway@gmail.com.

Selectmen Crowley asked what the current and historical State grant funding has been and how the funding has been distributed. Ms. Cataldo stated they have received $4,700 historically but anticipate $5,200 this year and the funds are disbursed in $100-$1,000 increments for various cultural projects. She cited a one woman play to be presented at the Ide House about Abby Kelley Foster called Yours for Humanity along with the Friends of Performing Arts slated to present a Shakespeare play at Medway High School. Ms. Cataldo reported they currently have five members on the Council which is the minimum but are allowed to go up to twenty-two. Selectman Crowley requested that she discuss with her Council members and report back to the Board by the end of the year on two to three small items for children or seniors that the Board could consider funding since the Council does not receive any Town funding. Ms. Cataldo reported on a potential Federal Grant that she is working on with other Town Boards that is a matching grant that hits in the middle of the summer. The Board thanked Ms. Cataldo and her group for their efforts.

Selectman Crowley thanked and recognized the following residents for their commitment and time served on the following Committees noting these are non-paying jobs, some of which are difficult committees to work on:

Theresa O'Brien	Affordable Housing Committee
John Maguire	Affordable Housing Trust
Susan Alessandri	Medway Pride Day Committee
Matthew DeSorbo	Town Wide Energy Committee
Paul Mahoney	Town Wide Energy Committee
Eric Arbeene	Finance Committee & Zoning Board of Appeals
Ted Kenney	Water & Sewer Commission
Barry Zide	Water & Sewer Commission
Bridgette Kelly	Zoning Board of Appeals

Selectman Crowley noted that current Committee openings are posted to the Selectmen's page on the Town website and interested volunteers should contact the Selectmen's Office.

Approval of Minutes: August 13, August 27, and September 5, 2018

The Board reviewed the draft Minutes of August 13, August 27, and September 5, 2018.

Selectman Trindade moved that the Board approve the minutes of August 13, 2018. Selectman White seconded. Discussion. Selectman Crowley noted a change on page 7, line 46 from "spent" to "received". **VOTE: 5-0-0.**

Selectman Trindade moved that the Board approve the minutes of August 27, 2018. Selectman White seconded. No Discussion. VOTE: 5-0-0.

Selectman Trindade moved that the Board approve the minutes of September 5, 2018. Selectman D'Innocenzo seconded. No Discussion. VOTE: 5-0-0.

Authorization to Expend Grant Funds – Recycling Dividends Program for Continued Programs Implementation- $6,000

The Board reviewed the (1) grant expenditure authorization form dated August 23, 2018, (2) award letter dated August 21, 2018 from Governor Baker, and (3) award letter dated August 21, 2018 from Massachusetts Department of Environmental Protection (MassDEP) Commissioner Martin Sunberg

Mr. D'Amico stated this grant is available every year from MassDEP with the intent to encourage towns to recycle. He noted points are assigned from 5000-8000 depending on what programs are in place. These funds were utilized to purchase recycling carts in the past and this year they plan to spend the funds on electronics recycling or outreach.

Selectman Foresto moved that the Board authorize the expenditure of the Recycling Dividends Program Grant in the amount of $6,000 as presented. Selectman Trindade seconded. No Discussion. VOTE: 5-0-0.

Report of Affordable Housing Committee/Trust (AHC/AHT)

There were no materials for the Board to review.

Ms. Sherry reported that ten years ago, the Town approved the Trust fund and in 2011 the Trust was formed for the purpose of preservation and creation of affordable housing. The primary projects this last year were the attempt to develop Cutler Street and the Glen Brook Way project. The RFP for Cutler Street will be sent out within the next couple of weeks and Glen Brook Way, with 48 affordable units planned, entered its first phase in August. Other projects they worked on included the: (1) Millstone Village price increase, (2) purchase, upgrade and sale of a Kingston Lane unit, (3) maintenance of Safe Harbor status, and (4) application to the State for the Housing Choice program noting this designation was achieved. Ms. Sherry stated they are actively looking for someone with real estate, banking or finance background to replace Jack Maguire, as they now only have four members and they are a five member board.

Selectman Crowley reported he had attended the last AHT/AHC meeting noting that the Selectmen took the initiative along with the Community Preservation Committee (CPC) to acquire the Cutler Street property. He is concerned that this not turn into a "white elephant". He stated hopefully, the RFP is successful, but, if not, requested that the AHT/AHC go back and review the process. If a developer cannot be found, a discussion with the CPC will be needed to market the property. Ms. Sherry reported an informal outreach to developers has not provided any response to date and agrees that the property can no longer be held if the RFP is not successful. Selectman Crowley noted the Board is cognizant of the need to be respectful of the Cutler Street neighbors but we also need to address development of that property. Mr. Havens noted that the AHC and AHT do not distinguish themselves as separate entities but work together on all projects. He stated his belief that the Cutler Street process can be streamlined and simplified. He clarified that both the AHT and Town provided $500,000 in funding to the Glen Brook Way project, for a total of $1 million.

Selectman Crowley asked Selectman Trindade to provide an overview of the Town's 40B status. Selectman Trindade explained how Safe Harbor status and 40B developments work noting that the State sets guidelines for achieving and maintaining 10% of your total housing stock as affordable to obtain and remain designated with Safe Harbor status if a town's affordable inventory is below 10%. He reviewed the impact of this status on preventing 40B developments. He further explained that if a development is permitted but not built within one year, it will no longer count towards the 10% affordable housing goal. The Town currently has Safe Harbor status until 2020. The goal is to be greater than the State mandated 10% noting the need of approximately 80-90 more units to achieve that goal. The Board is looking to work with developers to ensure the Town is secured for the next 10-20 years to maintain our Safe Harbor status. It was noted an affordable unit can be an apartment or a home and that all apartments in a complex where a portion are designated as affordable count towards the total number of affordable units, which is not true for homes.

Selectman Crowley addressed the July letter he sent to the AHT/AHC regarding a specific unit at Kingston Lane including the: (1) question of potential fraudulent actions by the owner, (2) question of initial qualifying requirements being met, and (3) monitoring agency's (Citizens' Housing and Planning Association - CHAPA) actions and responsibilities. Mr. Havens reported that CHAPA states this information is confidential and cannot be discussed with the Town, therefore we have to assume CHAPA has correctly determined qualifications. There was further discussion regarding this specific owner's violations and the unmet deadline CHAPA provided to resolve the specific issues. Ms. Sherry noted that Mr. Havens created a document outlining the specific qualifications required and will share this with the Board. It was noted that issues with compliance result from two sources: (1) CHAPA which fails to appropriately monitor these units and (2) the large banks that do not perform due diligence on the title search during the loan process. There was further discussion on the recourse for the Town and it was

determined that the legal costs to pursue enforcement of the regulations would be prohibitive. The Board voiced its frustration with the lack of ability to impact these situations. Ms. Sherry reported the frustration of the AHT/AHC as well. The Board requested that Town Administrator Boynton contact Town Counsel to determine what the appropriate next steps would be if CHAPA does not resolve this issue. Mr. Havens reported that CHAPA stated it does not bring legal action into these situations. There was further discussion about CHAPA versus other entities' potential for being the monitoring agent for these affordable units. Mr. Havens reported a letter is scheduled to be sent to all affordable housing owners pending Town Administrator approval. The Board requested that this letter be sent registered mail. The Board noted that the violators are a minority of owners.

Alan Pulito of 9 Kingson Lane and President of the Homeowners' Association addressed the Board noting he is aware of approximately five owners in the past ten years who have violated the affordable housing stipulations noting it is a systemic issue in 40B developments and the non-affordable housing owners feel they are paying the price for this fraudulent behavior of the minority of affordable housing owners. Ms. Sherry noted that once you initially qualify based on income, the owner's income is no longer taken into account and the Town is not allowed to monitor that information. Selectman Crowley reported he has a letter drafted for the state senators from the regional boards of selectmen regarding this issue. Leo O'Rourke, resident of Lovering Street, reiterated that the bank is not doing due diligence on the title, as the unit being designated as an affordable unit would be known since it is stated clearly on the title. It was also recommended that the Board consult with Town Counsel regarding the Town looking at the condo fees prior to approving developers' plans.

Discussion: Charter Update

There were no materials for the Board to review.

Town Administrator Boynton stated the Charter Review Committee is meeting tonight and there are draft Fall Town Meeting warrant articles that we hope to have finalized by the next Selectmen's meeting. This agenda item was moved to the next Selectmen's meeting on September 17th.

Discussion: Water Treatment and Capacity Update

There were no materials for the Board to review.

Town Administrator Boynton recognized the efforts of the DPS staff along with the Water and Sewer Commission noting this is now at the initial design and review stage with the need to be ready to make a high level presentation to the residents at Fall Town Meeting. He stated the goal of this presentation and discussion is so that all parties are on the same page before Fall Town Meeting. There was discussion on how this differs from the five year plan previously presented to the Board along with the Integrated Water Resources Management Plan (IWRMP), noting this all ties into the five year plan.

Mr. Eldridge reviewed the stakeholders of safe and sufficient drinking water noting the quantity project is due to the increased demand caused by population growth. The quality plan is to address the iron and manganese levels noting the need to prioritize both quantity and quality along with the recommended implementation options. The current limitations were then reviewed including the (1) average daily volume (2) the maximum rate and capacity of the current wells, and (3) impact if one well is offline. Selectman Foresto asked the process for changing the current permit if there is a population increase. Mr. Eldridge responded the Town would need to go back to the state to revise its permit. Selectman Crowley noted the issue of the need to document a <10% unaccounted water loss in Town in order to be able to even go to state for a redo of the permit. Mr. D'Amico stated the last report was at

16% but he believes we are currently at 12%. There was further discussion on the impact on capacity should a 40B development come into Town. Mr. Eldridge reviewed each of the wells' actual current capacity, what is permitted, along with the projected maximum and average daily demand. He noted in order to meet present and future capacity demands there is a need to: (1) get the existing wells up to the permitted withdrawal rate, (2) reduce the demand via leak identification and repair, (3) watering reduction, and (4) conservation education. The plan would include supplemental wells at the current sites and the development of new supply sites noting Chicken Brook is the only other site identified at this time but the environment is not good due to contamination and the proximity to wetlands. He then reviewed the specific well locations and the timeline and costs associated to address capacity. The Board noted the need to provide a simpler presentation at Fall Town Meeting as the information provide here is abundant and complicated. Mr. Eldridge then reviewed the quality issues of iron, a yellow appearance in water, and manganese noting that both the Oakland and Village Street wells contribute to this issue. The Board then reviewed an overview of the EPA and Mass DEP water regulations related to manganese and the actual iron and manganese levels from 2014-2018 by well location. Last year's decrease was attributed to the higher water table and decreased run time of the Oakland Street well. Treatment options were then discussed to address these levels including the pros and cons of individual versus centralized treatment approaches. The recommendation for implementation of a centralized approach along with treatment types and distribution system improvements was then reviewed including a listing other towns with iron and manganese removal plants. Treatment costs, projected in 2017 dollars, were discussed for centralized versus decentralized options including the impact of implementation on water rates, noting the anticipated impact of $210-$215 on a tier two bill, which is a 20% increase. The preliminary timeline for implementation was reviewed. There was discussion about decreasing the implementation timeline to address both quantity and quality and the impact on costs noting all the numbers presented included engineering costs, inflation, and a 10% contingency. The Board requested the confirmation of the inflation and contingency amount built into the presented costs and a copy of the presentation. Selectman Foresto asked what other Towns do in this same situation. Mr. Eldridge stated they address both issues at once. There was further discussion on the impact of a 40B and the need to have a more aggressive implementation timeline. Selectman Crowley noted this is an enterprise account and asked about the Board's opinion on the potential use of taxpayer funds for an enterprise account. Town Administrator Boynton stated that we look to the Board for the determination of the implementation timeline. Selectman Foresto asked for the required the lead time on this type of project. Mr. Eldridge stated one year for the design and permitting and two construction seasons, therefore, three to four years if this was approved to move forward today. Selectman Crowley requested a copy of the IWRMP report in addition to this presentation.

Authorization to Grant a Temporary License to Verizon for Placement of Utility Poles at the Senior Center

The Board reviewed the Temporary License to Verizon for Placement of Utility Poles at the Senior Center.

Selectman Trindade moved that the Board approve the temporary license to Verizon for placement of utility poles at the Senior Center as presented. Selectman Foresto seconded. Discussion: Selectman Crowley asked when the installation will occur. Town Administrator Boynton stated Friday. Selectman Trindade explained this is part of the Oakland Park project and is the last work item involving moving the utility poles noting this includes both underground wiring and upgraded service. **VOTE: 5-0-0.**

Vote: Close November 19, 2018 Fall Town Meeting Warrant on September 14, 2018

The Board reviewed the November 19, 2018 Fall Town Meeting Warrant calendar.

Selectman Trindade moved that the Board close the November 19, 2018 Fall Town Meeting Warrant on September 14, 2018. Selectman White seconded. Discussion: Selectman Foresto pointed out the draft that was sent to the Board included a significant number of capital items. Town Administrator Boynton stated these items were those not funded in the May Town Meeting due to the use of free cash to support debt service. The requested items include the fence for Idlybrook and the sign for Choate Park. **VOTE: 5-0-0.**

Special Event Permit Application: Cystic Fibrosis Foundation Cycle for Life – October 6, 2018

The Board reviewed the (1) Special Event Permit Application for the Cystic Fibrosis Foundation Cycle for Life and (2) the Police Chief's Recommendation.

Selectman Trindade moved that the Board approve the Special Event Permit Application for the Cystic Fibrosis Foundation Cycle for Life to be held on October 6, 2018 subject to the Police Chief's recommendations and proof of appropriate insurance coverage. Selectman D'Innocenzo seconded. Discussion. Selectman Crowley requested the actual locations of the police details for this event. **VOTE: 5-0-0.**

One-day liquor License Applications

The Board reviewed the Police Chief's recommendations for Sherri Chauvin, Amy Morin, Gladys Pozsgai, and Judith Moffat.

Selectman Foresto moved that the Board approve the one-day liquor licenses as presented subject to the Police Chief's recommendations and proof of appropriate insurance coverage. Selectman Trindade seconded. No Discussion. VOTE: 5-0-0.

Action Items from Previous Meeting

The Board reviewed the Action Items dated August 13, 2018.

Comcast cable license renewal (lic. exp. 7/13/18): Selectman Foresto reported there is a meeting tomorrow and anticipates a recommendation for the Board to vote on the license.

Gray Squirrel Matter: Town Administrator Boynton reported this is all but resolved.

Medway Plaza Redevelopment: Selectman Crowley reported that he along with Selectman Trindade, Ms. Saint Andre, and Matt Buckley will be meeting with owner of the Plaza in Chelsea next Monday.

Report to BOS Strategic Plan for making fields more viable for youth sports: Selectman Crowley updated the due date for this to December.

Park & Recreation Director Report Assessment Results & Action Plan to Board: Selectman Crowley updated the due date for this to December.

Town Administrator's Report

There were no items for the Board to review.

Town Administrator Boynton reported the RFPs for the Ide House at 158 Main Street are due back and requested Selectmen White and Trindade review the responses with Assistant Town Administrator Potter.

Eversource Project Information: Town Administrator Boynton reported he will be attending a meeting in Franklin next Thursday from 5-7pm at the Franklin Senior Center in reference to the Eversource reliability enhancement project.

Route 109 Update: Town Administrator Boynton reported there is heavy construction in front of the Charles River Bank, installation of curbing, and the plan to put asphalt down over the next two to three weeks moving into the Holliston Street intersection in October. He spoke with the sub-contractor for the sidewalks noting the new Plaza driveway needs to be completed as well. Eversource will be turning on the lights at the Plaza as well as the streetlights. He reported that Amorello hit a gas main again at Slocum Place noting it was marked by Dig Safe and Chief Lynch met with them today to put them on notice since this is a recurring problem.

DPS Facility Update: Town Administrator Boynton reported there have been staff working meetings with the project design team finalizing the scope and concept of the facility with the plan for an early October committee meeting to review the final product. He reported the target cost of < $12million not including the design.

Town Administrator Out of Office:

- Friday, September 14 – Tentative
- Friday, September 21, Personal Day
- September 22-26 – ICMA Conference, Baltimore

NEXT Regular Selectmen's Meeting – September 17, 2018

Selectmen's Reports

There were no items for the Board to review.

Selectman Foresto reported that he and Selectman White met with Town Administrator Boynton regarding his contract noting the next steps are to complete an evaluation by the Board and then meet with Mr. Boynton to discuss the contract.

Selectman Crowley requested a status from the Investment Advisory Committee at the next Selectmen's meeting. He requested an update on the status of the Water and Sewer Commission vacancies. There is one candidate, Steve Burke, who submitted his letter of interest and resume and will be available at the next Selectmen's meeting. He requested an update from Selectman White who reported at the last meeting about a resident who reported a significant increase in their most recent water bill. Ms. White referred them to DPS and has not heard any further on this matter.

At 9:07 PM Selectman Trindade moved to adjourn. Selectman Foresto seconded. VOTE: 5-0-0.

Respectfully submitted,
Liz Langley
Administrative Assistant
Town Administrator's Office

AGENDA TEM #2

Appointment Consideration: Water and Sewer Commission - Steve Burke

Associated back up materials attached.

- *E-mail of interest dated September 4, 2018*
- *Resume*

Liz Langley

From:
Sent: Tuesday, September 04, 2018 3:01 PM
To: Board of Selectmen
Subject: Water sewer commission

Hello my name is Steve Burke Medway resident since 1976 ran against past incumbent . I am still interested in position .I have experience in chemical waste treatment , water purification and recycling . presently retired. will drop of resume

Sent from my iPhone j

CONTACT INFO

Steven Burke
8 Ohlson Circle
Medway, Massachusetts 02053
US

Water Sewer Commission Opening

I feel my past experience would be of value to the Town of Medway in the task

of Water and Management Planning.

Due to strict EPA Regulations I partnered with industrial clients to dispose of liquid waste generated by the manufacturing process. Our objective was to form a plan that would be environmentally safe and efficient.

- Reduce gallons discharged, streamline operations,
- Minimize Risk
- Reduce Costs
- Develop waste and management plans
- Create Recycling programs, water purification and membrane filtration systems.

All successfully engineered to achieve environmental compliance with EPA and local municipalities.

✳ Presently Retired

Experience 2009 - ✳ Century 21 Realtor Waltham Ma.

Sales Associate

Selling and renting commercial and residential property. Working with buyers and sellers through lead follow up and marketing plan creation. Provide price guidence, market information, negotiation advice and closing assistance. Create and expand relationships for further business.

2007-2008 PlumbMaster Inc. Concordville Pa.

Sales Specialist

Servicing and maintaining existing customer base while developing new accounts through cold canvassing and lead follow up. Calling on colleges, military bases, housing authorities, hospitals, school systems, nursing homes, assisted living facilities.Developed territory plan for southern Ma., R.I., Cape Cod and Islands.

Increased business by 40% first year through strong new account development.

2006-2008 **Jack Conway Realtor** **Dorchester, MA**
Realtor/Sales Agent Full Time Part Time

2001–2005 **RE/Max Bayside** **Boston, MA**

Realtor / Sales Agent.

Utilized fact based data to create sales strategies for prospective buyers and sellers.Succesfully used human relation skills to work with people of diverse backgrounds. Conducted presentations to first time home buyers.

Ability to convert sales prospects to satisfied customers to new leads

Ability to utilize strong selling skills in a down market

1998–2001 **Angler Industries Inc.** **Sterling,CT**

Senior Sales Representative, Metal Working and Metal Finishing Chemicals

Sales forecasting, Fiscal budgets, and inventory control

Sales development through maintaining loyal customers, product knowledge.

Ability to increase productivity by prioritizing leads and sales potential

Devised methods to facilitate more open communication between sales representatives and other departments in the company, including production, quality control and finance

Demonstrated effective sales presentations, cold calling which resulted in six new accounts in first two quarters of employment

1996–1998 **Kenneth B. Page Co.** **W. Springfield, MA**

Sales Representative, Castrol Chemicals and Industrial Tooling for the metalworking industry in The Northeast

Developed and managed established accounts in the Northeast.

Facilitated all aspects of sales process; cold calls, presentations, pricing, negotiations, shipping and customer satisfaction.

Developed Excellence in Sales training course.

Access prospects chemical and tooling needs through proposals

Presented quarterly budget review to management

Successfully developed new tooling business resulting in $100,000 in incremental sales. Increased sales budgets by 75% within two years

1989-1995 Castrol Industrial Inc. Downers Grove, Illinois

Sales Engineer, Metalwork Chemicals

Responsible for marketing, sales and applications of metalworking chemicals to major manufacturers in the Northeast

Skilled in training sales representatives in the art of selling metalworking chemicals through cold calling and lead generation.

Provided technical support to the metalworking chemical industry.

Successfully maintained and increased volume with current users, while developing new business sales base. Received Company Quota Club bonuses for sales achievements 1993 1994 1995.

Education

Northeastern University **Boston, MA**

Bachelor of Science- Management

Associate of Science, Business Administration

Bryant & Stratton College, Boston, MA

Certified in Business data Processing & Programming

Organizations

Greater Boston Realtors Association.

AGENDA ITEM #3

Discussion/Vote: Acceptance of Easement, Millstone Village, Cobblestone Trailhead Parking

Associated back up materials attached.

- *Easement document*
- *Plan document*

Proposed Motion:
I move that the Board approve the Conservation Commission's acceptance of the gift of an easement from Millstone Builders, LLC, on and across a portion of the property located at 129R Lovering Street (Millstone Village) for vehicular parking, conservation and passive recreation purposes.

Grant of Easement

MILLSTONE BUILDERS, LLC, a Massachusetts limited liability company with a principal place of business in Westborough, Massachusetts (the "Grantor"), for no consideration, as a gift, does hereby give, grant, transfer and deliver unto THE TOWN OF MEDWAY, a municipal corporation in Norfolk County, Massachusetts, with a mailing address at Town Hall, 155 Village Street, Medway, Massachusetts 02053, ACTING BY AND THROUGH ITS CONSERVATION COMMISSION pursuant to G.L. c. 40, §8C (the "Grantee"), for vehicular parking, conservation and passive recreation purposes, with Quitclaim Covenants, the perpetual non-exclusive right and easement on, over, across, through and under the following described area (collectively, the "Easement Area") in common with the Grantor and others entitled thereto.

The Easement Area is shown as "Cobblestone Trailhead Parking", "5 Spaces (9' x 18')" and also includes that portion of Cobblestone Drive from its intersection with Winthrop Street to Station 1-00 so as to allow vehicular and pedestrian access to the Cobblestone Trailhead Parking, on that certain plan entitled "Adult Retirement Community Planned Unit Development, 'Millstone Village', Medway, Massachusetts" dated May 3, 2018, last revised June 7, 2018, Scale as Noted and prepared by GLM Engineering Consultants, Inc., recorded with the Norfolk County Registry of Deeds in Plan Book 670, Page 55, being a portion of the premises conveyed to Millstone Builders, LLC by deed dated August 7, 2014 recorded with said Deeds in Book 32460, Page 303. A reduced version of said plan showing the Easement Area is attached hereto. This Easement is granted subject to existing easements and rights of record as of the date of recording of this Easement and other rights and easements granted thereafter which do not materially interfere with the rights granted herein.

The Easement Area is created and granted by the Grantor so as to enable members of the public, in common with the Grantor, to use such Easement Area for vehicular access and parking, and to provide access for the public to the "Proposed Trail" as shown on said Plan, from the Cobblestone Trailhead Parking or by foot from Winthrop Street.

Grantor is responsible for the perpetual maintenance of the Easement Area until such time as it has resigned as Trustee of the Millstone Village Condominium Trust and upon such resignation, the Millstone Village Condominium Trust shall be responsible for the perpetual maintenance of the Easement Area. Grantee, and its employees, agents and contractors shall have the right, but not the obligation, to construct, inspect, maintain, plow, improve, repair, and reconstruct the parking spaces and any related improvements, including without limitation, signage and drainage, within the Easement Area, to the extent consistent with this Grant of Easement.

The Grantor and others to whom the Grantor may grant rights shall have the right to fully use and enjoy the surface and subsurface of the Easement Area for any use which does not unreasonably interfere with the exercise by the Grantee of the rights granted herein.

The Grantee, by acceptance hereof, agrees to assume all risks related to or arising from the exercise by Grantee of the rights granted herein, and does hereby release the Grantor and Grantor's successors and assigns from any and all claims, costs, causes of action and other

liabilities that arise from or are related to the use of the Easement Area by Grantee or others acting through Grantee unless caused by the gross negligence or willful misconduct of the Grantor.

The rights, benefits, obligations and burdens herein shall run with the land and shall be binding on the respective heirs, successors and assigns of Grantor and Grantee.

IN WITNESS WHEREOF, the said MILLSTONE BUILDERS, LLC has caused its corporate seal to be hereto affixed and these presents to be signed in its name and behalf:

MILLSTONE BUILDERS, LLC

By: _____ 8/27/18

Steven F. Venincasa
Its Manager, Duly Authorized

Date

COMMONWEALTH OF MASSACHUSETTS

Norfolk,SS August 27, 2018

On this 27th day of August, 2018, before me, the undersigned notary public, personally appeared Steven F. Venincasa, Manager of Millstone Builders, LLC, proved to me through satisfactory evidence of identification, which was Known to me, to be the person whose name is signed on the above document, and acknowledged to me that he signed it voluntarily as Manager as aforesaid for its stated purpose.

MARYANN C. CASSIDY
NOTARY PUBLIC
MY COMMISSION EXPIRES
03-01-2024
COMMONWEALTH OF MASSACHUSETTS

_____
Notary Public
My commission expires:

IN WITNESS WHEREOF, Millstone Builders, LLC, sole Trustee of the Millstone Village Condominium Trust hereby acknowledges and accepts responsibility for the perpetual maintenance of easement area upon the resignation of Millstone Builders, LLC as Trustee of the Condominium as set forth herein,

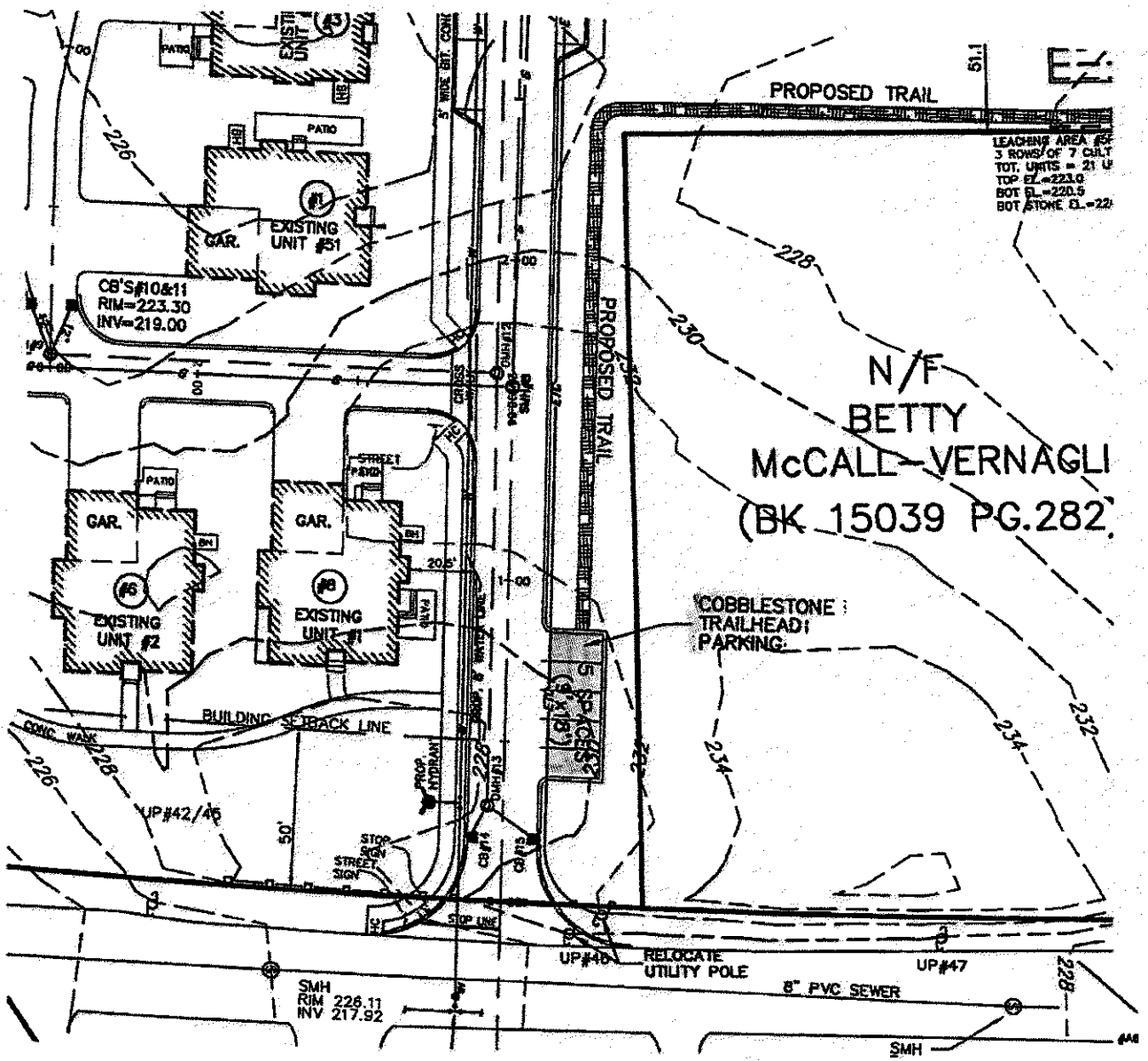
Millstone Village Condominium Trust

By: _____ 8/27/18

Steven F. Venincasa
Its Sole Trustee

Date

642487.v3/MEDW/0129


PROPOSED TRAIL
PROPOSED TRAIL
N/F
BETTY
McCALL-VERNAGLI
(BK 15039 PG.282)
COBBLESTONE
TRAILHEAD
PARKING
EXISTING UNIT #1
EXISTING UNIT #2
EXISTING UNIT #3
EXISTING UNIT #51
GAR.
PATIO
CB'S#10&11
RIM=223.30
INV=219.00
BUILDING SETBACK LINE
CONC. WALK
UP#42/45
UP#46
UP#47
RELOCATE
UTILITY POLE
8" PVC SEWER
SMH
RIM 226.11
INV 217.92
STOP SIGN
STREET SIGN
STOP LINE
PROP. HYDRANT
226
228
230
232
234

ACCEPTANCE BY THE CONSERVATION COMMISSION

We, the undersigned, being a majority of the Conservation Commission of the Town of Medway, vote to accept the foregoing Grant of Easement, as a gift, pursuant to G.L. c. 40, §8C this 13th day of September, 2018.

_____

_____

_____

_____

_____

_____

_____

COMMONWEALTH OF MASSACHUSETTS

Norfolk ss.

On this ____ day of _____, 2018, before me, the undersigned Notary Public, personally appeared _____, member of the Conservation Commission, as aforesaid, who proved to me through satisfactory evidence of identification, which was personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she/they signed it voluntarily for its stated purpose on behalf of the Town of Medway.

_____
Notary Public
My Commission Expires:

APPROVAL BY THE BOARD OF SELECTMEN

The undersigned Board of Selectmen of the Town of Medway hereby approve the acceptance of the grant of easement described above, by the Conservation Commission, as a gift, pursuant to G.L. c. 40, §8C on behalf of the Town of Medway.

Town of Medway
By its Board of Selectmen

_____ _____

_____ _____

_____

COMMONWEALTH OF MASSACHUSETTS

Norfolk ss.

On this ____ day of _____, 2018, before me, the undersigned Notary Public, personally appeared _____, member of the Board of Selectmen, as aforesaid, who proved to me through satisfactory evidence of identification, which was personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she/they signed it voluntarily for its stated purpose on behalf of the Town of Medway.

_____
Notary Public
My Commission Expires:

SUBORDINATION AGREEMENT

Cornerstone Bank (successor by merger to Southbridge Savings Bank) ("Mortgagee"), having an office at 230 Park Avenue, Worcester, MA 01609, the holder of certain mortgages from **Millstone Builders LLC**, a Massachusetts limited liability company having an address 1 Golden Court, Westborough, MA 01581, (the "Borrower"), on property located at 129R Lovering Street, Medway, Norfolk County, Massachusetts, recorded with the Norfolk County Registry of Deeds in Book 34113, Page 469, and Book 34113, Page 491, for consideration of $1.00 paid, the receipt and sufficiency of which are hereby acknowledged, hereby subordinates the lien of each of said mortgages to the Grant of Easement for vehicular access and parking (Cobblestone Trailhead Parking) between the Borrower and the Town of Medway, Massachusetts, acting by and through its Conservation Commission, recorded with said Deeds in Book _____, Page _____, and said mortgages shall be subject to the said Grant of Easement.

Executed under seal this 27th day of August, 2018.

Cornerstone Bank

By: _____
Name: James A. Sandagato
Its: Vice President

COMMONWEALTH OF MASSACHUSETTS

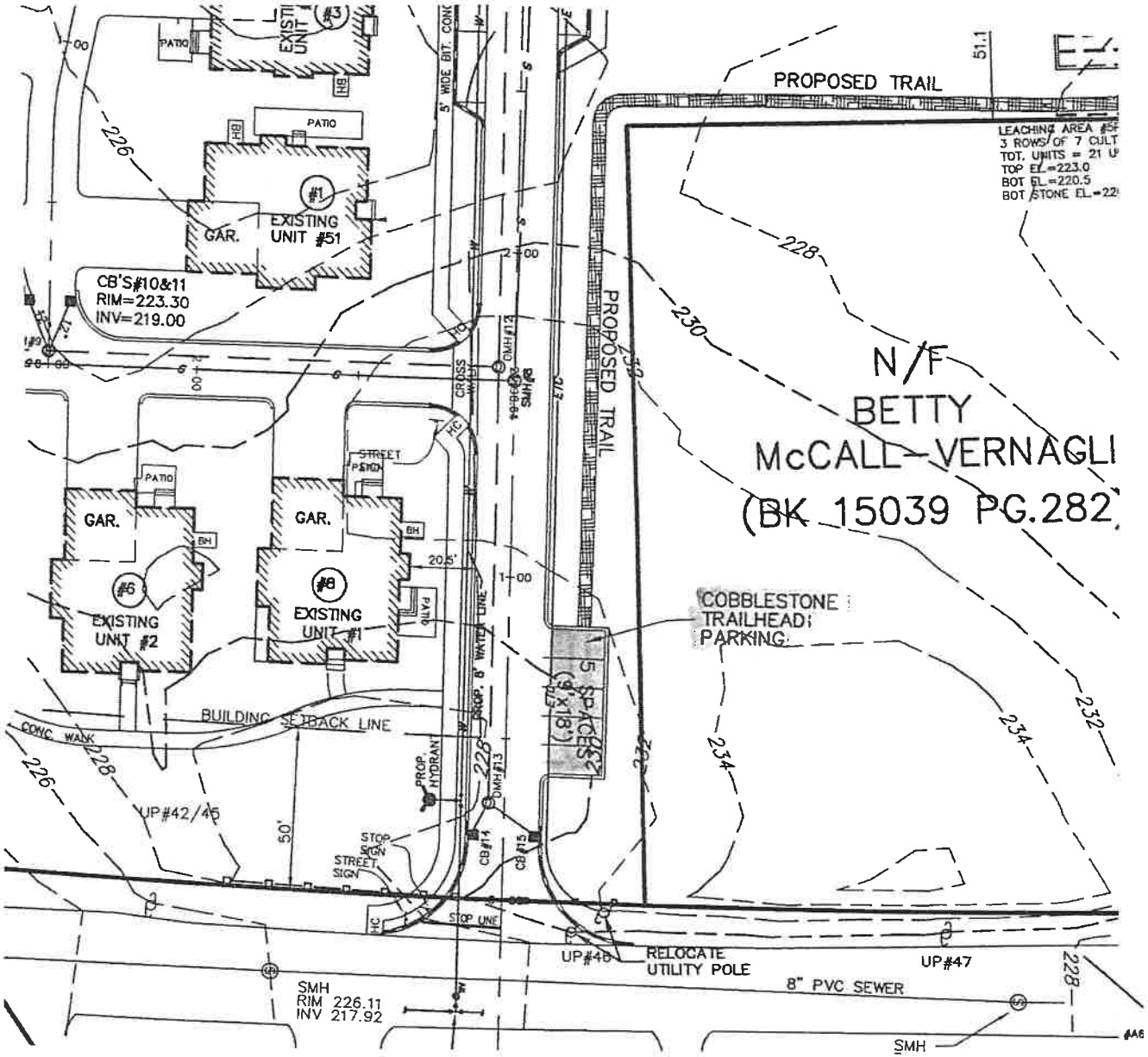
Worcester, ss.

On this 27th day of August, 2018, before me, the undersigned notary public, personally appeared the above-named James A. Sandagato, who proved to me through satisfactory evidence of identification, which was Person Known, to be the person whose name is signed above, and acknowledged to me that he/she signed it voluntarily for its stated purpose as Vice President of Cornerstone Bank.

Johanne T. Mahon
Notary Public: Johanne T. Mahon
My Commission Expires: 08/23/2024

JOHANNE T. MAHON
MY COMMISSION EXPIRES ON 08-23-2024
COMMONWEALTH OF MASSACHUSETTS
NOTARY PUBLIC

644538/MEDW/0129


PROPOSED TRAIL
LEACHING AREA #5
3 ROWS OF 7 CULT
TOT. UNITS = 21 U
TOP EL.=223.0
BOT EL.=220.5
BOT STONE EL.=22
N/F
BETTY
McCALL-VERNAGLI
(BK 15039 PG.282)
COBBLESTONE
TRAILHEAD
PARKING
15 SPACES
(9'x18')
PROPOSED TRAIL
5' WIDE BIT. CONC
PATIO
GAR.
EXISTING
UNIT #51
#1
CB'S#10&11
RIM=223.30
INV=219.00
EXISTING
UNIT #2
#6
EXISTING
UNIT #1
#8
STREET
PATIO
BUILDING SETBACK LINE
CONC. WALK
PROP. 8' WATER LINE
PROP. HYDRANT
STOP SIGN
STREET SIGN
STOP LINE
UP#42/45
UP#46
RELOCATE
UTILITY POLE
UP#47
8" PVC SEWER
SMH
RIM 226.11
INV 217.92
SMH
226
228
230
232
234
51.1

AGENDA ITEM #4

Discussion: Charter Update

No associated back up materials.

AGENDA ITEM #5

Discussion/Vote: Approval of Comcast Cable Television License

Associated back up materials attached.

- *Executive Summary*
- *License*

Proposed Motion:
I move that the Board grant the ten-year cable license to Comcast Communication Management, LLC, dated September 1, 2018, a copy of which has been reviewed and approved by the Town's Cable Advisory Committee and by the Town's Cable Counsel.

KP | LAW
The Leader in Public Sector Law

101 Arch Street, Boston, MA 02110
Tel: 617.556.0007 | Fax: 617.654.1735
www.k-plaw.com

William Hewig III
whewig@k-plaw.com

September 13, 2018

BY FACSIMILE - (508) 533-3287
BY ELECTRONIC MAIL (bos@townofmedway.org)
AND FIRST CLASS MAIL

Hon. Dennis Crowley and
Members of the Board of Selectmen
Medway Town Hall
155 Village Street
Medway, MA 02053

Re: Executive Summary of Proposed Comcast Cable Television Renewal License

Dear Members of the Board of Selectmen:

This letter is intended to give you an executive summary of the terms of the final cable television renewal license which is being proposed by Comcast. This proposed license is the product of our recent negotiations with Comcast.

(a) Term (Sec. 2.2):

The proposed term is ten (10) years from September 1, 2018, to expire on August 31, 2028. This is the maximum term available for a renewal license under state law (M.G.L. c.166A, §13). The May 15, 2017 Verizon License had a seven (7) year term, at Verizon's insistence (Sec. 2.3)

(b) Level Playing Field (Sec. 2.6 (a) – (g)):

Level playing field provisions are standard provisions recognized in contract law, and upheld by courts of law. In the cable television licensing context, they typically provide that if the selectmen issue a license to another cable operator, that additional license must contain approximately equivalent economic burdens and benefits. The level playing field provisions proposed by Comcast in this renewal license have become standard in the industry and were reviewed and revised by me, and in their present wording are acceptable as to legal form. A provision that would have extended level playing field principles to cover non-licensed cable providers in the future was deleted at our insistence. The Verizon license had a similar provision (Sec. 2.4).

(c) Service Area (Sec. 3.1 (a)):

The service area will be all residential dwellings within the Town, located within 200 feet of Comcast's distribution plant, and where there is a minimum density of at least thirty (30) homes per aerial mile and sixty (60) per underground mile. These are good provisions for a smaller and more

rural community. The Verizon license varied slightly: 250 foot set back but density of only thirty (30) homes aerial and forty (40) underground. (Sec. 3.1.40 and 3.9).

(d) Free Subscriber Drops (Sec. 3.3:

Comcast will continue to provide free cable drops and free basic subscriber service to Medway municipal and school buildings (Exhibit A).

(e) Video Origination Sites (Sec. 6.3):

Live video origination capability will be maintained from Medway High School, 88 Summer Street, Medway, MA Town Hall.

(f) PEG Access Provider (Sec. 6.2):

The selectmen will identify a PEG Access Provider to provide PEG Access services for the Town.

(g) Protections for the Town/Public Rights:

(i) System Maintenance (Sec. 4.1(b)): The construction, maintenance, operation and repair of the cable system will at all times conform to OSHA, National Electric Safety Code, Massachusetts Electrical Code, and FCC Regulations.

(ii) Signal Quality (Sec. 4.1 (e)): Signal quality will at all time comply with FCC regulations.

(iii) Plant Maps (Sec. 4.5): Comcast will maintain a complete set of plant maps and make them available to the Selectmen in town upon written request.

(iv) Dig Safe (Sec. 4.7): Comcast will comply with all applicable Dig Safe provisions under state law.

(v) Indemnification (Sec. 9.1): Comcast will indemnify the Town for all claims or suits arising as a result of Comcast's operation of the cable system pursuant to the license.

(vii) Insurance (Section 9.2(a)-(d)): Comcast will provide insurance as follows: comprehensive general liability - $1 Million/$5 Million; automobile liability - $1 Million; and worker's comp. Comcast will provide the selectmen with certificates of insurance for all required policies.

(viii) Performance Bond (Sec. 9.3): Comcast will provide a bond in the amount of $25,000 to guarantee satisfactory construction, installation, operation and, if necessary, the removal of the cable system, and the restoration of pavements and roads, and indemnity to the Town.

(ix) License Fees (Sec. 9.4 (a)): Comcast will pay the standard $.50 per subscriber license fee to the Town on an annual basis. Under state law and Cable Division rulings, this money may be used for any public purpose.

(h) Subscriber Rights and Consumer Protection:

(i) FCC Customer Service Regulations (Sec. 7.1): Comcast will comply with all FCC Customer service regulations, and the Massachusetts Business Practice Standards, regarding telephone response time, repairs, and initial installation of service.

(ii) Consumer Complaint Procedures (Sec. 7.2): Comcast will forward to the Town and to the state Cable Division copies of any complaints it receives. Comcast will also provide the Town with its annual complaint report.

(iii) Protection of Subscriber Privacy (Sec. 7.3): Comcast will provide the protections of subscriber privacy required by the federal Cable Act.

(i) PEG Access Support:

(i) PEG Access Channels (Sec. 6.1 (b): Comcast will continue to provide three (3) channels for the Town's PEG Access Programming.

(ii) Annual Operating Support (Sec. 6.4): Comcast will make an annual grant of four and one-half percent (4.5%) of its Gross Annual Revenues from the effective date through to the license term. The Verizon license provides for an annual grant of 5% GAR (Sec. 5.2.4), and that can be expected to be reduced to match Comcast's 4.5%.

(iii) PEG Access Capital Contribution: Comcast will pay on an annual basis, no later than June 1 of each year, equipment and facilities (capital) funding in the amount of seventy-four cents ($.74), per subscriber per month, for the duration of the license. This is identical to the grant in the Verizon License (Sec. 5.2.1).

(j) License Enforcement (Sec. 9.8 and 9.10):

(i) Public Hearing And Liquidated Damages: If the Issuing Authority believes that Comcast is in default, it will first notify Comcast in writing by certified mail, and if Comcast has not satisfactorily responded within thirty (30) days, the Issuing Authority may then call a public hearing (Section 9.8(c)). If, following the hearing, the Issuing Authority determine that a material breach in the license has occurred, it may exercise the options listed in Section 9, including seeking injunctive relief, a contract claim at law, license revocation, or the imposition of liquidated damages for certain specified breaches.

Conclusion

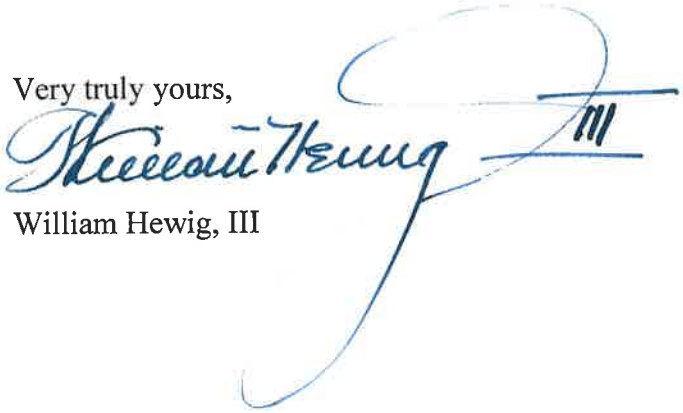
I have reviewed the September 2018 Comcast proposed renewal license, and I find that it is consistent with the substantive terms as negotiated by and agreed to between Comcast and your cable negotiators, and that they are acceptable as to legal form. Accordingly, I recommend the Comcast renewal license for acceptance by the Selectmen, with the following vote:

> MOVED THAT THE TOWN OF MEDWAY BOARD OF SELECTMEN GRANT THE TEN-YEAR CABLE LICENSE TO COMCAST COMMUNICATION MANAGEMENT, LLC, DATED SEPTEMBER 1, 2018, A COPY OF WHICH HAS BEEN REVIEWED AND APPROVED BY THE TOWN'S CABLE ADVISORY COMMITTEE AND BY THE TOWN'S CABLE COUNSEL.

Finally, I recommend that you send a copy of this renewal license to Verizon upon its execution.

I trust that this will be of assistance to you at the present time. If you have any further questions regarding the Comcast license, please do not hesitate to contact me. Thank you for the opportunity to be of service to the Town.

Very truly yours,



William Hewig, III

WH/caa
cc: Town Administrator

645787/ESEX/0070

D R A F T

RENEWAL

CABLE TELEVISION LICENSE

FOR

THE TOWN OF MEDWAY, MASSACHUSETTS

This Draft Renewal License is being submitted under the informal process pursuant to 47 USC 546 (h)

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EXHIBIT C VIDEO ORIGINATION LOCATIONS ..... ERROR! BOOKMARK NOT DEFINED.

MEDWAY CABLE RENEWAL LICENSE

INTRODUCTION

WHEREAS, Comcast Cable Communications Management, LLC, (hereinafter "Licensee"), is the duly authorized holder of a renewal license to operate a cable television system in the Town of Medway, Massachusetts (hereinafter the "Town"), said license having commenced on September 4, 2007;

WHEREAS, Licensee filed a written request for a renewal of its license by letter dated November 16, 2015 in conformity with the Cable Communications Policy Act of 1984 ("Cable Act") and filed a renewal proposal dated September 12, 2017;

WHEREAS, there has been an opportunity for public comment, as required by Section 626(h) of the Cable Act;

WHEREAS, the Issuing Authority has determined that the financial, legal, and technical ability of Licensee is reasonably sufficient to provide services, facilities, and equipment necessary to meet the future cable-related needs of the community, and desires to enter into this Renewal License with Licensee for the construction and continued operation of a cable system on the terms and conditions set forth herein; and

WHEREAS, the Town's Board of Selectmen, as the Issuing Authority, finds that Licensee has complied with the terms of its previous license.

NOW THEREFORE, after due and full consideration, the Issuing Authority and Licensee agree that this Renewal License is issued upon the following terms and conditions:

ARTICLE 1

DEFINITIONS

SECTION 1.1_DEFINITIONS

For the purpose of this Renewal License, capitalized terms, phrases, words, and abbreviations shall have the meanings ascribed to them in the Cable Communications Policy Act of 1984, as amended from time to time, 47 U.S.C. §§ 521 et seq. (the "Cable Act"), and Massachusetts General Laws Chapter 166A (M.G.L. c.166A), as amended from time to time, unless otherwise defined herein.

(a) Access Provider – shall mean the person, group or entity, for non-profit, designated by the Issuing Authority for the purpose of operating and managing the use of Public, Educational and Governmental Access funding, equipment and channels on the cable television system in accordance with this Renewal License and 47 U.S.C. 531.

(b) Basic Cable Service – shall mean the lowest tier of service which includes the retransmission of local television broadcast signals.

(c) Cable Act – shall mean the Cable Communications Policy Act of 1984, Public Law No. 98-549, 98 Stat. 2779 (1984), 47 U.S.C. 521 et. seq., amending the Communications Act of 1934, as further amended by the 1992 Cable Consumer Protection and Competition Act, Public Law No. 102-385 and the Telecommunications Act of 1996, Public Law No. 104-458, 110 Stat. 56 (1996) and as may be further amended.

(d) Cable Division – shall mean the Competition Division of the Massachusetts Department of Telecommunications and Cable established pursuant to Massachusetts General Laws Chapter 166A (M.G.L. Chapter 166A) or its successor

(e) Cable Service – shall mean the one-way transmission to subscribers of (i) video programming, or (ii) other programming service, and subscriber interaction, if any, which is required for the selection or use of such video programming or other programming service.

(f) Cable Television System or Cable System – shall mean the facility owned, constructed, installed, operated and maintained by Licensee in the Town of Medway, consisting of a set of closed transmission paths and associated signal generation, reception, and control equipment that is designated to provide cable service which includes video programming and which is provided to multiple subscribers within a community, but such term does not include (a) a facility that serves only to retransmit the television signals of one or more television broadcast stations; (b) a facility that serves subscribers without using any public right-of-way; (c) a facility of a common carrier which is subject, in whole or in part, to the provisions of Title II of the Cable Act, except that such facility shall be considered a cable system (other than for purposes of section 621(c) of the Cable Act) to the extent such facility is used in the transmission of video programming directly to subscribers unless the extent of such use is solely to provide interactive on-demand services; or (d) an open video system that complies with section 653 of this title, or (e) any facilities of any electric utility used solely for operating its electric utility systems.

(g) Drop – shall mean the coaxial cable that connects a home or building to the Subscriber Network or Institutional Network/Video Return Line.

(h) Effective Date – shall mean September 1, 2018.

(i) FCC – shall mean the Federal Communications Commission or any successor governmental entity.

(j) Franchise Fee – shall mean the payments to be made by Licensee to the Issuing Authority, the Town of Medway and or any other governmental subdivision, such as an Access Provider, which shall have the meaning as set forth in Section 622(g) of the Cable Act.

(k) Gross Annual Revenues – means all revenues derived by the Licensee and/or its Affiliates, calculated in accordance with Generally Accepted Accounting Principles ("GAAP"), from the operation of the Cable Television System for the provision of Cable Service(s) over the Cable Television System including, without limitation: the distribution of any Service over the Cable System; Basic Service monthly fees and all other Service fees; any and all Cable Service fees and/or charges received from Subscribers; installation, reconnection, downgrade, upgrade and any similar

fees; all digital Cable Service revenues; interest collected on Subscriber fees and/or charges; all Commercial Subscriber revenues; all Pay Cable, Pay-Per-View revenues; any other services now or in the future deemed to be lawful for purposes of computing Gross Annual Revenues by a court or forum of appropriate jurisdiction; video-on-demand Cable Services; fees paid for channels designated for commercial use; home shopping revenues; advertising revenues; Converter, remote control and other cable-related equipment rentals and/or leases and/or sales. Gross Annual Revenues shall also include the gross revenue of any other Person which is received directly or indirectly from or in connection with the operation of the Cable System to the extent that said revenue is received, through a means which has the effect of avoiding payment of License Fees to the Town that would otherwise be paid herein. It is the intention of the parties hereto that Gross Annual Revenues shall only include such revenue of such Affiliates and/or Persons relating to Signal carriage over the Cable System and not the gross revenues of any such Affiliate(s) and/or Person(s) itself, where unrelated to such Signal carriage. Gross Annual Revenues shall not include actual bad debt that is written off, consistent with GAAP; provided, however, that all or any part of any such actual bad debt that is written off, but subsequently collected, shall be included in Gross Annual Revenues in the period so collected. (l) Issuing Authority – shall mean the Board of Selectmen of the Town of Medway, Massachusetts, or the lawful designee thereof.

(m) Licensee – shall mean Comcast Cable Communications Management, LLC, or any successor or transferee in accordance with the terms and conditions in this Renewal License.

(n) License Fee – shall mean the payments to be made by Licensee to the Issuing Authority, the Town of Medway and or any other governmental subdivision, which shall have the meaning as set forth in M.G.L. c. 166A, § 9.

(o) Modulator – shall mean CATV modulator or equivalent device used for video signal transport.

(p) Multichannel Video Programming Distributor – shall mean a person such as, but not limited to, a cable operator, a multichannel multipoint distribution service, a direct broadcast

satellite service, or a television receive-only satellite program distributor, who makes available for purchase, by subscribers or customers, multiple channels of video programming.

(q) Outlet – shall mean an interior receptacle that connects a television set to the Cable Television System.

(r) PEG Access User – shall mean a Person utilizing the Cable Television System, including all related facilities for purposes of production and/or transmission of PEG Access Programming as opposed to utilization solely as a Subscriber.

(s) Person – shall mean any natural person or any association, firm, partnership, joint venture, corporation, or other legally recognized entity, whether for-profit or not-for profit, but shall not mean the Issuing Authority.

(t) Public Access Channel – shall mean a video channel designed for non-commercial use by the public on a first-come, first-served, non-discriminatory basis.

(u) Public, Educational and Government (PEG) Access Programming – shall mean non-commercial programming produced by any Medway residents or organizations, schools and government entities and the use of designated facilities, equipment and/or channels of the Cable System in accordance with 47 U.S.C. 531 and this Renewal License.

(v) Public Buildings – shall mean those buildings owned or leased by the Issuing Authority for municipal government administrative purposes, and shall not include buildings owned by Issuing Authority but leased to third parties or buildings such as storage facilities at which government employees are not regularly stationed.

(w) Public Way – shall mean the surface of, and the space above and below, any public street, highway, freeway, bridge, land path, alley, court, boulevard, sidewalk, way, lane, public way, drive, circle or other public right-of-way, including, but not limited to, public utility easements, dedicated utility strips, or rights-of-way dedicated for compatible uses and any temporary or permanent fixtures or improvements located thereon now or hereafter held by the Issuing Authority in the Town of Medway, which shall entitle Licensee to the use thereof for the purpose of installing, operating, repairing, and maintaining the Cable System. Public Way shall also

mean any easement now or hereafter held by the Issuing Authority within the Town of Medway for the purpose of public travel, or for utility or public service use dedicated for compatible uses, and shall include other easements or rights-of-way as shall within their proper use and meaning entitle Licensee to the use thereof for the purposes of installing, operating, and maintaining Licensee's Cable System over poles, wires, cables, conductors, ducts, conduits, vaults, manholes, amplifiers, appliances, attachments, and other property as may be ordinarily necessary and pertinent to the Cable System.

(x) Renewal License or License – shall mean this Agreement and any amendments or modifications in accordance with the terms herein.

(y) Signal – shall mean any transmission which carries Programming from one location to another.

(z) Standard Installation – shall mean the standard one hundred twenty-five foot (125') aerial Drop connection to the existing distribution system.

(aa) Subscriber – shall mean a Person or user of the Cable System who lawfully receives Cable Service with Licensee's express permission.

(ab) Subscriber Network – shall mean the trunk and feeder signal distribution network over which video and audio signals are transmitted to Subscribers.

(ac) Town – shall mean the Town of Medway, Massachusetts.

(ad) Trunk and Distribution System – shall mean that portion of the Cable System for the delivery of Signals, but not including Drop Cable(s) to Subscriber's residences.

(ae) Video Programming or Programming – shall mean the programming provided by, or generally considered comparable to programming provided by, a television broadcast station.

ARTICLE 2

GRANT OF RENEWAL LICENSE

SECTION 2.1_GRANT OF RENEWAL LICENSE

(a) Pursuant to the authority of M.G.L. c. 166A, and the Cable Act the Issuing Authority hereby grants a non-exclusive Renewal License to Comcast Cable Communications Management, LLC, a Delaware Corporation, authorizing and permitting Licensee to construct, operate and maintain a Cable Television System in the Public Way within the municipal limits of the Town of Medway. Nothing in this License shall be construed to prohibit Licensee from offering any service over its Cable System that is not prohibited by federal or state law.

(b) This Renewal License is granted under and in compliance with the Cable Act and M.G.L. c. 166A, and in compliance with all rules and regulations of the FCC and the Cable Division in force and effect during the period for which this Renewal License is granted.

(c) Subject to the terms and conditions herein, the Issuing Authority hereby grants to Licensee the right to construct, upgrade, install, operate and maintain a Cable Television System within the Public Way.

SECTION 2.2_TERM: NON-EXCLUSIVITY [SEE M.G.L. c. 166A §3(d) and 13]

The term of this non-exclusive Renewal License shall be for a period of ten (10) years and shall commence on September 1, 2018, following the expiration of the current license, and shall expire at midnight on August 31, 2028.

SECTION 2.3_POLE AND CONDUIT ATTACHMENT RIGHTS [SEE M.G.L. c. 166 §22-25]

Pursuant to M.G.L. c. 166, §§22-25, permission is hereby granted to Licensee to attach or otherwise affix including, but not limited to cables, wire, or optical fibers comprising the Cable Television System to the existing poles and conduits on and under public streets and ways,

provided Licensee secures the permission and consent of the public utility companies to affix the cables and/or wires to their pole and conduit facilities. By virtue of this License the Issuing Authority grants Licensee equal standing with power and telephone utilities in the manner of placement of facilities on Public Ways.

SECTION 2.4_RENEWAL [SEE M.G.L. c. 166A §13]

(a) In accordance with the provisions of federal law, M.G.L. c. 166A, § 13 and applicable regulations, this Renewal License shall be subject to additional renewals for the periods not to exceed ten (10) years or such other periods as allowed by law.

(b) In accordance with applicable law, any such renewal or renewals shall be upon mutual written agreement by Licensee and the Issuing Authority and shall contain such modified or additional terms as Licensee and the Issuing Authority may then agree.

SECTION 2.5_RESERVATION OF AUTHORITY

Nothing in this Renewal License shall (A) abrogate the right of the Issuing Authority to perform any public works or public improvements of any description, (B) be construed as a waiver of any codes or bylaws/ordinances of general applicability and not specific to the Cable Television System, Licensee, or this License, or (C) be construed as a waiver or release of the rights of the Issuing Authority in and to the Public Ways. Any conflict between the terms of this Renewal License and any present or future exercise of the municipality's police and regulatory powers shall be resolved by a court of appropriate jurisdiction.

SECTION 2.6_NON-EXCLUSIVITY OF LICENSE

(a) Licensee acknowledges and agrees that the Issuing Authority reserves the right to grant one or more additional licenses to other Cable Service providers within the Town for the right to use and occupy the Public Ways or streets within the Issuing Authorities jurisdiction. If any

such additional or competitive license is granted by the Issuing Authorities which, in the reasonable opinion of Licensee, contains more financially favorable or less burdensome terms or conditions than this Renewal License, including, but not limited to: franchise fees; payment schedules, insurance; system build-out requirements; performance bonds or similar instruments; public, education and government access channels and support; customer service standards; required reports and related record keeping; and notice and opportunity to cure breaches; the Issuing Authority agrees that it shall amend this Renewal License to include any more favorable or less burdensome terms or conditions.

(b) In the event an application for a new cable television license is filed with the Issuing Authority, proposing to serve the Town, in whole or in part, the Issuing Authority shall serve a copy of such application upon any existing Licensee or incumbent cable operator by registered or certified mail or via nationally recognized overnight courier service within a reasonable time thereafter.

(c) To the extent allowed by applicable law(s), the grant of any additional cable television license(s) shall be on equivalent terms and conditions as those contained in this Renewal License.

(d) The issuance of additional license(s) shall be subject to all applicable federal and state laws, including M.G.L. c. 166A and applicable regulations promulgated thereunder.

(e) In the event that Licensee believes that any additional license(s) has been granted on terms or conditions more favorable or less burdensome than those contained in this Renewal License, the Issuing Authority shall convene a public hearing on such issue, within not more than thirty (30) days of receipt of a hearing request from Licensee. Along with said written request, Licensee shall provide the Issuing Authority with written reasons for its belief. At the public hearing, the Issuing Authority shall afford Licensee an opportunity to demonstrate that any such additional license(s) are on terms more favorable or less burdensome than those contained in this Renewal License. Licensee shall provide the Issuing Authority with such financial or other relevant information as is requested.

(f) Should Licensee demonstrate that any such additional license(s) have been granted on terms and conditions more favorable or less burdensome than those contained in this Renewal License, the Issuing Authority shall make equitable amendments to this Renewal License within a reasonable time.

(g) In the event that Licensee demonstrates that an existing or future Cable Service provider in the Town has been provided relief by the Issuing Authority from any obligation of its license, then Licensee shall be awarded an equivalent amount of relief from obligations herein. Such relief shall be in writing and in the form of an amendment to this License. The Issuing Authority shall convene a public hearing on the issue within sixty (60) days of Licensee's notification to the Issuing Authority requiring such relief, unless otherwise mutually agreed to. License shall provide reasons for its belief in the notification. At the public hearing, the Issuing Authority shall afford Licensee an opportunity to demonstrate that any existing or future service providers in the Town have been provided relief by the Issuing Authority from any obligation of its cable television license. Licensee shall provide the Issuing Authority with such financial or other relevant information as is requested to justify its belief; provided, however, that the parties' counsels mutually and reasonably deem said information is non-proprietary.

ARTICLE 3

SYSTEM SPECIFICATIONS AND CONSTRUCTION

SECTION 3.1_AREA TO BE SERVED [SEE M.G.L. c. 166A §3(a)]

(a) Licensee shall make Cable Service available to every residential dwelling unit within the Town where the minimum density is at least thirty (30) dwelling units per aerial mile and sixty (60) dwelling units per underground mile providing however, that any plant extension is measured from the existing Trunk and Distribution System and Licensee is able to obtain from property owners any necessary easements and/or permits in accordance with Cable Act. Licensee shall make service available to multiple dwelling units (MDU) where economically feasible and providing that Licensee is able to obtain from the property owners any necessary easements, permits and agreements to provide service to said MDU. Subject to the density requirement, Licensee shall offer Cable Service to all new homes or previously unserved homes located within one hundred twenty-five feet (125') of Licensee's Distribution Cable. For non-Standard Installations Licensee shall offer said service within ninety (90) days of a Subscriber requesting such for aerial installations and one hundred eighty (180) days, weather permitting, of a Subscriber requesting such for underground installations. With respect to areas of the Town which are currently served by Licensee from a contiguous cable television system or currently unserved but could be served by abutting Town(s) served by Licensee, Licensee shall have the option to serve such areas from its cable television system in such abutting Town.

(b) Installation costs shall conform with the Cable Act. Any dwelling unit within an aerial one hundred twenty-five feet (125 ft.) of the Trunk and Distribution Cable shall be entitled to a Standard Installation rate in accordance with applicable federal and state laws. Underground installs are considered non-standard installations. All non-standard installations shall be provided at a rate established by the Licensee in accordance with applicable federal and state laws.

(c) Provided Licensee has at least ninety (90) days' prior written notice concerning the opening of residential subdivision trenching, or of the installation of conduit for the location of utilities, it shall install its cable in such trenching or conduits or may seek permission to utilize alternative trenching or conduits within a comparable time frame. If a substantial quantity of cable is required for a large subdivision and said quantity is not in stock, Licensee shall be allowed additional time for said installation. The Issuing Authority, or its designee, shall exercise reasonable efforts to have the Planning Board and developers give timely written notice of trenching and underground construction to Licensee. Developer shall be responsible for the digging and back-filling of all trenches.

SECTION 3.2_SUBSCRIBER NETWORK

Licensee shall maintain a Cable Television System, fully capable of carrying a minimum bandwidth of 750MHz.

SECTION 3.3_SUBSCRIBER NETWORK CABLE DROPS [SEE M.G.L. c. 166A §5(e)]]

(a) Licensee shall continue to provide a single Cable Drop, an Outlet and monthly Basic Cable Service, at no charge to the Town /City, to each Public Building located along the existing cable route as of the Effective Date, as designated by the Issuing Authority within the Town, listed in **Exhibit A** attached hereto, provided such are considered to be a Standard Installation and absent any other unusual installation conditions and/or installation requirements.

(b) Upon written request by the Issuing Authority, Licensee shall provide one (1) Standard Installation Drop, Outlet and Basic Cable Service at no charge to any new Public Buildings and other Town owned Public Buildings, along the Trunk and Distribution Cable subject to the limitations set forth above. The Issuing Authority or its designee shall consult with a representative of Licensee to determine the appropriate location for each of such Public Building's respective Outlet prior to requesting that Licensee install service at no charge.

(c) Nothing in this Section shall require Licensee to move existing or install additional Drops or Outlets at no charge to those buildings included in **Exhibit A**, or to move existing or install additional Drops or Outlets to buildings already installed pursuant to subsection (b) above.

(d) It is understood that Licensee shall not be responsible for any internal wiring of such Public Buildings.

SECTION 3.4_PARENTAL CONTROL CAPABILITY

(a) Pursuant to applicable law, upon request, and at no separate, additional charge, Licensee shall provide Subscribers with the capability to control the reception of any channel on the Cable System.

(b) The Issuing Authority acknowledges that the parental control capability may be part of a converter box and Licensee may charge Subscriber for use of said box.

SECTION 3.5_EMERGENCY ALERT OVERRIDE CAPACITY

Licensee shall comply with the FCC's Emergency Alert System ("EAS") regulations.

ARTICLE 4

TECHNOLOGICAL AND SAFETY STANDARDS

SECTION 4.1_SYSTEM MAINTENANCE [SEE M.G.L. c. 166A §5]

(a) In installing, operating and maintaining equipment, cable and wires, Licensee shall avoid damage and injury to trees, structures and improvements in and along the routes authorized by the Issuing Authority, except as may be approved by the Issuing Authority if required for the proper installation, operation and maintenance of such equipment, cable and wires.

(b) The construction, maintenance and operation of the Cable Television System for which this Renewal License is granted shall be done in conformance with all applicable laws, bylaws/ordinances of general applicability, codes and regulations, including but not limited to OSHA, the National Electrical Safety Code, and the rules and regulations of the FCC as the same exist or as same may be hereafter changed or amended.

(c) Operating and maintenance personnel shall be trained in the use of all safety equipment and the safe operation of vehicles and equipment. Licensee shall install and maintain its equipment, cable and wires in such a manner as shall not interfere with any installations of the Town or any public utility serving the Town.

(d) All structures and all equipment, cable and wires in, over, under, and upon streets, sidewalks, alleys, and public rights of ways of the Town, wherever situated or located shall at all times be kept and maintained in a safe and suitable condition and in good order and repair.

(e) The signal of any Broadcast station carried on the Cable Television System shall be carried without material degradation in quality at all subscribing locations within the limits imposed by the technical specifications of the Cable System and as set forth by the FCC. The Cable System shall be operated and maintained so as to comply with the technical standards set forth in the FCC's rules and regulations as they apply to cable television systems.

(f) Upon written notice from the Issuing Authority, Licensee shall remedy a general deficiency with respect to the technical standards described herein within three (3) months of receipt of notice and a safety deficiency within forty-eight (48) hours of receipt of notice and shall notify the Issuing Authority when the deficiency has been corrected.

SECTION 4.2_REPAIRS AND RESTORATION [SEE M.G.L. c. 166A §5(g)]

Whenever Licensee takes up or disturbs any pavement, sidewalk or other improvement of any public right of way or public place, the same shall be replaced and the surface restored in as good condition as possible as before entry as soon as practicable. If Licensee fails to make such restoration within a reasonable time, the Issuing Authority may fix a reasonable time for such restoration and repairs, and shall notify Licensee in writing of the restoration and repairs required and the time fixed for the performance thereof. Upon failure of Licensee to comply within the time specified, the Issuing Authority may cause proper restoration and repairs to be made and the expense of such work shall be paid by Licensee upon written demand by the Issuing Authority. However, prior to such repair or restoration the Town should submit a written estimate to Licensee of the actual cost of said repair or restoration.

SECTION 4.3_CABLE LOCATION

(a) In all areas of the Town where all of the transmission and distribution facilities of all public or municipal utilities are installed underground, Licensee shall install its Cable System underground provided that such facilities are actually capable of receiving the Licensee's cable and other equipment without technical degradation of the Cable System's signal quality.

(b) In all areas of the Town where public utility lines are aerially placed, if subsequently during the term of the Renewal License such public utility lines are required by local ordinance or State law to be relocated aerially or underground, Licensee shall similarly relocate its Cable System if it is given reasonable notice and access to the public and municipal utilities facilities at the time

that such are placed underground. Any costs incurred by Licensee for relocating utility poles or trenching for the placement of underground conduits shall be entitled to reimbursement of such relocation costs in the event public or private funds are raised for the project and made available to other users of the Public Way.

(c) Provided Licensee has at least ninety (90) days' prior written notice concerning the opening of residential subdivision trenching, or of the installation of conduit for the location of utilities, it shall install its cable in such trenching or conduits or may seek permission to utilize alternative trenching or conduits within a comparable time frame. If a substantial quantity of cable is required for a large subdivision and said quantity is not in stock, Licensee shall be allowed additional time for said installation. The Issuing Authority, or its designee, shall exercise reasonable efforts to have the Planning Board and developers give timely written notice of trenching and underground construction to Licensee. Developer shall be responsible for the digging and back-filling of all trenches.

(d) Nothing in this Section shall be construed to require Licensee to construct, operate, or maintain underground any ground-mounted appurtenances such as customer taps, line extenders, system passive devices, amplifiers, power supplies, pedestals, or other related equipment.

SECTION 4.4_TREE TRIMMING [SEE M.G.L. c. 166A §5(a)]

In installing, operating, and maintaining equipment, cable and wires, Licensee shall avoid all unnecessary damage and injuries to trees, structures, and improvements in and along the routes authorized by the Issuing Authority.

SECTION 4.5_PLANT MAPS

Licensee shall maintain a complete set of plant maps of the Town, which will show those areas in which its facilities exist. The plant maps will be retained at Licensee's primary place of

business and will be available to the Issuing Authority for inspection by the Issuing Authority upon written request.

SECTION 4.6_BUILDING MOVES [SEE M.G.L. c. 166 §39]

(a) In accordance with applicable laws, Licensee shall, upon the written request of any Person holding a building moving permit issued by the Town, temporarily raise or lower its wires to permit the moving of the building(s). Licensee shall be given not less than thirty (30) days' advance written notice to arrange for such temporary wire changes. The cost to raise or lower wires shall be borne by the Person(s) holding the building move permit.

(b) Licensee shall have the right to seek reimbursement under any applicable insurance or government program for reimbursement.

SECTION 4.7_DIG SAFE [SEE M.G.L. c. 82 §40]

Licensee shall comply with all applicable "dig safe" provisions pursuant to M.G.L. c. 82, § 40.

SECTION 4.8_DISCONNECTION AND RELOCATION [SEE M.G.L. c. 166 §39]

(a) Licensee shall, at its sole cost and expense, protect, support, temporarily disconnect, relocate in the same street, or other Public Right of Ways, or remove from any street or any other Public Ways and places, any of its property as required by the Issuing Authority or its designee by reason of traffic conditions, public safety, street construction, change or establishment of street grade, or the construction of any public improvement or structure by any Town department acting in a governmental capacity.

(b) In requiring Licensee to protect, support, temporarily disconnect, relocate or remove any portion of its property, the Issuing Authority shall treat Licensee the same as, and require no more of Licensee, than any other similarly situated utility.

(c) In either case, Licensee shall have the right to seek reimbursement under any applicable insurance or government program for reimbursement.

SECTION 4.9_EMERGENCY REMOVAL OF PLANT

(a) If, at any time, in case of fire or disaster in the Town, it shall be necessary in the reasonable judgment of the Issuing Authority to cut or move any of the wires, cable or equipment of the Cable Television System, the Town shall have the right to do so without cost or liability, provided however that, wherever possible, the Issuing Authority gives Licensee written notice and the ability to relocate wires, cable or other equipment.

(b) In either case, Licensee shall have the right to seek reimbursement under any applicable insurance or government program for reimbursement. All cable operators or public or municipal utility companies shall be treated alike if reimbursed for such costs by the Town.

SECTION 4.10_PROHIBITION AGAINST RESELLING OF SERVICE

No Person shall resell, without the express prior written consent of Licensee, any Cable Service, program or signal transmitted over the Cable System by Licensee.

ARTICLE 5

PROGRAMMING

SECTION 5.1_BASIC CABLE SERVICE

Licensee shall make available a Basic Cable Service tier to all subscribers in accordance with 47 U.S.C. 534.

SECTION 5.2_PROGRAMMING

(a) Pursuant to 47 U.S.C. 544, Licensee shall maintain the mix, quality and broad categories of Video Programming as set forth in **Exhibit B**. Pursuant to federal law, all Video Programming decisions, excluding PEG Access Programming, are at the sole discretion of Licensee.

(b) Licensee shall comply with 76.1603(c) of the FCC Rules and Regulations as well as 207 CMR 10.02 of the Massachusetts Cable Television Division Rules and Regulations regarding notice of programming changes.

SECTION 5.3_REMOTE CONTROLS

Licensee shall allow Subscribers to purchase remote control devices which are compatible with the converter installed by Licensee, if any, and allow the use of remotes. Licensee takes no responsibility for changes in its equipment or services that might render inoperable the remote control devices acquired by Subscribers.

SECTION 5.4_STEREO TV TRANSMISSIONS

All Broadcast Signals that are transmitted to Licensee's headend in stereo shall be transmitted in stereo to Subscribers.

SECTION 5.5_CABLE CHANNELS FOR COMMERCIAL USE

Pursuant to 47 U.S.C. 532, Licensee shall make available channel capacity for commercial use by persons unaffiliated with Licensee. Rates for use of commercial access channels shall be negotiated between Licensee and the commercial user in accordance with federal law.

ARTICLE 6

PEG ACCESS CHANNEL(S) AND SUPPORT

SECTION 6.1_PEG ACCESS CHANNEL(S)

(a) Use of channel capacity for Public, Educational and Governmental ("PEG") Access shall be provided in accordance with federal law, 47 U.S.C. 531, and as further set forth below. Licensee does not relinquish its ownership of or ultimate right of control over a channel by designating it for PEG use. A PEG Access User – whether an individual, educational or governmental user – acquires no property or other interest by virtue of the use of a channel so designated, and may not rely on the continued use of a particular channel number, no matter how long the same channel may have been designated for such use. Licensee shall not exercise editorial control over any public, educational, or governmental use of channel capacity, except Licensee may refuse to transmit any public access program or portion of a public access program that contains obscenity, indecency, or nudity pursuant to Section 611 of the Cable Act. The Issuing Authority shall be responsible for developing, implementing, interpreting and enforcing rules for PEG Access Channel use which shall ensure that PEG Access Channel(s) and PEG Access equipment will be available on a first-come non-discriminatory basis.

(b) Licensee shall designate capacity on three (3) channel(s) for a Public, Educational, and Governmental (PEG) Access Channel to be used for public video programming provided by the Issuing Authority or its designee, educational access video programming provided by the Issuing Authority or its designated educational institution(s), and governmental video programming provided by the Issuing Authority. A Public, Educational and Governmental Access Channel may not be used to cablecast for-profit, political or commercial fundraising programs in any fashion. Unused capacity may be utilized by Licensee subject to the provisions set forth in subsection (c) below.

(c) In the event the Issuing Authority or other PEG Access User elects not to fully program its Channel(s) with original PEG Access Programming, Licensee may reclaim any unused time on those channels.

SECTION 6.2_PEG ACCESS PROVIDER

Beginning on the Effective Date, the Access Provider shall provide services to PEG Access Users and the Town as follows:

(1) Schedule, operate and program the PEG Access channels provided in accordance with Section 6.3 below;

(2) Manage the annual funding, pursuant to Section 6.4 below;

(3) Purchase, maintain and/or lease equipment, with the funds allocated for such purposes in Section 6.4 below;

(4) Conduct training programs in the skills necessary to produce PEG Access Programming;

(5) Provide technical assistance and production services to PEG Access Users;

(6) Establish rules, procedures and guidelines for use of the PEG Access Channels;

(7) Provide publicity, fundraising, outreach, referral and other support services to PEG Access Users;

(8) Assist PEG Access Users in the production of Video Programming of interest to Subscribers and issues, events and activities; and

(9) Accomplish such other tasks relating to the operation, scheduling and/or management of the PEG Access Channels, facilities and equipment as appropriate and necessary.

SECTION 6.3_PEG ACCESS CABLECASTING

(a) In order that PEG Access Programming can be cablecast over Licensee's downstream PEG Access Channel, Licensee shall continue to connect to equipment owned by the Town and/or the PEG Access Provider at the Medway High School, 88 Summer Street in Medway, MA. The

Licensee shall provide, maintain, and replace all equipment necessary to transmit and receive such PEG Access Programming from the High School to the Licensee's Headend, including all equipment necessary to switch and route such Programming through the Headend to the designated Downstream PEG Access Channel(s) on the Subscriber Network.

(b) Licensee shall provide and maintain all necessary switching and/or processing equipment located at the High School or headend in order to switch upstream signals carrying PEG Access Programming to the designated Licensee-owned Subscriber Network downstream PEG Access Channel.

(c) Licensee shall own, maintain, repair and/or replace any Licensee-owned headend or hub-site audio and/or video signal processing equipment. The Town and/or PEG access provider shall own, maintain, repair and/or replace studio and/or portable modulators and demodulators. The demarcation point between Licensee's equipment and the Town's or PEG Access provider's equipment shall be at the output of the Town's and/or the PEG Access provider's modulator(s) or similar device(s).

SECTION 6.4_SUPPORT FOR PEG ACCESS PROGRAMMING

Licensee shall provide a Franchise Fee to the Issuing Authority, or its designee, for PEG Access purposes, equal to four and one-half percent (4.5%) of its Gross Annual Revenues, less applicable License Fees and assessments from any state or other governmental agencies. Said Franchise Fee shall be used for salaries, operating and other expenses related to PEG Access programming operations. Said four and one-half percent (4.5%) Franchise Fee shall be made to the Issuing Authority, or its designee, on a quarterly basis. The first payment shall be made on November 15, 2018 for the period of the Effective Date through September 30, 2018. Quarterly thereafter, Licensee shall provide payments each February 15th, May 15th, August 15th and November 15th based on revenues from the previous calendar quarter. The final payment shall be made on November 15, 2028 for the period of July 1, 2028 through September 30, 2028.

SECTION 6.5_PEG ACCESS EQUIPMENT/FACILITIES FUNDING

(a) The Licensee shall provide funding to the Issuing Authority and/or the Access Corporation, as directed by the Issuing Authority from time to time in writing, for equipment/facilities purposes totaling seventy-four cents ($.74) per subscriber per month, for the duration of this Renewal License. The Licensee shall provide such funding on an annual basis, no later than June 1st of each year of this Renewal License.

(b) In no case shall the equipment and facilities payments be counted against either the annual PEG Access payment, pursuant to Section 6.4 supra, or any License Fee payment, required by Section 9.4 infra, or any other fees or payments required by applicable laws. The payments in paragraph (a) above shall be made directly to the Issuing Authority and/or the designated Access Corporation, as directed by the Issuing Authority.

SECTION 6.6_PROGRAMMING EXCLUSIVITY AND NON-COMPETITION

The Issuing Authority, or its designee, agrees that it will not use its designated PEG Access channel(s), equipment, or other facilities to provide for-profit commercial services which have the effect of competing with Licensee's business. In addition, any Video Programming produced under the provisions of this Article 6 shall not be commercially distributed to a competing Multichannel Video Programming Distributor without the written consent of Licensee.

SECTION 6.7_INTERCONNECTION WITH COMPETING CABLE LICENSEE

In the event a License is issued by the Issuing Authority to a competing Licensee, the competing Licensee may not connect its system to Licensee's current system for purposes of obtaining PEG Access Programming from the Licensee's PEG Access channels without the prior written consent of Licensee.

SECTION 6.8_PEG ACCESS PROGRAMMING INDEMNIFICATION

The Issuing Authority and/or the Access Provider shall indemnify the Licensee for any liability, loss or damage it may suffer due to violation of the intellectual property rights of third parties or arising out of the content of programming aired on any PEG channel and from claims arising out of the Franchising Authority's rules for or administration of PEG Access Programming.

ARTICLE 7

CUSTOMER SERVICE AND CONSUMER PROTECTION

SECTION 7.1_CUSTOMER SERVICE

Licensee shall comply with all customer service regulations of the FCC (47 CFR §76.309) as they exist or as they may be amended from time to time. Likewise, Licensee shall comply with the customer service regulations promulgated by the Cable Division at 207 CMR §10.01 et seq. as they exist or as they may be amended from time to time.

SECTION 7.2_CONSUMER COMPLAINT PROCEDURES [SEE M.G.L. c. 166A §10]

Complaints by any Person as to the operation of the Cable System may be filed in writing with the Cable Division or with the Issuing Authority, each of which shall within ten (10) days forward copies of such complaints to the other. The Issuing Authority and the Cable Division shall be notified by Licensee on forms to be prescribed by the Cable Division not less than annually, of the complaints of subscribers received during the reporting period and the manner in which they have been met, including the time required to make any necessary repairs or adjustments.

SECTION 7.3_PROTECTION OF SUBSCRIBER PRIVACY

Licensee shall comply with all applicable federal and state privacy laws and regulations, including 47 U.S.C. 551 and regulations adopted pursuant thereto.

SECTION 7.4_EMPLOYEE IDENTIFICATION CARDS

All of Licensee's employees, including repair and sales personnel, entering private property shall be required to carry an employee photo identification card issued by Licensee.

ARTICLE 8

PRICES AND CHARGES

SECTION 8.1_PRICES AND CHARGES

(a) All rates, fees, charges, deposits and associated terms and conditions to be imposed by Licensee or any affiliated Person for any Cable Service as of the Effective Date shall be in accordance with applicable FCC's rate regulations [47 U.S.C. 543]. Before any new or modified rate, fee, or charge is imposed, Licensee shall follow the applicable FCC and State notice requirements and rules and notify affected Subscribers, which notice may be by any means permitted under applicable law. Nothing in this Renewal License shall be construed to prohibit the reduction or waiver of charges in conjunction with promotional campaigns for the purpose of attracting or retaining Subscribers.

(b) The Issuing Authority acknowledges that under the 1992 Cable Television Consumer Protection and Competition Act, certain costs of Public, Educational and Governmental ("PEG") Access and other license/franchise requirements, may be passed through to the Subscribers in accordance with federal law.

ARTICLE 9

REGULATORY OVERSIGHT

SECTION 9.1_INDEMNIFICATION

Licensee shall indemnify, defend and hold harmless the Issuing Authority, its officers, employees, and agents from and against any liability or claims resulting from property damage or bodily injury (including accidental death) that arise out of Licensee's construction, operation, maintenance or removal of the Cable System, including, but not limited to, reasonable attorney's fees and costs, provided that the Issuing Authority shall give Licensee timely written notice, sufficient to avoid entry of a default judgment, of its obligation to indemnify and defend the Issuing Authority within the timely receipt of a claim or action pursuant to this Section. If the Issuing Authority determines that it is necessary for it to employ separate counsel, the costs for such separate counsel shall be the responsibility of the Issuing Authority.

SECTION 9.2_INSURANCE

(a) Licensee shall carry insurance throughout the term of this Renewal License and any removal period pursuant to M.G.L. c. 166A, § 5(c) with an insurance company authorized to conduct business in Massachusetts satisfactory to the Issuing Authority protecting, as required in this Renewal License, Licensee and listing the Town as an additional insured, against any and all claims for injury or damage to persons or property, both real and personal, caused by the construction, installation, operation, maintenance or removal of its Cable System. The amount of such insurance against liability for damage to property shall be no less than One Million Dollars ($1,000,000) as to any one occurrence. The amount of such insurance for liability for injury or death to any person shall be no less than One Million Dollars ($1,000,000). The amount of such insurance for excess liability shall be Five Million Dollars ($5,000,000) in umbrella form. (b)

Licensee shall carry insurance against all claims arising out of the operation of motor

vehicles in the amount of One Million Dollars ($1,000,000) combined single limit for bodily injury and consequent death and property damage per occurrence;

(c) All insurance coverage, including Workers' Compensation, shall be maintained throughout the period of this Renewal License. All expenses incurred for said insurance shall be at the sole expense of Licensee.

(d) Licensee shall provide Issuing Authority upon request with certificate(s) of insurance for all policies required herein upon expiration of policies.

SECTION 9.3_PERFORMANCE BOND

(a) Licensee has submitted and shall maintain throughout the duration of this Renewal License and any removal period pursuant to M.G.L. c. 166A, § 5(c) a performance bond in the amount of Twenty-Five Thousand Dollars ($25,000) running to the Town with a surety company satisfactory to the Issuing Authority to guarantee the following terms:

(1) the satisfactory completion of the installation and operation of the Cable System in the time schedule provided herein and otherwise of M.G.L. c. 166A, § 5(a), (m) and (n);

(2) the satisfactory restoration of pavements, sidewalks and other improvements in accordance with M.G.L. c. 166A, § 5(g);

(3) the indemnity of the Town in accordance with M.G.L. c. 166A, § 5(b); and

(4) the satisfactory removal or other disposition of the Cable System in accordance with M.G.L. c. 166A, § 5(f).

SECTION 9.4_LICENSE FEES

(a) During the term of the Renewal License the annual License Fee payable to the Issuing Authority shall be the maximum allowable by law, per Subscriber served as of the last day of the

preceding calendar year, payable on or before March 15th of the said year. Pursuant to M.G.L. c. 166A, § 9, this fee is currently fifty cents ($.50) per Subscriber, but not less than Two Hundred Fifty Dollars ($250) annually.

(b) In accordance with Section 622(b) of the Cable Act, Licensee shall not be liable for a total financial commitment pursuant to this Renewal License and applicable law in excess of five percent (5%) of its Gross Annual Revenues; provided, however, that said five percent (5%) shall also include (i) the PEG Access Annual Support (Section 6.4) and (ii) any amounts included in the term "Franchise Fee" pursuant to Section 622(g)(1) of the Cable Act), but shall not include the following: (i) PEG Access Capital Support (Section 6.5); (ii) interest due herein to the Issuing Authority because of late payments; and (iii) any other exclusion to the term "Franchise Fee" pursuant to Section 622(g)(2) of the Cable Act.

(c) All payments by Licensee to the Town pursuant to this Section shall be made payable to the Town unless otherwise agreed to in writing by the parties.

SECTION 9.5_REPORTS

(a) Licensee shall file annually with the Cable Division on forms prescribed by the Cable Division, a sworn statement of its revenues and expenses for official use only. In addition, Licensee shall also file with the Cable Division, a financial balance sheet and statement of ownership which shall be supplied upon written request of the Issuing Authority. These requirements shall be subject to the regulations of the Cable Division.

(b) In addition, Licensee shall maintain for public inspection all records required by the FCC and as specified in 47 CFR §76.305 in the manner prescribed therein.

SECTION 9.6_EQUAL EMPLOYMENT OPPORTUNITY

Licensee is an Equal Opportunity Employer and shall comply with applicable FCC regulations with respect to Equal Employment Opportunities.

SECTION 9.7_REVOCATION OF LICENSE

The License issued hereunder may, after due written notice and hearing per Section 9.8 (Notice and Opportunity to Cure), be revoked by the Issuing Authority or the Cable Division for any of the following reasons:

(a) For false or misleading statements in, or material omissions from, the application submitted under M.G.L. c. 166A, § 4;

(b) For failure to file and maintain the performance bond as described in Section 9.3 (Performance Bond) or to maintain insurance as described in Section 9.2 (Insurance);

(c) For repeated violations, as determined by the Cable Division, of commitments of the license as set forth in M.G.L. c. 166A, § 5(j);

(d) For repeated failure, as determined by the Cable Division, to maintain signal quality pursuant to the standards provided for by the FCC and/or Cable Division;

(e) For any transfer or assignment of the Renewal License or control thereof without consent of the Issuing Authority in violation of Section 9.9 herein;

(f) For repeated failure to comply with the material terms and conditions herein required by M.G.L. c. 166A, §5; and

(g) For failure to complete construction in accordance with the provisions of the Renewal License.

SECTION 9.8_NOTICE AND OPPORTUNITY TO CURE

In the event that the Issuing Authority has reason to believe that Licensee has defaulted in the performance of any or several provisions of this Renewal License, except as excused by Force Majeure, the Issuing Authority shall notify Licensee in writing, by certified mail, of the provision or provisions which the Issuing Authority believes may have been in default and the details relating thereto. Licensee shall have thirty (30) days from the receipt of such notice to:

(a) respond to the Issuing Authority in writing, contesting the Issuing Authority's assertion of default and providing such information or documentation as may be necessary to support Licensee's position; or

(b) cure any such default (and provide written evidence of the same), or, in the event that by nature of the default, such default cannot be cured within such thirty (30) day period, to take reasonable steps to cure said default and diligently continue such efforts until said default is cured. Licensee shall report to the Issuing Authority, in writing, by certified mail, at thirty (30) day intervals as to Licensee's efforts, indicating the steps taken by Licensee to cure said default and reporting Licensee's progress until such default is cured.

(c) In the event that (i) Licensee fails to respond to such notice of default; and/or (ii) Licensee fails to cure the default or to take reasonable steps to cure the default within the required thirty (30) day period; the Issuing Authority or its designee shall promptly schedule a public hearing no sooner than thirty (30) days after written notice, by certified mail, to Licensee. Licensee shall be provided reasonable opportunity to offer evidence, question witnesses, if any, and be heard at such public hearing.

(d) Within thirty (30) days after said public hearing, the Issuing Authority shall issue a written determination of its findings. In the event that the Issuing Authority determines that Licensee is in such default, the Issuing Authority may determine to pursue any lawful remedy available to it.

(e) In the event that (i) the Issuing Authority fails to issue a written reply within 30 days accepting or rejecting Licensees' response pursuant to 9.8(a) above; (ii) the Issuing Authority fails to issue a written acknowledgement after Licensee's notice that it cured said default pursuant to 9.8(b) above; and/or (iii) the Issuing Authority fails to schedule a public hearing no later than thirty (30) days of having sent a written notice consistent with Section 9.8(c) above and/or (iv) the Issuing authority fails to issue a written determination with thirty (30) days after the public hearing pursuant to Section 9.8(d) above , then the issue of said default against Licensee by the Issuing Authority shall be considered null and void.

SECTION 9.9_TRANSFER OR ASSIGNMENT

This Renewal License or control hereof shall not be transferred or assigned without the prior written consent of the Issuing Authority, which consent shall not be arbitrarily or unreasonably withheld. The consent of the Issuing Authority shall be given only after a hearing upon written application therefor on forms prescribed by the Cable Division. Pursuant to 207 CMR 4.01(2), a transfer or assignment of a license or control thereof between commonly controlled entities, between affiliated companies, or between parent and subsidiary corporations, shall not constitute a transfer or assignment of a license or control thereof under M.G.L. c.166A Section 7. Under 207 CMR 4.00, an "affiliated company" is any person or entity that directly or indirectly or through one or more intermediaries, controls, is controlled by, or is under common control with another person or entity. The application for consent to an assignment or transfer shall be signed by Licensee and by the proposed assignee or transferee or by their representatives, evidence of whose authority shall be submitted with the application. Within thirty (30) days of receiving a request for consent, the Issuing Authority shall, in accordance with State and FCC rules and regulations, notify Licensee in writing of the additional information, if any, it requires to determine the legal, financial, technical and managerial qualifications of the transferee or new controlling party. If the Issuing Authority has not taken action on Licensee's request for consent within one hundred twenty (120) days after receiving such request, consent shall be deemed given.

SECTION 9.10_LIQUIDATED DAMAGES

For the violation of any of the following provisions of this Renewal License, liquidated damages shall be paid by the Licensee to the Town, subject to Section 9.8 (Notice and Opportunity to Cure) above. Any such liquidated damages shall be assessed as of the date that the Licensee receives written notice, by certified mail, pursuant to Section 9.8 (Notice and Opportunity to Cure) above, of the provision(s) which the Issuing Authority believes to be in default, unless cured pursuant to Section 9.8 (Notice and Opportunity to Cure) above.

(1) For failure to request the advance, written approval of the Issuing Authority for any transfer of the Renewal License in accordance with Section 9.9 (Transfer or

Assignment) herein, One Hundred and Fifty Dollars ($150.00) per day, for each day that such non-compliance continues;

(2) For failure to comply with the FCC's Customer Service Obligations, and the Massachusetts Department of Telecommunications and Cable, Cable Division, Billing Practices Regulation 207 CMR §10.01 et seq., as set forth in Section 7.1, and as each may from time to time be amended. Fifty Dollars ($50.00) for each day that any such non-compliance continues;

(3) For failure to operate and maintain the Cable Television System, in accordance with Section 4.1 (System Maintenance) herein, Fifty Dollars ($50.00) per day, for each day such non-compliance continues;

(4) For failure to comply with the PEG Access commitments contained in Article 6 (PEG Access Channels and Support) herein, Fifty Dollars ($50.00) per day, for each day such non-compliance continues longer than 30 days;

(5) For failure to maintain the bonds and insurance required by Article 9 (Insurance and Performance Bonds) herein, One Hundred Dollars ($100.00) per day, for each day of non-compliance.

SECTION 9.11_REMOVAL OF SYSTEM

Upon termination of this Renewal License or of any renewal hereof by passage of time or otherwise, Licensee shall remove its supporting structures, poles, transmission and distribution systems and other appurtenances from the streets, ways, lanes, alleys, parkways, bridges, highways, and other public and private places in, over, under, or along which they are installed and shall restore the areas to their original condition. If such removal is not completed within six (6) months of such termination, the Issuing Authority or property owner may deem any property not removed as having been abandoned.

SECTION 9.12_INCORPORATION BY REFERENCE

(a) All presently and hereafter applicable conditions and requirements of federal, state and generally applicable local laws, including but not limited to M.G.L. c. 166A, and the rules and regulations of the FCC and the Cable Division, as they may be amended from time to time, are incorporated herein by reference, to the extent not enumerated herein. However, no such general laws, rules, regulations and codes, as amended, may alter the obligations, interpretation and performance of this Renewal License to the extent that any provision of this Renewal License conflicts with or is inconsistent with such laws, rules or regulations.

(b) Should the Commonwealth of Massachusetts, the federal government or the FCC require Licensee to perform or refrain from performing any act the performance or non-performance of which is inconsistent with any provisions herein, the Issuing Authority and Licensee will thereupon, if they determine that a material provision herein is affected, modify any of the provisions herein to reflect such government action.

SECTION 9.13_NO THIRD PARTY BENEFICIARIES

Nothing in this Renewal License is intended to confer third-party beneficiary status on any member of the public to enforce the terms of this Renewal License.

ARTICLE 10

MISCELLANEOUS

SECTION 10.1_SEVERABILITY

If any section, subsection, sentence, clause, phrase, or other portion of this Renewal License is, for any reason, declared invalid, in whole or in part, by any court, agency, commission, legislative body, or other authority of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent portion. Such declaration shall not affect the validity of the remaining portions hereof, which other portions shall continue in full force and effect.

SECTION 10.2_FORCE MAJEURE

If for any reason of force majeure Licensee is unable in whole or in part to carry out its obligations hereunder, said Licensee shall not be deemed in violation or default during the continuance of such inability. Unless further limited elsewhere in this Renewal License, the term "force majeure" as used herein shall have the following meaning: strikes; acts of god; acts of public enemies, orders of any kind of the government of the United States of America or of the Commonwealth of Massachusetts or any of their departments, agencies, political subdivisions, or officials, or any civil or military authority; insurrections; riots, epidemics; landslides; lightning; earthquakes; tornados; fires; hurricanes; volcanic activity; storms; floods; washouts; droughts, environmental restrictions, arrests; civil disturbances; explosions; partial or entire failure of utilities; unavailability of materials and/or essential equipment, environmental restrictions or any other cause or event not reasonably within Licensee's control.

SECTION 10.3_NOTICES

(a) Every notice to be served upon the Issuing Authority shall be shall be sent by certified mail or other means providing for a receipt as proof of delivery to the following address or such other address as the Issuing Authority may specify in writing to Licensee.

Board of Selectmen
Medway Town Hall
155 Village Street
Medway, MA, 02053

(b) Every notice served upon Licensee shall be delivered or sent by certified mail (postage prepaid) to the following address or such other address as Licensee may specify in writing to the Issuing Authority.

Comcast Cable Communications, Inc.
Attn: Government Relations
181 Ballardvale Street
Wilmington, MA 01887

with copies to:

Comcast Cable Communications, Inc.
Attn: Government Relations
676 Island Pond Road
Manchester, NH 03109

Comcast Cable Communications, Inc.
Attn: Government Affairs
One Comcast Center
Philadelphia, PA 19103

(c) Delivery of such notices shall be equivalent to direct personal notice, direction or order, and shall be deemed to have been given at the time of receipt.

SECTION 10.4_ENTIRE AGREEMENT

This instrument contains the entire agreement between the parties, supersedes all prior agreements or proposals except as specifically incorporated herein, and cannot be changed without written amendment.

SECTION 10.5_CAPTIONS

The captions to sections throughout this Renewal License are intended solely to facilitate reading and reference to the sections and provisions of the Renewal License. Such sections shall not affect the meaning or interpretation of the Renewal License.

SECTION 10.6_WARRANTIES

Licensee warrants, represents and acknowledges that, as of the Effective Date of this Renewal License:

(a) Licensee is duly organized, validly existing and in good standing under the laws of the State;

(b) Licensee has the requisite power and authority under applicable law and its by-laws and articles of incorporation and/or other organizational documents, is authorized by resolutions of its Board of Directors or other governing body, and has secured all consents which are required to be obtained as of the date of execution of this Renewal License, to enter into and legally bind Licensee to this Renewal License and to take all actions necessary to perform all of its obligations pursuant to this Renewal License;

(c) This Renewal License is enforceable against Licensee in accordance with the provisions herein; and

(d) There is no action or proceedings pending or threatened against Licensee which would interfere with performance of this Renewal License.

SECTION 10.7_APPLICABILITY OF RENEWAL LICENSE

All of the provisions in this Renewal License shall apply to the Town, Licensee, and their respective successors and assigns.

WITNESS OUR HANDS AND OFFICIAL SEAL, THIS _____DAY OF

_____ 20___.

TOWN OF MEDWAY
By:

_____
Dennis Crowley, Chairman
Board of Selectmen

_____
John Foresto, Vice Chairman
Board of Selectmen

_____
Richard D'Innocenzo, Member
Board of Selectmen

_____
Glen Trindale, Member
Board of Selectmen

_____
Maryjane White, Member
Board of Selectmen

COMCAST OF COMCAST CABLE COMMUNICATIONS MANAGEMENT, LLC
By:

_____
Tracy L. Pitcher, Sr. Vice President
Greater Boston Region

645738/17700/0026

EXHIBIT A

PUBLIC BUILDINGS ON THE CABLE SYSTEM

Town Hall	155 Village Street
Department of Public Works	1 Broad Street Extension
Police Station	315 Village Street
Fire Station	44 Milford Street, Route 109
Burke/Memorial Schools	Legion Avenue/20 Cassidy Lane
High School/Access Corporation Studio	88 Summer Street
Public Library	26 High Street
North School (McGovern School)	9 Lovering Street
Medway Community Church	193 Main Street
Senior Center	76 Oakland Street
Housing Authority	Mahan Circle
Middle School	45 Holliston Street

And any additional town-owned and occupied buildings constructed or acquired after the Effective Date.

EXHIBIT B

PROGRAMMING

Licensee shall provide the following broad categories of Video Programming:

- News Programming;
- Sports Programming;
- Public Affairs Programming;
- Children's Programming;
- Entertainment Programming; and
- Local Programming.

AGENDA ITEM #6

Vote: Designate Medway Cable Access to Receive Comcast Cable Quarterly Franchise Fee Payments per New License Section 6.4

Associated back up materials attached.

- *Comcast license*

Proposed Motion:
I move that the Board designate Medway Cable Access to receive the Comcast Cable quarterly franchise fee payments as the Issuing Authority's Designee, pursuant to Section 6.4 of the new Comcast license.

AGENDA ITEM #7

Vote: Adoption of the Town of Medway Hazard Mitigation Plan 2018 Update

Associated back up materials attached:

- *Hazard Mitigation Plan 2018 Update dated September 12, 2018*
- *Plan adoption form*

Proposed Motion:
I move that the Board approve the Town of Medway Hazard Mitigation Plan 2018 Update as presented and authorize the Chair to execute the certificate of adoption.

TOWN OF MEDWAY
HAZARD MITIGATION PLAN
2018 PLAN UPDATE

FINAL PLAN
APPROVAL PENDING ADOPTION
ISSUED BY FEMA
SEPTEMBER 12, 2018

PREPARED FOR:
TOWN OF MEDWAY
900 MAIN STREET
MEDWAY, MASSACHUSETTS 02053

PREPARED BY:
METROPOLITAN AREA PLANNING COUNCIL
60 TEMPLE PLACE
BOSTON, MASSACHUSETTS 02111
TEL 617.933.0700
WWW.MAPC.ORG

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ACKNOWLEGEMENT AND CREDITS

This plan was prepared for the Town of Medway by the Metropolitan Area Planning Council (MAPC) under the direction of the Massachusetts Emergency Management Agency (MEMA) and the Massachusetts Department of Conservation and Recreation (DCR). The plan was funded by the Federal Emergency Management Agency's (FEMA) Pre-Disaster Mitigation (PDM) Grant Program.

MAPC Officers
President, Keith Bergman, Town of Littleton
Vice President, Erin Wortman, Town of Stoneham
Secretary, Sandra Hackman, Town of Bedford
Treasurer, Taber Keally, Town of Milton
Executive Director, Marc Draisen, MAPC

Thanks for the assistance of the following individuals:

MAPC Staff Credits

Project Manager/Senior Environmental Planner	Darci Schofield
Environment Director:	Martin Pillsbury
Mapping/GIS Services:	Darci Schofield
	Eliza Wallace

Massachusetts Emergency Management Agency

Director:	Kurt Schwartz

Department of Conservation and Recreation

Commissioner:	Carol I. Sanchez

Medway Local Hazard Mitigation Planning Team

Allison Potter	Assistant Town Administrator
Jeff Lynch	Fire Chief
Suzy Affleck-Childs	Planning and Economic Development Coordinator
Dave D'Amica	Director of Department of Public Services
Beth Hallal	Health Director
Bridget Graziano	Conservation

Public Meeting Participants and Community Stakeholders
Special thanks to the public meeting participants and community stakeholders who provided feedback.

MAPC would like to dedicate this plan to Stephanie Mercandetti, in recognition of her devoted public service to the Town of Medway and Norfolk County.

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I. EXECUTIVE SUMMARY

Hazard Mitigation planning is a proactive effort to identify actions that can be taken to reduce the dangers to life and property from natural hazard events. In the communities of the Boston region of Massachusetts, hazard mitigation planning tends to focus most on flooding, the most likely natural hazard to impact these communities. The Federal Disaster Mitigation Act of 2000 requires all municipalities that wish to be eligible to receive FEMA funding for hazard mitigation grants, to adopt a local multi-hazard mitigation plan and update this plan in five year intervals.

PLANNING PROCESS

This is an update of the original Medway Hazard Mitigation Plan, which was approved by FEMA on May 7, 2010. Planning for the Hazard Mitigation Plan update was led by the Medway Local Hazard Mitigation Planning Team, composed of staff from a number of different Town Departments. This team met on October 12, 2017, February 7, 2018, and June 13, 2018 and discussed where the impacts of natural hazards most affect the Town, goals for addressing these impacts, updates to the Town's existing mitigation measures and new or revised hazard mitigation measures that would benefit the Town.

Public participation in this planning process is important for improving awareness of the potential impacts of natural hazards and to build support for the actions the Town takes to mitigate them. The Town hosted two public meetings with the Board of Selectmen. The first was on April 2, 2018 and the second on June 18, 2018, and the draft plan update was posted on the Town's website for public review. Key town stakeholders and neighboring communities were notified and invited to review the draft plan and submit comments. No public comments were received.

RISK ASSESSMENT

The Medway Hazard Mitigation Plan assesses the potential impacts to the Town from flooding, high winds, winter storms, brush fire, geologic hazards, extreme temperatures, and drought. Flooding, driven by hurricanes, northeasters and other storms, clearly presents the greatest hazard to the Town. These are shown on the map series (Appendix B).

The Medway Local Hazard Mitigation Planning Team identified 49 Critical Facilities. These are also shown on the map series and listed in Table 24, identifying which facilities are located within the mapped hazard zones.

A HAZUS-MH analysis provided estimates of damages from Hurricanes of 1% and 0.2% Annual Chance at $10 million and $36 million, respectively. Earthquakes of magnitudes 5 and 7 analysis provided $81,720,000 to $858,200,000 million respectively in property damages. Flood damage for the 1% and the 0.2% Annual Chance Flood at $15,510,000 and $19,290,000 respectively.

HAZARD MITIGATION GOALS

The Medway Local Hazard Mitigation Planning Team identified the following hazard mitigation goals for the Town:

1. Prevent and reduce the loss of life, injury, public health impacts, and property damages resulting from all major natural hazards.

2. Prevent and reduce the damage to public infrastructure resulting from all hazards.

3. Identify and seek funding for measures to mitigate or eliminate each known significant flood hazard area.

4. Integrate hazard mitigation planning as an integral factor in all relevant municipal departments, committees and boards.

5. Encourage the business community, major institutions and non-profits to work with the Town to develop, review and implement the hazard mitigation plan.

6. Work with surrounding communities, state, regional and federal agencies to ensure regional cooperation and solutions for hazards affecting multiple communities.

7. Ensure that future development meets federal, state and local standards for preventing and reducing the impacts of natural hazards.

8. Take maximum advantage of resources from FEMA and MEMA to educate Town staff and the public about hazard mitigation.

9. Consider the impacts of climate change. Incorporate climate resilience and clean energy in hazard mitigation planning.

HAZARD MITIGATION STRATEGY

The Medway Local Hazard Mitigation Planning Team identified a number of mitigation measures that would serve to reduce the Town's vulnerability to natural hazard events. Overall, the hazard mitigation strategy recognizes that these measures will be an ongoing process as our understanding of natural hazards and the steps that can be taken to mitigate their damages changes over time. Climate change and a variety of other factors impact the Town's vulnerability and in the future, and local officials will need to work together across municipal lines and with state and federal agencies in order to understand and address these changes. The Hazard Mitigation Strategy will be incorporated into the Town's other related plans and policies.

PLAN REVIEW & UPDATE PROCESS

The process for developing Medway's Hazard Mitigation Plan 2018 Update is summarized in Table 1 below.

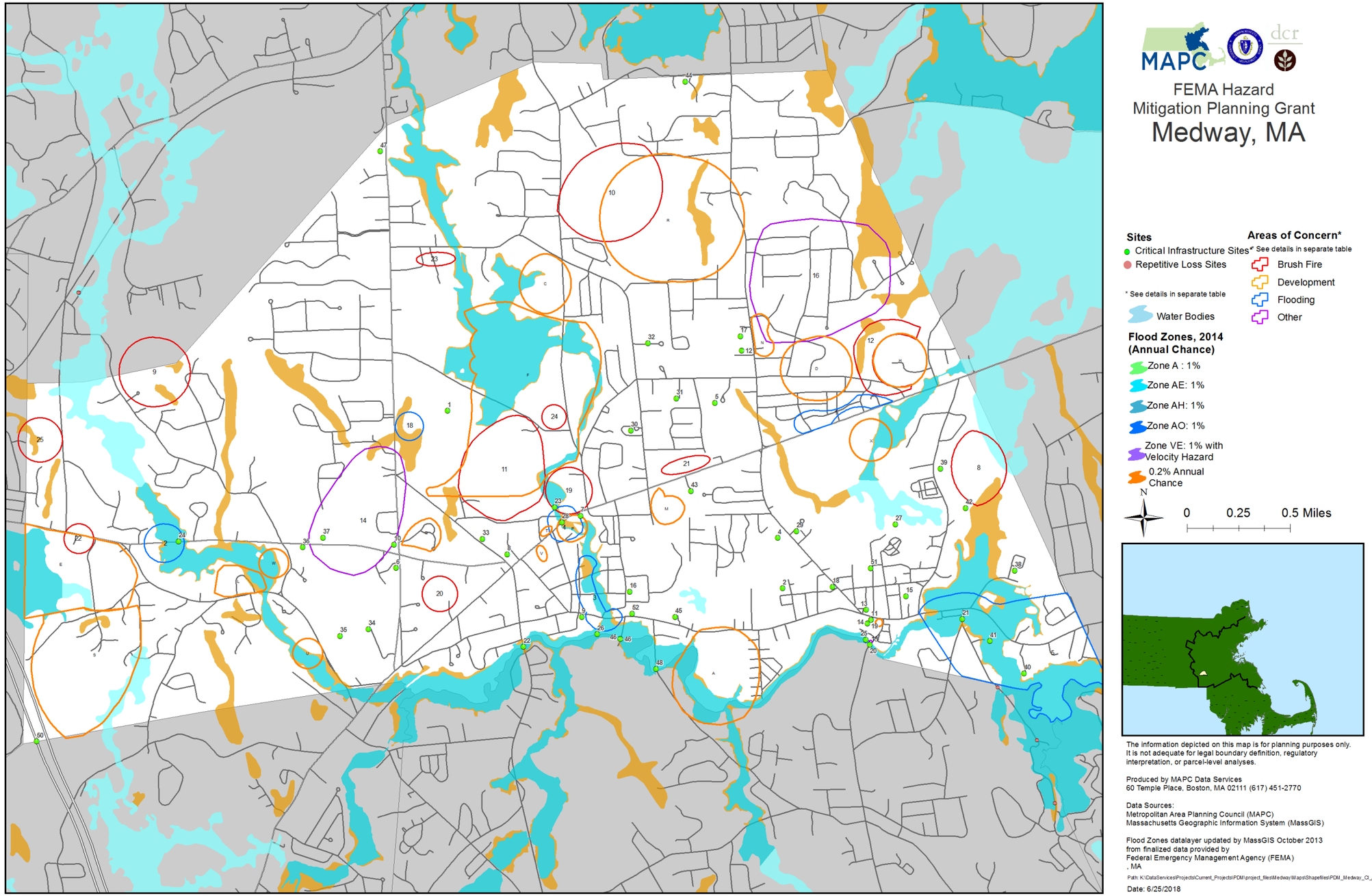
Table 1 Plan Review and Update Process

CHAPTER	REVIEWS AND UPDATES
III – PUBLIC PARTICIPATION	The Local Hazard Mitigation Planning Team placed an emphasis on public participation for the update of the Hazard Mitigation Plan, discussing strategies to enhance participation opportunities at the first local committee meeting. During plan development, the plan was discussed at two public meetings hosted by the Board of Selectmen. The plan was also available on the Town's website for public comment. No comments were received by the town.
IV – RISK ASSESSMENT	MAPC gathered the most recently available hazard and land use data and met with Town staff to identify changes in local hazard areas and development trends. Town staff reviewed critical infrastructure with MAPC staff in order to create an up-to-date list. MAPC also used the most recently available version of HAZUS and assessed the potential impacts of flooding using the latest data.
V - GOALS	The Hazard Mitigation Goals were reviewed and endorsed by the Medway Local Hazard Mitigation Planning Team.
VI – EXISTING MITIGATION MEASURES	The list of existing mitigation measures was updated to reflect current mitigation activities in the Town.
VII & VIII – HAZARD MITIGATION STRATEGY	Mitigation measures from the 2010 plan were reviewed and assessed as to whether they were completed, in-progress, or deferred. The Local Hazard Mitigation Planning Team determined whether to carry forward measures into the 2018 Plan Update or modify or delete them. The Plan Update's hazard mitigation strategy reflects both new measures and measures carried forward from the 2010 plan. The Local Hazard Mitigation Team prioritized all of these measures based on current conditions.
IX – PLAN ADOPTION & MAINTENANCE	This section of the plan was updated with a new on-going plan implementation review and five year update process that will assist the Town in incorporating hazard mitigation issues into other Town planning and regulatory review processes and better prepare the Town for the next comprehensive plan update.

Moving forward into the next five year plan implementation period there will be many more opportunities to incorporate hazard mitigation into the Town's decision making processes.

Though not formally done in the 2010 Plan, the Town will document any actions taken within this iteration of the Hazard Mitigation Plan on challenges met and actions successfully adopted as part of the ongoing plan maintenance to be conducted by the Medway Hazard Mitigation Implementation Team, as described in Section IX, Plan Adoption and Maintenance.

Figure 1 Existing Features: Critical Facilities, Development Sites, Open Space, & Local Hazard Areas



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II. INTRODUCTION

PLANNING REQUIREMENTS UNDER THE FEDERAL DISASTER MITIGATION ACT

The Federal Disaster Mitigation Act, passed in 2000, requires that after November 1 2004, all municipalities that wish to continue to be eligible to receive FEMA funding for hazard mitigation grants, must adopt a local multi-hazard mitigation plan and update this plan in five year intervals. This planning requirement does not affect disaster assistance funding.

Federal hazard mitigation planning and grant programs are administered by the Federal Emergency Management Agency (FEMA) in collaboration with the states. These programs are administered in Massachusetts by the Massachusetts Emergency Management Agency (MEMA) in partnership with the Department of Conservation and Recreation (DCR).

Massachusetts has taken a regional approach and has encouraged the regional planning agencies to apply for grants to prepare plans for groups of their member communities. The Town of Medway received a grant from the Federal Emergency Management Agency (FEMA) under the Pre-Disaster Mitigation (PDM) Program and hired the Metropolitan Area Planning Council (MAPC) to assist the Town of Medway to update its local Hazard Mitigation Plan, which was first adopted in 2010.

WHAT IS A HAZARD MITIGATION PLAN?

Natural hazard mitigation planning is the process of determining how to systematically reduce or eliminate the loss of life and property damage resulting from natural hazards such as floods, earthquakes, and hurricanes. Hazard mitigation means to permanently reduce or alleviate the losses of life, injuries, and property resulting from natural hazards through long-term strategies. These long-term strategies include planning, policy changes, programs, projects, and other activities.

PREVIOUS FEDERAL/STATE DISASTERS

The Town of Medway has experienced 20 natural hazards that triggered federal or state disaster declarations since 1991. These are listed in Table 2 below. The majority of these events involved flooding, while six were due to hurricanes or nor'easters, and four were due to severe winter weather.

Table 2 Previous Federal/State Disaster Declarations

DISASTER NAME (DATE OF EVENT)	TYPE OF ASSISTANCE	DECLARED AREAS
HURRICANE BOB (AUGUST 1991)	FEMA Public Assistance Project Grants	Counties of Barnstable, Bristol, Dukes, Essex, Hampden, Middlesex, Plymouth, Nantucket, Norfolk, Suffolk
	Hazard Mitigation Grant Program	Counties of Barnstable, Bristol, Dukes, Essex, Hampden, Middlesex, Plymouth, Nantucket, Norfolk, Suffolk (16 projects)

DISASTER NAME (DATE OF EVENT)	TYPE OF ASSISTANCE	DECLARED AREAS
NO-NAME STORM (OCTOBER 1991)	FEMA Public Assistance Project Grants	Counties of Barnstable, Bristol, Dukes, Essex, Middlesex, Plymouth, Nantucket, Norfolk
	FEMA Individual Household Program	Counties of Barnstable, Bristol, Dukes, Essex, Middlesex, Plymouth, Nantucket, Norfolk
	Hazard Mitigation Grant Program	Counties of Barnstable, Bristol, Dukes, Essex, Middlesex, Plymouth, Nantucket, Norfolk, Suffolk (10 projects)
MARCH BLIZZARD (MARCH 1993)	FEMA Public Assistance Project Grants	All 14 Counties
JANUARY BLIZZARD (JANUARY 1996)	FEMA Public Assistance Project Grants	All 14 Counties
MAY WINDSTORM (MAY 1996)	State Public Assistance Project Grants	Counties of Plymouth, Norfolk, Bristol
OCTOBER FLOOD (OCTOBER 1996)	FEMA Public Assistance Project Grants	Counties of Essex, Middlesex, Norfolk, Plymouth, Suffolk
	FEMA Individual Household Program	Counties of Essex, Middlesex, Norfolk, Plymouth, Suffolk
	Hazard Mitigation Grant Program	Counties of Essex, Middlesex, Norfolk, Plymouth, Suffolk (36 projects)
1997	Community Development Block Grant-HUD	Counties of Essex, Middlesex, Norfolk, Plymouth, Suffolk
JUNE FLOOD (JUNE 1998)	FEMA Individual Household Program	Counties of Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, Worcester
(1998)`	Hazard Mitigation Grant Program	Counties of Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, Worcester (19 projects)
	Community Development Block Grant-HUD	Counties of Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, Worcester
MARCH FLOOD (MARCH 2001)	FEMA Individual Household Program	Counties of Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, Worcester
	Hazard Mitigation Grant Program	Counties of Bristol, Essex, Middlesex, Norfolk, Suffolk, Plymouth, Worcester (16 projects)
FEBRUARY SNOWSTORM (FEB 17-18, 2003)	FEMA Public Assistance Project Grants	All 14 Counties
JANUARY BLIZZARD (JANUARY 22-23, 2005)	FEMA Public Assistance Project Grants	All 14 Counties
HURRICANE KATRINA (AUGUST 29, 2005)	FEMA Public Assistance Project Grants	All 14 Counties
MAY RAINSTORM/FLOOD (MAY 12-23, 2006)	Hazard Mitigation Grant Program	Statewide
APRIL NOR'EASTER (APRIL 15-27, 2007)	zard Mitigation Grant Program	Statewide

DISASTER NAME (DATE OF EVENT)	TYPE OF ASSISTANCE	DECLARED AREAS
FLOODING (MARCH, 2010)	FEMA Public Assistance FEMA Individuals and Households Program SBA Loan	Bristol, Essex, Middlesex, Suffolk, Norfolk, Plymouth, Worcester
	Hazard Mitigation Grant Program	Statewide
TROPICAL STORM IRENE (AUGUST 27-28, 2011)	FEMA Public Assistance	Statewide
HURRICANE SANDY (OCTOBER 27-30, 2012)	FEMA Public Assistance	Statewide
SEVERE SNOWSTORM AND FLOODING (FEBRUARY 8-09, 2013	FEMA Public Assistance; Hazard Mitigation Grant Program	Statewide
BLIZZARD OF 2015 (JANUARY 26-28, 2015)	FEMA Public Assistance; Hazard Mitigation Grant Program	Statewide
WINTER STORM RILEY AND FLOODING MARCH 3-6, 2018	Hazard Mitigation Grant Program	Statewide

Source: database provided by MEMA

FEMA FUNDED MITIGATION PROJECTS

Town of Medway has received funding from FEMA for one mitigation project under the Hazard Mitigation Grant Program (HMGP). This project totaled $680,719. The project is summarized in Table 3 below.

Table 3 FEMA-Funded Mitigation Projects

Grant	Project Title	Scope of Work	Total Cost
HMGP 1813-21	Brentwood Drainage Project	Drainage Improvements	$680,719

COMMUNITY PROFILE

The Town of Medway is a bucolic residential town in the southwestern suburbs of Boston with easy access to Route 495. It is predominantly a single-family home community with a handful of apartments and condos. Henry Gamsey was the first settler in town. Beginning in 1700 with the first modest home built by Henry for his wife Sarah, settlers filtered in and by 1713 residents had petitioned for a new town charter, and the town, to be known as Medway, was incorporated. By 1800, there had been many saw and grist mills and several textile mills established and Medway continued to grow over the years as an industrial center because of its location along its rivers (Chicken Brook and Charles River). Campbell Brothers ran a paper mill from 1854 to 1890 and the Sanford Mill was in operation in 1885. The establishment of a railroad through Medway did much to attract new mills to town. The charter for the railroad was granted by the state legislature in 1847 and served all the towns in the area, extending as far as Blackstone. The first post office was established in 1803, at which time there were just eight homes, a grist mill, two sawmills, and a store. Because of its proximity to Route 495 and other highways, Medway residents are confident the town will continue to grow residentially, industrially and commercially.

The town of Medway is located in Eastern Massachusetts and is bordered by Holliston on the north; Medway on the east; Norfolk, Franklin, and Bellingham on the south; and Milford on the west. Medway is 25 miles southwest of Boston, 24 miles southeast of Worcester, and 30 miles north of Providence, Rhode Island. Route 495, the outer belt around Boston, passes along the western border of Medway. State Routes 109 and 126 also serve the town. Commuter rail service to Back Bay Station and South Station is available in neighboring Franklin. Medway is not affiliated with a regional transit authority. Brush Hill Transportation provides rush hour service to Boston from West Medway-F. The Norfolk Airport, a General Aviation (GA) facility, is easily accessible. It has a 2,700' asphalt runway with a copter approach. The following regional facilities are located in Medway; the Medway Country Manor and Mary-land Rest Home.

Medway belongs to the Southwest subregion of the Metropolitan Area Planning Council. Medway is also a member of the I-495/Metrowest Partnership (also known as the Arc of Innovation). Through its participation in these organizations, Medway has participated in regional efforts addressing water resources, traffic problems, open space issues, economic development, town center development, and other issues. The town is governed by a Board of Selectmen with a Town Administrator. The town operates under the open town meeting format. The 2000 population was 12,448 people and there were 4,248 housing units.[1] The Town is governed by a Board of Selectmen with a Town Administrator. The town operates under the Town Meeting format. The 2010 population was 12,754 people and there were 4,613 housing units.
The town maintains a website at http://www.townofMedway.org/.

Challenges facing Medway when planning for natural disasters include:

- 23.2% of the housing units are old (built before modern building codes)
- 14.8% of the units are renter-occupied
- 2.5% of households do not own a car, posing challenges for evacuations
- 2% have limited English skills

[1] Narrative based on information provided by the Massachusetts Historical Commission and is taken from the Community Profile on the website maintained by the Department of Housing and Community Development.

Table 4 Medway Characteristics (Projected 2016)

Population = 13,308
• 5.4% are under age 5 • 28.1% are under age 18
• 10.4% are over age 65
• 1.6% speak English less than "very well" (over age 5)
• 5.6% of households have no vehicle
• 3.5% have a disability (over age 5)
Number of Housing Units = 4,816
• 14.8% are renter-occupied housing units
• 14.4% of housing units were built before 1940

The Town of Medway has several unique characteristics to keep in mind while planning for natural hazards:

- Medway has a diverse landscape that ranges from densely developed to rural and agricultural creating a bucolic and ideal community environment. [2]
- A defining characteristic of Medway is its rivers and streams, the Charles River, Hopping Brook, and Chicken Brook. These rivers and streams are all prone to extensive flood in severe storms or localized flooding during more frequent, minor storms.
- Another defining characteristic of the town are the tree-lined streets. Although these trees are vulnerable to high winds and ice storms, they are a tradeoff the town is willing to have.
- The town has proactive municipal officials that frequently share information and coordinate on a regular basis. An example of this was the first data collection session for the PDM plan, at which representatives of six different departments were present.
- Medway is home to historic structures surrounded by fields and forests[2] and sites that are irreplaceable and bring economic value to the town.
- Medway contains several major roadways that provide emergency routes for evacuation and for routes to medical facilities.
- Medway has some bridge crossings and dams that could be at risk in the event of flooding.
- Medway would be a good candidate for flood-related grants due to the potential impact to property, transportation emergency routes, economic/historic resources, and the ability to solve the flooding problems through structural measures such as culvert upgrades, dam and bridge upgrades or flood proofing. The cost-benefit analysis would likely be in the town's favor.
- Much of the critical infrastructure in the town is located in clusters, often near areas of floodplain. These facilities are therefore at higher risk during natural hazards.

[2] PGC Associates. 2010. Town of Medway Open Space and Recreation Plan.

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III. PLANNING PROCESS & PUBLIC PARTICIPATION

This is an update of the original Medway Hazard Mitigation Plan, which was approved by FEMA on May 7, 2010. MAPC employs a six step planning process based on FEMA's hazard mitigation planning guidance focusing on local needs and priorities but maintaining a regional perspective matched to the scale and nature of natural hazard events. Public participation is a central component of this process, providing critical information about the local occurrence of hazards while also serving as a means to build a base of support for hazard mitigation activities. MAPC supports participation by the general public and other plan stakeholders through a Local Hazard Mitigation Planning Teams, two public meetings hosted by the local Hazard Mitigation Team, posting of the plan to the Town's website, and invitations sent to neighboring communities, Town boards and commissions, and other local or regional entities to review the plan and provide comment.

PLANNING PROCESS SUMMARY

The six-step planning process outlined below is based on the guidance provided by FEMA in the Local Multi-Hazard Mitigation Planning Guidance. Public participation is a central element of this process, which attempts to focus on local problem areas and identify needed mitigation measures based on where gaps occur in the existing mitigation efforts of the municipality. By working on municipal hazard mitigation plans in groups of neighboring cities and towns, MAPC is able to identify regional opportunities for collaboration and facilitate communication between communities. In plan updates, the process described below allows staff to bring the most recent hazard information into the plan, including new hazard occurrence data, changes to a municipality's existing mitigation measures, and progress made on actions identified in previous plans.

- Map the Hazards – MAPC relies on data from a number of different federal, state, and local sources in order to map the areas with the potential to experience natural hazards. This mapping represents a multi-hazard assessment of the municipality and is used as a set of base maps for the remainder of the planning process. A particularly important source of information is the knowledge drawn from local municipal staff on where natural hazard impacts have occurred. These maps can be found in Appendix B.

- Assess the Risks & Potential Damages – Working with local staff, critical facilities, infrastructure, vulnerable populations, and other features are mapped and contrasted with the hazard data from the first step to identify those that might represent particular vulnerabilities to these hazards. Land use data and development trends are also incorporated into this analysis. In addition, MAPC develops estimates of the potential impacts of certain hazard events on the community. MAPC drew on the following resources to complete the plan:

    - Town of Medway, General Bylaws
    - Town of Medway, Zoning Bylaw
    - Town of Medway Master Plan 2009
    - Town of Medway Open Space Plan, 2010
    - Massachusetts State Hazard Mitigation Plan, 2013
    - FEMA, Local Mitigation Plan Review Guide; October 1, 2011
    - FEMA, Flood Insurance Rate Maps for Norfolk County, MA, 2012
    - Metropolitan Area Planning Council, GIS Lab, Regional Plans and Data.
    - New England Seismic Network, Boston College Weston Observatory, http://aki.bc.edu/index.htm
    - NOAA National Centers for Environmental Information, http://www.ncdc.noaa.gov/
    - Northeast States Emergency Consortium, http://www.nesec.org/
    - USGS, National Water Information System, http://nwis.waterdata.usgs.gov/usa/nwis
    - US Census, 2010
    - American Community Survey 2016

- Review Existing Mitigation – Municipalities in the Boston Metropolitan Region have an active history in hazard mitigation as most have adopted flood plain zoning districts, wetlands protection programs, and other measures as well as enforcing the State building code, which has strong provisions related to hazard resistant building requirements. All current municipal mitigation measures must be documented.

- Develop Mitigation Strategies – MAPC works with the local municipal staff to identify new mitigation measures, utilizing information gathered from the hazard identification, vulnerability assessments, and the community's existing mitigation efforts to determine where additional work is necessary to reduce the potential damages from hazard events. Additional information on the development of hazard mitigation strategies can be found in Chapter X.

- Plan Approval & Adoption – Once a final draft of the plan is complete it is sent to MEMA for the state level review and, following that, to FEMA for approval. Typically, once FEMA has approved the plan the agency issues a conditional approval (Approval Pending Adoption), with the condition being adoption of the plan by the municipality. More information on plan adoption can be found in Chapter XI and documentation of plan adoption can be found in Appendix D.

- Implement & Update the Plan – Implementation is the final and most important part of any planning process. Hazard Mitigation Plans must also be updated on a five year basis making preparation for the next plan update an important on-going activity. Chapter IX includes more detailed information on plan implementation.

2010 PLAN IMPLEMENTATION & MAINTENANCE

The 2010 Town of Medway Hazard Mitigation Plan contained a risk assessment of identified hazards for the Town and mitigation measures to address the risk and vulnerability from these hazards. Since approval of the plan by FEMA and local adoption, progress has been made on implementation of the measures. The Town has advanced a number of projects for implementation, including new land-use regulations that promote smart growth (Open Space Residential Development, Multifamily housing overlay district, stormwater management regulations, and Adult Retirement Community Planned Unit Development) as well as created stormwater infrastructure improvements to mitigate localized flooding.

THE LOCAL MULTIPLE HAZARD COMMUNITY PLANNING TEAM

MAPC worked with the local community representatives to organize a Local Hazard Mitigation Planning Team for Medway. MAPC briefed the local representatives as to the desired composition of that team as well as the need for public participation in the local planning process.

The Local Hazard Mitigation Planning Team is central to the planning process as it is the primary body tasked with developing a mitigation strategy for the community. The local team was tasked with working with MAPC to set plan goals, provide information on the hazards that impact the town, existing mitigation measures, and helping to develop new mitigation measures for this plan update. The Local Hazard Mitigation Planning Team membership can be found listed below.

Membership of the Medway Hazard Mitigation Planning Team

Name	Representing
Susy Affleck-Childs	Planning and Economic Development Director
Allison Potter	Assistant Town Administrator
Bridget Graziano	Conservation Agent
Beth Hallal	Board of Health Director
Jeffrey Lynch	Fire Chief
Dave D'Amico	Director, Department of Public Services

The Local Hazard Mitigation Planning Team met on the following dates:

October 12, 2017	*1st Meeting of the Medway Local Hazard Mitigation Planning Team*
March 7, 2018	2nd Meeting of the Medway Local Hazard Mitigation Planning Team
June 13, 2018	3rd Meeting of the Medway Local Hazard Mitigation Planning Team

The purpose of the meetings was to introduce the Hazard Mitigation planning program, review and update hazard mitigation goals, and to gather information on local hazard mitigation issues and sites or areas related to these. Later meetings focused on verifying information gathered by MAPC staff and discussion of

existing mitigation practices, the status of mitigation measures identified in the 2010 hazard mitigation plan, and potential new or revised mitigation measures. The meeting agendas are included in Appendix A.

PUBLIC MEETINGS

Public participation in the hazard mitigation planning process is important, both for plan development and for later implementation of the plan. Residents, business owners, and other community members are an excellent source for information on the historic and potential impacts of natural hazard events and particular vulnerabilities the community may face from these hazards. Their participation in this planning process also builds understanding of the concept of hazard mitigation, potentially creating support for mitigation actions taken in the future to implement the plan. To gather this information and educate residents on hazard mitigation, the Town hosted two public meetings, one during the planning process and one once the draft plan was complete and ready for review.

Natural hazard mitigation plans unfortunately rarely attract much public involvement in the Boston region, unless there has been a recent hazard event. One of the best strategies for overcoming this challenge is to include discussion of the hazard mitigation plan on the agenda of an existing board or commission. With this strategy, the meeting receives widespread advertising and a guaranteed audience of the board or commission members plus those members of the public who attend the meeting. These board and commission members represent an engaged audience that is informed and up to date on many of the issues that relate to hazard mitigation planning in the locality and will likely be involved in plan implementation, making them an important audience with which to build support for hazard mitigation measures. In addition, these meetings frequently receive press coverage, expanding the audience that has the opportunity to hear the presentation and provide comment.

The public had an opportunity to provide input to the Medway Hazard mitigation planning process during two public presentations before the Board of Selectmen meetings in April 2, 2018 and June 18, 2016.

LOCAL STAKEHOLDER INVOLVEMENT

The local Hazard Mitigation Planning Team was encouraged to reach out to local stakeholders that might have an interest in the Hazard Mitigation Plan including neighboring communities, agencies, businesses, nonprofits, and other interested parties. Notice was sent to the following organizations and neighboring municipalities inviting them to review the Hazard Mitigation Plan and submit comments to the Town:

- Towns of Bellingham, Holliston, Medway, Norfolk, and Franklin
- Medway Public Library
- Council on Aging
- Medway Business Council
- Housing Authority
- Charles River Watershed Association
- Medway Community Farm
- Medway Historical Society
- Charles River Pollution Control District

See Appendix C for public meeting notices. The draft Medway Hazard Mitigation Plan 2018 Update was posted the following URL after the second public meeting: https://www.townofmedway.org/sites/medwayma/files/uploads/draft.medway_hazardmitigationplan.6.22.18.pdf

Members of the public could access the draft document and submit comments or questions to the Town and MAPC. There were no public comments received by the town.

CONTINUING PUBLIC PARTICIPATION

Following the adoption of the plan update, the planning team will continue to provide residents, businesses, and other stakeholders the opportunity to learn about the hazard mitigation planning process and to contribute information that will update the town's understanding of local hazards. As updates and a review of the plan are conducted by the Hazard Mitigation Implementation Team, these will be placed on the Town's web site, and any meetings of the Hazard Mitigation Implementation Team will be publicly noticed in accordance with town and state open meeting laws.

PLANNING TIMELINE

October 12, 2017	First Meeting of the Medway Local Hazard Mitigation Planning Team
March 7, 2018	Second Meeting of the Medway Local Hazard Mitigation Planning Team
June 13, 2018	Third Meeting of the Medway Local Hazard Mitigation Planning Team
April 2, 2018	First Public Meeting with Medway Board of Selectmen
June 18, 2018	Second Public Meeting with Medway Board of Selectmen
July 27, 2018	Draft Plan Update submitted to MEMA
September 12, 2018	Approval Pending Adoption (APA) issued by FEMA

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IV. RISK ASSESSMENT

The risk assessment analyzes the potential natural hazards that could occur within the Town of Medway as well as the relationship between those hazards and current land uses, potential future development, and critical infrastructure. This section also includes a vulnerability assessment that estimates the potential damages that could result from certain large scale natural hazard events.

OVERVIEW OF HAZARDS AND IMPACTS

In order to update Medway's risk assessment, MAPC gathered the most recently available hazard and land use data and met with Town staff to identify changes in local hazard areas and development trends. MAPC also used FEMA's damage estimation software, HAZUS (described in the Vulnerability Assessment).

The Massachusetts Hazard Mitigation Plan provides an in-depth overview of natural hazards in Massachusetts. Previous state and federal disaster declarations since 1991 are summarized in Table 2. Table 5 summarizes the hazard risks for Medway. This evaluation takes into account the frequency of the hazard, historical records, and variations in land use. This analysis is based on the vulnerability assessment in the Massachusetts State Hazard Mitigation Plan. The statewide assessment was modified to reflect local conditions in Medway using the definitions for hazard frequency and severity listed below. Based on this, the Town set an overall priority for each hazard.

Table 5 Hazard Risks Summary

Hazard	Frequency		Severity	
	Massachusetts	**Medway**	**Massachusetts**	Medway
Flooding	High	High	Serious to extensive	**Serious to extensive**
Dam failures	Low	Low	Extensive	**Extensive**
Coastal Hazards	High	N/A	Serious	**N/A**
Tsunamis	Low	N/A	Extensive	**N/A**
Hurricane/Tropical Storm	Medium	Medium	Extensive to Catastrophic	**Extensive to Catastrophic**
Tornadoes	Medium	Medium	Serious	**Minor**
Thunderstorms	High	High	Minor	**Minor**
Nor'easter	High	High	Minor	**Minor**
Winter-Blizzard/Snow	High	High	Minor	**Minor**
Winter-Ice Storms	Medium	Medium	Minor	**Minor**
Earthquakes	Very Low	Very Low	Serious	**Serious**
Landslides	Low	Low	Minor	**Minor**
Brush fires	Medium	Medium	Minor	**Minor**
Major Urban Fires		N/A		**N/A**
Extreme Temperatures	Medium	Medium	Minor	**Minor**
Drought	Low	Low	Minor	**Minor**
Ice Jams	High	N/A	Minor	**Minor**

Source, Massachusetts State Hazard Mitigation Plan, 2013, modified for Medway

Definitions used in the Commonwealth of Massachusetts State Hazard Mitigation Plan

Frequency

- **Very low frequency:** events that occur less frequently than once in 100 years (less than 1% per year)
- **Low frequency:** events that occur from once in 50 years to once in 100 years (1% to 2% per year);
- **Medium frequency:** events that occur from once in 5 years to once in 50 years (2% to 20% per year);
- **High frequency:** events that occur more frequently than once in 5 years (Greater than 20% per year).

Severity

- **Minor**: Limited and scattered property damage; limited damage to public infrastructure and essential services not interrupted; limited injuries or fatalities.
- **Serious:** Scattered major property damage; some minor infrastructure damage; essential services are briefly interrupted; some injuries and/or fatalities.
- **Extensive:** Widespread major property damage; major public infrastructure damage (up to several days for repairs); essential services are interrupted from several hours to several days; many injuries and/or fatalities.
- **Catastrophic:** Property and public infrastructure destroyed; essential services stopped; numerous injuries and fatalities.

Note: Of the hazards listed in the 2013 Massachusetts State Hazard Mitigation Plan, several hazard categories are not applicable to the Town of Medway: (i) coastal hazards and tsunamis, due to the town's inland location away from the coast; (ii) major urban fires, due to the lack of significant urban areas in close proximity to wildfire hazards that could pose a significant threat of major urban fires, and (iii) ice jams since Medway's rivers are not typically completely frozen during the winter months and the US Army Corps of Engineers Ice Jam Database shows no documentation of ice jams occurring in the Town of Medway.

FLOOD RELATED HAZARDS

Flooding was the most prevalent serious natural hazard identified by local officials in Medway. Flooding is generally caused by hurricanes, nor'easters, severe rainstorms, and thunderstorms. Climate change has the potential to exacerbate these issues over time with the potential for changing rainfall patterns leading to heavier storms.

REGIONALLY SIGNIFICANT FLOODS

There have been a number of major storms that have affected the Metro Boston region over the last forty years. Significant historic flood events in the region have included:

- February 1978
- January 1979
- April 1987
- October 1991
- October 1996
- June 1998
- March 2001
- April 2004
- May 2006
- April 2007
- March 2010
- March 2018

Local data for previous flooding occurrences are not collected by the Town of Medway. The best available local data is for Norfolk County through the National Centers for Environmental Information (see Table 6). Norfolk County, which includes the Town of Medway, experienced 45 flood events from 1996 –2016. No deaths or injuries were reported and the total reported property damage in the county was $26.3 million dollars. Of that total, $24.9 million is attributed to the two major events of March 2010.

Table 6 Norfolk County Flood Events, 1996-2016

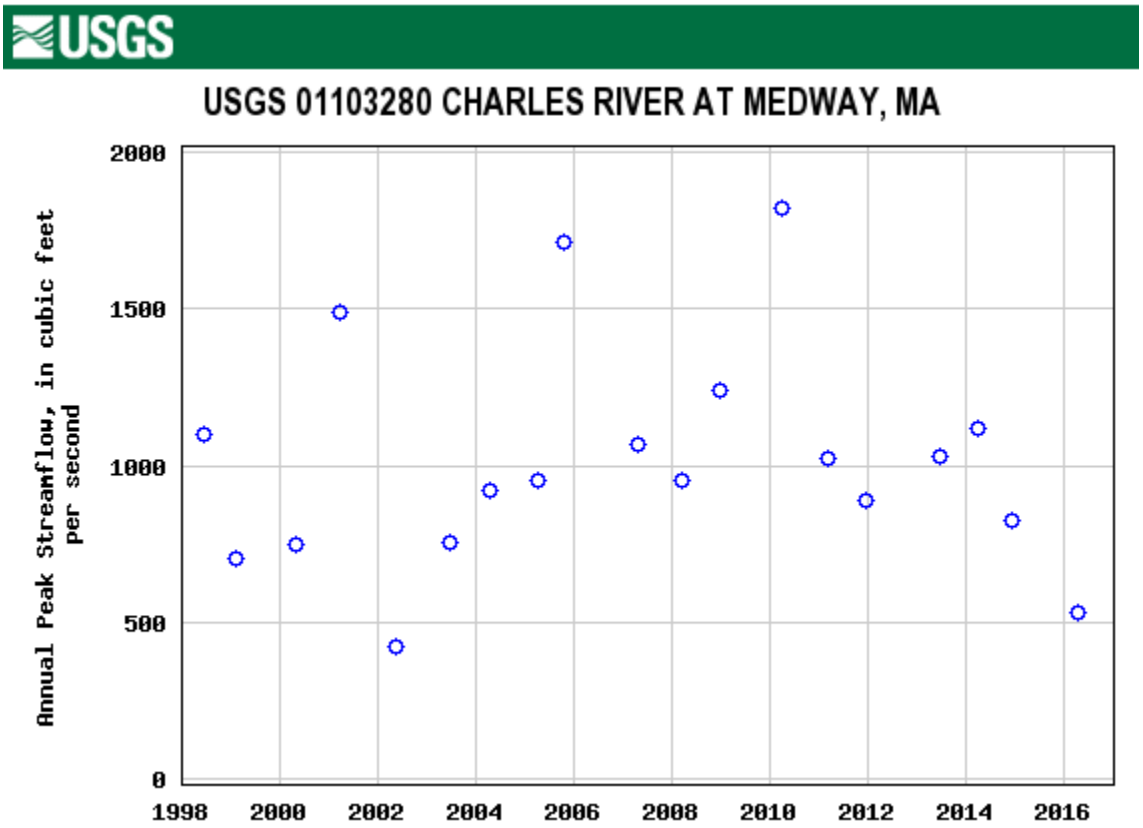
Date	Deaths	Injuries	Property Damage
01/27/1996	0	0	0.00K
09/18/1996	0	0	0.00K
10/21/1996	0	0	0.00K
05/12/1998	0	0	0.00K
06/13/1998	0	0	570.00K
06/15/1998	0	0	0.00K
03/05/2001	0	0	0.00K
03/22/2001	0	0	0.00K
03/22/2001	0	0	0.00K
04/01/2001	0	0	0.00K
03/28/2005	0	0	0.00K
10/15/2005	0	0	30.00K
10/15/2005	0	0	40.00K
10/15/2005	0	0	200.00K
10/15/2005	0	0	60.00K
10/15/2005	0	0	40.00K
10/15/2005	0	0	140.00K
10/25/2005	0	0	35.00K
05/13/2006	0	0	5.00K
06/07/2006	0	0	20.00K
10/28/2006	0	0	8.00K
11/24/2006	0	0	0.00K

Date	Deaths	Injuries	Property Damage
03/02/2007	0	0	5.00K
04/18/2007	0	0	5.00K
02/13/2009	0	0	10.00K
07/02/2009	0	0	5.00K
08/15/2009	0	0	3.00K
05/24/2009	0	0	0.00K
06/27/2009	0	0	15.00K
03/14/2010	0	0	16.640M
03/29/2010	0	0	8.320M
04/01/2010	0	0	0.00K
07/24/2010	0	0	20.00K
08/05/2010	0	0	0.00K
08/25/2010	0	0	8.00K
08/28/2011	0	0	0.00K
08/15/2012	0	0	0.00K
10/29/2012	0	0	0.00K
06/07/2013	0	0	0.00K
07/29/2013	0	0	0.00K
08/09/2013	0	0	15.00K
10/22/2014	0	0	0.00K
10/23/2014	0	0	0.00K
8/15/2015	0	0	0.00K
8/18/2015	0	0	0.00K
6/07/2016	0	0	5.00K
8/14/2016	0	0	5.00K
4/1/2017	0	0	5.00k
7/12/2017	0	0	0
7/18/2017	0	0	1.00k
8/2/2017	0	0	0
9/30/2017	0	0	10.0k
10/25/2017	0	0	0
10/29/2017	0	0	0
Total	**0**	**0**	**26.3 M**

Source: NOAA, National Centers for Environmental Information

The most severe flooding since the previous plan occurred during March 2010, when a total of 14.83 inches of rainfall accumulation was recorded by the National Weather Service (NWS). The weather pattern that consisted of early springtime prevailing westerly winds that moved three successive storms, combined with tropical moisture from the Gulf of Mexico, across New England. Torrential rainfall caused March 2010 to be the wettest month on record.

Figure 2 USGS Flood Gage Discharge Data for Charles River at Medway



Source: United States Geological Survey 2018

One indication of the extent of flooding is the gage discharge at the nearest USGS streamflow gauging station on Charles Street in Medway at the Walker Street Bridge. Figure 2 illustrates that 2010 had the highest streamflow at nearly 2,000 cubic feet per second for the years of 1998-2016. Potential damages from flooding in the Town of Medway were estimated using FEMA's HAZUS-MH program. The results, shown in Table 27, indicate potential damages from a 1% Annual Chance Flood (100-year) at $15,510,000 and from a 0.2% Annual Chance Flood (500-year) at $19,290,000.

OVERVIEW OF TOWN-WIDE FLOODING

As with most of eastern Massachusetts the natural hazard threat that is most prevalent in the town of Medway, and therefore the focus of most of the town's hazard mitigation efforts is flooding. Medway is bordered by the town of Milford on the west, Holliston to the north, Millis to the east and Franklin and Bellingham to the south.

Medway has very little topographical relief and much of the flat, undeveloped land is wetland. The town is impacted by several bodies of water, including but not limited to the Charles River (and surrounding wetlands), Chicken Brook, Hopping Brook, Choate Pond, Green Stream, and Winthrop St. Pond. However, the Charles River, the largest river in Massachusetts and Chicken Brook tend to have the largest impact on flooding, as does beaver activity, inadequate flood storage and under-sized drainage systems.

The Charles River is 80 miles in length - the longest river with its entire length in Massachusetts. The Charles River Watershed has a drainage area of approximately 308 square miles and encompasses all or part of 35 municipalities. The watershed drains northward and is divided into three distinct regions, which include the rural, forested upper watershed, the suburban lakes or middle watershed, and the urban lower watershed, which drains through the Boston metropolitan area. In general, the upper and middle watersheds are characterized by forest cover and residential land use, while the lower watershed is characterized by commercial land use and dense urban development. Since 1995, the water quality of the Charles River has improved dramatically, and is now clean enough for boating and swimming for the greater part of each year, according to the Environmental Protection Agency (EPA). The greatest source of pollution to the river is non-point source pollution, especially from stormwater runoff and Combined Sewer Overflows (CSOs). The quantity of water available for residential and commercial use is also threatened by overuse, which has lowered groundwater levels and decreased stream flow.

In the 1960's studies by the Corps of Engineers revealed that the communities above Newton had a history of only minimal flooding. Extensive marshes, swamps and wet meadows scattered around the upper watershed were holding floodwaters and then only slowly letting them go. In 1974 Congress authorized the "Charles River Natural Valley Storage Area," allowing for the acquisition and permanent protection of 17 scattered wetlands in the middle and upper watershed. Final acquisition totaled 8,103 acres, with 3,221 acres of land acquired in fee and 4,882 acres in flood easement, at total project cost of $8,300,000. Medway therefore, has the responsibility of preserving floodplains and other water storage areas in efforts reduce downstream flooding. It must be noted that within the Charles River Watershed, flooding within the lower watershed (Boston metro area) is controlled with dams and channelization, while the upper and middle watersheds, wetlands and other natural storage areas are relied upon to protect the area from flooding.

Flooding within Medway usually occurs within or near floodplains. The 1% Annual Chance Flood zones are found throughout Medway, mainly along the town's water ways. Within populated areas, flooding occurs in a handful of select areas; however the town has been able to avoid significant damages by passing aggressive zoning, wetland, watershed, and groundwater regulations.

According to Local Hazard Mitigation Team, most of the town's flood-related hazards are related to high rain events, such as heavy rainstorms, tropical storms or winter storms as well as beavers. In addition, the spring rainy season is a particularly hazardous time, as runoff from winter snowfalls saturates much of the town's wetlands and fills the town's streams and brooks. A heavy or severe rain event at this time of year can often overwhelm the natural flood storage areas of the town and create flood hazards on streets and around residential and business areas in town. Combined with the watershed from its neighboring towns to the north and west, the Medway area can accumulate a great deal of water in a short amount of time during heavy rains, severe storms and in the spring season.

POTENTIAL FLOOD HAZARD AREAS

Information on potential flood hazard areas was taken from two sources. The first was the current National Flood Insurance Rate Maps, dated July 17, 2012. The FIRM flood zones are shown on Map 3 in Appendix B and their definitions are listed below.

Flood Insurance Rate Map Zone Definitions

Zone A (1% annual chance) - Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study (FIS) by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs (base flood elevations) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone AE and A1-A30 (1% annual chance) **-** Zones AE and A1-A30 are the flood insurance rate zones that correspond to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

Zones X500 (.2% annual chance) **-** Zone X500 is the flood insurance rate zone that correspond to the 500-year floodplains that are determined in the Flood Insurance Study (FIS) by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no BFEs (base flood elevations) or depths are shown within this zone.

Zone VE (1% annual chance) **-** Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply

In addition, information on areas subject to flooding was provided by local officials. The Locally Identified Areas of Flooding described below were identified by Town staff as areas where flooding is known to occur. All of these areas do not necessarily coincide with the flood zones from the FIRM maps. Some may be areas that flood due to inadequate drainage systems or other local conditions rather than location within a flood zone. The numbers correspond to the numbers on Map 8, "Local Hazard Areas."

LOCALLY IDENTIFIED AREAS OF FLOODING

The town identified the following local areas of potential flooding. These are summarized in Table 7 and displayed on Map 8, with the corresponding map location numbers in parentheses.

The locally identified areas of flooding described below were identified by the Local Committee as areas where flooding occurs. These areas do not necessarily coincide with the flood zones from the FIRM maps. They may be areas that flood due to inadequate drainage systems or other local conditions rather than location within a flood zone. The numbers correspond to the numbers on Map 8, "Hazard Areas". The numbers do not reflect priority order.

1) Brentwood (Flooding)
   Brentwood, a subdivision built in the 1970's, suffers from inadequate drainage systems. Water runoff from a hill located west of the community is the primary cause of the flooding. Additionally, development, which has increased impervious surface around the subdivision has decreased the ability for stormwater to absorb into the ground and has increased the rate of water flow. Rain water from the abutting hill coupled with increases in impervious has caused the culvert at Route 109 to exceed its capacity, further

exacerbating Brentwood flooding. Damages sustained from the flooding include street closures, property damage and basement flooding to several single family houses. These damages typically result in minor damages, but occur frequently. To the extent the Town has been allowed, they performed some drainage work in the Right of Way, but there are still some areas prone to flooding, especially through private property/residential areas. The Town received FEMA Hazard Mitigation Assistance funds to mitigate this challenge.

2) Hopping Brook (Flooding)
Each spring Hopping Brook exceeds its banks. Infrequently, the brook floods Route 109, a major roadway and escape route for Medway residents. Every spring and in larger rain storms, 4-5 five houses south of the brook sustain flood damages. Expanding the culvert under Route 109 could potentially mitigate this problem.

3) Chicken Brook at Village Street (Flooding)
During large rain storms and spring events, Chicken Brook exceeds its banks floods Village Street. The town also indicated that flooding occurs south of Chicken Brook in Bellingham causing the upstream portion in Medway to flood. The town has a pump station that runs year round, but exceeds capacity every spring and in large rain storms. While this is a frequent problem, there is little damage caused by the flooding. The town has identified a hydro analytics study of the area and/or building a retaining wall on the northern banks of Chicken Brook as potential mitigation measures.

4) Main Street by the Mill (Flooding)
During large storms water levels at Chicken Brook raise and threaten to flood the old Medway Mill. The brook flows directly under the mill, a site for potential development. In attempts to restore the natural flow of Chicken Brook, the town is looking to conduct stream restoration. Massachusetts Department of Transportation updated the drainage in the area with the Route 109 project including bio-retention, additional catch basins, new piping to manage water going through. The bridge has not been improved.

5) Charles River at Village Street (Flooding)
The Charles River rises every spring and causes or threatens flooding throughout its duration. The Charles River flows through the southern portion of Medway, which has low topography. During large storms, Village Street, a major roadway through Medway, sustains flooding resulting in partial to complete road closure. The town is currently working to mitigate flooding at this location.

6) Choate Dam (Dam/Flooding)
The Choate Dam is currently out for bid for renovation. If the dam were to break it would cause extensive to catastrophic southward/downstream damages. The dam is high significance, impounding four or five acres of water. The Town owns the dam and is liable. They completed a hydrology study on the dam.

7) Sanford Dam (Dam/Flooding)
The town is unsure of the condition of the Sanford Dam. It is a minor concern for the town since it does not own it. However, if the dam were to break it would cause extensive to catastrophic eastward/downstream damages.

17.) Walker Street Bridge (Flooding)

There is scouring present on the Walker Street Bridge walls from damage related to flooding. This a priority to repair and have requested $150,000 for repairs from the Town.

18.) High School Entrance Road

At the entrance road to the high school, beaver activity has raised the level of the water causing flooding. This could become more problematic in the future.

Table 7 Locally Identified Areas of Flooding

Locally Identified Hazards Site ID	Name	Type	Comments
1	Brentwood	Flooding	Flooding
2	Hopping Brook	Flooding	Flooding
3	Chicken Brook at Village Street	Flooding	Flooding
4	Main Street by the Mill	Flooding	Flooding
5	Charles River	Flooding	Flooding
6	Choate Dam	Flooding	Dam
7	Sanford Dam	Flooding	Dam
17	Walker Street Bridge	Flooding	Flooding scours bridge walls
18	High School Entrance Road	Flooding	Beaver causing flooding

REPETITIVE LOSS STRUCTURES

As defined by the National Flood Insurance Program (NFIP), a repetitive loss property is any property which the NFIP has paid two or more flood claims of $1,000 or more in any given 10-year period since 1978. For more information on repetitive losses see https://www.fema.gov/txt/rebuild/repetitive_loss_faqs.txt

The state plan indicates that Massachusetts is one of the 10 states that cumulatively account for 76% of all repetitive loss buildings in the United States. However, there are no repetitive loss structures in the town of Medway.

DAMS AND DAM FAILURE

Dam failure can occur as a result of structural failure, independent of a hazard event, or as the result of the impacts of a hazard event such as flooding associated with storms or an earthquake. In the event of a dam failure, the energy of the water stored behind even a small dam can cause loss of life and property damage if there are people or buildings downstream. The number of fatalities from a dam failure depends on the amount of warning provided to the population and the number of people in the area in the path of the dam's floodwaters. With an anticipated increase in the intensity or amount of precipitation, a primary climate change dam concern is failure and/or overtopping since they were most likely designed based on historic weather patterns.

Dam failure is a highly infrequent occurrence but a severe incident could result in loss of lives and significant property damage. Since 1984, and according to the Association of State Dam Safety Officials, three dams

have failed in Massachusetts, one of which resulted in a death. There have been no recorded dam breaches in Medway.

According to data provided by the Massachusetts Department of Conservation and Recreation (DCR) and the town, there are three dams located in Medway. Two of these are privately owned one is owned by the Town of Medway. None of the dams in Medway were listed in the state auditor's report that identified dams in unsafe or poor condition. Medway's dams are summarized in Table 8 according to ownership and hazard potential. DCR defines dam hazard potential classifications as follows:

> *High*: Dams located where failure or mis-operation will likely cause loss of life and serious damage to homes(s), industrial or commercial facilities, important public utilities, main highways(s) or railroad(s).
>
> *Significant:* Dams located where failure or mis-operation may cause loss of life and damage home(s), industrial or commercial facilities, secondary highway(s) or railroad(s) or cause interruption of use or service of relatively important facilities.
>
> *Low:* Dams located where failure or mis-operation may cause minimal property damage to others. Loss of life is not expected.

Table 8 Inventory of Dams in Medway

Dam Name	River	Owner	Owner Type	Hazard Potential Classification
Stanford Mill Pond Dam	Charles River	Private	Private	Significant Hazard
Medway(Choate) Park Dam	Chicken Brook	Town of Medway	Municipality	Significant Hazard
West Medway Dam	Charles River	Private	Private	Low Hazard

There have been no dam failures documented for the Town of Medway. Based on the record of previous occurrences, dam failure in Medway is a very low frequency event as defined by the 2013 Massachusetts State Hazard Mitigation Plan. This hazard may occur less frequently than once in 100 years (less than 1% per year).

WIND RELATED HAZARDS

Wind-related hazards include hurricanes, tropical storms, and tornadoes, as well as high winds during nor'easters and thunderstorms. As with many communities, falling trees that result in downed power lines and power outages are an issue in Medway. Information on wind related hazards can be found on Map 5 in Appendix B.

Tree damage during high winds has the potential to be a significant hazard in Medway. Trees can knock out power lines and block major roadways, which hinders emergency response. While Medway does experience downed trees that have caused isolated power outages and roadway blockages, the town also takes pride in its tree-lined streets. Therefore, maintaining trees in a proactive fashion has been a trade-off for the tree amenities. Medway would benefit from an effective tree trimming and removal programs.

HURRICANES AND TROPICAL STORMS

A hurricane is a violent wind and rainstorm with wind speeds of 74 to 200 miles per hour. A hurricane is strongest as it travels over the ocean and is particularly destructive to coastal property as the storm hits land. Given its location not too distant from the coast, the Town of Medway's entire area is vulnerable to hurricanes, which occur between June and November. A tropical storm has similar characteristics, but wind speeds are below 74 miles per hour. Since 1900, 39 tropical storms have impacted New England (NESEC), nine Category 1 hurricanes, five Category 2 hurricanes and one Category 3 hurricane. This equates to a frequency of once every six years. Massachusetts hurricanes since 1938 are shown in Table 9.

Table 9: Hurricane Records for Massachusetts, 1938 to 2012

Hurricane Event	Date
Great New England Hurricane	September 21, 1938
Great Atlantic Hurricane	September 14-15, 1944
Hurricane Doug	September 11-12, 1950
Hurricane Carol	August 31, 1954
Hurricane Edna	September 11, 1954
Hurricane Diane	August 17-19, 1955
Hurricane Donna	September 12, 1960
Hurricane Gloria	September 27, 1985
Hurricane Bob	August 19, 1991
Hurricane Earl	September 4, 2010
Tropical Storm Irene	August 28, 2011
Hurricane Sandy	October 29-30, 2012

Source: National Oceanic and Atmospheric Administration

Hurricane intensity is measured according to the Saffir/Simpson scale, which categorizes hurricane intensity linearly based upon maximum sustained winds, barometric pressure, and storm surge potential. These are combined to estimate potential damage. Table 10 gives an overview of the wind speeds, surges, and range of damage caused by different hurricane categories:

Table 10: Saffir/Simpson Scale[3]

Scale No. (Category)	Winds (mph)	Surge (ft)	Potential Damage
1	74 – 95	4 - 5	Minimal
2	96 – 110	6 - 8	Moderate
3	111 – 130	9 - 12	Extensive
4	131 – 155	13 - 18	Extreme
5	> 155	>18	Catastrophic

A hurricane or storm track is the line that delineates the path of the eye of a hurricane or tropical storm. However, the town does experience the impacts of the wind and rain of hurricanes and tropical storms regardless of whether the storm track passed through the town. Falling trees and branches are a significant

[3] National Oceanic and Atmospheric Administration

problem because they can result in power outages or block traffic and emergency routes. Hurricanes are a town-wide hazard in Medway. Potential hurricane damages in Medway have been estimated using HAZUS-MH. Total damages are estimated at $6 million for a Category 2 hurricane and $36 million for a Category 4 hurricane. The hazard mapping indicates that the 100 year wind speed in Medway is 110 miles per hour.

Based on records of previous occurrences, hurricanes in Medway are a Medium frequency event as defined by the 2013 Massachusetts State Hazard Mitigation Plan. This hazard occurs from once in 5 years to once in 50 years, or a 2% to 20% chance per year.

TORNADOS

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. These events are spawned by thunderstorms and occasionally by hurricanes, and may occur singularly or in multiples. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. Most vortices remain suspended in the atmosphere. Should they touch down, they become a force of destruction. Some ingredients for tornado formation include:

- Very strong winds in the mid and upper levels of the atmosphere.
- Clockwise turning of the wind with height (from southeast at the surface to west aloft).
- Increasing wind speed with altitude in the lowest 10,000 feet of the atmosphere (i.e., 20 mph at the surface and 50 mph at 7,000 feet).
- Very warm, moist air near the ground with unusually cooler air aloft.
- A forcing mechanism such as a cold front or leftover weather boundary from previous shower or thunderstorm activity.

Tornado damage severity is measured by the Fujita Tornado Scale, in which wind speed is not measured directly but rather estimated from the amount of damage. As of February 01, 2007, the National Weather Service began rating tornados using the Enhanced Fujita-scale (EF-scale), which allows surveyors to create more precise assessments of tornado severity. The EF-scale[4] is summarized below:

Fujita Scale			Derived		Operational EF Scale	
F Number	**Fastest ¼ mile (mph)**	**3-second gust (mph)**	**EF Number**	**3-second gust (mph)**	**EF Number**	**3-second gust (mph)**
0	40 – 72	45 – 78	0	65 – 85	0	65 – 85
1	73 – 112	79 – 117	1	86 – 109	1	86 – 110
2	113 – 157	118 – 161	2	110 – 137	2	111 – 135
3	158 – 207	162 – 209	3	138 – 167	3	136 – 165
4	208 – 260	210 – 261	4	168 – 199	4	166 – 200
5	261– 318	262 – 317	5	200 – 234	5	Over 200

Source: Massachusetts State Hazard Mitigation Plan, 2013

[4] Tornado Facts

The frequency of tornadoes in eastern Massachusetts is low; on average, there are six tornadoes that touchdown somewhere in the Northeast region every year. The strongest tornado in Massachusetts history was the Worcester Tornado in 1953, killing 94 people, injuring 1,288 and costing $52.1 million in damages (worth $465.3 million today). [5]

The most recent tornado events in Massachusetts were in Springfield in 2011 and in Revere in 2014. The Springfield tornado caused significant damage and resulted in four deaths in June of 2011. The Revere tornado touched down at in Chelsea just south of Route 16 and moved north into Revere's business district along Broadway and ended near the intersection of Routes 1 and 60. The path was approximately two miles long and 3/8 mile wide, with wind speeds up to 120 miles per hour. Approximately 65 homes had substantial damages and 13 homes and businesses were uninhabitable.

There has been one documented tornado within the limits of the Town of Medway, and since 1956 there have been 11 tornadoes in surrounding Norfolk County recorded by the Tornado History Project. One of these was an F2 tornado, and three were FI.

Buildings constructed prior to current building codes may be more vulnerable to damages caused by tornadoes. Evacuation of impacted areas may be required on short notice. Sheltering and mass feeding efforts may be required along with debris clearance, search and rescue, and emergency fire and medical services. Key routes may be blocked by downed trees and other debris, and widespread power outages are also typically associated with tornadoes.

Table 11 Tornado Records for Norfolk County

Date	Fujita	Fatalities	Injuries	Width	Length	Damage
11/21/1956	2	0	0	17	0.1	$500-$5000
8/9/1972	1	1	6	30	4.9	$5K-$50K
9/6/1973	1	0	0	10	1.1	$5K-$50K
7/10/1989	0	0	0	23	0.1	$500-$5000
5/18/1990	0	0	0	10	0.2	$500-$5000
5/18/1990	0	0	0	10	0.2	$500-$5000
6/30/2001	0	0	0	80	0.1	-
8/21/2004	1	0	0	40	6	$1,500,000
5/9/2013	0	0	0	50	0.38	$20,000
6/23/2015	0	0	0	200	0.48	-
8/22/2016	1	0	0	400	0.85	$10
TOTAL		**1**	**5**			

Source: The Tornado History Project

Although tornadoes are a potential town-wide hazard in Medway, tornado impacts are relatively localized compared to severe storms and hurricanes. Damages from any tornado in Medway would greatly depend on

[5] Morrison, Sara. 2014. Tornados of Massachusetts Past.https://www.boston.com/weather/untagged/2014/07/28/tornadoes-of-massachusetts-past

the track of the tornado. The greatest potential damages would be in the most densely developed part of town in the town center. While there are no existing estimates for potential damages from tornadoes in Medway, the best available date for Norfolk County (Table 11) shows that 11 recorded tornadoes since 1956 resulted in a range of damages from &1,532,000 to $1,640,000 million. One fatality and six injuries were reported.

Based on the record of previous occurrences since 1950, Tornado events in Medway are a Medium frequency event as defined by the 2013 Massachusetts State Hazard Mitigation Plan. This hazard may occur from once in 5 years to once in 50 years, or a 2% to 20% chance per year.

SEVERE THUNDERSTORMS

While less severe than the other types of storms discussed, thunderstorms can lead to localized damage and represent a hazard risk for communities. A thunderstorm typically features lightning, strong winds, and rain and/or hail. Thunderstorms sometime give rise to tornados. On average, these storms are only around 15 miles in diameter and last for about 30 minutes. A severe thunderstorm can include winds of close to 60 mph and rain sufficient to produce flooding. The town's entire area is potentially subject to severe thunderstorms.

The best available data on previous occurrences of thunderstorms in Medway is for Norfolk County through the National Centers for Environmental Information. Between the years 1995 and 2016 NOAA's National Centers for Environmental Information records show 69 thunderstorm events in Norfolk County (Table 12). These storms resulted in a total of $1,062,000 in property damages. There were no injuries or deaths reported.

Table 12 Norfolk County Thunderstorm Events, 1995-2017

Date	Magnitude*	Deaths	Injuries	Damage ($)
4/4/1995	53	0	0	0
7/15/1995	55	0	0	0
10/28/1995	0	0	0	0
5/21/1996	60	0	0	0
5/31/1998	50	0	0	0
6/26/1998	50	0	0	20,000
7/20/1998	50	0	0	0
7/23/1998	50	0	0	0
7/6/1999	70	0	0	0
7/24/1999	50	0	0	0
8/5/1999	50	0	0	0
4/9/2000	61	0	0	0
6/2/2000	50	0	0	0
6/27/2000	50	0	0	0
7/18/2000	55	0	0	0
8/10/2000	50	0	0	0
6/30/2001	50	0	0	0
8/10/2001	50	0	0	20,000

Date	Magnitude*	Deaths	Injuries	Damage ($)
6/16/2002	50	0	0	5000
7/15/2002	62	0	0	25,000
7/23/2002	50	0	0	7000
8/21/2004	50	0	0	25,000
8/5/2005	50	0	0	25,000
8/14/2005	50	0	0	20,000
5/21/2006	52	0	0	35,000
6/1/2006	50	0	0	15,000
6/23/2006	50	0	0	15,000
7/4/2006	50	0	0	40,000
7/21/2006	50	0	0	15,000
7/28/2006	50	0	0	20,000
8/2/2006	50	0	0	55,000
6/28/2007	50	0	0	0
7/28/2007	50	0	0	0
8/17/2007	50	0	0	0
6/24/2008	50	0	0	5000
7/2/2008	54	0	0	20,000
8/3/2008	50	0	0	1000
9/9/2008	50	0	0	1000
5/24/2009	50	0	0	1000
6/27/2009	50	0	0	10,000
7/7/2009	50	0	0	500
7/8/2009	50	0	0	1000
7/31/2009	50	0	0	26,000
6/6/2010	53	0	0	10,000
6/20/2010	58	0	0	113,000
6/24/2010	50	0	0	1000
8/19/2011	50	0	0	7000
6/23/2012	50	0	0	41,000
8/10/2012	50	0	0	5000
8/15/2012	40	0	0	500
6/17/2013	50	0	0	11,000
7/29/2013	50	0	0	20,500
7/3/2014	50	0	0	20,000
7/28/2014	60	0	0	50,000
6/23/2015	50	0	0	5000
8/4/2015	50	0	0	30,000
8/15/2015	50	0	0	35,000
2/25/2016	56	0	0	94,000
6/7/2016	50	0	0	10,000
7/18/2016	50	0	0	90,000

Date	Magnitude*	Deaths	Injuries	Damage ($)
7/22/2016	50	0	0	65,000
7/23/2016	40	0	0	35,000
8/14/2016	50	0	0	5000
6/9/2017	45	0	0	1000
6/13/2017	48	0	0	1000
6/23/2017	50	0	0	1000
8/2/2017	50	0	0	2500
9/6/2017	50	0	0	1000
Total		**0**	**0**	**1,062,000**

Magnitude refers to maximum wind speed
Source: NOAA, National Centers for Environmental Information

Severe thunderstorms are a town-wide hazard for Medway. The town's vulnerability to severe thunderstorms is similar to that of Nor'easters. High winds can cause falling trees and power outages, as well as obstruction of key routes and emergency access. Heavy precipitation may also cause localized flooding, both riverine and urban drainage related. While there are no existing estimates for potential damages from thunderstorms in Medway, the best available date for Norfolk County (Table 11) shows that from 1995 to 2016 thunderstorms resulted in $1,062,000 in property damages. There were no injuries or deaths reported.

Based on the record of previous occurrences, severe thunderstorms in Medway are high frequency events as defined by the 2013 Massachusetts State Hazard Mitigation Plan. This hazard may occur more frequently than once in 5 years (greater than 20% per year).

WINTER STORMS

Winter storms, including heavy snow, blizzards, and ice storms, are the most common and most familiar of the region's hazards that affect large geographic areas. The majority of blizzards and ice storms in the region cause more inconvenience than they do serious property damage, injuries, or deaths. However, periodically, a storm will occur which is a true disaster, and necessitates intense large-scale emergency response. Map 6 in Appendix A indicates one snowfall band within Medway. The average annual snowfall in Medway is 36.1 – 48.0 inches. The Town provides standard snow plowing operations, and clearing snow has not posed any significant challenges. They feel they have sufficient storage space and snow removal equipment.

Winter storms are a potential town-wide hazard in Sharon. The impacts of winter storms are often related to the weight of snow and ice, which can cause roof collapses and also causes tree limbs to fall. This in turn can cause property damage and potential injuries. Power outages may also result from fallen trees and utility lines.. A number of public safety issues can arise during snow storms. Impassible streets are a challenge for emergency vehicles and affect residents and employers. Snow-covered sidewalks force people to walk in streets, which are already less safe due to snow, slush, puddles, and ice.Not all residents are able to clear their properties, especially the elderly. Refreezing of melting snow can cause dangerous roadway conditions.

HEAVY SNOW AND BLIZZARDS

A blizzard is a winter snow storm with sustained or frequent wind gusts to 35 mph or more, accompanied by falling or blowing snow reducing visibility to or below ¼ mile. These conditions must be the predominant condition over a 3 hour period. Extremely cold temperatures are often associated with blizzard conditions, but are not a formal part of the definition. The hazard created by the combination of snow, wind and low visibility significantly increases, however, with temperatures below 20 degrees.

Winter storms are a combination hazard because they often involve wind, ice and heavy snow fall. The National Weather Service defines "heavy snow fall" as an event generating at least 4 inches of snowfall within a 12 hour period. Winter Storms are often associated with a Nor'easter event, a large counter-clockwise wind circulation around a low-pressure center often resulting in heavy snow, high winds, and rain.

The Northeast Snowfall Impact Scale (NESIS) developed by Paul Kocin of The Weather Channel and Louis Uccellini of the National Weather Service[6] characterizes and ranks high impact northeast snowstorms. These storms have large areas of 10 inch snowfall accumulations and greater. NESIS has five categories: Extreme, Crippling, Major, Significant, and Notable. NESIS scores are a function of the area affected by the snowstorm, the amount of snow, and the number of people living in the path of the storm. The largest NESIS values result from storms producing heavy snowfall over large areas that include major metropolitan centers. The NESIS categories are summarized below[7]:

TABLE 5. NESIS categories, their corresponding NESIS values, number of 70 total cases within each category, and a descriptive adjective.

Category	NESIS values	No. of cases	Description
1	1–2.499	23	"Notable"
2	2.5–3.99	22	"Significant"
3	4–5.99	16	"Major"
4	6–9.99	7	"Crippling"
5	10.0+	2	"Extreme"

The most significant winter storm in Massachusetts in recent history was the "Blizzard of 1978," which resulted in over three feet of snowfall and multiple day closures of roadways, businesses, and schools. In Medway blizzards and severe winter storms have occurred in the following years:

[6] Kocin, Paul J. and Uccellini, Louis W. 2004. A snowfall impact scale derived from Northeast storm snowfall distributions. American Meteorological Society. October 14, 2003.
[7] Kocin, Paul J. and Uccellini, Louis W. 2004. A snowfall impact scale derived from Northeast storm snowfall distributions. American Meteorological Society. October 14, 2003.

Table 13 Severe Winter Storm Records for Massachusetts[8]

Blizzard of 1978	February 1978
Blizzard	March 1993
Blizzard	January 1996
Severe Snow Storm	March 2001
Severe Snow Storm	December 2003
Severe Snow Storm	January 2004
Severe Snow Storm	January 2005
Severe Snow Storm	April, 2007
Severe Snow Storm	December 2010
Severe Snow Storm	January 2011
Blizzard of 2013	February 2013
Blizzard of 2015	January 2015

The Town of Medway does not keep local records of winter storms. Data for Norfolk County, which includes Medway, is the best available data to help understand previous occurrences and impacts of heavy snow events. While there are no existing estimates for damages from winter storms in Medway, the best available date for Norfolk County from NOAA shows that from 1996 to 2016 there were 77 heavy snowfall events that resulted in $6.4 million dollars in property damage There were no deaths and one injury reported (Table 14).

Table 14 Heavy Snow events and Impacts in Norfolk County 1996 –2014

Date	Deaths	Injuries	Property Damage
1/2/1996	0	0	-
1/7/1996	0	0	1,400,000
1/7/1996	0	0	2,000,000
1/10/1996	0	0	-
2/2/1996	0	0	-
2/16/1996	0	0	-
3/2/1996	0	0	-
3/7/1996	0	0	-
4/7/1996	0	0	-
4/9/1996	0	0	-
12/6/1996	0	0	-
1/11/1997	0	0	-
2/16/1997	0	0	-
3/31/1997	0	0	-
4/1/1997	0	0	2,500,000
12/23/1997	0	0	-
1/15/1998	0	0	-
1/15/1998	0	0	-
12/24/1998	0	0	-
1/14/1999	0	0	-

[8] National Oceanic and Atmospheric Administration

Date	Deaths	Injuries	Property Damage
2/25/1999	0	0	-
3/6/1999	0	0	-
3/15/1999	0	0	-
1/13/2000	0	0	-
2/18/2000	0	0	-
12/30/2000	0	0	-
1/20/2001	0	0	-
2/5/2001	0	0	-
3/5/2001	0	0	-
3/9/2001	0	0	-
3/26/2001	0	0	250,000
12/8/2001	0	0	-
12/5/2002	0	0	-
3/16/2004	0	0	-
2/21/2005	0	0	-
2/24/2005	0	0	-
12/13/2007	0	0	-
12/16/2007	0	0	7,500
12/19/2007	0	0	-
1/14/2009	0	0	36,000
1/14/2009	0	0	30,000
1/14/2009	0	0	55,000
1/27/2009	0	0	-
2/22/2009	0	0	-
12/19/2009	0	0	10,000
12/19/2009	0	0	3,000
12/31/2009	0	0	-
1/18/2009	0	0	-
1/19/2009	0	0	-
2/3/2009	0	0	-
3/1/2009	0	0	-
3/2/2009	0	0	-
12/19/2009	0	0	-
2/16/2010	0	0	-
12/20/2010	0	0	-
1/12/2011	0	0	-
1/26/2011	0	0	-
1/21/2012	0	0	-
12/29/2012	0	0	5,000
2/8/2013	0	0	-
3/7/2013	0	0	-
3/18/2013	0	0	-
12/14/2013	0	0	-
12/17/2013	0	0	-
1/2/2014	0	0	-
1/21/2014	0	0	-
2/5/2014	0	0	-
2/15/2014	0	0	5,000

Date	Deaths	Injuries	Property Damage
01/26/2015	0	0	-
02/02/2015	0	0	-
02/08/2015	0	0	-
02/14/2015	0	0	-
01/23/2016	0	0	-
02/05/2016	2	0	100,000
02/08/2016	0	0	-
04/04/2016	0	0	-
3/14/2017	0	0	0
Total	**0**	**1**	**6,401,500**

Source: NOAA, National Climatic Data Center

Blizzards are considered to be high frequency events based on past occurrences, as defined by the Massachusetts State Hazard Mitigation Plan. This hazard occurs more than once in five years, with a greater than 20% chance of occurring each year.

NOR'EASTERS

A northeast coastal storm, known as a nor'easter, is typically a large counter-clockwise wind circulation around a low-pressure center. Featuring strong northeasterly winds blowing in from the ocean over coastal areas, nor'easters are relatively common in the winter months in New England occurring one to two times a year. The storm radius of a nor'easter can be as much as 1,000 miles and these storms feature sustained winds of 10 to 40 mph with gusts of up to 70 mph. These storms are accompanied by heavy rains or snows, depending on temperatures.

Previous occurrences of Nor'easters include the following:

February 1978	Blizzard of 1978
October 1991	Severe Coastal Storm ("Perfect Storm")
December 1992	Great Nor'easter of 1992
January 2005	Blizzard/ oreaster
October 2005	Coastal Storm/Nor'easter
April 2007	Severe Storms, Inland & Coastal Flooding/Nor'easter
January 2011	Winter Storm/Nor'easter
October 2011	Severe Storm/Nor'easter
February 2013	Winter Storm/Nor'easter
January 2015	Winter Storm/Nor'easter
March 2018	Nor'easter(s)

Many of the historic flood events identified in the previous section were precipitated by nor'easters, including the "Perfect Storm" event in 1991. More recently, blizzards in January 2015 and March 2018 were large Nor'easters that caused significant snowfall amounts.

Medway is vulnerable to both the wind and precipitation that accompanies nor'easters. High winds can cause damage to structures, fallen trees, and downed power lines leading to power outages. Intense rainfall can overwhelm drainage systems causing localized flooding of rivers and streams as well as urban stormwater

ponding and localized flooding. Fallen tree limbs as well as heavy snow accumulation and intense rainfall can impede local transportation corridors, block access for emergency vehicles, severely damage utilities, and cause injury and death.

The entire Town of Medway could be at risk from the wind, rain or snow impacts from a nor'easter, depending on the track and radius of the storm, but due to its inland location the town would not be subject to coastal hazards.

Based on the record of previous occurrences, nor'easters in Medway are high frequency events as defined by the 2013 Massachusetts State Hazard Mitigation Plan. This hazard may occur more frequently than once in 5 years (greater than 20% per year).

ICE STORMS

The ice storm category covers a range of different weather phenomena that collectively involve rain or snow being converted to ice in the lower atmosphere leading to potentially hazardous conditions on the ground. Hail size typically refers to the diameter of the hailstones. Warnings and reports may report hail size through comparisons with real-world objects that correspond to certain diameters:

Description	Diameter (inches)
Pea	0.25
Marble or Mothball	0.50
Penny or Dime	0.75
Nickel	0.88
Quarter	1.00
Half Dollar	1.25
Walnut or Ping Pong Ball	1.50
Golf ball	1.75
Hen's Egg	2.00
Tennis Ball	2.50
Baseball	2.75
Tea Cup	3.00
Grapefruit	4.00
Softball	4.50

While ice pellets and sleet are examples of these, the greatest hazard is created by freezing rain conditions, which is rain that freezes on contact with hard surfaces leading to a layer of ice on roads, walkways, trees, and other surfaces. The conditions created by freezing rain can make driving particularly dangerous and emergency response more difficult. The weight of ice on tree branches can also lead to falling branches damaging electric lines.

Town-specific data for previous ice storm occurrences are not collected by the Town of Medway. The best available local data is for Norfolk County through the National Centers for Environmental Information (Table

15) which experienced eight events from 1969 –2016. Since 1965, Norfolk County experienced eight events, but no damages, deaths, or injuries were recorded for these events.

Table 15 Norfolk County Ice Storm Events, 1965-2016[9]

BEGIN_DATE	EVENT_TYPE	MAGNITUDE	DEATHS	INJURIES	DAMAGE
6/8/1965	Hail	1.5	0	0	0
4/19/1969	Hail	2	0	0	0
9/6/1973	Hail	1.75	0	0	0
6/13/1987	Hail	0.75	0	0	0
7/7/1994	Hail	1.75	0	0	0
7/15/2002	Hail	1	0	0	0
5/24/2004		0.75	0	0	0
8/02/2006		0.75	0	0	0
7/02/2008		0.75	0	0	0
5/24/2009		0.88	0	0	0
7/2/2009	Hail	0.88	0	0	0
6/01/2011		1.0			
6/23/2012		0.88	0	0	0
9/01/2013		0.75	0	0	0
8/7/2014	Hail	1	0	0	0
5/12/2015		0.75	0	0	0
8/04/2015		1.0	0	0	0

The Town's vulnerability is primarily related to restrictions to travel on roadways, temporary road closures, school closures, and potential restrictions on emergency vehicle access. The town may also be vulnerable to power outages due to fallen trees and utility lines.

Ice storms are considered to be medium frequency events based on past occurrences, as defined by the Massachusetts State Hazard Mitigation Plan, 2013. This hazard occurs once in five years to once in 50 years, with 2% to 20% chance of occurring each year.

GEOLOGIC HAZARDS

Geologic hazards include earthquakes and landslides. Although new construction under the current building codes generally will be built to seismic standards, there are still many structures which pre-date the most recent building code. Information on geologic hazards in Medway can be found on Map 4 in Appendix B.

EARTHQUAKES

Damage in an earthquake stems from ground motion, surface faulting, and ground failure in which weak or unstable soils, such as those composed primarily of saturated sand or silts, liquefy. The effects of an earthquake are mitigated by distance and ground materials between the epicenter and a given location. An

[9] NOAA, National Centers for Environmental Information. Magnitude refers to diameter of hail stones in inches.

earthquake in New England affects a much wider area than a similar earthquake in California due to New England's solid bedrock geology.[10]

Seismologists use a Magnitude scale (Richter Scale) to express the seismic energy released by each earthquake. The typical effects of earthquakes in various ranges are summarized below[11].

Richter Magnitudes	Earthquake Effects
Less than 3.5	Generally not felt, but recorded
3.5- 5.4	Often felt, but rarely causes damage
Under 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas up to about 100 km. across where people live.
7.0- 7.9	Major earthquake. Can cause serious damage over larger areas.
8 or greater	Great earthquake. Can cause serious damage in areas several hundred meters across.

According to the State Hazard Mitigation Plan, New England experiences an average of five earthquakes per year. From 1668 to 2007, 355 earthquakes were recorded in Massachusetts.[10] Most have originated from the La Malbaie fault in Quebec or from the Cape Anne fault located off the coast of Rockport. The region has experienced larger earthquakes, including a magnitude 5.0 earthquake in 1727 and a 6.0 earthquake that struck in 1755 off the coast of Cape Anne. More recently, a pair of damaging earthquakes occurred near Ossipee, NH in 1940, and a 4.0 earthquake centered in Hollis, Maine in October 2012 was felt in the Boston area. Historical records of some of the more significant earthquakes in the region are shown in Table 16.

Table 16 Historical Earthquakes in Massachusetts or Surrounding Area[12]

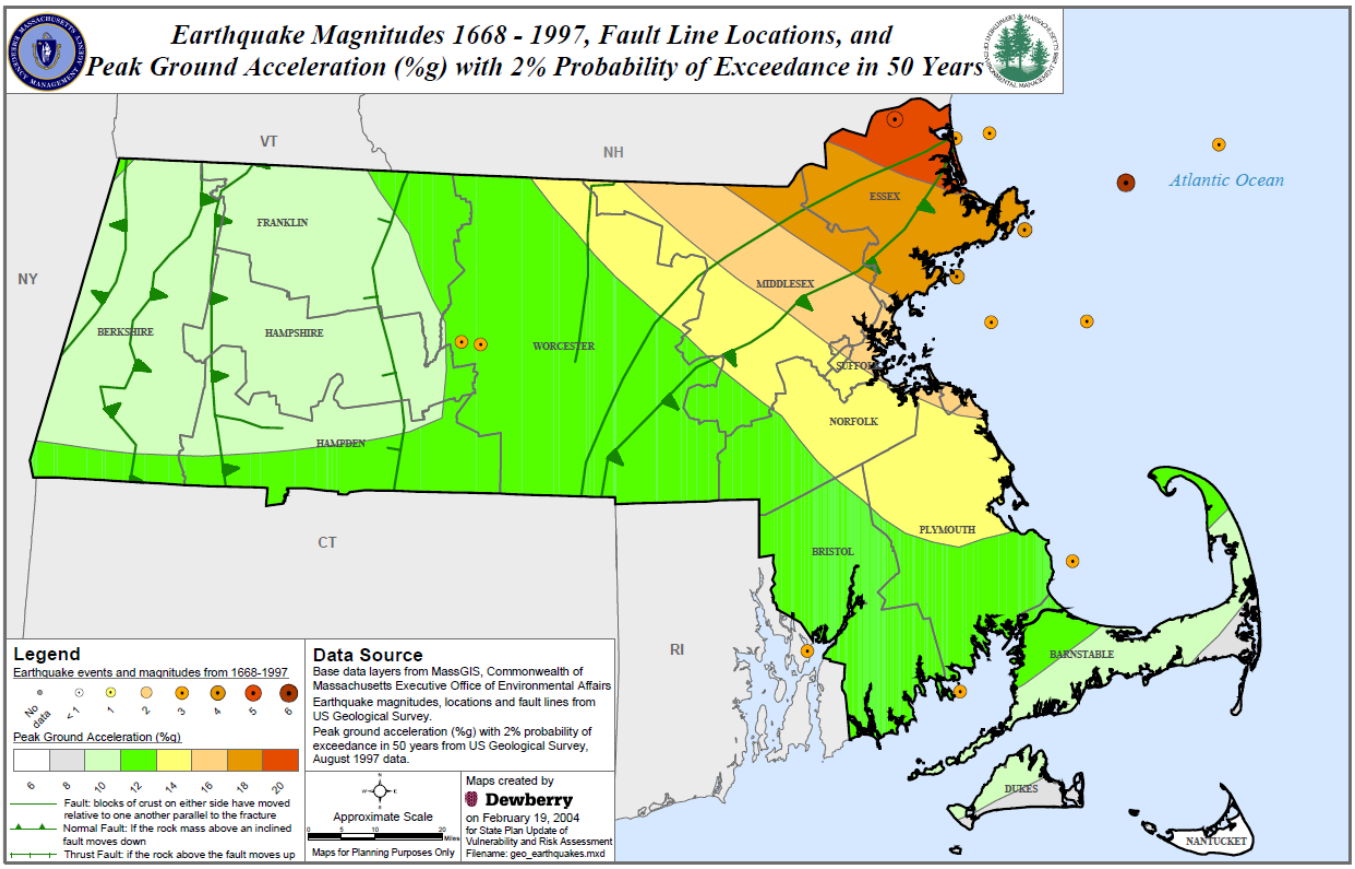
Location	Date	Magnitude
MA - Cape Ann	11/10/1727	5
MA - Cape Ann	12/29/1727	NA
MA – Cape Ann	2/10/1728	NA
Location	**Date**	**Magnitude**
MA – Cape Ann	3/30/1729	NA
MA – Cape Ann	12/9/1729	NA
MA – Cape Ann	2/20/1730	NA
MA – Cape Ann	3/9/1730	NA
MA – Boston	6/24/1741	NA
MA - Cape Ann	6/14/1744	4.7
MA – Salem	7/1/1744	NA
MA - Off Cape Ann	11/18/1755	6
MA – Off Cape Cod	11/23/1755	NA
MA – Boston	3/12/1761	4.6

[10]The Northeast States Emergency Consortium. http://nesec.org/earthquakes-hazards/
[11] Nevada Seismological Library (NSL), 2005
[12] United States Geological Society. https://earthquake.usgs.gov/earthquakes/

MA - Off Cape Cod	2/2/1766	NA
MA – Offshore	1/2/1785	5.4
MA – Wareham/Taunton	12/25/1800	NA
MA – Woburn	10/5/1817	4.3
MA - Marblehead	8/25/1846	4.3
MA – Brewster	8/8/1847	4.2
MA – Boxford	5/12/1880	NA
MA - Newbury	11/7/1907	NA
MA - Wareham	4/25/1924	NA
MA – Cape Ann	1/7/1925	4
MA – Nantucket	10/25/1965	NA
MA – Boston	12/27/74	2.3
VA –Mineral	8/23/11	5.8
MA - Nantucket	4/12/12	4.5
ME – Hollis	10/17/12	4.0
CT-Wauregan	1/12/2015	3.3
CT-Wauregan	1/13/2015	2.6
NH-East Kingston	2/15/2018	2.7

Source: Boston HIRA

Figure 3 State of Massachusetts Earthquake Probability Map[13]



[13] Massachusetts Emergency Management Agency

One measure of earthquake risk is ground motion, which is measured as maximum peak horizontal acceleration, expressed as a percentage of gravity (1 g). The range of peak ground acceleration in Massachusetts is from 10g to 20g, with a 2% probability of exceedance in 50 years (see Figure 3). Medway is in the middle part of the range for Massachusetts, at 14g to 16g, making it a relatively moderate area of earthquake risk within the state, although the state as a whole is considered to have a low risk of earthquakes compared to the rest of the country. There have been no earthquake epicenters within Medway.

Although New England has not experienced a damaging earthquake since 1755, seismologists state that a serious earthquake occurrence is possible. There are five seismological faults in Massachusetts, but there is no discernible pattern of previous earthquakes along these fault lines. Earthquakes occur without warning and may be followed by aftershocks. Most older buildings and infrastructure were constructed without specific earthquake resistant design features.

Earthquakes are a hazard with multiple impacts beyond the obvious building collapse. Buildings may suffer structural damage which may or may not be readily apparent. Earthquakes can cause major damage to roadways, making emergency response difficult. Water lines and gas lines can break, causing flooding and fires. Another potential vulnerability is equipment within structures. For example, a hospital may be structurally engineered to withstand an earthquake, but if the equipment inside the building is not properly secured, the operations at the hospital could be severely impacted during an earthquake. Earthquakes can also trigger landslides.

Earthquakes are a potential town-wide hazard in Medway. The Town has many older buildings that pre-date current building code which could be vulnerable in the event of a severe earthquake. Potential earthquake damages to Medway have been estimated using HAZUS-MH. Total building damages are estimated at $81,720,000 for a 5.0 magnitude earthquake and $858,200,000 for a 7.0 magnitude earthquake. Other potential impacts are detailed in Table 26 Estimated Damages from Earthquakes.

According to the Boston College Weston Observatory, in most parts of New England, there is a one in ten chance that a potentially damaging earthquake will occur in a 50 year time period. The Massachusetts State Hazard Mitigation Plan classifies earthquakes as "very low" frequency events that occur less frequently than once in 100 years, or a less than 1% per year. The Local Steering Committee s that earthquakes are not a major concern for the Town.

LANDSLIDES

According to the United States Geological Society (USGS), a landslide describes a process that results in movement of rock, soil, fill, or combination downward and outward by falling, toppling, sliding, spreading or flowing.[14] Although gravity acting on an over steepened slope is the primary reason for a landslide, there are other contributing factors. Among the contributing factors are: erosion by rivers or ocean waves over steepened slopes; rock and soil slopes weakened through saturation by snowmelt or heavy rains; other causes include earthquakes weakening slopes, excess weight from accumulation of rain or snow, and stockpiling of rock or ore, from waste piles, or from man-made structures.

[14] U.S. Dept. of Interior U.S. Geological Society. Landslide Types and Processes. Fact Sheet 2003-3072

Landslides can result from human activities that destabilize an area or can occur as a secondary impact from another natural hazard such as flooding. In addition to structural damage to buildings and the blockage of transportation corridors, landslides can lead to sedimentation of water bodies. Typically, a landslide occurs when the condition of a slope changes from stable to unstable. Natural precipitation such as heavy snow accumulation, torrential rain and run-off may saturate soil creating instability enough to contribute to a landslide. The lack of vegetation and root structure that stabilizes soil can destabilize hilly terrain.

There is no universally accepted measure of landslide extent but it has been represented as a measure of the destructiveness. The table below summarizes the estimated intensity for a range of landslides. For a given landslide volume, fast moving rock falls have the highest intensity while slow moving landslides have the lowest intensity.

Estimated Volume	**Expected Landslide Velocity**[15]		
(m^3)	Fast moving landslide (Rock fall)	Rapid moving landslide (Debris flow)	Slow moving landslide (Slide)
<0.001	Slight intensity		
<0.5	Medium intensity		
>0.5	High intensity		
<500	High intensity	Slight intensity	
500-10,000	High intensity	Medium intensity	Slight intensity
10,000 – 50,000	Very high intensity	High intensity	Medium intensity
>500,000		Very high intensity	High intensity
>>500,000			Very high intensity

Most of Medway has been classified as having a low risk for landslides (see Map 4, Appendix B), and the Local Steering Committee stated that they were unaware of any areas of geologic instability. There are not many steep slopes in the town and the Local Steering Committee concurs that landslides are not a major threat or occurrence in Medway. Rather, there may be localized issues of erosion during construction, as a result of development, or as a result of clearing vegetation.

Should a landslide occur in the future, the type and degree of impacts would be highly localized, and the town's vulnerabilities could include damage to structures, damage to infrastructure, and localized road closures. The value of potential damages would depend on how many properties were affected. Given the assessed value of property in Medway, damages affecting a single residence could exceed $440,000, and damages affecting several homes or business properties could theoretically extend from $1 million to several million. However, there are no data available on landslide damages in Medway, as there are no records of any damages caused by landslides in the town. Injuries and casualties, while possible, would be unlikely given the low extent and impact of landslides in Medway.

Based on past occurrences and the Massachusetts Hazard Mitigation Plan, landslides are of Low frequency, events that can occur once in 50 to 100 years (a 1% to 2% chance of occurring each year).

[15] Cardinali et al, 2002. *A Geomorphological Approach to the Estimation of Landslide Hazards and Risks in Umbria, Central Italy.*

FIRE RELATED HAZARDS

A brush fire is an uncontrolled fire occurring in a forested or grassland area. In the Boston Metro region these fires rarely grow to the size of a wildfire as seen more typically in the western U.S. As their name implies, these fires typically burn no more than the underbrush of a forested area. There are three different classes of wild fires:

- Surface fires are the most common type and burn along the floor of a forest, moving slowly and killing or damaging trees;
- Ground fires are usually started by lightning and burn on or below the forest floor;
- Crown fires spread rapidly by wind, jumping along the tops of trees.

Wildfire season can begin in March and usually ends in late November. The majority of wildfires typically occur in April and May, when most vegetation is void of any appreciable moisture, making them highly flammable. Once "green-up" takes place in late May to early June, the fire danger usually is reduced somewhat.

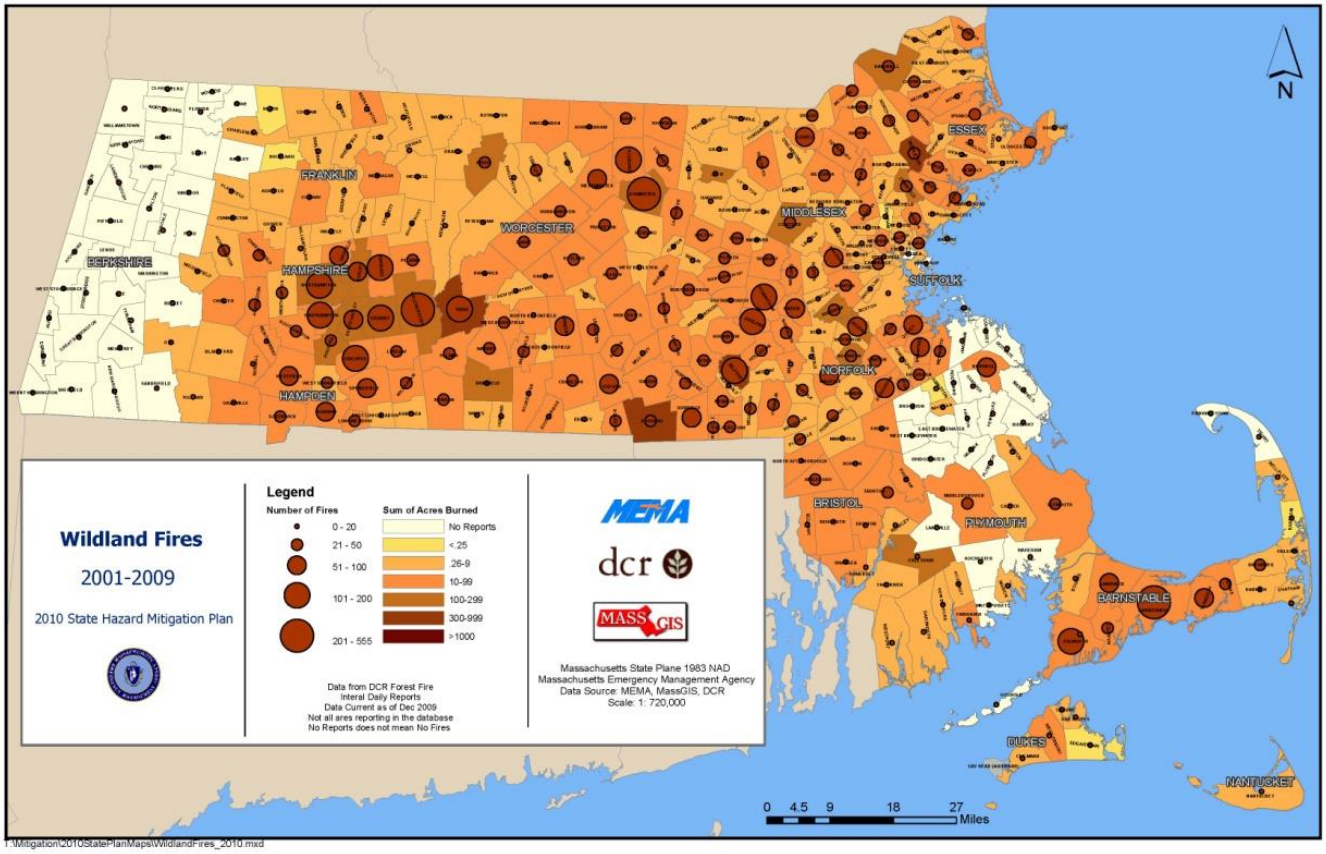
A wildfire differs greatly from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to unexpectedly change direction, and its ability to jump gaps such as roads, rivers and fire breaks. These fires can present a hazard where there is the potential for them to spread into developed or inhabited areas, particularly residential areas where sufficient fuel materials might exist to allow the fire the spread into homes.

Protecting structures from fire poses special problems, and can stretch firefighting resources to the limit. If heavy rains follow a fire, other natural disasters can occur, including landslides, mudflows, and floods. If the wild fire destroys the ground cover, then erosion becomes one of several potential problems.

Wildfires in Massachusetts are measured by the number of fires and the sum of acres burned. The most recent data available for wildfires in Massachusetts, shown in Figure 4 below, indicates that the wildfire extent in Medway consists of 9 to 26 acres burned, with 51 to 100 recordable fires from 2001 to 2009.

The Medway Fire Department responds to approximately 35 brush fires annually. There have been no reports of significant property damage or deaths related to brush fires. In most areas of town, fires are inadvertently caused by pedestrian recreational use, careless disposal of cigarettes, and by weather conditions such as lack of rainfall, winds and lightning. Most of these fires are small, but some are larger. There is a potential for severe fires, especially during dry summers and fall months. The Fire Chief, indicated that the town has all-terrain vehicles capable of fighting remote brush fires located off existing roadways.

Figure 4 Massachusetts Wildfires 2001-2009[16]



The Local Steering Committee identified the following fire hazard areas. The numbers correspond to the numbers on Map 8, "Hazard Areas" and do not reflect priority order.

Locally Identified Hazards Site ID	Name	Type
8	Oakland Park	Brush Fire
9	Fisher Street	Brush Fire
10	High Tension Lines	Brush Fire
11	High School	Brush Fire
12	Industrial Park	Brush Fire
19	Winthrop/Temple/Main	Brush Fire
20	240-250 Main Street	Brush Fire
21	108/114 Main Street	Brush Fire
22	119/124 Milford Street	Brush Fire
23	153-157 Lovering	Brush Fire
24	27-38 Winthrop Street	Brush Fire
25	23 Clark Street	Brush Fire

[16] Massachusetts State Hazard Mitigation Plan

Less than 1% result in any significant property damage and there have been no deaths as a result of brush fires. The areas with the highest incidence of brush fires are around the Interstate 495 corridor from careless disposal of cigarettes.

Potential vulnerabilities to wildfires in Medway could include damage to adjacent structures and impacts to natural resources such a forested conservation land. Potential damages in Medway would depend on the extent and type of land affected. There could be the need for post-fire revegetation to restore a burned property, which could cost from a few thousand dollars to tens of thousands for an extensive area. However, there are no data on actual wildfire damages in the town.

Based on past occurrences and the Massachusetts Hazard Mitigation Plan 2013, brushfires are of Medium frequency, events that occur from once in 5 years to once in 50 years (2% to 20% probability per year).

EXTREME TEMPERATURES

Extreme temperatures occur when either high temperature or low temperatures relative to average local temperatures occur. These can occur for brief periods of time and be acute, or they can occur over long periods of time where there is prolonged period of excessively hot or cold weather.

Medway has four well-defined seasons. The seasons have several defining factors, with temperature one of the most significant. Extreme temperatures can be defined as those, which are far outside of the normal seasonal ranges for Massachusetts. The average temperatures for Massachusetts are: winter (Dec-Feb) Average = 31.8°F and summer (Jun-Aug) Average = 71°F. Extreme temperatures are a town-wide hazard.

EXTREME COLD

For extreme cold, temperature is typically measured using Wind Chill Temperature Index, which is provided by the National Weather Service (NWS). The latest version of the index was implemented in 2001 and it meant to show how cold conditions feel on unexposed skin. The index is provided in Figure 5 below.

Extreme cold is relative to the normal climatic lows in a region. Temperatures that drop decidedly below normal and wind speeds that increase can cause harmful wind-chill factors. The wind chill is the apparent temperature felt on exposed skin due to the combination of air temperature and wind speed. The National Weather Service (NWS) issues a Wind Chill Advisory if the Wind Chills of -5F to -19F are expected. A Wind Chill Warning issued when wind chills of -20F or lower are expected.[17]

Extreme cold is a dangerous situation that can result in health emergencies for susceptible people, such as those without shelter or who are stranded or who live in homes that are poorly insulated or without heat. The elderly and people with disabilities are often most vulnerable. In Medway, 10.4% of the population people are over 65 years old, and 3.5% of the population have a disability.

[17] National Weather Service. https://www.weather.gov/lwx/WarningsDefined#Wind%20Chill%20Advisory

Figure 5 Wind Chill Temperature Index and Frostbit Risk

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01

Source: NOAA and National Weather Service.

The Town of Medway does not collect data for previous occurrences of extreme cold. The best available local data are for Norfolk County, through the National Centers for Environmental Information. There was one extreme cold event in February 2007 which caused one death and no injuries or property damage (Table 17). Three other occurrences in February 2016 did not lead to any reported deaths or damages.

Table 17 Norfolk County Extreme Cold and Wind Chill Occurrences[18]

Date	Deaths	Injuries	Property Damage
02/03/2007	1	0	0
2/16/2015	0	0	0
2/13/2016	0	0	0
2/14/2016	0	0	0

[18] NOAA, National Centers for Environmental Information

EXTREME HEAT

While a heat wave for Massachusetts is defined as three or more consecutive days above 90°F, another measure used for identifying extreme heat events is through a Heat Advisory from the NWS. These advisories are issued when the heat index (Figure 6) is forecast to exceed 100 degree Fahrenheit (F) for 2 or more hours; an excessive heat advisory is issued if forecast predicts the temperature to rise above 105 degrees F.

Figure 6 Heat Index Chart[19]

NOAA's National Weather Service

Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

Extreme heat poses many health risks. Prolonged exposure to high temperatures can cause heat-related illnesses, such as heat cramps, heat exhaustion, heat stroke, and in severe cases, death. Heat exhaustion is the most common heat-related illness and if untreated, it may progress to heat stroke. Prolonged heat exposure can also exacerbate pre-existing conditions, including respiratory illnesses, cardiovascular disease, and mental illnesses.

Senior adults are at particularly high risk to heat for several reasons. They may not adjust to sudden changes in temperature as quickly as younger people, they are more likely to have a chronic medical condition whose symptoms may be exacerbated by heat, and they are more likely to be taking prescription medications that affect their ability to control body temperature.[20,21] In Medway children under 5 years old make up 5.4 perceten of the population, and 10.4 percent are over 65 years old.

[19] National Weather Service

[20] Gamble, J. L., Hurley, B. J., Schultz, P. A., Jaglom, W. S., Krishnan, N., & Harris, M. (2013). Climate Change and Older Americans: State of the Science. Environmental Health Perspectives, 121(1), 15–22. http://doi.org/10.1289/ehp.1205223

[21] Center for Disease Control and Prevention. Natural Disasters and Severe Weather. https://www.cdc.gov/disasters/extremeheat/older-adults-heat.html

Power failures can occur during heat waves, where intense heat spikes electricity demand and aging infrastructure. This occurred in June 2017 in the Town of Belmont, MA where intense heat cause a spike in electricity demand. With its aging infrastructure, the combination of these factors led to equipment failure.[22] Loss of electricity not only impair a resident's ability to cool, but can cause significant medical emergency for those who require electronic medical equipment or from food-borne illnesses from contaminated food, ingested after loss of refrigeration.

The Town of Medway does not collect data on excessive heat occurrences. The best available local data are for Norfolk County, through the National Climatic Data Center. From 1999 - 2011, there have been a total of 16 excessive heat events, with two reported deaths, no injuries, and no property damage resulting from excessive heat (see Table 18). Further, climate change scientists project that extreme heat events are projected to be to occur more frequently. According to the Northeast Climate Science Center, Medway in the Charles River Basin could experience 10-35 more days over 90° by 2050 and 15-76 more days over 90° by the end of the century.[23]

Table 18 Norfolk County Extreme Heat Occurrences[24]

DATE	DEATHS	INJURIES	DAMAGE
6/7/1999	0	0	0
7/5/1999	2	0	0
7/16/1999	0	0	0
7/17/1999	0	0	0
7/18/1999	0	0	0
9/7/1999	0	0	0
9/8/1999	0	0	0
7/6/2010	0	0	0
7/22/2011	0	0	0
TOTAL	**2**	**0**	**0**

Today, extreme temperatures are a medium frequency event based on past occurrences, as defined by the Massachusetts State Hazard Mitigation Plan, 2013. Both extreme cold and hot weather events occur between once in five years to once in 50 years, or a 2 percent to 20 percent chance of occurring each year.

DROUGHT

Drought is a temporary irregularity in precipitation and differs from aridity since the latter is restricted to low rainfall regions and is a permanent feature of climate. Drought is a period characterized by long durations of below normal precipitation. Drought conditions occur in virtually all climatic zones yet its characteristics vary significantly from one region to another, since it is relative to the normal precipitation in that region. Drought can affect agriculture, water supply, aquatic ecology, wildlife, and plant life.

[22] Wicked Local Belmont "Power Outage in Belmont Affects 2,000 Customers" June 14, 2017. http://belmont.wickedlocal.com/news/20170612/power-outage-in-belmont-affects-2000-customers.

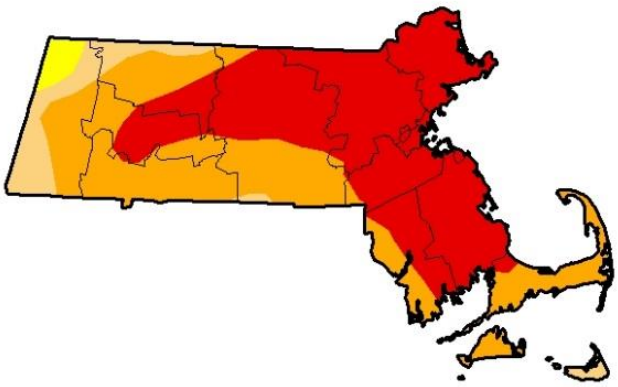
[23] *Northeast Climate Science Center. UMass Amherst. Massachusetts Climate Change Projections. December 2017*

[24] NOAA, National Centers for Environmental Information

Five levels of drought have been developed to characterize drought severity: Normal, Advisory, Watch, Warning, and Emergency. These drought levels are based on the conditions of natural resources and are intended to provide information on the current status of water resources. The levels provide a basic framework from which to take actions to assess, communicate, and respond to drought conditions. They begin with a normal situation where data are routinely collected and distributed, move to heightened vigilance with increased data collection during an advisory, to increased assessment and proactive education during a watch. Water restrictions might be appropriate at the watch or warning stage, depending on the capacity of each individual water supply system. A warning level indicates a severe situation and the possibility that a drought emergency may be necessary. A drought emergency is one in which mandatory water restrictions or use of emergency supplies is necessary. Drought levels are used to coordinate both state agency and local response to drought situations.

In Massachusetts, droughts are caused by the prevalence of dry northern continental air and a decrease in coastal- and tropical-cyclone activity. During the 1960's, a cool drought occurred because dry air from the north caused lower temperatures in the spring and summer of 1962-65. Average annual precipitation in Massachusetts is 44 inches per year, and during the 1965 drought, the statewide precipitation total of 30 inches was 68 percent of average. The drought was so severe, the Quabbin Reservoir was 20 feet below its current level today.[25] This is considered to be the drought of record I Massachusetts.

Figure 7 Extreme Drought Conditions in Massachusetts 2016.



October 4, 2016
(Released Thursday, Oct. 6, 2016)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.15	89.95	52.13	0.00
Last Week 9/27/2016	0.00	100.00	98.15	89.95	52.13	0.00
3 Months Ago 7/5/2016	0.70	99.30	54.99	29.65	0.00	0.00
Start of Calendar Year 12/29/2015	22.85	77.15	26.34	0.00	0.00	0.00
Start of Water Year 9/27/2016	0.00	100.00	98.15	89.95	52.13	0.00
One Year Ago 10/6/2015	22.34	77.66	13.81	0.00	0.00	0.00

Intensity:
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Brian Fuchs
National Drought Mitigation Center

http://droughtmonitor.unl.edu/

[25] Lathrop, Janet. Putting New England's Drought into Perspective. https://www.umass.edu/newsoffice/article/putting-new-england%E2%80%99s-drought-perspective

According to the US Drought Monitor, in 2016, nearly half of Massachusetts was in extreme drought conditions with 15 inches of deficit rainfall (Figure 8), the worst drought since 1965. The drought geographically affected 6.5 million people, forced communities to buy drinking water from the Massachusetts Water Resources Authority,[26] and prompting State aid to farmers for crop losses.

Although Massachusetts is relatively small, it has a number of distinct regions that experience significantly different weather patterns and react differently to the amounts of precipitation they receive. The DCR precipitation index divides the state into six regions: Western, Central, Connecticut River Valley, Northeast, Southeast, and Cape and Islands. Medway is located in the Northeast Region. In Medway, drought is a potential town-wide hazard.

As dry conditions can have a range of different impacts, a number of drought indices are available to assess these various impacts. Massachusetts uses a multi-index system that takes advantage of several of these indices to determine the severity of a given drought or extended period of dry conditions. Drought level is determined monthly based on the number of indices which have reached a given drought level. Drought levels are declared on a regional basis for each of six regions in Massachusetts. County by county or watershed-specific determinations may also be made.

A determination of drought level is based on seven indices:

- Standardized Precipitation Index (SPI) reflects soil moisture and precipitation.
- Crop Moisture Index: (CMI) reflects soil moisture conditions for agriculture.
- Keetch Byram Drought Index (KBDI) is designed for fire potential assessment.
- Precipitation Index is a comparison of measured precipitation amounts to historic normal precipitation.
- The Groundwater Level Index is based on the number of consecutive month's groundwater levels are below normal (lowest 25% of period of record).
- The Stream flow Index is based on the number of consecutive months that stream flow levels are below normal (lowest 25% of period of record).
- The Reservoir Index is based on the water levels of small, medium and large index reservoirs across the state, relative to normal conditions for each month.

Determinations regarding the end of a drought or reduction of the drought level focus on two key drought indicators: precipitation and groundwater levels. These two factors have the greatest long-term impact on stream flow, water supply, reservoir levels, soil moisture and potential for forest fires.

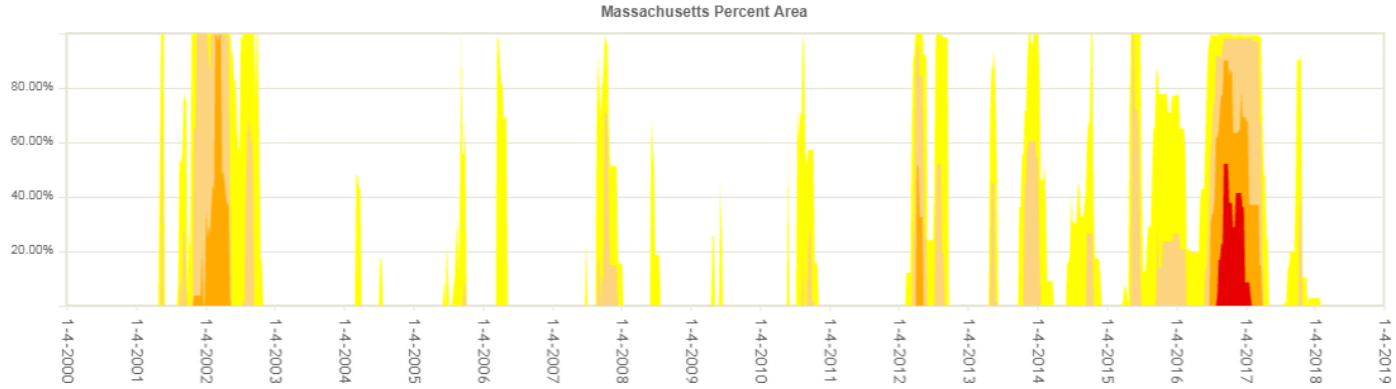
Previous Occurrences

Medway does not collect data relative to drought events. Because drought tends to be a regional natural hazard, this plan references state data as the best available data for drought. The statewide scale is a composite of six regions of the state. Regional composite precipitation values are based on monthly values from six stations, and three stations in the smaller regions (Cape Cod/Islands and West).

[26] https://www.boston.com/weather/local-news/2016/09/15/more-than-half-of-massachusetts-now-experiencing-an-extreme-drought

Figure 8 depicts the incidents of drought levels' occurrence in Massachusetts from 1850 to 2012 using the Standardized Precipitation Index (SPI) parameter alone. On a monthly basis, the state would have been in a Drought Watch to Emergency condition 11 percent of the time between 1850 and 2012. Table 19 summarizes the chronology of major droughts since the 1920's.

Figure 8 Percent Area in Massachusetts with Drought Conditions 2000-2017[27]



Drought Emergency

Drought emergencies have been reached infrequently, with 5 events occurring in the period between 1850 and 2012: in 1883, 1911, 1941, 1957, and 1965-1966. The 1965-1966 drought period is viewed as the most severe drought to have occurred in modern times in Massachusetts because of its long duration. On a monthly basis over the 162-year period of record, there is a one percent chance of being in a drought Emergency.

Drought Warning

Drought Warning levels not associated with drought Emergencies have occurred five times, in 1894, 1915, 1930, and 1985, and 2016. On a monthly basis over the 162-year period of record, there is a two percent chance of being in a drought Warning level. As of July 2016, a Drought Warning has been declared for the Northeast region, which includes the Town of Medway. December, 2016 marked the ninth consecutive month of below average rainfall (see Figure 9). In response to the drought, the Medway Water Department instituted restrictions on outdoor watering.

Drought Watch

Drought Watches not associated with higher levels of drought generally have occurred in three to four years per decade between 1850 and 1950. In the 1980s, there was a lengthy drought Watch level of precipitation between 1980 and 1981, followed by a drought Warning in 1985. A frequency of drought Watches at a rate of three years per decade resumed in the 1990s (1995, 1998, 1999). In the 2000s, Drought Watches occurred in 2001 and 2002. The overall frequency of being in a drought Watch is 8% on a monthly basis over the 162-year period of record.

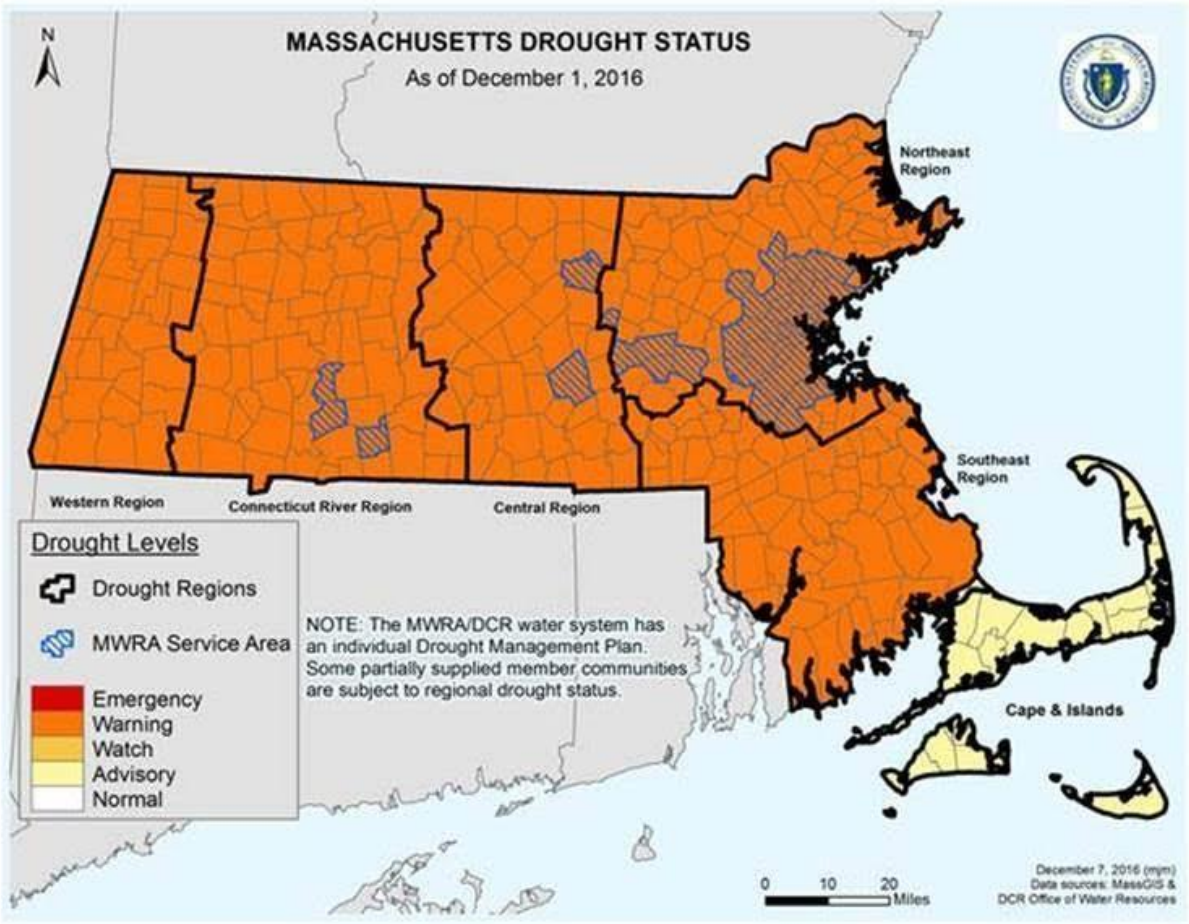
[27] U.S. Drought Monitor

Table 19 Chronology of major droughts in Massachusetts

Date	Area affected	Recurrence interval (years)	Remarks
1929-32	Statewide	10 to >50	Water-supply sources altered in 13 communities. Multistate.
	Statewide	15 to >50	More severe in eastern and extreme western Massachusetts. Multistate.
1957-59	Statewide	5 to 25	Record low water levels in observation wells, northeastern Massachusetts.
1961-69	Statewide	35 to >50	Water-supply shortages common. Record drought. Multistate.
1980-83	Statewide	10 to 30	Most severe in Ipswich and Taunton River basins; minimal effect in Nashua River basin. Multistate.
1985-88	Housatonic River basin	25	Duration and severity unknown. Streamflow showed mixed trends elsewhere.
2016-17	Statewide	NA	Drought declaration began in July 2016 with a Drought Watch, which was upgraded to a Drought Warning in August 2016. The Central and Northeast regions were initially affected, then the declaration was extended statewide except the Cape and Islands.

Under a severe long term drought the Town of Medway could be vulnerable to restrictions on water supply. Potential damages of a severe drought could include losses of landscaped areas if outdoor watering is restricted and potential loss of business revenues if water supplies were severely restricted for a prolonged period. As this hazard has never occurred to such a severe degree in Medway, there are no data or estimates of potential damages, but under a severe long term drought scenario it would be reasonable to expect a range of potential damages from several million to tens of millions of dollars.

Figure 10 Massachusetts Drought Status as of December 2016[28]



Probability of Future Occurrences

The state has experienced Emergency Droughts five times between 1850 and 2012. Even given that regional drought conditions may occur at a different interval than state data indicates, droughts remain primarily regional and state phenomena in Massachusetts. Emergency Drought conditions over the 162 period of record in Massachusetts are a Low Frequency natural hazard event that can occur from once in 50 years to once in 100 years (1% to 2% chance per year), as defined by the Massachusetts State Hazard Mitigation Plan, 2013.

[28] MA Department of Conservation and Recreation, Office of Water Resources

LAND USE AND DEVELOPMENT TRENDS

EXISTING LAND USE

The most recent land use statistics available from the state are from aerial photography done in 2005. Table 18 shows the acreage and percentage of land in 25 categories. The majority of the Town is comprised of forest at 37.1% with low density residential use being the second most significant land use at 22.5%. Commercial and industrial combined make up 1.5% of the town, or 115 acres.

Table 20 Town of Medway, MA 2005 Land Use

Land Use	Acres	Percentage
Brushland/Successional	7	0.1
Cemetery	23	0.3
Commercial	115	1.5
Cropland	153	2.0
Forest	2,768	37.1
Forested Wetland	613	8.2
High Density Residential	134	1.8
Industrial	102	1.4
Junkyard	3	0.0
Low Density Residential	1,681	22.5
Medium Density Residential	399	5.3
Multi-Family Residential	132	1.8
Non-Forested Wetland	421	5.6
Nursery	10	0.1
Open Land	43	0.6
Orchard	4	0.0
Participation Recreation	94	1.3
Pasture	208	2.8
Powerline/Utility	228	3.1
Transitional	35	0.5
Transportation	12	0.2
Urban Public/Institutional	76	1.0
Very Low Density Residential	136	1.8
Waste Disposal	28	0.4
Water	43	0.6
Total	**7,467**	**100%**

For more information on how the land use statistics were developed and the definitions of the categories, please go to http://www.mass.gov/mgis/lus.htm.

NATURAL, CULTURAL, AND HISTORIC RESOURCE AREAS

Medway has experienced significant growth since the 1990s but still maintains a desirable mix of a rural and suburban feel. A survey completed by residents in 2009 indicated that the majority of respondents place high value on preserving natural resources and Medway's rural, small town character.[29] Medway adopted the Community Preservation Act in 2001 providing a dedicated source of funding for acquiring land for open space, historic preservation, and affordable housing.

Medway contains 25 designated scenic roads and important open space and recreation areas such as Choate Park, Idylbrook Park, Medway Community Farm and trails and forest around Medway High School. The Town has protected 320 acres of land, constituting 4.3 % of the total land area. Of its total area, 352 acres are considered BioMap2 Core Habitat and 163 acres of BioMap2 Critical Natural Landscape. BioMap2 is a program created in partnership with the MA Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program and The Nature Conservancy to identify exemplary and important natural ecosystems that support the biodiversity and protect the nature of Massachusetts. Of Medway's total Core Habitat and Critical Natural Landscape, 23.5% of that land is protected. Medway's forests and natural areas support three State-listed Species of Critical Concern, including the Spotted Turtle and Four-toed Salamander.[30] Further, 55.8% of Medway is covered by tree canopy. The tree canopy serves as a great resource for community health, beauty and livability. The Tree canopy mitigates 318,000 pounds of air pollutants per year, intercepts 62.5 million gallons of stormwater a year and sequesters 3,402 tons of carbon a year.[31]

The Charles River is also a prominent natural and recreational amenity which in part has shaped Medway's community character. Combined with Chicken and Hopping Brooks which flow into the Charles, Medway was an ideal location for mills during the Industrial Revolution.[32] Beginning as an agrarian society, it evolved with home-based industries and mills. The Town currently has two historic districts the Rabbit Hill Historic district, and the Medway Village Historic district, recognized by both the Massachusetts Historical Commission and National Parks Service in 1988 and 2008 respectively. Overall, the town has 336 historic structures registered with the Massachusetts Historic Commission. One notable is the Torrent Engine House, one of the few remaining unaltered examples of later 19th century firehouse architecture in the state.
Medway has a Demolition Delay Bylaw and the Historical Commission has been active in the review of Demolition Permit to preserve historic resources. This is in addition to 19 historic preservation projects completed in Medway using Community Preservation Act funds.

Of the 336 historic structures, seven lie within a 1% Annual Chance Flood and 15 lie within the 0.2% Annual Chance Flood. Most of these are historic homes with the exception of the Stanford Mill Dam and Bridge.

[29] Town of Medway. 2009. Medway Master Plan.
[30] MADFW and TNC. 2012. Preserving the Biodiversity of Massachusetts in a Changing World. Medway. http://maps.massgis.state.ma.us/dfg/biomap/pdf/town_core/Medway.pdf
[31] iTreeLandscape.v.3.1.Modeled April 6, 2018
[32] PGC Associates. 2010. Town of Medway Open Space and Recreation Plan

DEVELOPMENT TRENDS

According to the town's Community Development Plan , 45% of the land in Medway, equating to 3,381 acres, is developed. Developed land almost doubled (an increase of 95%) from 1971 to 1999. Meanwhile, the population increased by only 63% (from 7,938 to 12,448) between 1970 and 2000. Acreage devoted to commercial and industrial uses only increased by 98 acres during this period. Residential land area, however, increased by 1,518 acres, accounting for 92% of the increased developed land. Almost two-thirds of this increase in residential land was in the category of low density residential (lots larger than ½ acre). Thus, the 1970 population of 7,938 occupied a total of 1,478 acres or about 0.19 acres per person. The 2000 population of 12,448 occupied 2,996 acres in 1999. This is 0.24 acres per person. Another way of looking at it is that Medway was able to accommodate 7,938 people in 1971 on 1,478 residential acres. In order to add 4,510 people by 2000, it required an additional 1,518 acres of residential land. This is 0.34 acres per person, almost twice the amount of land per person used in 1971.

Table 21 Summary of Medway New Developments[33]

Development Name	Completion Year	Project Acres	Residential Units	Commercial Square Feet
Wingate Farm	2016	1.74	6	0
Williamsburg Condominium	2015	13.86	37	0
Norwood Acres	2015	3	4	0
Millstone Village	2018	51	161	0
Summer Valley Lane	2015	2	4	0
Bay Oaks	2015	8.8	8	0
Cumberland Farms	2014	1.35	0	4,500
Tri Valley Commons	2016	4.6	0	35,000
Salmon Retirement	2017	57	251	5,000
Granite Woods Medway	2009	8	8	0
Evergreen Meadow	2011	23	31	0
Franklin Creek	2011	2.7	6	0
Pine Meadow Medway	2016	6.3	16	0
Ishmael Coffee Estates	2010	0	36	0
Grapevine Estates	2009	0	10	0
Applegate Farm	2015	0	44	0

[33] MAPC Development Database

Development Name	Completion Year	Project Acres	Residential Units	Commercial Square Feet
Winchester	2009	5	6	0
Woodside/Deerview Meadow	2010	0	105	0
Hartney Acres	2010	15	16	0
Morgan Heights	2009	5	6	0
Granite Estates	2009	0	36	0
Charles River Village	2016	7.6	23	0
Village at Pine Ridge	2010	18.34	41	0
Fox Run Farm	2014	0	31	0
Total		**234**	**886**	**44,500**

Development trends throughout the metropolitan region are tracked by MAPC's Development Database, which provides an inventory of new development over the last decade. The database tracks both completed developments and those currently under construction. The database includes 24 new developments in the Town of Medway. The database also includes several attributes of the new development, including site acreage, housing units, and commercial space. They are a mix of commercial and residential projects. The 24 developments in Medway include a total of 886 housing units, 44,500 square feet of commercial space, and are sited on a total of 234 acres (see Table 21).

In order to characterize any change in the town's vulnerability associated with new developments, a GIS mapping analysis was conducted which overlaid the development sites with the FEMA Flood Insurance Rate Map. The analysis shows that one development, Williamsburg Condominiums is within a 0.2% Annual Chance Flood Zone and Evergreen Meadows is at the edge of a 0.2% Annual Chance Flood. With respect to average annual snowfall, all of the development sites are within the zone of 36 to 48 inches average annual snowfall. With respect to wind, there is no variation across the town of Medway; the entire town is in the same category, which has a 100-year wind maximum speed of 110 miles per hour. Overall, Medway's new development does not significantly increase the town's vulnerability to natural hazards.

POTENTIAL FUTURE DEVELOPMENT

MAPC consulted with town planning staff to determine areas that may be developed in the future, based on the Town's comprehensive planning efforts and current trends and projects. These areas are listed below and shown on Map 8 in Appendix B and Table 22.

Table 22 Potential Future Development Sites

Development Areas Site ID	Name	Type*
A	The Willows/ Walnut Grove on the Charles	Future Development
C	Millstone/ Betania II	Development
D	Applegate Farm	Development
F	Shady Oaks	Potential Development
E	Oak Grove	Potential Development
H	CommCan., Inc./ Industrial Park	Development
L	Williamsburg Condominiums/ West street Meadow	Development
M	Maritime 40B	Future Development
N	Morningside Run/ Fox Run 40b	Development
P	Medway Mill Redevelopment	Potential Development
Q	Ishmael Coffee Estates	Development
R	Timber Crest Estates	Future Development
S	Industrial/Business Park at 1-495	Development
T	Medway Greens	Future Development
U	Glen Brook Way	Potential Development
V	179/181 Main Street	Potential Development
W	The Haven	Potential Development
X	Paul Revere Estates	Future Development
Y	143 Village Street	Future Development

* "Future Development" indicates a project in or completed the permitting process, "Development" indicates a project currently under construction and "Potential Development" indicates prospective development opportunities.

FUTURE DEVELOPMENT IN HAZARD AREAS

Table 23 shows the relationship of these 19 potential development parcels to two of the mapped hazards, flood zones and landslides. This information is provided so that planners can ensure that development proposals comply with flood plain zoning and that careful attention is paid to drainage issues and other natural hazards. The table shows that 11 of the 19 development sites are partially within a flood hazard area, typically a portion of the site that is not built on.. With respect to other natural hazards, all of the development sites are located in the area designated as "Low Incidence" for landslides.

Besides flooding and landslides, the only other hazard that varies with location within the town is snowfall. For average annual snowfall, all of the 19 development sites are located in the area of 36 to 48 inches average annual snowfall. With respect to wind, there is no variation across different sites in Medway; the hazard map depicts the entire town in the same category, which is a 100-year wind maximum speed of 110

miles per hour (Appendix B). Overall, Medway's potential future development would not significantly increasing the town's vulnerability.

Table 23 Future Development Sites in Hazard Areas

Map ID	Name	Status	FEMA Flood Zone
A	The Willows/ Walnut Grove on the Charles	Permitted	29.6% in AE (1% Annual Chance)
C	Millstone/ Betania II	Under Construction	20.4% in AE (1% Annual Chance) and 5.1% in X (0.2% Annual Chance)
R	Timber Crest Estates	Permitted 40B Potential Development	0.2% Annual Chance Flood
D	Applegate Farm	Under Construction	No
S	Industrial/Business Park at 1-495	Under Construction	6.5% in A and 4.2% in AE (1% Annual Chance) and 1.7% in X (0.2% Annual Chance)
F	Shady Oaks	Potential Development	31.4% in AE (1% Annual Chance Flood) and 1% in X (0.2% Annual Chance)
H	CommCan., Inc./ Industrial Park	Under Construction	No
E	Oak Grove	Urban Renewal Plan approved. Residential, commercial and industrial uses.	No
L	Williamsburg Condominiums/ West street Meadow	Under Construction	32% in AE (1% Annual Chance Flood) and 10% in X (0.2% Annual Chance)
M	Maritime 40B	Future Development	No
N	Morningside Run/ Fox Run 40b	Under Construction	No
P	Medway Mill Redevelopment	Potential Development	12% in AE (% Annual Chance Flood) and 22.2 % in X (0.2% Annual Chance)
Q	Ishmael Coffee Estates	Development	No
T	Medway Greens	Permitted	No
U	Glen Brook Way	In Permitting Process	1% Annual Chance Flood and 0.2% Annual Chance
V	179/181 Main Street	Future Development	No
W	The Haven	Under Construction	1% Annual Chance Flood and 0.2% Annual Chance
X	Paul Revere Estates	Permitted	1% Annual Chance Flood
Y	143 Village Street	Permitted	No

CRITICAL FACILITIES & INFRASTRUCTURE IN HAZARD AREAS

Critical facilities and infrastructure includes facilities that are important for disaster response and evacuation (such as emergency operations centers, fire stations, water pump stations, etc.) and facilities where additional assistance might be needed during an emergency (such as nursing homes, elderly housing, day care centers, etc.). There are 50 facilities identified in Medway. These are listed in Table 24 and are shown on the maps in Appendix B.

Explanation of Columns in Table 24

- ***Column 1: ID #:*** The first column in Table 21 is an ID number which appears on the maps that are part of this plan. See Appendix B.
- ***Column 2: Name***: The second column is the name of the site. If no name appears in this column, this information was not provided to MAPC by the community.
- ***Column 3: Type*:** The third column indicates what type of site it is.
- ***Column 4: Landslide Risk:*** The fourth column indicates the degree of landslide risk for that site. This information came from NESEC. The landslide information shows areas with either a low susceptibility or a moderate susceptibility to landslides based on mapping of geological formations. This mapping is highly general in nature. For more information on how landslide susceptibility was mapped, refer to http://pubs.usgs.gov/pp/p1183/pp1183.html.
- ***Column 5: FEMA Flood Zone*:** The fifth column addresses the risk of flooding. A "No" entry in this column means that the site is not within any of the mapped risk zones on the Flood Insurance Rate Maps (FIRM maps). If there is an entry in this column, it indicates the type of flood zone.
- ***Column 6: Snowfall***. Areas designated "low" receive an annual average of 36.1 to 48.0 inches of snow. Areas designated "high" receive an annual average of 48.1 to 72 inches of snow, as shown on Map 6 in Appendix B.

Table 24 Critical Facilities and Relationship to Hazard Areas

Map ID	Name	Type	Landslides	FEMA Flood Zone	Locally Identified Hazard	Average Annual Snowfall
1	Medway High School	School	Low	No	No	36"-48"
2	Burke Memorial Elementary School	School	Low	No	No	36"-48"
2	Burke Memorial Elementary School	School	Low	No	No	36"-48"
4	Medway Middle School	School	Low	No	No	36"-48"
5	John D McGovern Elementary School	School	Low	No	No	36"-48"
6	Country Cottage Children's Center	Daycare	Low	No	No	36"-48"
7	Meeting House School Inc	Daycare	Low	No	No	36"-48"
8	Little Lamb Nursery School	Daycare	Low	No	No	36"-48"
9	Medway Police Station	Police station	Low	No	No	36"-48"
10	Medway Fire Station I	Fire station	Low	No	No	36"-48"
11	Town Hall	Town Hall	Low	No	No	36"-48"
12	Medway Country Manor	Nursing home	Low	No	No	36"-48"
13	Good Shepard Nursery School	Daycare	Low	No	No	36"-48"
14	Medway Fire Station II	Fire Station	Low	No	No	36"-48"
15	Medway Episcopal Church Nursery School	Daycare	Low	No	No	36"-48"
16	Shining Stars Nursery School	Daycare	Low	No	No	36"-48"
17	VFW Hall	Proposed Municipal Property	Low	No	No	36"-48"
18	SMOC	Family Shelter	Low	No	No	36"-48"
19	Town Hall	EOC	Low	No	No	36"-48"
20	Sanford Street Bridge	Bridge	Low	AE 1% Annual Chance with BFE	No	36"-48"
21	Walker Street Bridge	Bridge	Low	AE 1% Annual Chance with BFE	Flooding	36"-48"
22	Franklin Street Bridge	Bridge	Low	AE 1% Annual Chance with BFE	No	36"-48"
23	Choate Dam	Dam	Low	AE 1% Annual Chance with BFE	Flooding	36"-48"
24	Milford Street Culvert	Bridge	Low	AE Regulated Floodway	Flooding	36"-48"
25	Sanford Dam	Dam	Low	AE 1% Annual Chance with BFE	No	36"-48"
26	Village Street Dam	Dam	Low	AE 1% Annual Chance with BFE	No	36"-48"
27	DPS Garage	DPW Garage	Low	AE 1% Annual Chance with BFE	No	36"-48"
28	Main Street Culvert	Bridge	Low	AE 1% Annual Chance with BFE	Flooding	36"-48"
29	Medway Housing Authority	Elderly Housing	Low	No	No	36"-48"
30	Medway Housing Authority	Elderly Housing	Low	No	No	36"-48"
31	Stand Pipe 2	Water stand pipe/ Communication Repeater	Low	No	No	36"-48"
32	Medway Housing Authority	Elderly Housing	Low	No	No	36"-48"
33	Stand Pipe 1	Water stand pipe/ Communication Repeater	Low	No	No	36"-48"
34	Exelon Energy	Power generating plant	Low	No	No	36"-48"
35	Eversource	Power substation	Low	No	No	36"-48"
36	Osterman Propane	Gas and Propane distribution	Low	No	No	36"-48"

Map ID	Name	Type	Landslides	FEMA Flood Zone	Locally Identified Hazard	Average Annual Snowfall
37	Algonquin Gas	Gas transmission	Low	No	Tornado/Micro Bursts	36"-48"
38	Charles River Pollution Control District	Sewer treatment plant	Low	No	No	36"-48"
39	Medway Senior Center	Senior center	Low	No	No	36"-48"
40	Village Street Well	Well	Low	No	Flooding	36"-48"
41	Populatic Street Well	Well	Low	No	Flooding	36"-48"
42	Oakland Street Well	Well	Low	No	No	36"-48"
43	Main Street Communication Tower	Communication Tower/ Town Repeater	Low	No	No	36"-48"
44	Sprint Communication Tower	Communication Tower	Low	No	No	36"-48"
45	The Willows	Assisted Living/Senior Housing	Low	No	No	36"-48"
46	Kadin Lane Bridge	Bridge	Low	AE 1% Annual Chance with BFE	No	36"-48"
47	Claybrook Dam	Dam	Low	No	No	36"-48"
48	Shaw Street Bridge	Bridge	Low	AE 1% Annual Chance with BFE	No	36"-48"
50	Electric Utility Right of Way	Electricity Lines	Low	No	No	36"-48"
51	Medway Oil & Propane	Fuel Storage	Low	No	No	36"-48"
52	Verizon	Utility	Low	No	No	36"-48"

VULNERABILITY ASSESSMENT

The purpose of the vulnerability assessment is to estimate the extent of potential damages from natural hazards of varying types and intensities. A vulnerability assessment and estimation of damages was performed for hurricanes, earthquakes, and flooding. The methodology used for hurricanes and earthquakes was the HAZUS-MH software. The methodology for flooding was developed specifically to address the issue in many of the communities where flooding was not solely related to location within a floodplain.

Introduction to HAZUS-MH

HAZUS- MH (multiple-hazards) is a computer program developed by FEMA to estimate losses due to a variety of natural hazards. The following overview of HAZUS-MH is taken from the FEMA website.

> "HAZUS-MH is a nationally applicable standardized methodology and software program that contains models for estimating potential losses from earthquakes, floods, and hurricane winds. HAZUS-MH was developed by the Federal Emergency Management Agency (FEMA) under contract with the National Institute of Building Sciences (NIBS). Loss estimates produced by HAZUS-MH are based on current scientific and engineering knowledge of the effects of hurricane winds, floods and earthquakes. Estimating losses is essential to decision-making at all levels of government, providing a basis for developing and evaluating mitigation plans and policies as well as emergency preparedness, response and recovery planning.
>
> HAZUS-MH uses state-of-the-art geographic information system (GIS) software to map and display hazard data and the results of damage and economic loss estimates for buildings and infrastructure. It also allows users to estimate the impacts of hurricane winds, floods and earthquakes on populations."[34]

There are three modules included with the HAZUS-MH software: hurricane wind, flooding, and earthquakes. There are also three levels at which HAZUS-MH can be run. Level 1 uses national baseline data and is the quickest way to begin the risk assessment process. The analysis that follows was completed using Level 1 data. Level 1 relies upon default data on building types, utilities, transportation, etc. from national databases as well as census data. While the databases include a wealth of information on the Town of Medway, it does not capture all relevant information. In fact, the HAZUS training manual notes that the default data is "subject to a great deal of uncertainty."

However, for the purposes of this plan, the analysis is useful. This plan is attempting to generally indicate the possible extent of damages due to certain types of natural disasters and to allow for a comparison between different types of disasters. Therefore, this analysis should be considered to be a starting point for understanding potential damages from the hazards.

[34] http://www.fema.gov/plan/prevent/hazus/index.shtm

ESTIMATED DAMAGES FROM HURRICANES

The HAZUS software was used to model potential damages to the community from a 100 year and 500 year hurricane event; storms that are 1% and 0.2% likely to happen in a given year, and roughly equivalent to a Category 2 and Category 4 hurricane. The damages caused by these hypothetical storms were modeled as if the storm track passed directly through the Town, bringing the strongest winds and greatest damage potential.

Though there are no recorded instances of a hurricane equivalent to a 500 year storm passing through Massachusetts, this model was included in order to present a reasonable "worst case scenario" that would help planners and emergency personnel evaluate the impacts of storms that might be more likely in the future, as we enter into a period of more intense and frequent storms.

Table 25 Estimated Damages from Hurricanes

	Category 2	Category 4
Building Characteristics		
Estimated total number of buildings	4,429	
Estimated total building replacement value (2010 $)	$1,671,000,000	
Building Damages		
# of buildings sustaining minor damage	155	778
# of buildings sustaining moderate damage	10	123
# of buildings sustaining severe damage	0	7
# of buildings destroyed	0	3
Population Needs		
# of households displaced	0	1
# of people seeking public shelter	0	0
Debris		
Building debris generated (tons)	4,213	11,429
Tree debris generated (tons)	1,419	3,658
# of truckloads to clear building debris (25 ton trucks)	19	93
Value of Damages		
Total property damage (buildings and content)	$5,710,830	34,177,850
Total losses due to business interruption	$ 342,510	$1,971,500

ESTIMATED DAMAGES FROM EARTHQUAKES

The HAZUS earthquake module allows users to define an earthquake magnitude and model the potential damages caused by that earthquake as if its epicenter had been at the geographic center of the study area. For the purposes of this plan, two earthquakes were selected: magnitude 5.0 and a magnitude 7.0. Historically, major earthquakes are rare in New England, though a magnitude 5 event occurred in 1963.

Table 26 Estimated Damages from Earthquakes

	Magnitude 5.0	Magnitude 7.0
Building Characteristics		
Estimated total number of buildings	4,000	
Estimated total building replacement value (2010 $)	$1,671,000,000	
Building Damages		
# of buildings sustaining slight damage	615	889
# of buildings sustaining moderate damage	301	784
# of buildings sustaining extensive damage	83	629
# of buildings completely damaged	21	1,040
Population Needs		
# of households displaced	81	1,252
# of people seeking public shelter	41	640
Debris		
Building debris generated (tons)	200,000	180,000
# of truckloads to clear debris (@ 25 tons/truck)	600	7,320
Value of Damages (Millions of dollars)		
Total property damage	$81,720,000	$858,200,000
Total losses due to business interruption	$149,550,000	$1,039,200,000

ESTIMATED DAMAGES FROM FLOODING

The HAZUS flooding module allows users model the potential damages caused by a 100 Year Flood event and a 500 Year Flood event.

Table 27 Estimated Damages from Flooding

	100 Year Flood	500 Year Flood
Building Characteristics		
Estimated total number of buildings	4,429	
Estimated total building replacement value (2010 $)	$1,671,000	
Building Damages		
# of buildings sustaining moderate damage	18	13
# of buildings sustaining extensive damage	15	15
# of buildings substantially damaged	1	3
Population Needs		
# of households displaced	145	173
# of people seeking public shelter	100	117
Value of Damages		
Total property damage	$15,510,000	$19,290,000
Total losses due to business interruption	$15,530,000	$19,310,000

V. HAZARD MITIGATION GOALS

The Medway Local Hazard Mitigation Planning Team reviewed and discussed the goals from the 2009 Hazard Mitigation Plan for the Town of Medway. All of the goals are considered critical for the Town and they are not listed in order of importance.

GOAL 1: Prevent and reduce the loss of life, injury, public health impacts and property damages resulting from all major natural hazards.

GOAL 2: Identify and seek funding for measures to mitigate or eliminate each known significant flood hazard area.

GOAL 3: Integrate hazard mitigation planning as an integral factor in all relevant municipal departments, committees and boards.

GOAL 4: Prevent and reduce the damage to public infrastructure resulting from all hazards.

GOAL 5: Encourage the business community, major institutions and non-profits to work with the Town to develop, review and implement the hazard mitigation plan.

GOAL 6: Work with surrounding communities, state, regional and federal agencies to ensure regional cooperation and solutions for hazards affecting multiple communities.

GOAL 7: Ensure that future development meets federal, state and local standards for preventing and reducing the impacts of natural hazards.

GOAL 8: Take maximum advantage of resources from FEMA and MEMA to educate Town staff and the public about hazard mitigation.

GOAL 9: Consider the impacts of climate change and incorporate climate mitigation and adaptation in hazard mitigation planning.

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VI. EXISTING MITIGATION MEASURES

The existing protections in the Town of Medway are a combination of zoning, land use, and environmental regulations, infrastructure maintenance and drainage infrastructure improvement projects. Infrastructure maintenance generally addresses localized drainage clogging problems, while large scale capacity problems may require pipe replacement or invert elevation modifications. These more expensive projects are subject to the capital budget process and lack of funding is one of the biggest obstacles to completion of some of these.

The Town's existing mitigation measures are listed by hazard type here and are summarized in Table 29 below.

FLOOD-RELATED EXISTING MITIGATION

Medway employs a number of practices to help minimize potential flooding and impacts from flooding, and to maintain existing drainage infrastructure. Existing town-wide mitigation measures include the following:

- *Participation in the National Flood Insurance Program (NFIP)* – Medway participates in the National Flood Insurance Program. NFIP provides access to funds in the case of flood related damages. Table 28 provides and overview of NFIP information for the Town of Medway (reporting period covers through June 2018. FEMA maintains a database on flood insurance policies and claims FEMA maintains a database on flood insurance policies and claims. This database can be found on the FEMA website at http://www.fema.gov/business/nfip/statistics/pcstat.shtm.

Table 28 National Flood Insurance Program Statistics for Medway

Flood insurance policies in force	112
Coverage amount of flood insurance policies	$28,454,400
Premiums paid	$75,120
Total losses (all losses submitted regardless of the status)	7
Closed losses (Losses that have been paid)	5
Open losses (Losses that have not been paid in full)	0
CWOP losses (Losses that have been closed without payment)	2
Total payments (Total amount paid on losses)	$ 112,880

The Town complies with the NFIP by enforcing floodplain regulations, maintaining up-to-date floodplain maps, and providing information to property owners and builders regarding floodplains and building requirements.

- *Street Sweeping* – The Medway Department of Public Services conducts year-round street sweeping. All streets are swept at least once per year or as needed in select areas of town. Street sweeping begins as soon as possible each spring.

- *Catch Basin Cleaning* –Catch basins are cleaned out once a year. Included in the town's Stormwater Management program is a provision to keep catch basins free and clear of snow, ice and debris.

- *Roadway Treatments* – The town uses a mixture of sand and salt with a bit more salt in the mix. This is done to minimize the amount of sand that enters catch basins and streams. Roads are treated when needed for winter storms.
- *Enforcement of the State Building Code* – The Massachusetts State Building Code contains many detailed regulations regarding wind loads, earthquake resistant design, flood-proofing and snow loads.
- *The Massachusetts Stormwater Policy* – This policy is applied to developments within the jurisdiction of the Conservation Commission.
- *Community Preservation Act (CPA)* – The town adopted the CPA (permitted by Massachusetts General Law Chapter 44B, Sections 3 through 7), in 2001. CPA establishes a dedicated funding source, derived from a 3% surcharge on the annual property tax and state matching funds, for the purpose of preserving open space, historical preservation, community housing and recreation.
- *Infrastructure Improvements* – Within the past 5-10 years, the town upgraded much of the town's infrastructure such as culverts, bridges, roads, and drainage systems.
- *Regulations and By-Laws* – The town has adopted many regulations and bylaws that serve to reduce flooding, preserve open space, and protect the community from natural hazards.

DAM FAILURE EXISTING MITIGATION

- *DCR dam safety regulations* – All dams are subject to the Division of Conservation and Recreation's dam safety regulations. The dams must be inspected regularly and reports filed with the DCR Office of Dam Safety.
- *Permits required for construction* – State law requires a permit for the construction of any dam.
- *The Comprehensive Emergency Management Plan* (CEMP)– The CEMP addresses dam safety.

WIND-RELATED HAZARDS EXISTING MITIGATION

- *Massachusetts State Building Code* – The town enforces the Massachusetts State Building Code whose provisions are generally adequate enough to mitigate most wind damage. The code's provisions are the most cost-effective mitigation measure against tornados given the extremely low probability of occurrence. If a tornado were to occur, the potential for severe damages would be extremely high.
- *Tree-Trimming* – The Medway Tree Warden and local electric company conduct regular tree trimming. The town responds to downed tree limbs caused by winds, lightning strike reports and other weather related incidents. The town utilizes a bucket truck for tree removal efforts.

WINTER-RELATED HAZARDS EXISTING MITIGATION

- *Snow Disposal* – The town does not do any snow disposal except for removing snow at municipal buildings.
- *Roadway Treatments* – The town uses salt to pre-treat roadways during storms.

FIRE-RELATED HAZARDS EXISTING MITIGATION

- *Permits Required for Outdoor Burning* – The Fire Department requires a written permit for outdoor burning. The property-owner must come into the Fire Station and fill out a form.
- *Fire Hydrant Regulations* – The Medway Water Department regulates that fire hydrants be installed at all new developments at the expense of the developer.
- *Subdivision Review* – The Fire Department is involved in reviewing subdivision plans from conceptual design through occupancy to ensure that there is adequate access for fire trucks and an adequate water supply.
- *Portable Water Pumps* – Rivers and ponds in town are available to be tapped into for water supply if necessary.
- *All-Terrain Vehicles* – The town maintains all-terrain vehicles for fighting forest fires. These vehicles provide access to remote areas that otherwise would not be reachable.

EARTHQUAKE HAZARDS EXISTING MITIGATION

- *Massachusetts State Building Code* – The State Building Code contains a section on designing for earthquake loads (780 CMR 1612.0). Section 1612.1 states that the purpose of these provisions is "to minimize the hazard to life to occupants of all buildings and non-building structures, to increase the expected performance of higher occupancy structures as compared to ordinary structures, and to improve the capability of essential facilities to function during and after an earthquake". This section goes on to state that due to the complexity of seismic design, the criteria presented are the minimum considered to be "prudent and economically justified" for the protection of life safety. The code also states that absolute safety and prevention of damage, even in an earthquake event with a reasonable probability of occurrence, cannot be achieved economically for most buildings.
- *Comprehensive Emergency Management Plan* –The town has an evacuation plan as specified in its Comprehensive Emergency Management Plan (CEMP).
- *Portable Water Pumps* – Rivers and ponds in town are available to be tapped into for water supply if necessary.
- *FEMA Resources* – A tanker task force is available through State Fire mobilization. FEMA has 8-12 tankers that can be deployed anywhere in the US within 72 hours.

LANDSLIDE HAZARD EXISTING MITIGATION

- The subdivision regulations have maximum slope requirements for new roads to minimize landslide risk.

MULTI-HAZARD EXISTING MITIGATION

- *Massachusetts State Building Code* – The State Building Code contains a section on designing for earthquake loads (780 CMR 1612.0). Section 1612.1 states that the purpose of these provisions is "to minimize the hazard to life to occupants of all buildings and non-building structures, to increase the expected performance of higher occupancy structures as compared to ordinary structures, and to improve the capability of essential facilities to function during and after an earthquake". This section goes on to state that due to the complexity of seismic design, the criteria presented are the minimum

considered to be "prudent and economically justified" for the protection of life safety. The code also states that absolute safety and prevention of damage, even in an earthquake event with a reasonable probability of occurrence, cannot be achieved economically for most buildings.

Section 1612.2.5 sets up seismic hazard exposure groups and assigns all buildings to one of these groups according to a Table 1612.2.5. Group II includes buildings which have a substantial public hazard due to occupancy or use and Group III are those buildings having essential facilities which are required for post-earthquake recovery, including fire, rescue and police stations, emergency rooms, power-generating facilities, and communications facilities.

- *Multi-Department Review of Developments* – Multiple departments, such as the Town Administrator, Planning, Zoning, Health, Highway, Fire, Police, and Conservation, review all subdivision and site plans prior to approval.
- *Comprehensive Emergency Management Plan (CEMP)* – Every community in Massachusetts is required to have a Comprehensive Emergency Management Plan. These plans address mitigation, preparedness, response and recovery from a variety of natural and man-made emergencies. These plans contain important information regarding flooding, dam failures and winter storms. Therefore, the CEMP is a mitigation measure that is relevant to many of the hazards discussed in this plan. The CEMP is available online through secure access for town personnel.

COMPILATION OF EXISTING MITIGATION

Table 29 summarizes the many existing natural hazard mitigation measures already in place in Medway. Because of the number of entities, public and private, involved in natural hazard mitigation, it is likely that this list is a starting point for a more comprehensive inventory of all measures.

Table 29 Table of existing hazard mitigation measures in Medway.

Type of Existing Protection	Description	Effectiveness /Enforcement	Changes Needed
MULTIPLE HAZARD MITIGATION			
Comprehensive Emergency Management Plan (CEMP)	Addresses mitigation, preparedness, response and recovery from a variety of natural and man-made emergencies.	Emphasis is on emergency response.	None.
Massachusetts State Building Code	Regulates wind loads, earthquake resistant design, flood-proofing and snow loads.	Most effective for new construction.	None.
Multi-Department Review of Developments	Multiple department within town review site plans before development.	Most effective for new construction.	None.
Portable Water Pumps	Rivers and ponds in town are available to be tapped into for water supply if necessary.	Effective.	None.

Type of Existing Protection	Description	Effectiveness /Enforcement	Changes Needed
FEMA Tankers	FEMA has 8-12 tankers that can be deployed anywhere in the US within 72 hours.	Effective for most situations.	None.
FLOOD RELATED HAZARDS			
Participation in the National Flood Insurance Program (NFIP)	Homeowners in the floodplain can purchase flood insurance.	There are 100 policies in force.	Encourage all eligible homeowners to obtain insurance.
Street Sweeping	Every street gets swept once a year or as needed. High traffic areas are swept more regularly.	Effective.	None.
Catch Basin Cleaning	All 1.900 catch basins are cleaned out once a year.	Effective.	None.
Roadway Treatments	The town uses a mixture of sand and salt on the roads.	Effective.	None.
Enforcement of the State Building Code	Regulates for wind loads, earthquake resistant design, flood-proofing and snow loads.	Most effective for new construction.	None.
Community Preservation Act	The town adopted CPA in 2001.	Most effective for new construction.	None.
Infrastructure Improvements	Infrastructure improvements include culverts, bridges, roads, and drainage systems.	Partially Effective	Funding, Equipment, Resources
Regulations, By-Laws, and Plans	Includes: Stormwater Management, Floodplain Protection District, Open Space Residential Development, NPDES	Effective.	None.
Comprehensive Emergency Management Plan (CEMP)	The CEMP addresses dam safety issues.	Emphasis is on emergency response.	Plan needs to be updated.
State permits required for dam construction	State law requires a permit for the construction of any dam.	Most effective for new construction.	Improvements needed to the statewide system for dam inspections.

Type of Existing Protection	Description	Effectiveness /Enforcement	Changes Needed
DCR Dam Safety Regulations	The state has enacted dam safety regulations mandating inspections and emergency action plans.	Enforcement is an issue.	Staffing and budgeting needs to be addressed.
BRUSH FIRE RELATED HAZARDS			
Permits required for outdoor burning.	The Fire Department requires a written permit for outdoor burning. The permit must be obtained from the Fire Dept.	Effective.	None.
Fire Hydrant Regulations	Town-wide hydrant regulations.	Effective.	None.
Subdivision Review	The Fire Department is involved in reviewing all subdivision plans.	Effective.	None.
Comprehensive Emergency Management Plan (CEMP)	Addresses mitigation, preparedness, response and recovery from a variety of natural and man-made emergencies.	Emphasis is on emergency response.	None.
Portable Water Pumps	Rivers and ponds in town are available to be tapped into for water supply if necessary.	Effective.	None.
All-Terrain Vehicles	The town maintains all-terrain vehicles for fighting forest fires	Effective.	None.
GEOLOGIC HAZARDS			
The Massachusetts State Building Code	The Town enforces the Massachusetts State Building Code.	Effective for most situations.	None.
WIND HAZARDS			
Massachusetts State Building Code	The town enforces the Massachusetts State Building Code.	Most effective for new construction.	None.
Tree-Trimming	The Tree Department and local electric company, National Grid, conducts regular tree trimming. The Town responds to local calls.	Effective for most situations.	None.
WINTER-RELATED HAZARDS			
Roadway Operations & Treatments	The town DPS conducts salting, sanding and plowing services throughout the town during winter storms.	Effective for most situations.	None.

Type of Existing Protection	Description	Effectiveness /Enforcement	Changes Needed
Snow Disposal	The town does not do any snow disposal except for removing snow at the library	Effective for most situations.	None.

MITIGATION CAPABILITIES AND LOCAL CAPACITY FOR IMPLEMENTATION

Under the Massachusetts system of "Home Rule," the Town of Medway is authorized to adopt and from time to time amend a number of local bylaws and regulations that support the town's capabilities to mitigate natural hazards. These include Zoning Bylaws, Subdivision and Site Plan Review Regulations, Wetlands Bylaws, Health Regulations, Public Works regulations, and local enforcement of the State Building Code. Local Bylaws may be amended each year at the annual Town Meeting to improve the town's capabilities, and changes to most regulations simply require a public hearing and a vote of the authorized board or commission, such as the Planning Board or Conservation Commission

The Town of Medway has recognized several existing mitigation measures that require implementation or improvements, and has the capacity within its local boards and departments to address these. The Medway Department of Public Works will address the needs for catch basin cleaning, repairs and upgrades to drainage infrastructure. The town's Planning Board will address the updates to the Master Plan and implementation of the Zoning Ordinance, Floodplain District, and Subdivision Rules and Regulations. The Conservation Commission will oversee implementation of the Wetlands Bylaw and the Open Space Plan.

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VII. MITIGATION MEASURES FROM THE 2010 PLAN

IMPLEMENTATION PROGRESS ON THE PREVIOUS PLAN

At a meeting of the Medway Hazard Mitigation Planning Committee, Town staff reviewed the mitigation measures identified in the 2009 Medway Hazard Mitigation Plan and determined whether each measure had been implemented or deferred. Of those measures that had been deferred, the committee evaluated whether the measure should be deleted or carried forward into this Hazard Mitigation Plan 2017 Update. The decision on whether to delete or retain a particular measure was based on the committee's assessment of the continued relevance or effectiveness of the measure and whether the deferral of action on the measure was due to the inability of the Town to take action on the measure. Table 30 summarizes the status of mitigation measures from the 2010 plan and identification of measures that are being continued as part of the 2018 update.

Medway has made considerable progress on implementing mitigation measures identified in the 2010 Hazard Mitigation Plan. Some policy and regulation mitigation measures include implementing a Stormwater Bylaw, expansion of the water resource protection district to protect water flowing into surrounding communities and protecting all Zone II drinking water recharge areas, implementing Open Space Residential Development and Adult Retirement Community Planned Unit Development. Some infrastructure projects for flood mitigation include culvert upgrades at the Brentwood Subdivision and some other drainage improvements and construction of a retaining wall at Chicken Brook/Village Street. The Town has also acquired GIS mapping technology for municipal services and has also undertaken an update on its Open Space and Recreation Plan for prioritizing land for protection and flood control.

Moving forward into the next five year plan implementation period there will be many more opportunities to incorporate hazard mitigation into the Town's decision making processes. The challenges the Town faces in implementing these measures are primarily due to limited funding and available staff time. This plan should help the Town prioritize the best use of its limited resources for enhanced mitigation of natural hazards.

Table 30 Medway Hazard Mitigation Measures from the 2010 Plan

Mitigation Measure		Priority in 2010 Plan	Current Status	Include in 2018 Plan Update?
FLOOD HAZARDS				
Brentwood Subdivision-Culvert Upgrades		High	Completed	No
Brentwood Subdivision-Comprehensive Drainage Improvements		High	Not Completed. The East portion (highest priority) is complete. Mid-section did not receive local support from residents. East section will be a future development project.	Yes
Hopping Brook Culvert Enlargement		High	Not Completed	Yes
Chicken Brook & Village Street Mitigation-Hydro Analysis/Drainage Study		Medium	Not Completed	Yes
Chicken Brook & Village Street Mitigation-Retaining Wall		Medium	Completed	No
Choate Dam Restoration & Repairs		Medium	Not Completed	Yes
Sanford Dam Restoration & Repairs		Medium	Not Completed	Yes
Chicken Brook Stream Restoration		Low	Not Completed	Yes
Charles River Drainage Improvements		Low	Not Completed	Yes
FLOOD HAZARDS-For NFIP Compliance				
Open Space Protection-ensure future development does not increase flooding.	Acquire additional conservation land to develop conservation areas centered around the Town's natural resource areas	High	Ongoing	Yes
	Continue open space purchases and negotiate conservation restrictions and easements	High	Ongoing	Yes
	Prioritize land acquisition or protection based on groundwater recharge standards.	High	Ongoing	Yes
	Designate clearly significant parcels as permanently protected open space.	High	Ongoing	Yes
	Continue to develop criteria to prioritize lands for protection and find ways to acquire those lands or the development rights.	High	Completing Open Space and Recreation Plan (OSRP) Update	No
	Develop partnerships with private landowners or pursue easements to protect sensitive open space or recreation lands where land acquisition is not an option.	High	Ongoing	Yes
	Promote compact development to reduce sprawl Objectives.	High	Completing Open Space and Recreation Plan Update	Yes

Mitigation Measure		Priority in 2010 Plan	Current Status	Include in 2018 Plan Update?
Open Space Protection-ensure future development does not increase flooding.	Identify key parcels of land which are most important for protecting natural resources and wildlife corridors	High	Completing Open Space and Recreation Plan Update	Yes- Implement the OSRP
	Identify key parcels of land which are most important for protecting historic landscapes and/or community character	High	Completing Open Space and Recreation Plan Update	Yes- Implement the OSRP
	Develop/implement a system of prioritizing parcels for potential acquisition	High	Completing Open Space and Recreation Plan Update	Yes- Implement the OSRP
	Encourage/promote the incorporation of open space into new development plans (especially by the use of the open space residential subdivision (OSRD) and the Adult Retirement Community Planned Unit Development (ARCPUD) sections of the Zoning Bylaw), and use these tools to establish "eco-corridors" or greenbelts where appropriate	High	Open Space Residential Developments and ARCPUD	No
	Acquire additional conservation and open space lands. Encourage donations of open space by landowners.	High	Ongoing	Yes- Implement the OSRP
	Establish an Open Space and Recreation Plan Implementation Committee to coordinate among Town Boards and Commissions, and contact land owners	High	Ongoing	Yes- Implement the OSRP
	Increase public awareness of the value of open space, and encourage citizen input.	High	Ongoing	Yes- Implement the OSRP
	Preserve historically significant buildings and sites	High	Ongoing	Yes
Revisions to Development Bylaws and Regulations to further prevent flooding	Increase the current Stormwater Management Regulations for pipe size to accommodate more frequent larger storms (current regulations twenty five (25) year storm). The State recognizes that larger storm events have been occurring more frequently and subsequent building standards should reflect the higher frequency of larger storms.	High	Completed. Town Meeting voted to accept new stormwater bylaw.	No
	Incorporate the proposed Traditional Neighborhood Development Overlay District By-Law into the town's Zoning By-Laws. This By-Law, proposed in 2007 as part of a Smart Growth Technical assistance Grant would reduce lot sizes and environmental impacts through low impact developments.	High	Completed	No
	Modify the Water Resource Protection District to include all Zone II areas within the town, including those areas that contribute to the water supply of surrounding communities.	High	Completed	No

Mitigation Measure		Priority in 2010 Plan	Current Status	Include in 2018 Plan Update?
Revisions to Development Bylaws and Regulations to further prevent flooding	Develop a bylaw that protects a 35-foot "no disturbance" buffer around all wetlands that prohibits grading, building and all other construction activities. Consider exempting repairs to existing structures to ensure that this action is not cost-prohibitive to owners (current limits are 25-foot).	High	Not Completed	Yes
	Amend zoning bylaws to exclude wetlands from the density calculations.	High	Completed	No
	Expand the Water Resource Protection District to protect water flowing into surrounding communities.	High	Completed	No
	Continue to address the on-going issue of non-point source pollution to protect the drinking water supply.	High	Completed	No
	Require aggressive and legally-binding operation and maintenance plans and reporting, with enforcement mechanisms, for private drainage facilities.	High	Not Completed	Yes
	Include construction and post-construction slope stabilization requirements in the site plan and subdivision regulations.	High	Completed	Yes
	Require the use of the new LID guidance manual for all developments in town, and not just those within the Aquifer Protection District.	High	Not Completed	Yes
	Expand the requirements of the state stormwater policy to not just locations within Conservation Commission jurisdiction, but to all developments in the town.	High	Completed. Town Meeting voted to accept new stormwater bylaw.	No
Flood-Related Public Education on water resources such as flood prevention and stormwater management.		High	Ongoing	Yes
BRUSH FIRE				
Brush Fire Regulation-Back yard setback requirements for fire protection		Medium	Completed	Yes
Brush Fire Education-Public Education on Brush Fire Prevention		Medium	Completed	Yes
MULTIPLE HAZARDS				
Acquire GIS Mapping Technology		High	Completed	No
Inter-municipal Collaboration to improve communications between municipalities.		Medium	Completed	Yes
Communications for Emergency Operations by upgrading to wireless communications.		Medium	Completed	No

VIII. HAZARD MITIGATION STRATEGY

WHAT IS HAZARD MITIGATION?

Hazard mitigation means to permanently reduce or alleviate the losses of life, injuries and property resulting from natural hazards through long-term strategies. These long-term strategies include planning, policy changes, education programs, infrastructure projects and other activities. FEMA currently has three mitigation grant programs: the Hazards Mitigation Grant Program (HGMP), the Pre-Disaster Mitigation program (PDM), and the Flood Mitigation Assistance (FMA) program. The three links below provide additional information on these programs.
http://www.fema.gov/government/grant/hmgp/index.shtm
http://www.fema.gov/government/grant/pdm/index.shtm
http://www.fema.gov/government/grant/fma/index.shtm

Hazard Mitigation Measures can generally be sorted into the following groups:[35]

- *Prevention:* Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.
- *Property Protection*: Actions that involve the modification of existing buildings or infrastructure to protect them from a hazard or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter resistant glass.
- *Public Education & Awareness*: Actions to inform and educate citizens, elected officials, and property owners about the potential risks from hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
- *Natural Resource Protection*: Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- *Structural Projects*: Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include storm water controls (e.g., culverts), floodwalls, seawalls, retaining walls, and safe rooms.
- *Emergency Services Protection*: Actions that will protect emergency services before, during, and immediately after an occurrence. Examples of these actions include protection of warning system capability, protection of critical facilities, and protection of emergency response infrastructure.

[35] FEMA Local Multi-Hazard Mitigation Planning Guidance

IDENTIFICATION OF POTENTIAL MITIGATION MEASURES

During the Local Steering Committee meetings, officials in Medway determined possible mitigation measures for the various natural hazards that have impacted or could impact the town. In addition, MAPC solicited suggestions for mitigation measures when it collected hazard information from town officials and from other town plans and studies. MAPC compiled all suggested potential mitigation measures in Table 31 below.

Table 31 is then followed by series of considerations that were factored into determining mitigation measures. These include: regional and inter-community issues, regional partners and facilities, and new development and infrastructure. Following those considerations, the Hazard Mitigation Strategy chapter of the plan then provides an explanation of the prioritization process of the potential mitigation measures to be included in the updated mitigation plan, as well as a prioritized matrix of the measures.

INTRODUCTION TO POTENTIAL MITIGATION MEASURES TABLE

Description of the Mitigation Measure – The description of each mitigation measure is brief and cost information is given only if cost data were already available from the community. The cost data represent a point in time and would need to be adjusted for inflation and for any changes or refinements in the design of a particular mitigation measure.

Priority – As described above and summarized in Table 31, the designation of high, medium, or low priority was done considering potential benefits and estimated project costs, as well as other factors in the STAPLEE analysis.

Implementation Responsibility – The designation of implementation responsibility was done based on a general knowledge of what each municipal department is responsible for. It is likely that most mitigation measures will require that several departments work together and assigning staff is the sole responsibility of the governing body of each community.

Time Frame – The time frame was based on a combination of the priority for that measure, the complexity of the measure and whether or not the measure is conceptual, in design, or already designed and awaiting funding. Because the time frame for this plan is five years, the timing for all mitigation measures has been kept within this framework. The identification of a likely time frame is not meant to constrain a community from taking advantage of funding opportunities as they arise.

Potential Funding Sources – This column attempts to identify the most likely sources of funding for a specific measure. The information on potential funding sources in this table is preliminary and varies depending on a number of factors. These factors include whether or not a mitigation measure has been studied, evaluated or designed, or if it is still in the conceptual stages. MEMA and DCR assisted MAPC in reviewing the potential eligibility for hazard mitigation funding. Each grant program and agency has specific eligibility requirements that would need to be taken into consideration. In most instances, the measure will require a number of different funding sources. Identification of a potential funding source in this table does not guarantee that a project will be eligible for, or selected for funding. Upon adoption of this plan, the local team responsible for its implementation should begin to explore the funding sources in more detail.

Additional information on funding sources – The best way to determine eligibility for a particular funding source is to review the project with a staff person at the funding agency. The following websites provide an overview of programs and funding sources.

Army Corps of Engineers (ACOE) – The website for the North Atlantic district office is http://www.nae.usace.army.mil/. The ACOE provides assistance in a number of types of projects including shoreline/streambank protection, flood damage reduction, flood plain management services and planning services.

Massachusetts Emergency Management Agency (MEMA) – The grants page http://www.mass.gov/dem/programs/mitigate/grants.htm has a useful table that compares eligible projects for the Hazard Mitigation Grant Program and the Flood Mitigation Assistance Program.

Abbreviations Used in Table 31

FEMA Mitigation Grants includes:
- FMA = Flood Mitigation Assistance Program.
- HMGP = Hazard Mitigation Grant Program.
- PDM = Pre-Disaster Mitigation Program

ACOE = Army Corps of Engineers.
DHS/EOPS = Department of Homeland Security/Emergency Operations
DEP (SRF) = Department of Environmental Protection (State Revolving Fund)
USDA = United States Department of Agriculture
Mass DOT = Massachusetts Department of Transportation
DCR = MA Department of Conservation and Recreation
EEA=MA Executive Office of Energy and Environmental Affairs
MAPC= Metropolitan Area Planning Council
MVP= MA Municipal Vulnerability Preparedness Program
TOM= Town of Medway

Table 31 Potential Mitigation Measures for the 2018 Hazard Mitigation Strategy

Mitigation Measures	Priority 2018	Priority 2010	Geographic Coverage	Lead Implementation	Time Frame	Estimated Cost	Potential Funding
BRUSH FIRE HAZARDS							
Brush Fire Regulation-Back yard setback requirements for fire protection	Low	Medium	Town-wide	Fire Department	2018-2023	<$10,000	Town General Fund
Brush Fire Education-Public Education on Brush Fire Prevention (Senior, Student existing)	Low	Medium	Town-wide	Fire Department	2018-2023	<$10,000	Town General Fund
DROUGHT HAZARDS							
Impose water restrictions for town facilities, residents, businesses, and institutions with exceptions for emergency response training.	High	N/A	Town-wide	DPS	2018-2023	<$10,000	Town General Fund
Public Education around drinking water supply, where drinking water comes from.	High	N/A	Town-wide	DPS	2019-2023	<$10,000	Town General Fund, MAPC
Promote drought tolerant landscaping and site design measures	Medium	N/A	Town-wide	Planning Department	Begin 2019	<$10,000	Town General Fund, MAPC
Audit water use with existing household meters, particularly during times with use restrictions.	High	N/A	Town-wide	DPS	2018-2023	<$10,000	Town General Fund
Provide Rain barrels to residents, commercial/industrial/institutions, and municipal facilities.	Low	N/A	Town-wide	DPS	2018-2023	<$10,000	Town General Fund
GEOLOGIC HAZARDS (EARTHQUAKES/LANDSLIDES)							
Assessment /feasibility study of town buildings earthquake vulnerability, especially public safety facility. Police and Fire.	Low	N/A	Town-wide	DPS/ Selectmen's Office	2020	$50,000-$100,000	Town General Fund
Assessment/ feasibility study of roadways and stormwater infrastructure vulnerable to earthquakes and landslides.	High	N/A	Town-wide	DPS/Selectmen's Office	2022	$50,000-$100,000	Town General Fund
EXTREME TEMPERATURES							
Encourage Site Design to increase tree plantings near buildings, increase the percentage of trees used in parking areas, and along public ways.	Low	N/A	Town-wide	Planning Department	2019	<$10,000	Town General Fund
Public education campaign on extreme heat and cold to prevent health challenges or property damages (extreme cold).	Medium	N/A	Town-wide	Health Department	2018	<$10,000	Town General Fund

Mitigation Measures	Priority 2018	Priority 2010	Geographic Coverage	Lead Implementation	Time Frame	Estimated Cost	Potential Funding
WIND-RELATED HAZARDS (TORNADOS, HURRICANES, THUNDERSTORMS)							
Create a tree inventory and risk assessment. Tree trimming.	High	N/A	Town-Wide	Tree Warden	2020	$35,000	Town General Fund
WINTER STORMS							
Salt roads during winter storms	High	High	Town-wide	DPS	2018-2023	>$100,000	Town General Fund
Evaluate public buildings for ability to withstand snow loads; retrofit if needed to greatest degree feasible.	High	N/A	Town-wide	Building Commissioner	2019	$50,000	Town General Fund
FLOODING AND DAM RELATED HAZARDS							
Open Space Protection-ensure future development does not increase flooding. Implement Open Space and Recreation Plan 2018.	Medium	High	Town-wide	Conservation Department, Planning Department	2018-2023	>$100,000	Town General Fund
Require the use of the new Low Impact Development guidance manual for all developments in Town, not just those within the Aquifer Protection District.	Medium	N/A	Town-wide	Planning	2019	Staff Time	Town General Fund
Flood-related Public Education on water resources such as flood prevention and stormwater management.	Medium	High	Town-wide	Planning Department, Conservation Commission, Building Department	2018-2023	<$10,000	Town General Fund, MAPC
Brentwood Subdivision-Comprehensive Drainage Improvements	High	High	northeast Medway	DPS, TOM	2020	$5 million	PDM, ACOE, CMRP, DEP, NCMCP, Town General Fund
Hopping Brook Culvert Enlargement	High	High	northwest Medway	DPS, TOM	2019	$250,000-$300,000	PDM, TOM
Chicken Brook & Village Street Mitigation-Hydro Analysis/Drainage Study	Medium	Medium	central Medway	TOM DPS, DCR	2020	$25,000-$100,000	PDM, ACOE, DCR, DEP, Town General Fund
Choate Dam Restoration & Repairs	Medium	Medium	Choate Pond	TOM DPS, DCR	2021-2023	$50,000-$300,000	Town General Fund, DCR, DOER
Sanford Dam Restoration & Repairs	Medium	Medium	Charles River at Medway and Franklin	TOM DPS, DCR	2021-2023	N/A	Town of Franklin
Chicken Brook Stream Restoration-better bank stabilization, development management, buy land around Chicken Brook. More plantings, wildlife buffer. Medway Block leaks into Chicken Brook. Establish vegetated cover. To prevent washouts.	Medium	Low	Chicken Brook Corridor	Conservation Department	2020	$5,000-$100,000	PDM, ACOE, CMRP, DCR, DEP, NCMCP, Town General Fund

Mitigation Measures	Priority 2018	Priority 2010	Geographic Coverage	Lead Implementation	Time Frame	Estimated Cost	Potential Funding
Charles River Drainage Improvements	Low	Low	Charles River Corridor	TOM DPS	2018-2023	$50,000-$1million	PDM, ACOE, CMRP, DCR, DEP, NCMCP, Town General Fund
Clark Street roadway and drainage improvements and resource protection. Install a bridge at Clark street over the wetland which is in the 1% Annual Chance Flood zone.	Medium	N/A	northwest Medway	TOM DPS	2022	$500,000-$1 million	PDM, ACOE, CMRP, DCR, DEP, NCMCP, TOM
MULTIPLE HAZARDS							
Inter-municipal Collaboration to improve communications between municipalities.	Medium	Medium	Regional	Selectmen's Office	2018-2023	<$10,000	Town General Fund
First Net-nationwide communication system. Participate First Net.	High	Medium	Regional/nationwide	Fire Department/Police Department	2018-2023	$50,000	HMS, Town General Fund
CLIMATE CHANGE HAZARDS							
Promote Net Zero in new buildings/new development in town. DPS is Net Zero building.	Low	N/A	Town-wide	Planning Department, Energy Manager	2020	<$10,000	Town General Fund
Investigate performing greenhouse gas inventory.	Low	N/A	Town-wide	Planning Department, Energy Manager	2020	$25,000-$35,000	Town General Fund, MAPC, DER

PROCESS FOR SETTING PRIORITIES FOR MITIGATION MEASURES

The last step in developing the Town's mitigation strategy is to assign a level of priority to each mitigation measure so as to guide the focus of the Town's limited resources towards those actions with the greatest potential benefit. At this stage in the process, the Local Steering Committee had limited access to detailed analyses of the cost and benefits of any given mitigation measure, so prioritization is based on the local team members' understanding of existing and potential hazard impacts and an approximate sense of the costs associated with pursuing any given mitigation measure.

Priority setting was based on local knowledge of the hazard areas, including impacts of hazard events, the extent of the area impacted, and the relation of a given mitigation measure to the Town's goals. In addition, the Local Steering Committee also took into consideration factors such as the number of homes and businesses affected, whether or not road closures occurred and what impact closures had on delivery of emergency services and the local economy, anticipated project costs, whether any environmental constraints existed, and whether the Town would be able to justify the costs relative to the anticipated benefits.

Table 32 demonstrates the prioritization of the Town's City's potential hazard mitigation measures. For each mitigation measure, the geographic extent of the potential benefiting area is identified as is an estimate of the overall benefit and cost of the measures. The benefits, costs, and overall priority were evaluated in terms of the following parameters:

Estimated Benefits

High	Action will result in a significant reduction of hazard risk to people and/or property from a hazard event
Medium	Action will likely result in a moderate reduction of hazard risk to people and/or property from a hazard event
Low	Action will result in a low reduction of hazard risk to people and/or property from a hazard event

Estimated Costs

High	Estimated costs greater than $100,000
Medium	Estimated costs between $10,000 to $100,000
Low	Estimated costs less than $10,000 and/or staff time

Priority

High	Action very likely to have political and public support and necessary maintenance can occur following the project, and the costs seem reasonable considering likely benefits from the measure
Medium	Action may have political and public support and necessary maintenance has potential to occur following the project
Low	Not clear if action has political and public support and not certain that necessary maintenance can occur following the project

Table 32 Prioritization of Potential Hazard Mitigation Measures

Mitigation Measures	Geographic Coverage	Estimated Benefit	Estimated Cost	Priority 2018
Brush Fire Mitigation Measures				
Brush Fire Regulation-Back yard setback requirements for fire protection.	Town-wide	Low	Low	Low
Brush Fire Education-Public Education on Brush Fire Prevention.	Town-wide	Medium	Low	Low
DROUGHT HAZARDS				
Impose water restrictions for town facilities, residents business, institutions with exceptions for emergency response training.	Town-wide	High	Low	High
Public Education around drinking water supply, where drinking water comes from.	Town-wide	Medium	Low	High
Promote drought tolerant landscaping and site design measures.	Town-wide	Medium	Low	Medium
Audit water use with existing household meters, particularly during times with use restrictions.	Town-wide	Medium	Low	High
Provide Rain barrels to residents, commercial/industrial/institutions, and municipal facilities.	Town-wide	Low	Low	Low
GEOLOGIC HAZARDS (EARTHQUAKES/LANDSLIDES)				
Assessment /feasibility study of town buildings earthquake vulnerability, especially public safety facilities, police and fire.	Town-wide	Low	Medium	Low
Assessment/ feasibility study of roadways and stormwater infrastructure vulnerable to earthquakes and landslides.	Town-wide	Low	Medium	High
EXTREME TEMPERATURES				
Encourage Site Design to increase tree plantings near buildings, increase the percentage of trees used in parking areas, and along public ways.	Town-wide	Medium	Low	Low

Mitigation Measures	Geographic Coverage	Estimated Benefit	Estimated Cost	Priority 2018
Public education campaign on extreme heat and cold to prevent health challenges or property damages (extreme cold).	Town-wide	Medium	Low	Medium
WIND-RELATED HAZARDS (TORNADOS, HURRICANES, THUNDERSTORMS)				
Create a tree inventory and risk assessment. Tree trimming.	Town-Wide	Medium	Low	High
WINTER STORMS				
Salt roads during winter storms.	Town-wide	High	High	High
Evaluate public buildings for ability to withstand snow loads; retrofit if needed to greatest degree feasible.	Town-wide	Low	Medium	High
FLOODING AND DAM RELATED HAZARDS				
Open Space Protection-ensure future development does not increase flooding. Implement Open Space and Recreation Plan 2018.	Town-wide	High	High	Medium
Require the use of the new Low Impact Development guidance manual for all developments in Town, not just those within the Aquifer Protection District.	Town-wide	High	Low	Medium
Flood-related Public Education on water resources such as flood prevention and stormwater management.	Town-wide	Medium	Low	Medium
Brentwood Subdivision-Comprehensive Drainage Improvements.	northeast Medway	High	High	High
Hopping Brook Culvert Enlargement.	northwest Medway	High	High	High
Chicken Brook & Village Street Mitigation-Hydro Analysis/Drainage Study.	central Medway	High	Medium	Medium
Choate Dam Restoration & Repairs.	Choate Pond	High	High	Medium
Sanford Dam Restoration & Repairs.	Charles River at Medway and Franklin	High	High	Medium

Mitigation Measures	Geographic Coverage	Estimated Benefit	Estimated Cost	Priority 2018
Chicken Brook Stream Restoration-better bank stabilization, development management, buy land around Chicken Brook. More plantings, wildlife buffer. Medway Block leaks into Chicken Brook. Establish vegetated cover. To prevent washouts.	Chicken Brook Corridor	High	Medium	Medium
Charles River Drainage Improvements.	Charles River Corridor	High	High	Low
Clark Street roadway and drainage improvements and resource protection. Install a bridge at Clark street over the wetland which is in the 1% Annual Chance Flood zone.	northwest Medway	High	High	Medium
MULTIPLE HAZARDS				
Inter-municipal Collaboration to improve communications between municipalities.	Regional	Medium	Low	Medium
First Net-nationwide communication system. Participate First Net.	Regional/nationwide	Medium	Medium	High
CLIMATE CHANGE HAZARDS				
Promote Net Zero in new buildings/new development in town. DPS is Net Zero building.	Town-wide	Medium	Low	Low
Investigate performing greenhouse gas inventory.	Town-wide	Medium	Medium	Low

NEW DEVELOPMENT AND INFRASTRUCTURE

As part of the process of developing recommendations for new mitigation measures for this plan update, the Town considered the issues related to new development, redevelopment, and infrastructure needs in order limit future risks. Taking into consideration the Town's stormwater requirements town-wide, the Wetlands Bylaw enforced by the Conservation Commission, the Comprehensive Plan, and the Open Space Plan, the town determined that existing regulatory measures are taking good advantage of local Home Rule land use regulatory authority to minimize natural hazard impacts of development. Priorities for the future include further regulatory changes and public education efforts toward ensuring that future development occurs in a sustainable manner. Open Space purchases and drainage upgrades are also priorities in this plan.

REGIONAL AND INTER-COMMUNITY CONSIDERATIONS

Some hazard mitigation issues are strictly local. The problem originates primarily within the municipality and can be solved at the municipal level. Other issues are inter-community and require cooperation between two or more municipalities. There is a third level of mitigation which is regional and may involve a state, regional or federal agency or three or more municipalities.

REGIONAL PARTNERS

In densely developed urban communities such as the metropolitan Boston area, mitigating natural hazards, particularly flooding, is more than a local issue. The drainage systems that serve these communities are complex systems of storm drains, roadway drainage structures, pump stations and other facilities owned and operated by a wide array of agencies including the Town, the Department of Conservation and Recreation (DCR), the Charles River Pollution District, Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transportation Authority (MBTA). The planning, construction, operation and maintenance of these structures are integral to the flood hazard mitigation efforts of communities. These agencies must be considered the communities' regional partners in hazard mitigation. These agencies also operate under the same constraints as communities do including budgetary and staffing constraints and they must make decisions about numerous competing priorities.

Following, is a brief overview of regional facilities found in Medway and a discussion of inter-municipal issues.

OVERVIEW OF REGIONAL FACILITIES WITHIN MEDWAY

Major facilities owned, operated and maintained by state or regional entities include:

- Interstate I-495 (Mass Highways)
- State roads Routes 109 and 126 (Mass Highways)
- Charles River
- Sanford Dam at the Charles River on the boundary of Medway and Franklin
- Major power utility lines, power plants, and substations
- Charles River Pollution Control District, a regional wastewater treatment facility servicing Medway, Millis, Franklin, and Bellingham

INTER-COMMUNITY CONSIDERATIONS

Mitigation measures for the following regional issues should be taken into account as Medway develops its own local plan:

A) Coordinate on New Development on a Regional Basis

As Medway and the surrounding communities are undergoing development, it is vital that these communities communicate and provide input during the review processes. When addressing housing, transportation, and economic development projects, the impacts to neighbors must be addressed.

B) Long-Term Regional Management Plan To Control Beaver Activity

One regional issue of significance is the widespread effects of beaver dams in the area. Most streams, wetland areas, and ponds in the region have had some degree of beaver activity in the past several years. Much of the localized flooding that occurs is due to beaver activity. The towns will mitigate the problem temporarily by hiring trappers, removing dams, or installing pipes, but a long-term comprehensive approach should be considered.

C) Stormwater Management within and along the Charles River Watershed

Medway lies along the Charles River and is one of the municipalities serviced by the Charles River Pollution Control District. Collaboration and cooperation on stormwater with the Towns of Millis, Bellingham, and Franklin, will minimize potential infrastructure capacity challenges during extreme precipitation events, minimize localized flooding, and enhance the water quality of the Charles River.

IX. PLAN ADOPTION & MAINTENANCE

PLAN ADOPTION

The Medway Hazard Mitigation Plan 2018 Update was adopted by the Board of Selectmen on *[ADD DATE]*. See Appendix D for documentation. The plan was approved by FEMA on [*ADD DATE*] for a five-year period that will expire on [*ADD DATE*].

PLAN MAINTENANCE

Although several of the mitigation measures from the Town's previous Hazard Mitigation Plan have been implemented, since that plan was adopted there has not been an ongoing local process to guide implementation of the plan. Such a process is needed over the next five years for the implementation of this plan update, and will be structured as described below.

MAPC worked with the Medway Hazard Mitigation Planning Team to prepare this plan. After approval of the plan by FEMA, this group will meet to function as the Hazard Mitigation Implementation Team, with the Commissioner of Public Works designated as the coordinator. Additional members could be added to the local implementation team from businesses, non-profits and institutions. The Town will encourage public participation during the next five-year planning cycle. As updates and a review of the plan are conducted by the Hazard Mitigation Implementation Team, these will be placed on the Town's web site, and any meetings of the Hazard Mitigation Implementation Team will be publicly noticed in accordance with town and state open meeting laws.

IMPLEMENTATION AND EVALUATION SCHEDULE

Mid-Term Survey on Progress– The coordinator of the Hazard Mitigation Implementation Team will prepare and distribute a survey in year three of the plan. The survey will be distributed to all of the local implementation group members and other interested local stakeholders. The survey will poll the members on any changes or revisions to the plan that may be needed, progress and accomplishments for implementation, and any new hazards or problem areas that have been identified.

This information will be used to prepare a report or addendum to the local hazard mitigation plan in order to evaluate its effectiveness in meeting the plan's goals and identify areas that need to be updated in the next plan. The Hazard Mitigation Implementation Team, coordinated by the Health Director, will have primary responsibility for tracking progress, evaluating, and updating the plan.

Begin to prepare for the next Plan Update -- FEMA's approval of this plan is valid for five years, by which time an updated plan must be approved by FEMA in order to maintain the town's approved plan status and its eligibility for FEMA mitigation grants. Given the lead time needed to secure funding and conduct the planning process, the Hazard Mitigation Implementation Team will begin to prepare for an update of the plan in year three. This will help the Town avoid a lapse in its approved plan status and grant eligibility when the current plan expires.

The Hazard Mitigation Implementation Team will use the information from the Mid-Term progress review to identify the needs and priorities for the plan update and seek funding for the plan update process. Potential sources of funding may include FEMA Pre-Disaster Mitigation grants and the Hazard Mitigation Grant Program. Both grant programs can pay for 75% of a planning project, with a 25% local cost share required.

Prepare and Adopt an Updated Local Hazard Mitigation Plan –Once the resources have been secured to update the plan, the Hazard Mitigation Implementation Team may decide to undertake the update themselves, contract with the Metropolitan Area Planning Council to update the plan or to hire another consultant. However the Hazard Mitigation Implementation Team decides to update the plan, the group will need to review the current FEMA hazard mitigation plan guidelines for any changes. The Medway Hazard Mitigation Plan Update will be forwarded to MEMA and DCR for review and to FEMA for approval.

INTEGRATION OF THE PLANS WITH OTHER PLANNING INITIATIVES

Upon approval of the Medway Hazard Mitigation Plan 2018 Update by FEMA, the Local Hazard Mitigation Team will provide all interested parties and implementing departments with a copy of the plan and will initiate a discussion regarding how the plan can be integrated into that department's ongoing work. The plan will be reviewed and discussed with the following departments. During updates of any Town department's plans or policies, the relevant portions of this mitigation strategy will be incorporated.

- Fire Department
- Emergency Management
- Police Department
- Public Works Department
- Planning and Community Development
- Conservation Commission
- Public Health
- Building
- Land Use

Other groups that will be coordinated with include large institutions, Chambers of Commerce, land conservation organizations and watershed groups. The plans will also be posted on a community's website with the caveat that local team coordinator will review the plan for sensitive information that would be inappropriate for public posting. The posting of the plan on a web site will include a mechanism for citizen feedback such as an e-mail address to send comments.

The Hazard Mitigation Plan will be integrated into other town plans and policies as they are updated and renewed, including the Medway Comprehensive Plan, Open Space Plan, Comprehensive Emergency Management Plan, and Capital Investment Program.

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APPENDIX A: LOCAL TEAM MEETINGS

AGENDA

Medway Hazard Mitigation Plan Update
Medway Local Hazard Mitigation Planning Team

Meeting #1
October 12, 2017
9:30AM
Medway Town Hall

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1. Review Project Scope of Work and Schedule

2. Update Critical Facilities Inventory and Mapping

3. Identify/update local hazards:

a) Flood Hazard Areas
b) Fire Hazard Areas (brushfires/wildfires)
c) Dams
d) Other hazards

4. Identify/Update New and Potential Development Sites

5. Discuss Public Involvement and Outreach

a) Identify local stakeholders
b) Schedule first public meeting

MEDWAY LOCAL HAZARD MITIGATION TEAM MEETING #1

October 12, 2017 – 9:30 AM – Medway Town Hall

Name	Department	Email	Phone
Bridget Graziano	Conservation	bgraziano@townofmedway.org	508 533 3292
Susy Affleck-Childs	Planning	sachilds@townofmedway.org	508 533-3291
Beth Hallal	BOH	bhallal@townofmedway.org	(-508-533-3206
Stephanie Mercandetti	Community & Econ. Development	smercandetti@townofmedway.org	(508) 321-4918
Allison Potter	Town Administrator	apotter@townofmedway.org	508 533 3264
Jeffrey P. Lynch	Fire Chief Dept.	CHIEFLYNCH@TOWNOFMEDWAY.ORG	508-533-3211

Wednesday, March 7, 2018
10:30 -12:30
Team Meeting #2

AGENDA

1. Introductions
2. Review Map and Data from Last Meeting (20 Minutes)
3. Review original existing mitigation measures from 2010 plan (15 minutes)
   - confirm effectiveness
   - note any needed changes
4. Review recommended mitigation measures from 2010 plan (40 minutes)
   - current status
   - decide which to carry forward into 2018 plan
5. Review Mitigation Goals and update as needed (20 minutes)
6. Next Steps (10 minutes)
   - Schedule a public meeting (Planning Board, Conservation Commission, etc.)
   - Create Stakeholder List for Comment (includes business, institutions, public agencies, watershed organizations)

Metropolitan Area Planning Council

MAPC
50 YEARS

dschofield@mapc.org
617-933-0794

MAPC Town of Medway
Natural Hazard Mitigation Plan 2018 Update

Team Meeting #2

Name	Title	Email
Susy Affleck-Childs	Planning & Eco. Dev Coordinator	sachilds@townofmedway.org
Allison Potter	Asst. Town Admin	apotter@townofmedway.org
Bridget Graziano	Conservation	bgraziano@townofmedway.org
Beth Hallal	BOH	bhallal@townofmedway.org
Jeffrey P. Lynch	FIRE CHIEF	CHIEFLYNCH@TOWNOFMEDWAY.ORG
Dave D'Amico	DPS Director	ddamico@townofmedway.org

MAPC

AGENDA

Medway Local Hazard Mitigation Planning Team
Meeting #3

Wednesday, June 13, 2018
2:00 PM

---

1. HAZARD MITIGATION PLAN TIMELINE AND STATUS UPDATE
MVP REVIEW

2. PROPOSE NEW MITIGATION MEASURES FOR THE 2018 PLAN

Mitigation catagories:

Flood
Brushfire
Drought
Earthquakes
Extreme Temperatures
Wind
Winter Storms
Climate Resilience/Adaptation (optional)

3. PRIORIZITE NEW MITIGATION STRATEGIES/COST ESTIMATE

4. STAKEHOLDER LIST AND ANNOUNCEMENT

4. NEXT STEPS

Final public meeting before the Board of Selectmen – June 18, 2018

MAPC

MAPC Sign-In Sheet –Medway **LOCAL HAZARD MITIGATION TEAM MEETING** – 2018 Plan Update

June 13, 2018 – 2:00 PM – Medway Town Hall

Name	Department	Email
Bridget R Grazziano	Conservation	bgrazziano@gmail.com
Beth Hallal	B.O.H.	bhallal@townofmedway.org
Allison Potter	Town Admin	apotter@townofmedway.org
Jeffrey P. Lynch	Fire Chief	JLYNCH@TOWNOFMEDWAY.ORG

APPENDIX B: HAZARD MAPPING

The MAPC GIS (Geographic Information Systems) Lab produced a series of maps for each community. Some of the data came from the Northeast States Emergency Consortium (NESEC). More information on NESEC can be found at http://www.serve.com/NESEC/. Due to the various sources for the data and varying levels of accuracy, the identification of an area as being in one of the hazard categories must be considered as a general classification that should always be supplemented with more local knowledge.

The map series consists of eight maps as described below. The maps in this appendix are necessarily reduced scale versions for general reference. Full sized higher resolution PDF's of the maps can be downloaded from the MAPC File Transfer Protocol (FTP) website at: ftp://ftp.mapc.org/Hazard_Mitigation_Plans/maps/Medway/

Map 1.	Population Density
Map 2.	Potential Development
Map 3.	Flood Zones
Map 4.	Earthquakes and Landslides
Map 5.	Hurricanes and Tornadoes
Map 6.	Average Snowfall
Map 7.	Composite Natural Hazards
Map 8.	Hazard Areas

Map1: Population Density – This map uses the US Census block data for 2010 and shows population density as the number of people per acre in seven categories with 60 or more people per acre representing the highest density areas.

Map 2: Land Use – This map depicts existing land use, based on the MacConnell Land Use map series from University of Massachusetts, available from MassGIS. The map displays 33 categories of land use based on interpretation of aerial photos. For more information on how the land use statistics were developed and the definitions of the categories, please go to http://www.mass.gov/mgis/lus.htm

Map 3: Flood Zones – The map of flood zones used the FEMA NFIP Flood Zones as depicted on the FIRMs (Federal Insurance Rate Maps) for Norfolk County dated July 17, 2012 as its source. This map is not intended for use in determining whether or not a specific property is located within a FEMA NFIP flood zone. The currently adopted FIRMS for Medway are kept by the Town. For more information, refer to the FEMA Map Service Center website http://www.msc.fema.gov. The definitions of the flood zones are described in detail on this site as well. The flood zone map for each community also shows critical infrastructure and repetitive loss areas.

Map 4: Earthquakes and Landslides – This information came from NESEC. For most communities, there was no data for earthquakes because only the epicenters of an earthquake are mapped.

The landslide information shows areas with either a low susceptibility or a moderate susceptibility to landslides based on mapping of geological formations. This mapping is highly general in nature. For more information on how landslide susceptibility was mapped, refer to http://pubs.usgs.gov/pp/p1183/pp1183.html.

Map 5: Hurricanes and Tornadoes – This map shows a number of different items. The map includes the storm tracks for both hurricanes and tropical storms, if any occurred in this community. This information must be viewed in context. A storm track only shows where the eye of the storm passed through. In most cases, the effects of the wind and rain from these storms were felt in other communities even if the track was not within that community. This map also shows the location of tornadoes with a classification as to the level of damages. What appears on the map varies by community since not all communities experience the same wind-related events. These maps also show the 100 year wind speed.

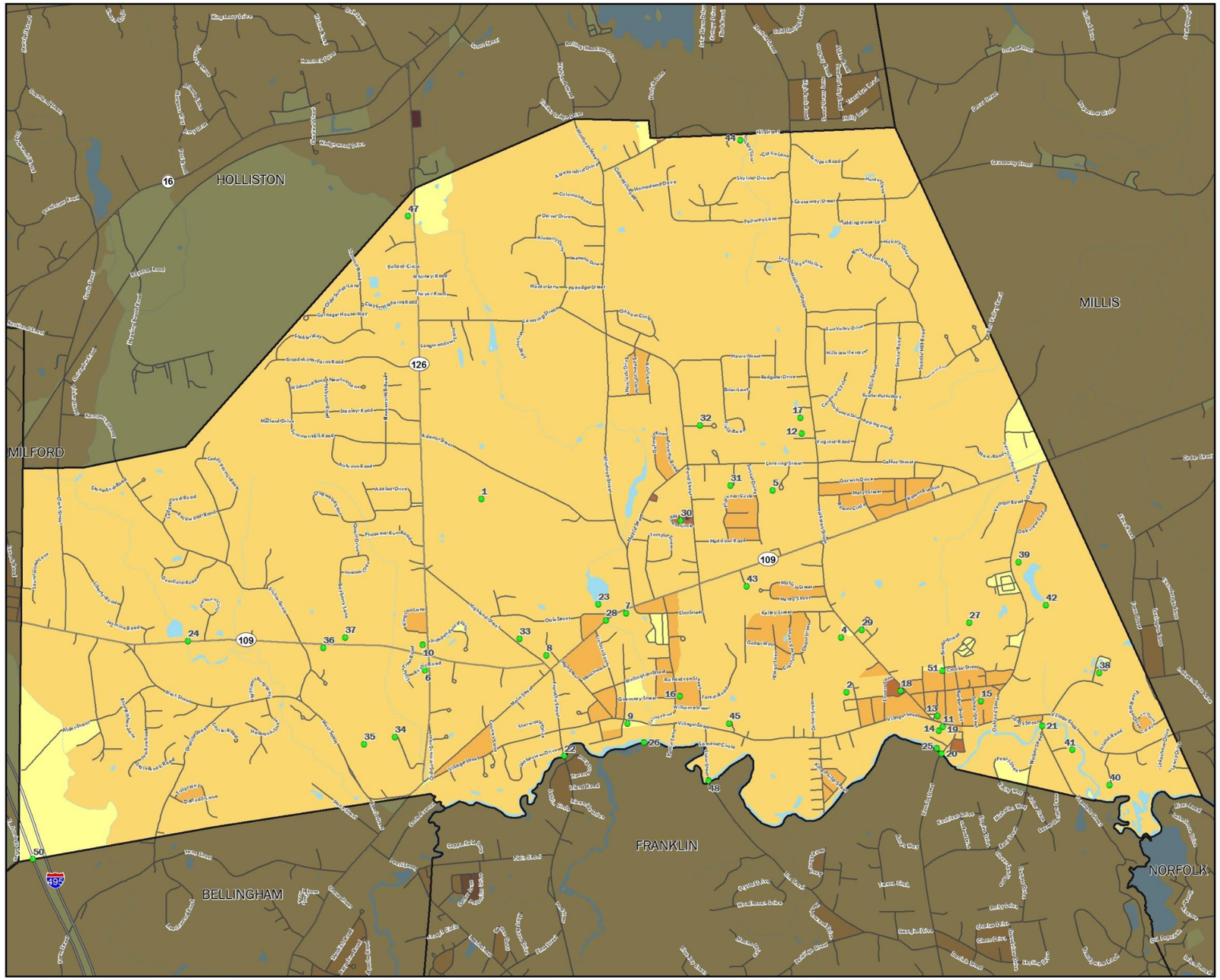
Map 6: Average Snowfall - - This map shows the average snowfall. It also shows storm tracks for nor'easters, if any storms tracked through the community.

Map 7: Composite Natural Hazards - This map shows four categories of composite natural hazards for areas of existing development. The hazards included in this map are 100 year wind speeds of 110 mph or higher, low and moderate landslide risk, FEMA Q3 flood zones (100 year and 500 year) and hurricane surge inundation areas. Areas with only one hazard were considered to be low hazard areas. Moderate areas have two of the hazards present. High hazard areas have three hazards present and severe hazard areas have four hazards present.

Map 8: Hazard Areas – For each community, locally identified hazard areas are overlaid on an aerial photograph dated April, 2009. The source of the aerial photograph is Mass GIS. This map also shows potential future developments, and critical infrastructure sites. MAPC consulted with town staff to determine areas that were likely to be developed or redeveloped in the future.

Table 33 Medway Locally Identified Hazards

Locally Identified Hazards Site ID	Name	Type	Comments
1	Brentwood	Flooding	Flooding
2	Hopping Brook	Flooding	Flooding
3	Chicken Brook at Village Street	Flooding	Flooding
4	Main Street by the Mill	Flooding	Flooding
5	Charles River	Flooding	Flooding
6	Choate Dam	Flooding	Dam
7	Sanford Dam	Flooding	Dam
8	Oakland Park	Brush Fire	Brush Fire
9	Fisher Street	Brush Fire	Brush Fire
10	High Tension Lines	Brush Fire	Brush Fire
11	High School	Brush Fire	Brush Fire
12	Industrial Park	Brush Fire	Brush Fire
13	Sanford Street	Other	Erosion Area
14	High Tension Lines at Rt. 109	Other	Tornado/Micro Bursts
16	Residential Area	Other	Winter Storm
17	Walker Street Bridge	Flooding	Flooding scours bridge walls
18	High School Entrance Road	Flooding	Beaver causing flooding
19	Winthrop/Temple/Main	Brush Fire	Brush Fires in this vicinity
20	240-250 Main Street	Brush Fire	Brush Fire report
21	108/114 Main Street	Brush Fire	Brush Fires reported
22	119/124 Milford Street	Brush Fire	Brush Fires reported
23	153-157 Lovering	Brush Fire	Brush Fires Reported
24	27-38 Winthrop Street	Brush Fire	Brush Fires Reported
25	23 Clark Street	Brush Fire	Brush Fires Reported



FEMA Hazard
Mitigation Planning Grant
MEDWAY, MA

Map 1: Population Density

Sites
- Critical Infrastructure Sites*

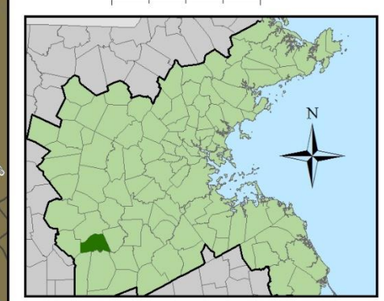
* See details in separate table

- Water Bodies
- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

Population Density
2010 Census Blocks
People Per Acre
- 0 or No Data
- 0.1 - 5.0
- 5.1 - 15.0
- 15.1 - 30.0
- More than 30

0 0.25 0.5 Miles



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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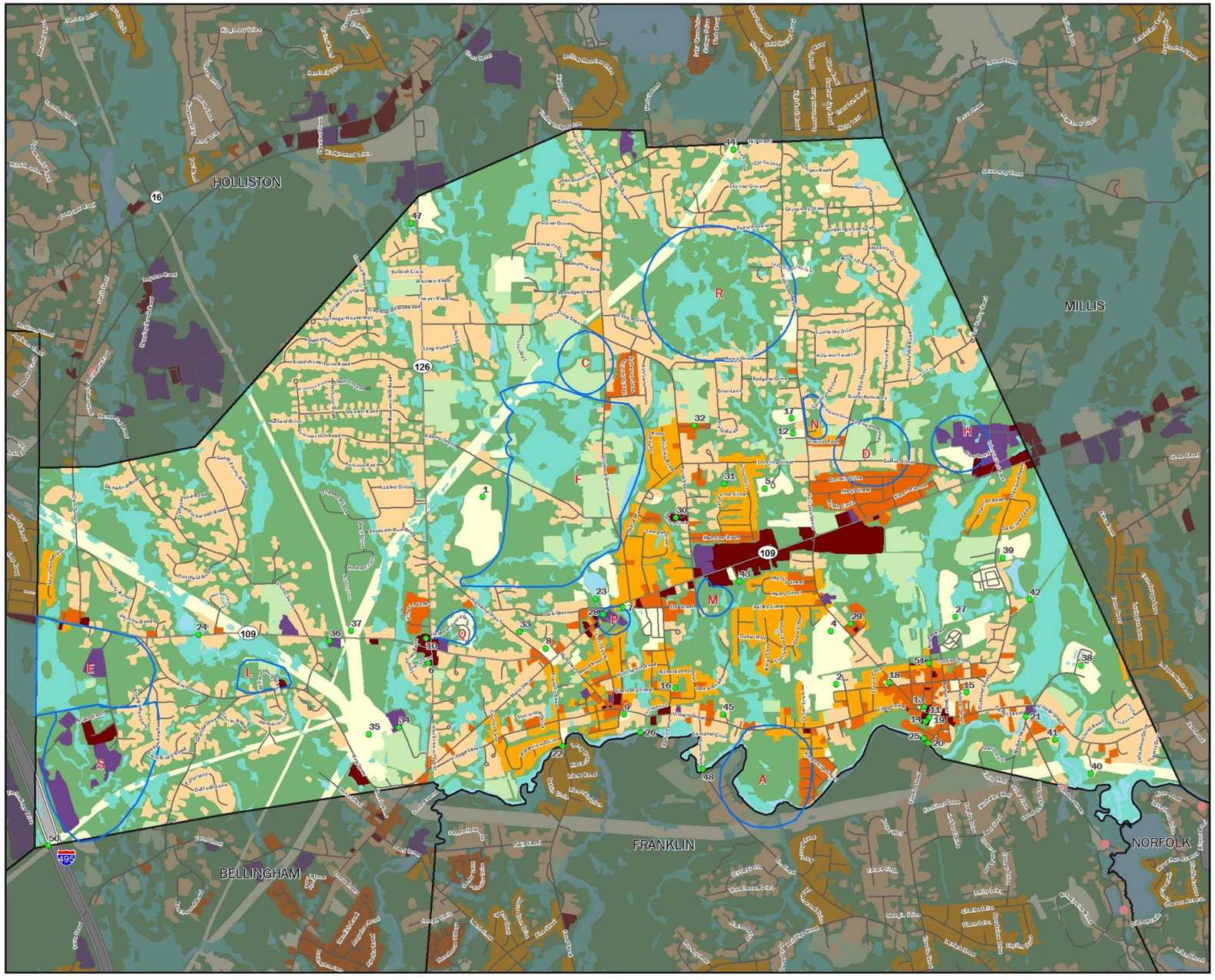
Date: 4/10/2018



MAPC dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 2: Land Use

Sites
- Critical Infrastructure Sites*
- Repetitive Loss Sites

* See details in separate table

- Development Areas

* See details in separate table

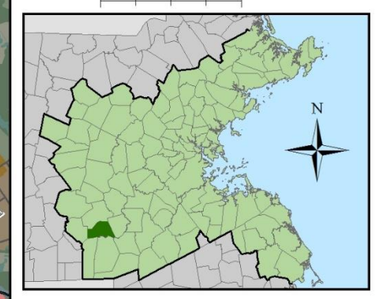
Land Use (2005)
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Non-Residential Developed
- Commercial
- Industrial
- Transportation
- Agriculture
- Undeveloped
- Undeveloped Wetlands

- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

- Water Bodies

0 0.25 0.5 Miles



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Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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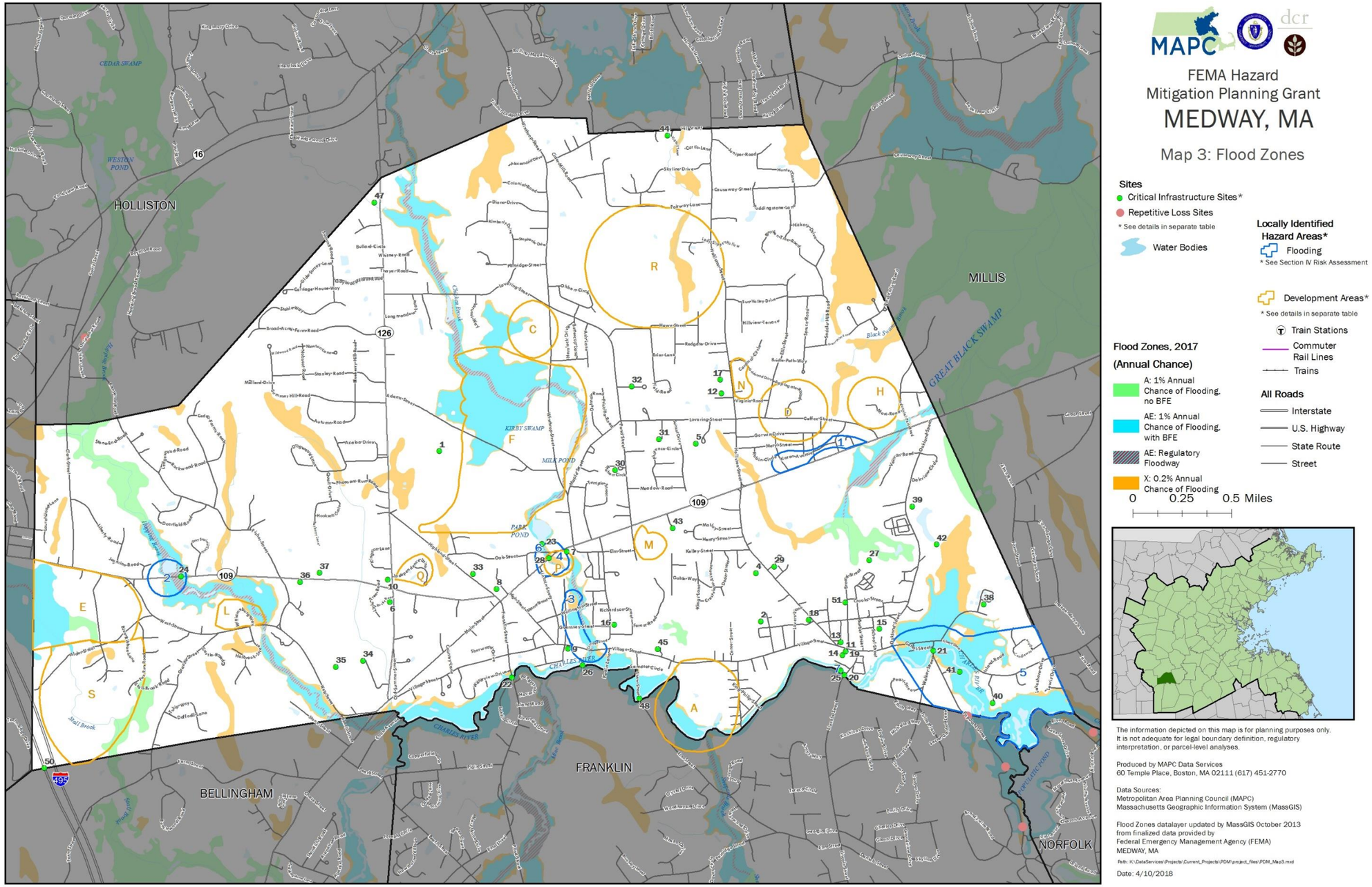

MAPC dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 3: Flood Zones

Sites
- Critical Infrastructure Sites*
- Repetitive Loss Sites

* See details in separate table

Water Bodies

Locally Identified Hazard Areas*
- Flooding

* See Section IV Risk Assessment

Development Areas*

* See details in separate table

Train Stations
Commuter Rail Lines
Trains

Flood Zones, 2017 (Annual Chance)
- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- X: 0.2% Annual Chance of Flooding

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

0 0.25 0.5 Miles

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Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)

Flood Zones datalayer updated by MassGIS October 2013
from finalized data provided by
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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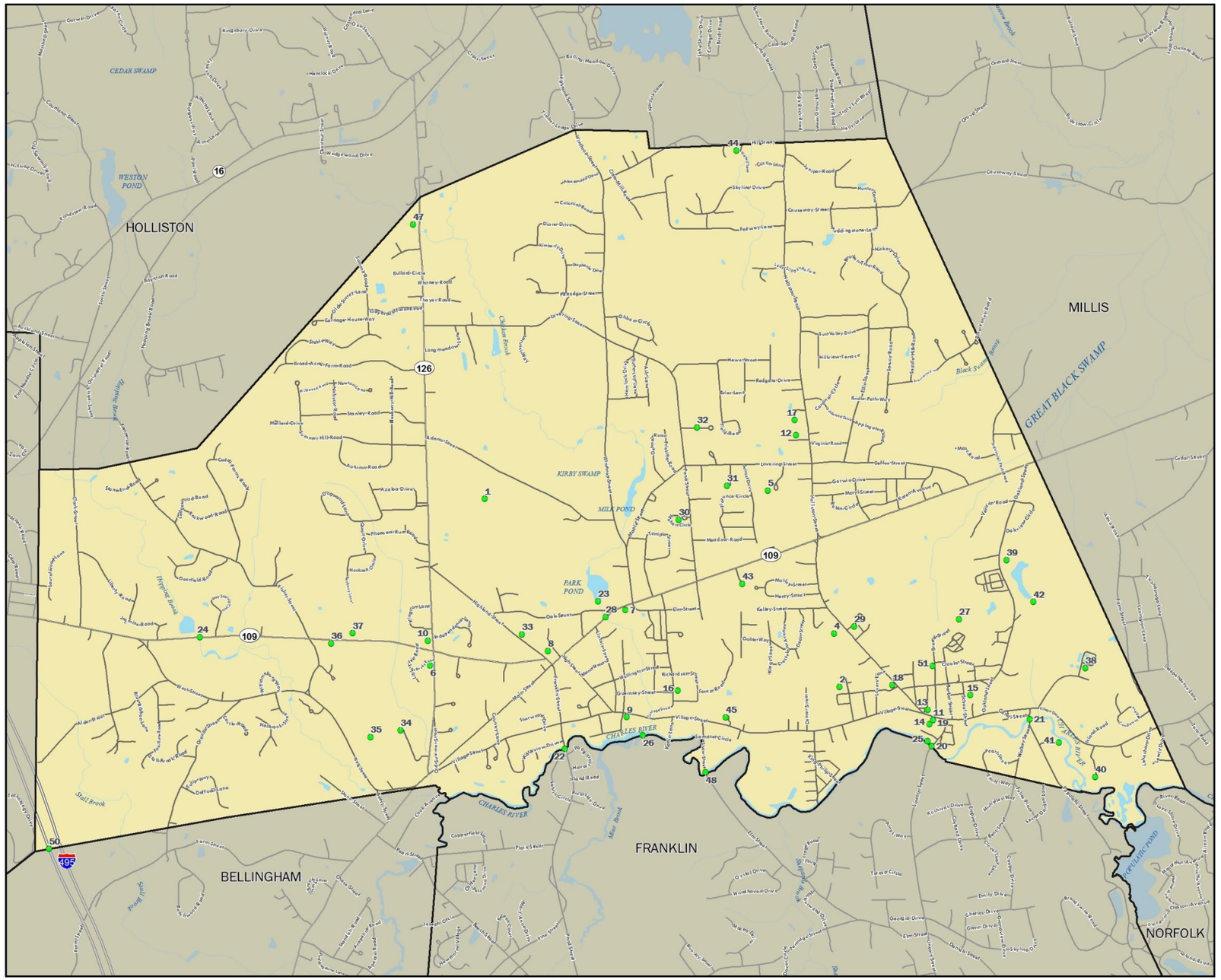
Date: 4/10/2018



MAPC dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 4: Earthquakes / Landslides

Sites
- Critical Infrastructure Sites*
- Water Bodies

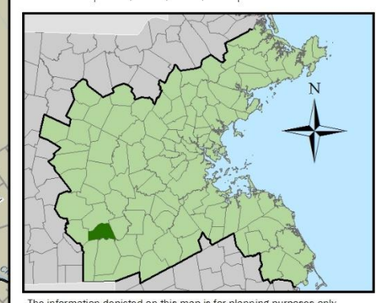
* See details in separate table

Earthquakes
- Epicenters
- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

Landslides
- High landslide incidence (greater than 15% of the area is involved in landsliding)
- High susceptibility to landsliding and moderate incidence
- High susceptibility to landsliding and low incidence
- Moderate susceptibility to landsliding and low incidence
- Low landslide incidence (less than 1.5 % of the area is involved in landsliding

0 0.25 0.5 Miles



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Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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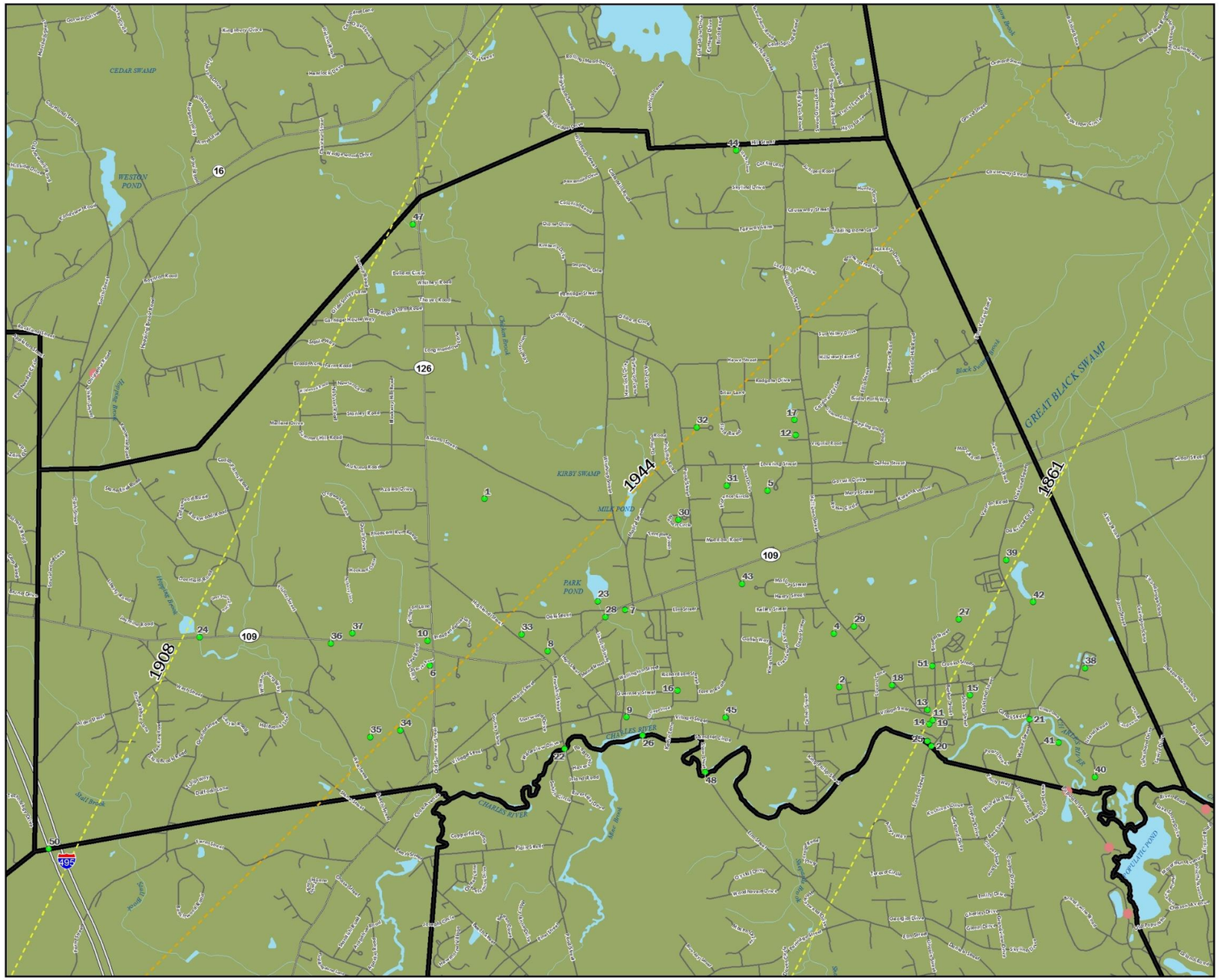
Date: 4/10/2018



MAPC

dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 5: Hurricanes / Tornadoes

Sites
- Critical Infrastructure Sites*
- Repetitive Loss Sites

* See details in separate table

Tornadoes
- Tornado

Storm Tracks
- Tropical Depression
- Tropical Storm
- Category 1 Hurricane
- Category 2 Hurricane
- Category 3 Hurricane

Year of storm noted on map

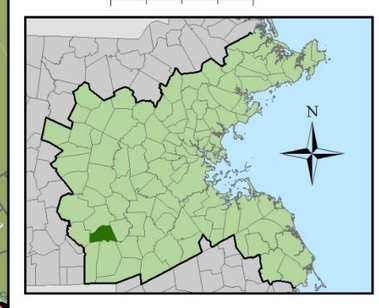
- Hurricane Surge Innudation Ares
- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

Water Bodies

100 Year Wind Speeds
Miles Per Hour
- 90 MPH
- 100 MPH
- 110 MPH
- 120 MPH
- 130 MPH

0 0.25 0.5 Miles



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Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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Date: 4/10/2018

MAPC dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 6: Average Snowfall

Sites
- Critical Infrastructure Sites*

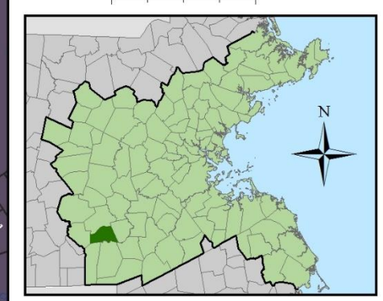
* See details in separate table

Average Annual Snowfall
- 36.1 to 48.0 inches
- 48.1 to 72.0 inches

- Water Bodies
- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

0 0.25 0.5 Miles



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Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
MEDWAY, MA

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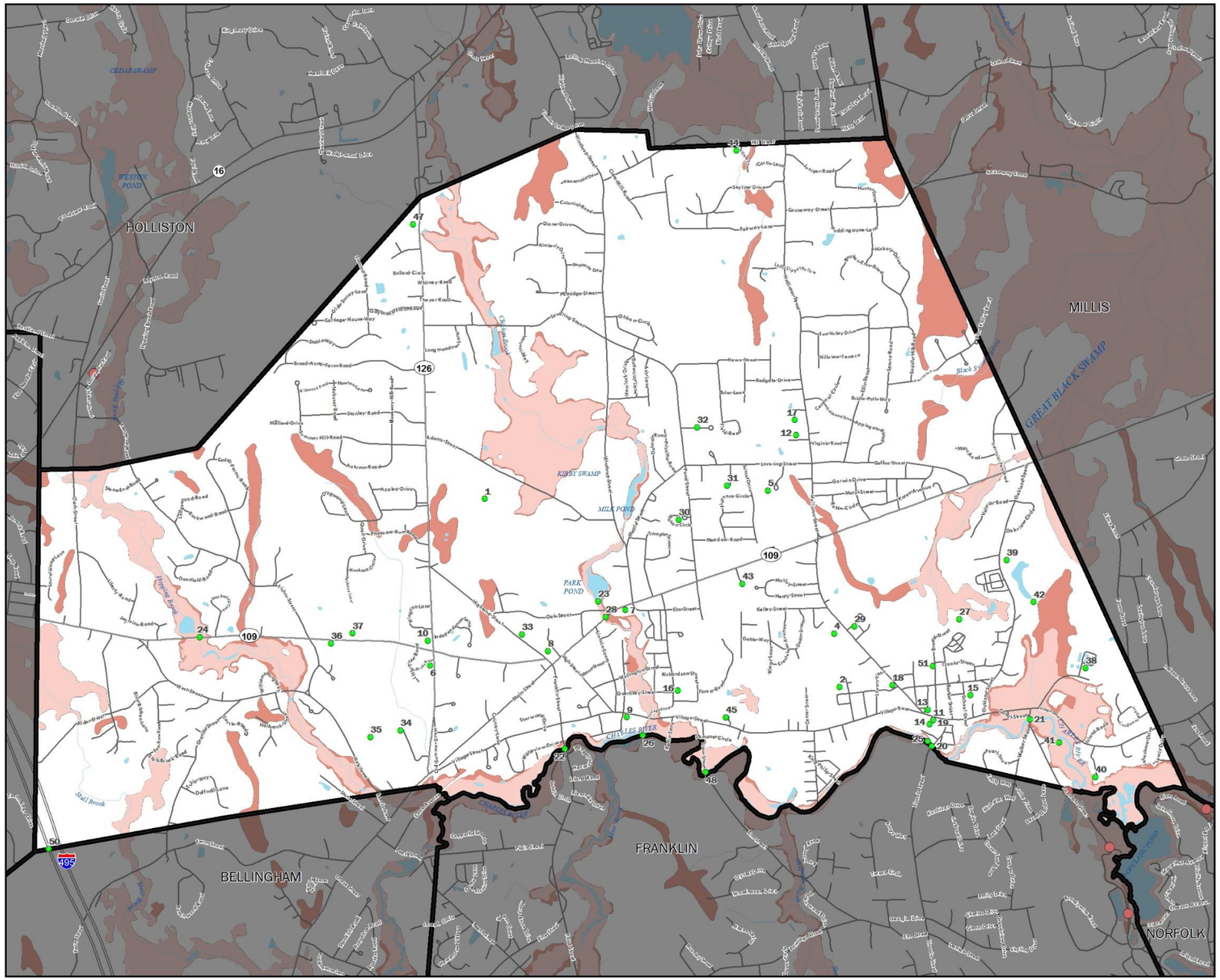
Date: 4/10/2018



MAPC dcr

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 7: Composite Natural Hazards

Composite Natural Hazards

- Low (2 Hazards)
- Moderate (3 Hazards)
- High (4 Hazards)
- Very High (5 Hazards)

Composite natural hazards shown for areas of existing development. Hazards include:

- 100 year wind speed of 110 MPH or higher
- Moderate landslide risk
- FEMA flood zones (100 year and 500 year)
- Average snowfall of 36.1" or more
- Hurricane surge innundation areas

Sites

- Critical Infrastructure Sites*
- Repetitive Loss Sites

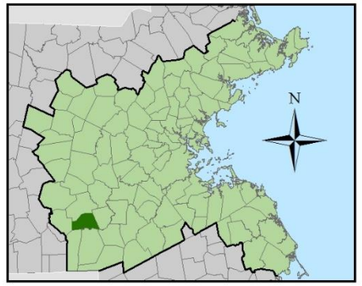
* See details in separate table

- Water Bodies

All Roads

- Interstate
- U.S. Highway
- State Route
- Street
- Train Stations
- Commuter Rail Lines
- Trains

0 0.25 0.5 Miles



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by MAPC Data Services
60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources

Composite Natural Hazard:
Wind, Landslide Risk, Snow -Northeast States Emergency Consortium (NESEC)
Flood Zones - 2013 FEMA/MassGIS
Hurricane Surge - 2013 U.S. Army Corps of Engineers, New England District

Roads/Trains: MassDOT/ CTPS

Repetitive Loss Sites: DCR/Office of Flood Hazard Management

Critical Infrastructure: Metropolitan Area Planning Council (MAPC) / MEDWAY, MA

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Date: 4/10/2018

FEMA Hazard
Mitigation Planning Grant

MEDWAY, MA

Map 8: Local Hazard Areas

Sites
- Critical Infrastructure Sites*
- Repetitive Loss Sites

* See details in separate table

Locally Identified Hazard Areas
- Brush Fires
- Flooding
- Historic

* See Section IV Risk Assessment

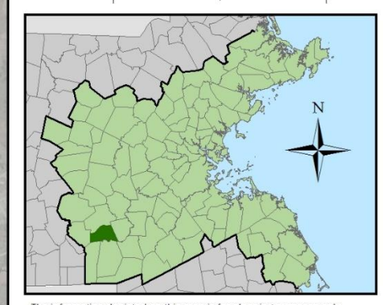
- Development Sites

* See details in separate table

- Train Stations
- Commuter Rail Lines
- Trains

All Roads
- Interstate
- U.S. Highway
- State Route
- Street

0 0.5 1 Miles



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60 Temple Place, Boston, MA 02111 (617) 451-2770

Data Sources:
Metropolitan Area Planning Council (MAPC)
Massachusetts Geographic Information System (MassGIS)
Northeast States Emergency Consortium (NESEC)
Massachusetts Emergency Management Agency (MEMA)
Federal Emergency Management Agency (FEMA)
Imagery © Google
MEDWAY, MA

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Date: 4/11/2018

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APPENDIX C: PUBLIC PARTICIPATOIN

HAZARD MITIGATION PLAN PUBLIC MEETING

Natural hazards can have serious impacts on the Town of Medway and its residents

The Medway Hazard Mitigation Plan is being updated to help the town reduce its vulnerability to natural hazard events such as flooding, hurricanes and winter storms. Please join the Town for a public presentation and discussion about the update to the Medway Hazard Mitigation Plan at a public meeting of the Board of Selectmen:

Date: Monday, April 2, 2018
Time: 7:00 PM
Location: Medway Town Hall, Sanford Hall
155 Village Street, Medway, MA

For more information, please contact Darci Schofield via phone at (617) 933-0794 or email dschofield@mapc.org

MAPC

Board of Selectmen
Maryjane White, Chair
Richard A. D'Innocenzo, Vice-Chair
Dennis P. Crowley, Clerk
Glenn D. Trindade
John A. Foresto

Medway Town Hall
155 Village Street
Medway, MA 02053
Phone (508) 533-3264
Fax (508) 321-4988

TOWN OF MEDWAY

COMMONWEALTH OF MASSACHUSETTS

Board of Selectmen's Meeting
April 2, 2018 7:00 PM
Sanford Hall, Town Hall
155 Village Street
Agenda

7:00 PM

- Call to order; Recitation of the Pledge of Allegiance
- Public Comments

Other Business

1. Approval of Minutes: March 26, 2018
2. Appointment Considerations: Memorial Committee – William Pride and Gordon White
3. Hazard Mitigation Plan Update: Public Input Session
4. Presentation of Fiscal Year 2017 Financial Statements – Melanson Heath
5. Discussion/Vote: May 21, 2018 Annual Town Meeting Warrant – Zoning Articles 21-27
6. Approval: Contract with Clean Harbors Environmental Services, Inc. for Household Hazardous Waste Day – $10,000
7. Vote: Request to Increase Affordable Housing Unit Price at Millstone
8. Discussion: Veterans Only Parking
9. Consideration/Vote: Town Administrator Vacation Carryover
10. Special Event Permit Applications:
    a. Medway Youth Baseball Parade – April 22, 2018
    b. Rooney's Trail Run - April 22, 2018
    c. Bikes Not Bombs Bike-A-Thon – June 10, 2018
    d. Ride for Food – September 23, 2018
11. One-day liquor License Applications:
    a. Jennifer Fitzgerald – Thayer Homestead – 4/21/2018
    b. Medway Foundation for Education – Thayer Homestead – 5/5/2018
    c. Laurie Insel – Thayer Homestead – 6/1/2018
    d. Jean Gilman – Thayer Homestead – 6/3/2018
    e. Jane Regan – Thayer Homestead – 6/8/2018
    f. Linda DiFonzo – Thayer Homestead – 6/9/2018
12. Action Items from Previous Meeting
13. Town Administrator's Report
14. Selectmen's Reports

Amanda Linehan, Communications Manager, Metropolitan Area Planning Council
617-933-0705, alinehan@mapc.org

CALENDAR LISTING / MEDIA ADVISORY

MEDWAY'S DRAFT HAZARD MITIGATION PLAN TO BE PRESENTED AT JUNE 18 PUBLIC MEETING

Meeting to present the 2018 update of Medway's Hazard Mitigation Plan and solicit public comments

Who: Medway residents, business owners, representatives of non-profit organizations and institutions, and others who are interested in preventing and reducing damage from natural hazards.

What: The Medway Hazard Mitigation Team will hold a public meeting to present an overview of the draft Medway Hazard Mitigation Plan Update 2018. The Metropolitan Area Planning Council (MAPC) is assisting the Town on the plan update, and a representative of MAPC will present an overview of the plan update.

The Town of Medway adopted its first Hazard Mitigation Plan in 2010, which was approved by the Federal Emergency Management Agency (FEMA). The plan identifies natural hazards affecting Medway such as flooding, hurricanes, winter storms, extreme temperatures and earthquakes, as well as actions that the Town can take to reduce the impacts of these hazards. FEMA requires that plans be updated regularly, so MAPC is assisting the Town prepare a 2018 updated plan.

When: Monday, June 18, 2018, 7:00 PM
Medway Board of Selectmen meeting

Where: Medway Town Hall, Sanford Hall, 155 Village Street, Medway, MA

MAPC is the regional planning agency for 101 communities in the metropolitan Boston area, promoting smart growth and regional collaboration. More information about MAPC is available at www.mapc.org.

###

HAZARD MITIGATION PLAN PUBLIC MEETING

Natural hazards can have serious impacts on the Town of Medway and its residents

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155 Village Street, Medway, MA

For more information, please contact Darci Schofield via phone at (617) 933-0794 or email dschofield@mapc.org

MAPC

Board of Selectmen
Dennis P. Crowley, Chair
John A. Foresto, Vice-Chair
Richard D. Iannuccillo, Clerk
Glenn D. Trindade
Maryjane White

Medway Town Hall
155 Village Street
Medway, MA 02053
Phone (508) 533-3264
Fax (508) 321-4988

TOWN OF MEDWAY

COMMONWEALTH OF MASSACHUSETTS

Board of Selectmen's Meeting
June 18, 2018 7:00 PM
Sanford Hall, Town Hall
155 Village Street
Agenda

7:00 PM

- Call to order; Recitation of the Pledge of Allegiance
- Public Comments

Other Business

1. Approval of Minutes: May 31, 2018 and June 4, 2018
2. Appointment Consideration: Evaluation of Parks, Fields, and Recreational Areas Committee (EPFRAC) Youth Sports Representative (1) – Lyle Core, Jim Daly and John Farrell
3. Discussion/Vote: Millstone Village: Acceptance of Walking Trail Easement
4. Discussion/Vote: Millstone Village: Request to Increase Affordable Housing Unit Price
5. Report of the Library Board of Trustees
6. Approval: Contract with Tetra Tech for Engineering & Consulting Services
7. Approval: Contract with Salmon Home Care, LLC for Public Health Nursing Services - $14,150
8. Discussion/Vote: Other Post Employment Benefits (OPEB) Trust Investment Policy and Consideration of Investment Advisory Committee
9. Authorization to Borrow $3,310,000 (Bond Anticipation Note: Land Acquisition $510,000.00 and Parks/Recreation $2,800,000.00)
10. Public Hearing: Hazard Mitigation Plan – Metropolitan Area Planning Council (MAPC)
11. Discussion: Senior Walking Trail at Oakland Park
12. Discussion/Vote: Oakland Park Playground Naming
13. Live Entertainment Application: Medway Community Farm – September 8, 2018
14. One-day liquor License Applications:
    a. Christine Phenegar – Thayer Homestead – 6/22/2018
    b. Katherine Powers – Thayer Homestead – 7/6/2018 & 7/7/2018
    c. Mayra Santiago – Thayer Homestead – 7/8/2018
    d. Doueihi ElDoueihi – Thayer Homestead – 7/14/2018
    e. **Donna O'Connor – Thayer Homestead – 7/15/2018***
    f. Ann Lim & Daniel Fields – Thayer Homestead – 8/18/2018
    g. Elizabeth Shepard – Thayer Homestead – 8/19/2018

Amanda Linehan, Communications Manager, Metropolitan Area Planning Council
617-933-0705, alinehan@mapc.org

CALENDAR LISTING / MEDIA ADVISORY

MEDWAY'S DRAFT HAZARD MITIGATION PLAN TO BE PRESENTED AT JUNE 18 PUBLIC MEETING

Meeting to present the 2018 update of Medway's Hazard Mitigation Plan and solicit public comments

Who: Medway residents, business owners, representatives of non-profit organizations and institutions, and others who are interested in preventing and reducing damage from natural hazards.

What: The Medway Hazard Mitigation Team will hold a public meeting to present an overview of the draft Medway Hazard Mitigation Plan Update 2018. The Metropolitan Area Planning Council (MAPC) is assisting the Town on the plan update, and a representative of MAPC will present an overview of the plan update.

The Town of Medway adopted its first Hazard Mitigation Plan in 2010, which was approved by the Federal Emergency Management Agency (FEMA). The plan identifies natural hazards affecting Medway such as flooding, hurricanes, winter storms, extreme temperatures and earthquakes, as well as actions that the Town can take to reduce the impacts of these hazards. FEMA requires that plans be updated regularly, so MAPC is assisting the Town prepare a 2018 updated plan.

When: Monday, June 18, 2018, 7:00 PM
Medway Board of Selectmen meeting

Where: Medway Town Hall, Sanford Hall, 155 Village Street, Medway, MA.

MAPC is the regional planning agency for 101 communities in the metropolitan Boston area, promoting smart growth and regional collaboration. More information about MAPC is available at www.mapc.org.

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Schofield, Darci

Wed 6/13/2018 12:02 PM

To: dfraine@bellinghamma.org <dfraine@bellinghamma.org>; ritterj@holliston.k12.ma.us <ritterj@holliston.k12.ma.us>; mguzinski@millsma.net <mguzinski@millsma.net>; jhathaway@norfolk.ma.us <jhathaway@norfolk.ma.us>; jnutting@franklinma.gov <jnutting@franklinma.gov>; mperkins@minlib.net <mperkins@minlib.net>; criley@townofmedway.org <criley@townofmedway.org>; helen.luccio@verizon.net <helen.luccio@verizon.net>; charles@crwa.org <charles@crwa.org>; seth.terramane@medwaycommunityfarm.org <seth.terramane@medwaycommunityfarm.org>; ltaglieri@charlesriverpcd.org <ltaglieri@charlesriverpcd.org>; sdubrawski@aol.com <sdubrawski@aol.com>; julie@dennehypr.com <julie@dennehypr.com>; wtexeira@dfmurphy.com <wtexeira@dfmurphy.com>;

Cc: Allison Potter <apotter@townofmedway.org>;

Dear Town of Medway stakeholder:

The Town of Medway and the Metropolitan Area Planning Council have been working on the *Medway Hazard Mitigation Plan Update*, a plan intended to reduce the Town's vulnerability to the impacts of natural hazard events such as flooding and hurricanes.

A draft plan update has been developed which identifies a set of hazard mitigation measures, including structural improvements, regulatory changes for development in hazard areas, educational and outreach efforts related to natural hazards in the Town, and other actions.

The draft plan update will be available for public review from June 22 to July 6, 2018 on the Town's web site.

The plan will be discussed at a meeting of the Medway Board of Selectmen to be held on:
When: Monday, June 18th
Time: 7:00 pm
Location: Medway Town Hall, Sanford Hall, 155 Village Street, Medway, MA

Comments and questions may be submitted at this meeting or in writing to Darci Schofield, 60 Temple Place, Boston, MA 02111, or by email to dschofield@mapc.org. Comments should be submitted by July 6, 2018 in order to be incorporated into the final draft of the plan that will be submitted to the Massachusetts Emergency Management Agency and FEMA.

Thank you.

Sincerely,

Darci Schofield
Senior Environmental Planner
Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111
617-451-2770 x 794
dschofield@mapc.org

https://mail.mapc.org/owa/#viewmodel=ReadMessageItem&ItemID=AAMkADlmNWFhYjg5LTBjZGtNDNmZS05MzRkLWZlNDk5NDlhZGM5NgBGAA... 1/2

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APPENDIX D: PLAN ADOPTION

Certificate to Document Adoption of the
Hazard Mitigation Plan Update
By the Board of Selectmen

<TOWN LETTERHEAD>

CERTIFICATE OF ADOPTION
BOARD OF SELECTMEN
TOWN OF MEDWAY, Massachusetts

A RESOLUTION ADOPTING THE
TOWN OF MEDWAY HAZARD MITIGATION PLAN 2018 UPDATE

WHEREAS, the Town of Medway established a Committee to prepare the *Town of Medway Hazard Mitigation Plan 2018 Update*; and

WHEREAS, the *Town of Medway Hazard Mitigation Plan 2018 Update* contains several potential future projects to mitigate potential impacts from natural hazards in the Town of Medway, and

WHEREAS, duly-noticed public meetings were held by Board of Selectmen in April 2, 2018 and June 18, 2018.

WHEREAS, the Town of Medway authorizes responsible departments and/or agencies to execute their responsibilities demonstrated in the plan, and

NOW, THEREFORE BE IT RESOLVED that the Town of Medway Board Of Selectmen adopts the *Town of Medway Hazard Mitigation Plan 2018 Update*, in accordance with M.G.L. 40 §4 or the charter and bylaws of the Town of Medway.

ADOPTED AND SIGNED this Date. _____

Name(s)

Title(s)

Signature(s)

ATTEST

Board of Selectmen
Dennis P. Crowley Chair
John A. Foresto, Vice-Chair
Richard D'Innocenzo, Clerk
Glenn D. Trindade
Maryjane White

Medway Town Hall
155 Village Street
Medway, MA 02053
Phone (508) 533-3264
Fax (508) 321-4988

TOWN OF MEDWAY

COMMONWEALTH OF MASSACHUSETTS

CERTIFICATE OF ADOPTION
BOARD OF SELECTMEN
TOWN OF MEDWAY, Massachusetts

A RESOLUTION ADOPTING THE
TOWN OF MEDWAY HAZARD MITIGATION PLAN 2018 UPDATE

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WHEREAS, the *Town of Medway Hazard Mitigation Plan 2018 Update* contains several potential future projects to mitigate potential impacts from natural hazards in the Town of Medway, and

WHEREAS, duly-noticed public meetings were held by Board of Selectmen in April 2, 2018 and June 18, 2018.

WHEREAS, the Town of Medway authorizes responsible departments and/or agencies to execute their responsibilities demonstrated in the plan, and

NOW, THEREFORE BE IT RESOLVED that the Town of Medway Board Of Selectmen adopts the *Town of Medway Hazard Mitigation Plan 2018 Update*, in accordance with M.G.L. 40 §4 or the charter and bylaws of the Town of Medway.

ADOPTED AND SIGNED this Date. _____

_____
Dennis Crowley, Chairman

ATTEST _____

AGENDA ITEM #8

Discussion: November 19, 2018 Fall Town Meeting Warrant Articles

Associated back up materials attached:

- *Draft November 19, 2018 Fall Town Meeting Warrant*

DRAFT

TOWN OF MEDWAY
WARRANT FOR 2018
FALL TOWN MEETING

NORFOLK ss:

To either of the Constables of the Town of Medway

GREETING:

In the name of the Commonwealth of Massachusetts, you are hereby required to notify and warn the inhabitants of said Town who are qualified to vote in Town affairs to meet at the Medway High School Auditorium, 88 Summer Street, on Monday, November 19, 2017 at 7:00 PM, then and there to act on the following articles:

ARTICLE 1: (Prior Year Bills)
To see if the Town will vote to transfer the sum of $X from the Fiscal Year 2019 X Account for the purpose of paying unpaid bills of prior years of the Town, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 2: (Repurpose Funds to Middle School Paving Project)
To see if the Town will vote to repurpose $17,494.07 authorized to be borrowed under Article 8 of the November 15, 2010 Fall Town Meeting for the Middle School Repair Project and $21,938.20 authorized under Article 18 of the May 12, 2014 Annual Town Meeting for various site improvements to the Middle School property, the funds for which are no longer needed for the projects for which they were approved, to fund paving for recess area improvements at the Middle School, or to act in any manner relating thereto.

SCHOOL DEPT.

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 3: (Repurpose CPC Funds to Trail Improvements)

To see if the Town will vote to repurpose $7,026.77 in Community Preservation Act funds authorized for information kiosks under Article 19 of the May 2017 Annual Town Meeting, the funds for which are no longer needed for the project for which they were approved, to fund trail improvements (at X and X), or act in any manner relating thereto.

OPEN SPACE COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 4: (Transfer from Debt Service to DPS Facility)
To see if the Town will vote to transfer $367,000 from the Fiscal Year 2019 Debt Service Budget to fund DPS Facility Design and Project Management Services authorized by vote under Article 16 of the May 11, 2015 Annual Town Meeting, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 5: (Free Cash Appropriation: Transfer to Debt Stabilization)
To see if the Town will vote to appropriate $1,250,000 from Certified Free Cash to the Debt Stabilization account, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 6: (Free Cash Appropriation: Capital and Other Items)
To see if the Town will vote to appropriate the sum of $471,725 from Certified Free Cash for the purpose of funding the following capital and other items, including associated engineering, personnel, maintenance and legal service costs; said appropriations to be expended by June 30, 2019, with unexpended funds as of June 30, 2019 being returned to the General Fund, or act in any manner relating thereto.

Project	Department	Cost
Sidewalk Tractor w/ Plow, Blower & Boom Mower	DPS	$190,000
Replace Heavy Duty Dump/Plow Truck 217	DPS	$175,000
Replace Sander For Truck 212	DPS	$20,000

Green Communities Grant Match Funding	Various	$44,000
Police Ballistic Vests	Police	$21,725
Perimeter Fencing Idylbrook Field	DPS	$21,000
Total		**$471,725**

CAPITAL IMPROVEMENT PLANNING COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 7: (Free Cash Appropriation: Choate LCD Sign)
To see if the Town will vote to appropriate the sum of $45,000 from Certified Free Cash for the purpose of funding the purchase, installation, and related needs of a digital message center system, to be located at Choate Park including associated engineering, equipment, materials, personnel, maintenance and legal service costs, or act in any manner relating thereto.

CAPITAL IMPROVEMENT PLANNING COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 8: (Fund Elementary School Playgrounds)
To see if the Town will vote to raise and appropriate, borrow, or transfer from available funds a sum of money for the purpose of making playground improvements at the McGovern and the Memorial Elementary Schools, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 9: (Fund Street Acceptance Account)
To see if the Town will vote to transfer from available funds the sum of $30,000 to the special Street Acceptance Account, or act in any manner relating thereto.

PLANNING AND ECONOMIC DEVELOPMENT BOARD

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 10: (Create Receipts Reserved for Appropriation Special Revenue Account – EMS Services)
To see if the Town will vote to accept the provisions of Massachusetts General Laws Chapter 40, Section 5F, and to establish a separate fund for the receipt of the fees or charges paid by or on behalf of persons transported by town ambulances, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 11: (Reserve for Overlay Release; Transfer to EMS Receipts Reserved for Appropriation Special Revenue Account)
To see if the Town will vote to transfer from Overlay Surplus the sum of $146,952.19 to the EMS Receipts Reserved for Appropriation Special Revenue Account, or act in any manner relating thereto.

BOARD OF ASSESSORS

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 12: (Transfer to EMS Special Revenue Account)
To see if the Town will vote to transfer a sum of money from EMS Enterprise Fund retained earnings and the Fiscal Year 2019 Fire Department operations budget to the newly created EMS Receipts Reserved for Appropriation Special Revenue Account, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 13: (CPA Transfers from Reserves to Retained Earnings)
To see if the Town will vote to transfer $92,117 from Community Preservation Act reserve accounts to the unreserved fund balance as follows, or act in any manner relating thereto.

Reserve Account	Amount
Community Housing	$30,040.00
Open Space	$31,040.00
Historical Preservation	$31,040.00
	$92,120.00

COMMUNITY PRESERVATION COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 14: (Charter Amendment: General Changes)
To see if the Town will vote to amend the Town Charter to correct language, update spellings, update department names and titles, and remove unneeded sections of the Charter to provide clarity and accuracy as shown in the proposed Charter on file in the Town Clerk's office and available on the Town website, or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 15: (Charter Amendment: Board of Selectmen)
To see if the Town will vote to amend the Town Charter to replace the term Board of Selectmen and replace with the term Executive Board, in the proposed Charter on file in the Town Clerk's office and available on the Town website, or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 16: (Charter Amendment: Parks and Recreation Commission)
To see if the Town will vote to amend the Town Charter Chapter 3, Elections and Elected Officers, Section 11, Parks and Recreation Commission, by deleting it in its entirety and replacing it as follows:

Or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 17: (Charter Amendment: Board of Health)
To see if the Town will vote to amend the Town Charter Chapter 3, Elections and Elected Officers, Section 8, Board of Health, by deleting it in its entirety and replacing it as follows:

Or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 18: (Charter Amendment: Water and Sewer Commission)
To see if the Town will vote to amend the Town Charter Chapter 3, Elections and Elected Officers, Section 9, Water and Sewer Commission, by deleting it in its entirety and replacing it as follows:

Or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 19: (Charter Amendment: Town Clerk)
To see if the Town will vote to amend the Town Charter Chapter 3, Elections and Elected Officers, Section 5 Town Clerk, by deleting it in its entirety and replacing it with Chapter 8, Section 6, as follows:

Or act in any manner relating thereto.

CHARTER REVIEW COMMITTEE

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 20: (Accept Sidewalk Easement: Mechanic Street)
To see if the Town will vote to acquire, by gift, purchase, eminent domain or otherwise, an easement for sidewalk and related purposes, including, but not limited to, public pedestrian access and access and installation, construction, maintenance, repair and replacement, on such terms and conditions as the Board of Selectmen deems to be in the best interests of the Town, on, upon, under and over property identified as Assessor's Map 47, Parcel 036, and shown as "Pedestrian Access Easement 563 S.F." on a plan of land entitled "Easement Plan of Land in Medway, MA. Scale: 1" = 20' June 5, 2018" prepared by Colonial Engineering Inc., on file with the Town Clerk, and further authorize the Board of Selectmen to execute all documents and take all actions necessary in connection therewith, or act in any manner relating thereto.

PLANNING AND ECONOMIC DEVELOPMENT BOARD

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 21: (Street Acceptance, Land Conveyance and Infrastructure Acceptance: Candlewood and Island Road Subdivisions)

To see if the Town will vote to accept as public ways, the following streets as laid out by the Board of Selectmen and as shown on a plan or plans on file in the Office of the Town Clerk:

Candlewood Drive as laid out by a vote of the Board of Selectmen and shown on the plan entitled "'As-Built" Acceptance Plan Candlewood Drive Medway, MA", dated January 7, 1999, prepared by Engineering, Surveying, and Planning Associates, excluding from said layout the unconstructed portion of Candlewood Drive abutting Lots 8, 9 and 10, as shown on said plan.

Island Road in its entirety as laid out by a vote of the Board of Selectmen and shown on the plan entitled "Subdivision As-Built 'Island Road' Medway, MA", dated February 15, 1995, prepared by Engineering, Surveying and Planning Associates.

And further to authorize the Board of Selectmen to acquire by gift, purchase, eminent domain or otherwise one parcel of land totaling 59,856 sq. ft. identified as "Parcel A" on a plan entitled "'Candlewood' Definitive Subdivision Plan in Medway (Norfolk County) in Massachusetts", dated March 22, 1999, recorded at the Norfolk County Registry of Deeds in Plan Book 413 as Plan 260, to be used by the Town for drainage purposes and for public pedestrian access between the Candlewood Drive and Island Road subdivisions.

And further to authorize the Board of Selectmen to acquire by gift, purchase, eminent domain or otherwise, and to accept the deed or deeds to the Town of a fee simple interest or easements in said streets and any associated drainage, utility or other easements for said streets, and for any trail or public access easements and to appropriate a sum of money for this purpose and any related expenses;

And further to authorize the Board of Selectmen and town officers to take any and all related actions necessary or appropriate to carry out the purposes of this article;

Or to act in any manner relating thereto.

PLANNING AND ECONOMIC DEVELOPMENT BOARD

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 22: (Grant Utility Easement: 76 Oakland St)
To see if the Town will vote to grant a utility easement to Verizon New England Inc. and Eversource on and over a portion of 76 Oakland St, as shown on a plan of land entitled "X" dated X for the purpose of locating poles and appurtenances, and, further, to authorize the Board of Selectmen and town officers to take any and all related actions necessary or appropriate to carry out the purposes of this article, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 23: (Amend General Bylaw: Accepting Gifts of Land for Various Purposes)
To see if the Town will vote to amend the Town of Medway General Bylaws Article II Town Officers and Their Duties by adding a new subsection to 2.6 as follows:

(b) The Selectmen may accept on behalf of the Town of Medway gifts of land and interest in land for the following purposes: walkway and sidewalk purposes, water and sewer purposes, storm drainage, above and below ground general drainage purposes, for slope maintenance purposes, for purposes of rounding street corners, and for any purpose approved by the Planning and Economic Development Board and shown on a plan approved by the Planning and Economic Development Board under Massachusetts General Laws, Chapter 43, Sections 81K to 81Y inclusive.

Or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

ARTICLE 24: (Zoning Bylaw Amendment: Adaptive Use Overlay District)
To see if the Town will vote to amend the Town of Medway Zoning Bylaws, Section 5.6.2 Adaptive Use Overlay District, by adding a new subsection to Section 5.6.2.D.2 as follows: "i. museum", and revising the current subsection i to read as follows: "j. The alteration of, addition to, and/or conversion of an existing building to one or two residential dwelling units and one or more business uses listed in items a-i above, provided that the appearance of the building is characteristic of a single-family dwelling, or act in any manner relating thereto.

BOARD OF SELECTMEN

BOARD OF SELECTMEN RECOMMENDATION:

FINANCE COMMITTEE RECOMMENDATION:

And you are hereby directed to serve this warrant by posting printed attested copies thereof at two (2) locations in each precinct at least FOURTEEN (14) days before the day of said meeting. Hereof fail not and make due return of this warrant with your doings thereon to the Clerk of said Town at or before the time of said meeting.

Given under our hands in Medway, this 15th day of October 2018.

A TRUE COPY:

SELECTMEN OF THE TOWN OF MEDWAY

_____
Dennis Crowley, Chairman

_____
John Foresto, Vice-Chairman

_____
Richard D'Innocenzo, Clerk

_____
Glenn Trindade, Member

_____
Maryjane White, Member

_____
ATTEST: Paul Trufant, Constable

AGENDA ITEM #9

Approval: Special Event License with Medway Plaza for the Town Wide Yard Sale: September 22, 2018

Associated back up materials attached.

- *Special event license with Medway Plaza*

Proposed Motion:
I move that the Board approve the Special Event License with Medway Plaza for the Town Wide Yard Sale to be held on September 22, 2018 conditioned upon Town Counsel's approval of the license.

SPECIAL EVENT LICENSE WAIVER ~~AND HOLD HARMLESS~~ AGREEMENT

THIS SPECIAL EVENT LICENSE, WAIVER ~~AND HOLD HARMLESS AGREEMENT~~ ("Agreement") is executed by The Town of Medway, acting by and through its Board of Selectmen ("Licensee") and Medway Realty, LLC ("Owner") on this _____ day of September, 2018.

RECITALS:

A. Owner is the owner of a commercial retail plaza located on Main Street / Rt. 109 in Medway, MA 02053 including 98 Main Street, 106 Main Street, 114 Main Street, among others, collectively known as Medway Plaza Shopping Center ("Building"). Licensee is a Tenant under lease within 106A Main Street within the Building.

B. Licensee has requested that Owner make available a portion of the parking lot (the "Designated Area") at the Building for the Town of Medway Christmas Parade Committee and its customers, invitees and guests (collectively, "Invited Parties") as part of the Medway Town Wide Yard Sale. ("Event") on September 22, 2018 and Owner has agreed to permit such use of the Designated Area upon the condition that Licensee covenants and agrees to the terms and conditions hereof.

NOW, THEREFORE, Owner will allow Licensee to conduct the Event in the Designated Area under the following conditions which are hereby acknowledged by Licensee:

1. Owner hereby grants a non-exclusive license to Licensee to use the Designated Area for the Event at the time set forth in Recital B and on the conditions set forth herein. Owner may inspect the Designated Area at all times and reserves the right for itself and its agents to enter the Designated Area for inspection, repair, cleaning or other purposes.

2. Licensee shall continually keep the Designated Area clean. Without limitation, Licensee shall not allow any substance on the ground at or around the Designated Area which may cause the ground to be slippery or otherwise hazardous to persons walking on the ground. Licensee shall promptly repair any damage to the Designated Area or the surrounding area caused by Licensee or the Invited Parties, or arising out of Licensee or the Invited Parties' activities.

3. Licensee shall obtain prior to the beginning of the Term all necessary permits and licenses necessary or appropriate to the activities Licensee shall be carrying on the Event at the Designated Area, and shall at all times comply with all applicable laws, codes, rules, regulations and other governmental and municipal requirements.

4. Licensee shall not permit any noises, music, odors or other matters to occur at or about the Designated Area which may bother or annoy other occupants of the Building or members of the public.

5. No alcoholic beverages will be consumed by Licensee or the Invited Parties within the Designated Area.

6. Licensee and ~~Invitees~~ Invited Parties shall accept the Designated ~~Area~~ Area in as-is condition and waive any claim for damage to a person or property against the Owner its subsidiaries and affiliates, and the tenants and occupants of the Building, the managing agent of the Building ("Property Manager"), and each of their respective guests, agents, servants, employees, officers, managers, members and directors (collectively, "Owner Parties") ~~from and against any and all actions, claims, liabilities, assertions of liabilities, losses, costs and expenses whatsoever, including but not limited to attorney's fees,~~ which in any manner may arise or be alleged to have arisen or resulted or alleged to have resulted from the presence, activities, events and omissions of any nature whatsoever of Licensee, the Invited Parties, and any other attendees of the Event, whether invited or uninvited, at the Building in connection with the use and occupancy of the Designated Area for the Event including, without limitation, any claim or claims for bodily injury or death of any persons whatsoever and for any loss or damage whatsoever, for any loss of the means of support and for any loss or damage whatsoever to property, except to the extent caused by the intentional misconduct or gross negligence of the Owner Parties.

7. Licensee, on behalf of itself, its employees, agents, the Invited Parties, and any and all parties who utilize the Designated Area or Building for the purposes of the Event (collectively, "Releasors"), do hereby release, acquit and forever discharge Owner, Property Manager, Owner Parties, their successors, assigns, affiliates, subsidiaries, agents and employees, of and from any and all known and unknown causes of action, damages, liabilities, costs, expenses and claims and demands of whatsoever kind or nature which Releasors now have or may ever have against Owner, Property Manager, Owner Parties their successors, assigns, affiliates, subsidiaries, agents and employees on account of any and all known and unknown present or future injuries, losses and damages sustained or received or which may be sustained by Releasors or the property of Releasors occurring on, at or about the Building, parking structures, parking areas, driveways, roads and appurtenant facilities adjacent thereto, resulting during the time that Releasors are occupying or using the Designated Area for the purposes of the Event.

8. Notwithstanding that Licensee shall have full responsibility for the conduct and management of the Event in a safe, lawful and nondisruptive manner, the Invited Parties shall obey all requests of Property Manager and Owner's employees and agents as to any matter regarding the conduct of the Event without limitation.

9. In addition to, not in lieu of, any other insurance required hereunder, Licensee, at its expense, shall obtain and maintain commercial general liability insurance, which shall be on an occurrence basis, unless otherwise agreed to by Owner, shall include contractual liability insurance applicable to Licensee's obligations hereunder and shall otherwise be in form and substance, in an amount and issued by a responsible carrier all satisfactory to Owner. Prior to the Event, Licensee shall deliver to Owner evidence, in form and substance satisfactory to Owner, of such required insurance coverage.

10. Licensee hereby represents and warrants to Owner that it has the full right, power and authority to execute this Agreement.

11. This Agreement contains the entire agreement between the parties hereto.

12. This Agreement shall inure to the benefit of and shall be binding upon the parties hereto and their respective heirs, successors and assigns and the legal representatives of their estates, as the case may apply. Notwithstanding the foregoing, neither this Agreement nor any of the obligations and benefits of this Agreement may be assigned by Licensee without the prior written consent of Owner, which consent may be withheld at Owner's sole and absolute discretion.

13. The term Owner as used in this Agreement so far as covenants or obligations on the part of Owner are concerned shall be limited to mean and include only the owner or owners at the time in question of the Owner's interest in the Building. Licensee acknowledges and agrees, for itself and its successors and assigns, that no manager, member, trustee, director, officer, employee or agent of Owner shall be personally liable for any of the terms, covenants or obligations of Owner hereunder, and Licensee shall look solely to Owner's interest in the Building for the collection of any judgment (or enforcement of any other judicial process) requiring the payment of money by Owner with respect to any of the terms, covenants and conditions of this Agreement to be observed or performed by Owner and no other property or assets of Owner shall be subject to levy, execution or other enforcement procedures for the satisfaction of any obligation due Licensee or its successors or assigns.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first above written.

OWNER:

Medway Realty, LLC
a MA limited liability company

By: _____
Name: _____
Title: _____

LICENSEE:

Town of Medway

By: Its Board of Selectmen
Name: _____
Title: _____

AGENDA ITEM #10

One-day liquor License Applications

- **Jo Hunt & Karen Sibilio – Thayer Homestead – 10/13/2018**
- **Raj Tirur – Thayer Homestead – 11/3/2018**
- **Anne Marie Lynch – Thayer Homestead – 11/11/2018**

Associated back up materials attached.

- *Police Chief's recommendations for Jo Hunt & Karen Sibilio, Raj Tirur and Anne Marie Lynch.*

NOTE: One-day liquor license applications are on file in the Town Administrator's Office.

Proposed motion:
I move that the Board approve the one-day liquor licenses as presented subject to the Police Chief's recommendations and proof of appropriate insurance coverage.

Medway Police Department

315 Village Street
Medway, MA 02053

Phone: 508-533-3212
FAX: 508-533-3216
Emergency: 911

Allen M. Tingley
Chief of Police

September 7, 2018

To: Michael Boynton
Town Administrator

From: Allen M. Tingley
Chief of Police

Re: One-Day Liquor request – Thayer House – Wedding Reception

I have reviewed the application for a one day alcohol l license request from Karen Sibilio and Jo Hurt for a wedding reception scheduled for October 13, 2018 at the Thayer House.

I approve of the issuing of the permit with the following conditions.

There will be no on-street parking on either side of Oak Street or Mechanic Street. Additional parking may be found at the Choate Park complex and in the rear parking lot off of Winthrop Street.

The serving of alcoholic beverages will comply with the standards set forth in the Town of Medway's liquor policy for a one day alcoholic beverage license, including the stipulation that all alcohol/wine served at the event will be purchased from a licensed alcohol liquor distributor, as indicated on the license application.

A responsible adult will be checking ID's of individuals being served alcohol at this event.

Respectfully Submitted

Allen M. Tingley

Allen M. Tingley
Chief of Police

Medway Police Department

315 Village Street
Medway, MA 02053

Phone: 508-533-3212
FAX: 508-533-3216
Emergency: 911

Allen M. Tingley
Chief of Police

September 10, 2018

To: Michael Boynton
Town Administrator

From: Allen M. Tingley
Chief of Police

Re: One day liquor license- Thayer Property- Baby Shower

I have reviewed the request from Raj Tirur for a one day alcohol license for a baby shower, to be held at the Thayer House, November 3, 2018. I approve of the issuance of this one day alcohol license with the stipulation that the alcohol will be purchased from a licensed alcohol wholesale distributor, as indicated on the license application and the Town of Medway's Alcohol Policy. A responsible adult with some knowledge of Mass Liquor Laws will be checking ID's of individuals who are served alcohol at the baby shower .There will be no on-street parking on Mechanic Street and Oak Street.

Sincerely,
Allen M. Tingley
Allen M. Tingley
Chief of Police

Medway Police Department

315 Village Street
Medway, MA 02053

Phone: 508-533-3212
FAX: 508-533-3216
Emergency: 911

Allen M. Tingley
Chief of Police

September 11, 2018

To: Michael Boynton
Town Administrator

From: Allen M. Tingley
Chief of Police

Re: One day liquor license- Thayer Property- Bridal Shower

I have reviewed the request from Anne Marie Lynch for a one day wine and malt license for a bridal shower, to be held at the Thayer House, November 11, 2018

I approve of the issuing of this permit with the following condition.

There will be no on-street parking on either side of Oak Street or Mechanic Street. As a result of construction at the Choate Park complex, limited parking will be available in the area, additional parking arrangements may need to be made by the applicant.

The serving of the beer and wine will comply with the standards set forth in the Town of Medway's liquor policy for a one day alcoholic beverage license, including the stipulation that all beer/wine served at the event will be purchased from a licensed alcohol liquor distributor, as indicated on the license application.

A responsible adult with some knowledge of Mass. Liquor Laws will be checking ID's of individuals served beer or wine at this event

Sincerely,

Allen M. Tingley

Allen M. Tingley
Chief of Police

AGENDA ITEM #11

Action Items from Previous Meeting

Associated back up materials attached.

- *Action Items Dated 9/10/2018*

	DATE	ACTION ITEMS BOS	WHO	DUE - COMPLETED
1	7/6/2010	Street acceptance progress	S. Affleck-Childs	Ongoing
2	9/20/2010	Route 109 Project	DPS	Ongoing
3	2/3/2014	Comcast cable license renewal (lic. exp. 7/13/18)	TA/CAC	Jul 2018
4	7/28/2014	DPS Facility Building Project	DPS/TA/Committee	Ongoing
5	IWRMP Task Force Mtg	Unaccounted for water loss status report	DPS	Quarterly UAW Reports to Board
6	7/17/2017	Centralized v Individual Well Water Treatment Options	DPS	Fall Town Meeting
7	3/5/2018	Final decision on EMS into Fire Budget	BOS	September 2018
8	6/18/2018	Gray Squirrel Cir matter	TA/ConCom	Ongoing
9	6/18/2018	Medway Plaza redevelopment	BOS	Ongoing
10	6/18/2018	Idyllbrook fencing/ field protection	DPS	Ongoing
11	8/13/2018	Report to BOS Strategic Plan for making fields more viable for youth sports	EPFRAC	December 2018
12	8/13/2018	Park & Recreation Director Report Assessment Results & Action Plan to Board	Julie Harrington	December 2018

AGENDA ITEM #12

Town Administrator's Report

No associated back up materials.

AGENDA ITEM #13

Selectmen's Reports

No associated back up materials.