

COMMUNITY RESILIENCE BUILDING WORKSHOPS- SUMMARY OF FINDINGS

CITY OF WESTFIELD
MUNICIPAL VULNERABILITY PREPAREDNESS (MVP)
PROGRAM



SUBMITTED TO
City of Westfield
Planning Department

June 29, 2020



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Section 1

Community Resilience Building Workshops

1.1 Overview

The City of Westfield, like other communities in the Commonwealth of Massachusetts, is already feeling the impacts of climate change. In particular, the community has experienced severe weather related to inland flooding and extreme winter events in the recent past. In 2007, Westgate Plaza and East Silver Street suffered significant flooding that resulted in evacuations and the closure of roads and stores. 2011 was a banner year for natural hazard events beginning with the June 2011 tornado damaging homes, businesses and forests and Tropical Storm Irene in August 2011 caused devastating flooding and wind damage. Finally, the October 2011 “Halloween Storm” caused power outages and destroyed thousands of trees in the City, resulting in many residents being without heat for days. In 2017, Westfield experienced a drought that lasted almost



entire year impacting public water supplies and the environment. In the future, the City anticipates more severe and commonly occurring weather events due to climate change such as increased flooding from large rain events, more substantial winter storms, and a greater likelihood of drought, including increased extreme heat days and heat waves. These extreme weather events will test Westfield’s ability to prepare for and respond to emergencies.

Figure 1 – Westfield River Flooding during Tropical Storm Irene (*Springfield Republican*, 8/28/11)

In 2017, the Commonwealth of Massachusetts inaugurated the Municipal Vulnerability Preparedness (MVP) program to assist municipalities in planning for and implementing strategies to adapt to predicted changes in our warming climate. The Executive Office of Energy and Environmental Affairs (EEA) oversees and implements the MVP program. Funds are awarded to municipalities under two categories of work: planning grants and action grants.

To prepare for climate resiliency and begin to consider adaptation strategies, the City was awarded a planning grant to complete the MVP planning process. This summary describes the planning process and findings suggested by the community for building a more resilient Westfield.

1.1.1 Overview of the Community Resilience Building (CRB) Process

The CRB methodology is an “anywhere at any scale” format that draws on stakeholders’ wealth of information and experiences to foster a collaborative dialogue about the strengths and vulnerabilities within a community, identify potential resiliency actions, and advance the education, planning, and ultimately implementation of priority actions.

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Figure 2 provides an overview of this process from the CRB Workshop Guide, which is available online at: <https://www.communityresiliencebuilding.com/>

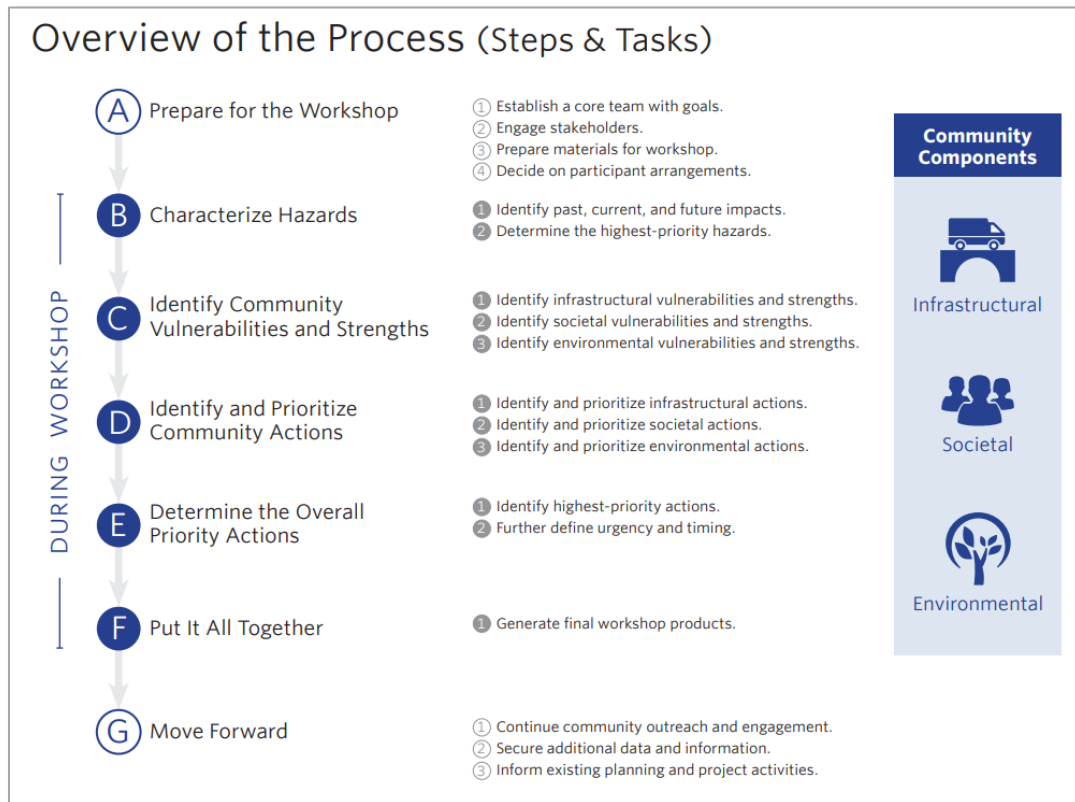


Figure 2: Overview of the CRB Process

During the workshops, participants interact at both small and large group levels, using an iterative process to gather input, synthesize ideas across groups, and ultimately develop a set of priority resilience and adaptation actions. Each workshop's central objectives are to:

- Define the top local natural and climate-related hazards of concern;
- Identify existing and future strengths and vulnerabilities of the Community;
- Develop prioritized actions for the Community; and
- Identify immediate opportunities to collaboratively advance actions to increase resilience.

1.2 Westfield's CRB Planning Activities

Jay Vinskey, Westfield City Planner, served as the Local Project Manager for undertaking the MVP planning process. The City partnered with Tighe & Bond, a state-certified MVP Provider, to complete the CRB process, including holding the CRB workshops.

To complete the first step in the CRB Process, Core Team members for the City of Westfield MVP were identified from multiple departments, boards, and commissions. The Core Team is listed in Table 1.

Section 1 Community Resilience Building Workshops

TABLE 1: Core Team Members

Name	Title/Department/Affiliation
Jay Vinskey	City Planner
Ben Warren	Fire Dept
David Billips	DPW Director
Heather Stayton	DPW Water Division
Jeremy Cigal	Engineering Department
Jim Wiggs	Emergency Management Director
Joe Rouse	Director Public Health
Joseph Kietner	DPW Stormwater Coordinator
Lawrence Valliere	Chief of Police
Mary Ann Babinski	Former City Councilor
Mark Cressotti	City Engineer
Matthew Gamelli	Engineering Department
Meredith Borenstein	Conservation Coordinator
Michael McCabe-	Police Captain
Pat Egloff	Fire Chief
Peter Miller	Community Development Director
Thomas Hibert	Public Health
Chris Rogers	Westfield Public Schools

The role of the Core Team was to:

- Identify and engage community stakeholders to participate in the CRB workshops and the listening session
- Review workshop materials and attend workshop session
- Review the summary of findings
- Attend the final listening session

The following provides additional detail on the overcall CRB planning process undertaken by the City of Westfield to obtain MVP Community Designation.

1.2.1 Core Team Meetings

The MVP kickoff meeting, held on March 12, 2020, was coordinated to involve the Core Team at an early stage in the planning process. At this meeting, Tighe & Bond presented an overview of EEA's MVP Program and Goals, reviewed the scope, schedule, and budget, discussed public involvement and outreach, and reviewed the CRB process.

Due to COVID-19 and the need to accommodate social distancing and stay-at-home advisories that went into effect on March 13, additional Core Team review was completed via email and virtual meeting format.

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The Core team provided review on natural hazards, recommended stakeholders to invite to the workshop and identified stakeholders to interview to provide more detail on Community assets and reviewed workshop materials.

The Core Team conducted a final virtual meeting on June 9, 2020, to review the post workshop survey and mitigation strategies, review draft deliverables to date, and finalize the presentation for the listening session.

Materials documenting the Core Team meetings are provided in Appendix A.

1.2.2 COVID-19 Alternate Public Engagement Strategy

Westfield worked with their MVP Provider, Tighe & Bond, to develop a virtual engagement process for the CRB workshops and public listening session following the recommendations made by the EEA MVP staff.

1. **Provide an online space for MVP materials:** A municipal-specific MVP website was designed and hosted by Tighe & Bond, to provide all necessary materials for completing the MVP process. Reference materials, including the Massachusetts State Hazard Mitigation and Climate Action Plan, ResilientMA.org, the MVP Workshop Guide, and the municipality's Hazard Mitigation Plan, are available for public access on this website. Recorded CRB Workshop Webinars, survey results, and the draft and final MVP Summary of Findings Report are also posted on the website.
2. **Survey to identify strengths and vulnerabilities:** Tighe & Bond used Survey Monkey to create and distribute a survey to members of the Core Team and identified stakeholders. The survey questionnaire results were used to develop an initial list of strengths and vulnerabilities in the community. The survey was distributed via email and linked to the MVP website.
3. **Distribute recorded presentation on background information:** Tighe & Bond developed a pre-workshop video including information on climate change and the MVP process. The short video was posted on the MVP website for viewing or downloads. Stakeholders were encouraged to view the introductory video prior to attending the Virtual CRB Workshop Webinars.
4. **Distribute virtual CRB Workshop webinar materials:** Materials necessary to participate in the workshop were distributed via email, posted on the MVP website or sent by regular mail if requested. Materials include: (1) a partially pre-populated CRB Matrix according to the Strengths and Vulnerabilities survey, (2) applicable slides to discuss natural hazard risk for the specific community asset sector featured in the workshop, and (3) a map of the municipality and featured community assets and (4) a map showing the location of the 100-year floodplains.
5. **Hold Webinars to meet the CRB Workshop requirement:** Tighe & Bond hosted four virtual CRB Workshop Webinars featuring each one of the Community Asset Categories: societal, infrastructural, economy, and the natural environment. During the workshop, attendees brainstormed mitigation actions for specific community assets to address top priority hazards

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6. **Prioritization Polling:** After the completion of all four Virtual CRB Workshop Webinars, Tighe & Bond developed and distributed a Survey Monkey poll to the Core Team and stakeholders. This poll includes a list of mitigation actions developed during the webinar. Individuals were asked to rank actions one (low priority) through five (high priority) in each of the four asset categories to develop a draft prioritization.
7. **Core Team Meeting:** Tighe & Bond hosted a final virtual Core Team meeting on June 9, 2020 to review the results of the prioritization polling and discuss the first Draft MVP Summary of Findings Report.
8. **Distribute Listening Session materials:** Tighe & Bond distributed listening session materials to Core Team members and stakeholders electronically or through mailings if requested. Information about the Listening Session and directions to participate were publicly posted. Materials included an agenda and copy of the Draft MVP Summary of Findings Report.
9. **Hold Listening Session:** Tighe & Bond and the Core Team hosted a live, one-hour Listening Session to present the draft MVP Summary of Findings Report and allow time for a Question & Answer session for community input. The Final Draft MVP Summary of Findings Report was available on the MVP website for a 10-day public comment period. The session may also be broadcast or re-broadcast on the City's community access television.
10. **MVP Website:** Tighe & Bond posted the recorded Listening Session, Question & Answer dialog, and Final MVP Summary of Findings Report on the MVP website.

A memo documenting the proposed alternative public engagement strategy is included in Appendix B.

1.2.3 Stakeholder Engagement and Pre-Workshop Survey

Community stakeholders included municipal staff not already a member of the Core Team, elected and appointed officials in Westfield, municipal staff and representatives from abutting communities, PVPC staff, environmental non-profits, representatives from power utilities, owners and managers of local businesses (including pharmacies, large employers, contractors, farms, tree removal services), and the citizens involved in local planning. The complete stakeholder list is provided in Appendix C.

Eighteen key stakeholders were highlighted by the Team for further interviews to get a cross section of ideas about community assets at risk and perspectives on mitigation, and responses were received from ten. The results of the stakeholder interviews are included in Appendix C.

Pre-workshop stakeholder engagement materials were developed including maps of community assets and hazard areas and an introductory video about the MVP program and community climate change impacts. A pre-workshop survey was created to get input from stakeholders regarding perception of natural hazard risk, future impacts due to climate change, and important community assets in each of the four sectors.

The Westfield MVP coordinator emailed invitations to all 100+ stakeholders to participate in the MVP CRB workshop process. The email included a link to the MVP website,

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instructions on how to take the survey, access pre-workshop materials and links to sign up for the four workshops.

1.2.4 Community Resilience Building Workshops

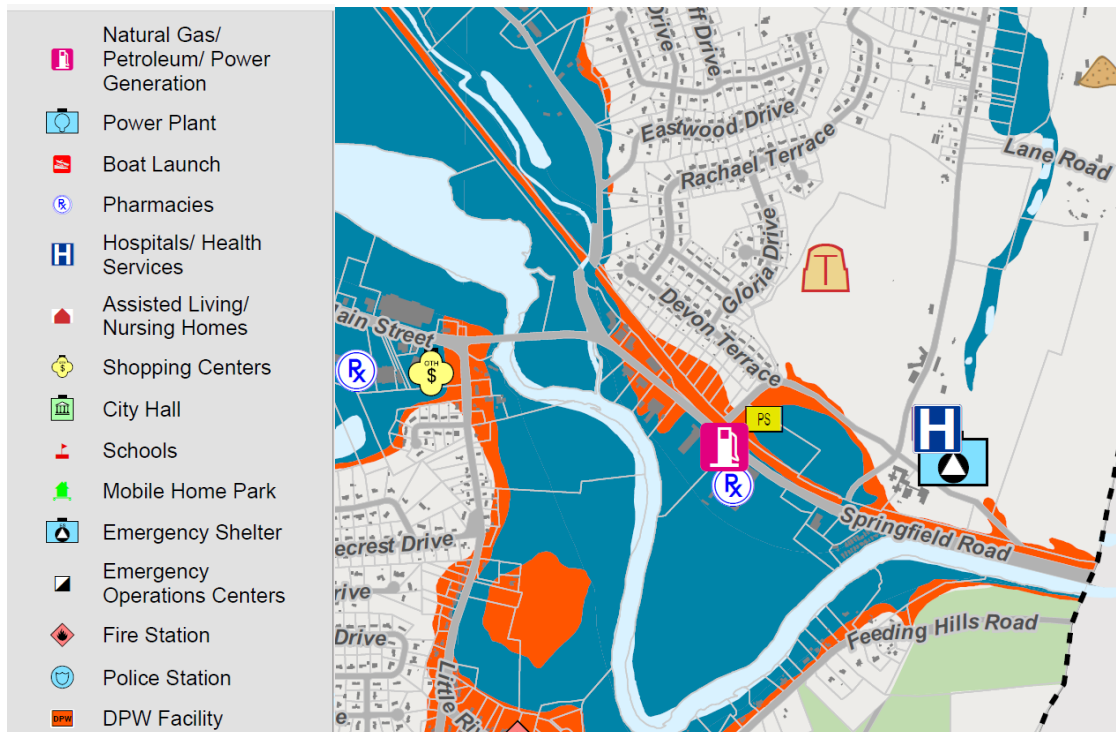
The four workshops focusing on society, infrastructure, economy, and the environment were held over a four-week period from May 12th-June 2nd.

Each workshop followed a similar format with an introduction by City Planner, an overview of the MVP planning process, discussion of top natural hazards impacting Westfield including future climate change impacts, followed by a discussion of the featured community assets and survey results. The working sessions with stakeholders included an initial session to dive further into specific strengths and vulnerabilities of the community assets and a second session to develop mitigation strategies that addressed the top identified natural hazards.

The virtual workshops used the Teams Live Event platform, which enabled a production team to provide live video and audio, present slides and complete the CRB worksheets based on input from stakeholders. Participants in the workshop provided comment through the Q&A feature of Teams Live Event.

As each workshop was completed, a recording of the workshop, documented Q&A and a draft of the CRB matrix was uploaded to the City's MVP website. The website address is: <http://services.tighebond.com/mvp/westfield>.

Appendix D contains the attendance list for all workshops, the MVP website page and supplemental workshop materials including PowerPoint presentations and published Q&A documentation. Natural Hazard Maps are included in Appendix E. The list of community assets by category is provided in Appendix F, and the completed CRB matrix is included in Appendix G.



Section 1 Community Resilience Building Workshops

Figure 3: Location of Community Assets within Flood Zones (100-yr in Blue, 500-yr in orange)

1.2.5 Listening Session

A listening session to present the final report and review the high priority actions identified through the CRB workshops was held on June 16, 2020, via a remote Zoom platform as part of a regular Planning Board meeting. City Staff led the session with support from Tighe & Bond. The session was broadcast live on local Community Access Television (Channel 15) as well as live-streamed at westfieldtv.org. It is also archived (with all Planning Board meeting videos) and is accessible at the City's website. City staff facilitated discussion including citizen input on the following:

- MVP program background – grant award and CRB process
- Natural hazards in Westfield – SHMCAP hazards, top hazards in Westfield based on Core Team input and pre-workshop survey results
- Climate change – observed and predicted climate changes to temperature, precipitation, and severe storms in the State and Westfield River Basin, associated risks, and amplified risks from natural hazards due to climate change
- Community asset inventory developed during the CRB workshops
- Workshops – CRB process, objectives, CRB matrix
- Summary of community asset strengths and vulnerabilities from workshops
- Mitigation strategies – types of actions, examples from workshops, results of post-workshop survey on prioritization
- Next steps – public comment period
- MVP Action Grants – types of projects, nature-based solutions
- Question & Answer portion - open to or live call-in or texted comments or questions

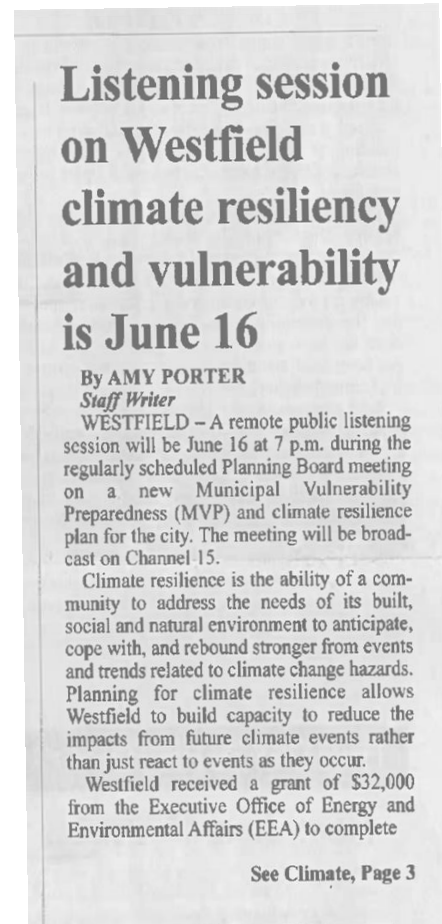


Figure 4: Article published in *The Westfield News* (6/15/20)

During the Question and Answer portion of the Listening Session, the strengths and vulnerabilities of Stanley Park were discussed, as well as ongoing mitigation of non-native aquatic plants in Pequot Pond (Hampton Ponds) and the impacts of invasive species on trees in Westfield.

Meeting materials, and the presentation for the listening session are provided in Appendix H.

Section 2

Top Hazards and Vulnerable Areas

This section discusses Steps B and C of the CRB Process to characterize hazards and identify community vulnerabilities and strengths (a.k.a. community assets).

2.1 Natural Hazard Risks

2.1.1 State Identified Hazards

The 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan (SHMCAP)¹ provides an in-depth overview of natural hazards in Massachusetts. The State Plan identifies 14 natural hazards that have an impact or have a history of impacting communities in the Commonwealth of Massachusetts. These hazards are as follows:



Figure 5: Hazards Identified in the SHMCAP

¹ <https://www.mass.gov/files/documents/2018/10/26/SHMCAP-September2018-Full-Plan-web.pdf>

Section 2 Top Hazard and Vulnerable Areas

2.1.2 Hazards that Apply to Westfield

The SHMCAP includes coastal flooding, coastal erosion, and tsunamis that are not applicable to Westfield and are not further discussed or evaluated in this report.

The Core Team reviewed the remaining natural hazards identified in the SHMCAP and identified natural hazards that have impacted Westfield in the past or could impact Westfield in the future. The hazards selection for Westfield was made using local expertise from the Planning Team, information from the 2015 Regional Hazard Mitigation Plan, the SHMCAP and other sources.

The Core Team reviewed each natural hazard and analyzed the history of occurrence in City, hazard probability, hazard frequency, geographic extent, and severity of impact. Each was ranked based on the Hazard Profile Definitions, displayed in Table 2. Westfield's Natural Hazard Risk Index is summarized in Table 3.

TABLE 2: Hazard Profile Definitions (2018 SHMCAP)

Definitions		
Points	Description	
Hazard Probability (Possible occurrence in the future)		
1	Unlikely	Less than a 1% probability over the next 100 years
2	Possible	1-10% probability in the next year or at least one chance in the next 100 years
3	Likely	10-100% probability in the next year or at least one chance in the next 10 years
4	Highly Likely	Near 100% probability in the next year
Hazard Frequency (previous occurrence-present)		
0	Very Low	Events that occur less frequently than once in 1,000 years (less than 0.1% per year).
1	Low	Events that occur from once in 100 years to once in 1,000 years (0.1% - 1% per year).
2	Medium	Events that occur from once in 10 years to once in 100 years (1% - 10% per year).
3	High	Events that occur more frequently than once in 10 years (greater than 10% per year).
Geographical Extent (Area Impacted by a Given Natural Hazard)		
1	Small	Less than 10% of the Town affected
2	Medium	10-50% of the Town affected
3	Large	More than 50% of the Town affected
Severity of Impact from Hazard		
1	Minor	Limited and scattered property damage; no damage to public infrastructure (roads, bridges, trains, airports, public parks, etc.); contained geographic area (i.e. one or two communities); essential services (utilities, hospitals, schools, etc.) not interrupted; no injuries or fatalities.
2	Serious	Scattered major property damage (more than 10% destroyed); some minor infrastructure damage; wider geographic area (several communities); essential services briefly interrupted up to 1 day; some minor injuries.
3	Extensive	Consistent major property damage (more than 25%); major damage public infrastructure damage (up to several days for repairs); essential services are interrupted from several hours to several days; many injuries and possible fatalities.
4	Catastrophic	Property and public infrastructure destroyed (more than 50%); essential services stopped for 30 days or more, multiple injuries and fatalities.

Section 2 Top Hazard and Vulnerable Areas

TABLE 3: Relevant Natural Hazards for the City of Westfield

Natural Hazard Risk Index- Westfield, MA

Type of Natural Hazard	History of Occurrence in Westfield	Hazard Probability	Hazard Frequency	Geographic Extent- Location	Severity of Impact	Hazard Risk Ranking
Hydrological Hazards						
		A	B	C	D	
Flood Related						
• Major Flooding	Yes	2	1	2	3	3
• Localized Flooding	Yes	3	2	1	2	3
• Culvert Failure	Yes	3	2	2	1	3
• Beavers	Yes	2	2	1	1	4
• Dam Failure	Yes	2	0	3	3	3
Coastal Flooding	No	NA	NA	NA	NA	NA
Drought	Yes	4	2	3	1	2
Atmospheric Hazards						
High Winds	Yes	4	1	1	2	3
Hurricanes/Tropical Storms	Yes	2	1	3	1	4
Severe Weather- Thunderstorms/ Microbursts	Yes	4	2	1	2	3
Tornadoes	Yes	2	1	1	3	4
Severe Winter Storm - Nor'easter	Yes	3	2	3	2	2
Severe Winter Weather - Heavy Snow/ Blizzards	Yes	4	3	3	3	1
Severe Winter Weather- Ice Storms	Yes	4	3	3	3	1
Extreme Temperature	Yes	4	2	3	1	2
Geological Hazards						
Coastal Erosion	No	NA	NA	NA	NA	NA
Earthquake	Yes	2	0	2	3	4
Landslide	No	1	0	1	2	5
Tsunami	No	NA	NA	NA	NA	NA
Other Hazards						
Wildfires	Yes	3	2	2	2	3
Invasive Species	Yes	4	3	1	1	3

Section 2 Top Hazard and Vulnerable Areas

2.1.3 Top Hazards for Westfield from Risk Matrix

Based on the evaluation of natural hazard risk ranking coupled with the history of occurrence, the geographic extent of impact, economic impact, and consideration for climate change, the Core Team determined the highest ranked natural hazards for Westfield consist of:

- Severe winter storms: ice, snow, blizzards and nor'easters
- Extreme temperatures and drought
- Other severe weather thunderstorms, high wind and microbursts
- Inland Flooding

2.1.4 Top Hazards for Westfield from Survey

The Pre-workshop survey included polling to identify the top natural hazards currently impacting Westfield, and hazards likely to impact Westfield in the future with climate change. The survey agreed with the findings of the Core Team for natural hazards that are currently impacting Westfield or have impacted the City in the past, however future natural hazard concerns with climate change included flooding from dam overtopping, invasive species and impacts due to high winds.

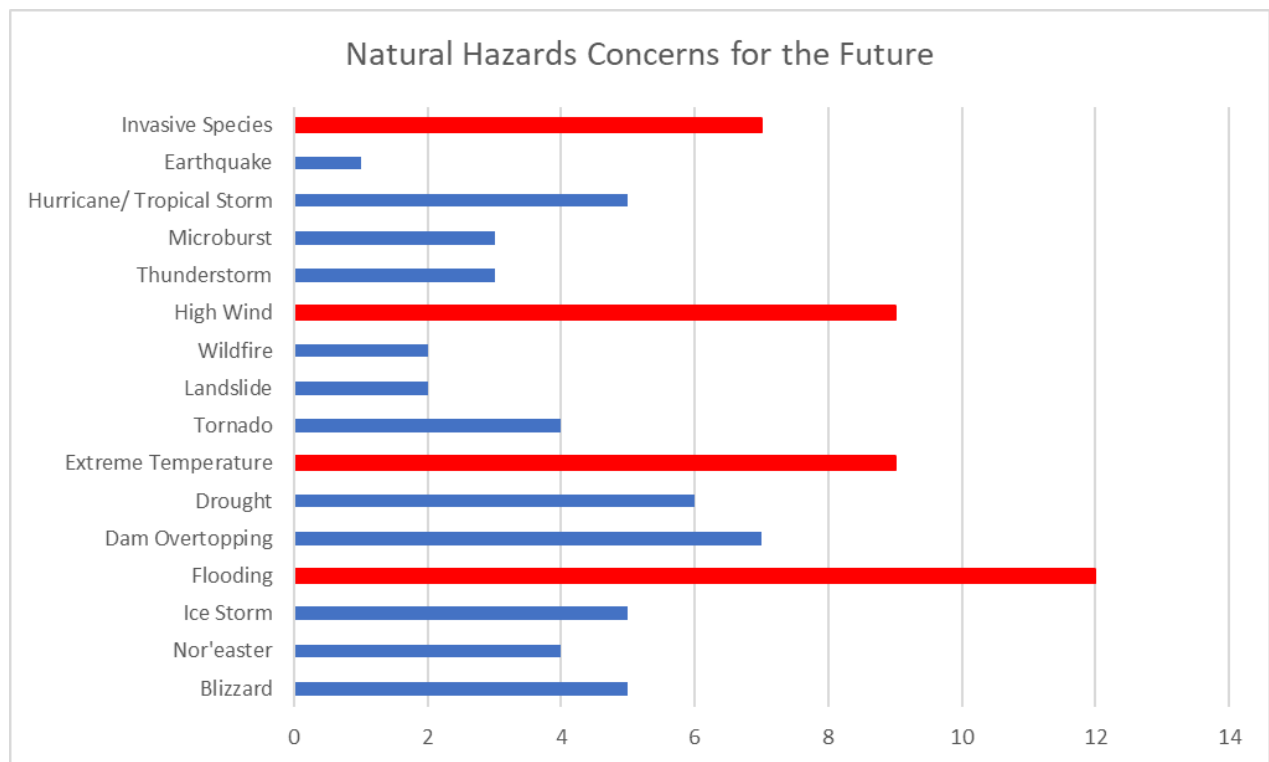


Figure 6: Westfield MVP Survey Results for Natural Hazards with Climate Change

The CRB Workshop top natural hazards combined the Core Team evaluation with the stakeholder survey results for a final list including:

- Extreme temperatures
- High winds/ tropical storms and hurricanes
- Flooding/ dam overtopping
- Invasive species

2.2 Areas of Concern

During the CRB Workshops, areas of concern were distributed under four categories of community assets, infrastructural, societal, environmental and the economy. A complete list of community assets by category is included in Appendix F. The completed CRB Risk Matrix in Appendix G provides additional information and discussion of vulnerabilities and strengths for specific community assets.

2.2.1 Societal (People / Vulnerable Populations)

Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.

The workshop participants identified the following societal sectors with vulnerabilities or strengths within the community:

1. **Public Education Facilities and Resources**

Public education facilities and resources they provide create opportunities for information dissemination through websites, social media, classroom presentation and written materials. Goal for public education is to focus on what residents can do to mitigate hazards on their property and how to be prepared for hazards that can't be mitigated.

2. **Buildings That Support Community Needs**

Buildings that support community service are important gathering spaces, providing resources for impacted individuals during a hazard event and through the recovery phase. Buildings must be self-sufficient and accessible.

3. **Vulnerable Populations**

Vulnerable populations may need additional attention in the event of a natural hazard. These populations may be dependent on caregivers, hard to evacuate, lack means for dealing with prolonged disruption food supply or power loss or be disconnected from the community based on language barrier.

4. **Support Services**

Certain operations such as medical facilities, transit services, unusual alternatives for public shelter and farms may fit into other community sectors but are included here as providing a vital societal need in the event of a natural disaster.



Figure 7: First Congregational Church and Hall (photo courtesy of City of Westfield)

2.2.2 Infrastructural (Built Environment)

Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.

The workshop participants identified the following infrastructural sectors with vulnerabilities or strengths within the community:

1. Flood Control Infrastructure

Flood Control Infrastructure protects utilities, homes, businesses and municipal facilities that are in proximity to the Westfield and Little Rivers. These assets include levees, dams, stormwater drainage, and pump stations that remove flood water during high river elevation flood events.

2. Transportation Corridors

Westfield's roads, bridges and rail service are infrastructure systems critical for life safety and economic viability. Mitigation to protect evacuation routes is especially important in this community that is crisscrossed by rivers and flood hazard areas. If evacuation routes are flooded, areas of the City may be isolated for days or longer periods.

3. Critical Facilities

Critical facilities are structures and institutions necessary for a community's response to and recovery from emergencies. Critical facilities must continue to operate during and following a disaster to reduce the severity of impacts and accelerate recovery.

4. Communications and Energy

Communication and Energy resilience is a top priority for Westfield. Mitigation should focus on making the City and its residents, including vulnerable populations more self-sufficient during a natural hazard event.



Figure 8: Westfield-Barnes Regional Airport

2.2.3 Economy

Major employers, primary economic sectors and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.

The workshop participants identified the following economic sectors with vulnerabilities or strengths within the community:

1. Essential Goods- Large Retail

Large retail stores in the City of Westfield supply goods and services to support residents and small businesses within the community in addition to providing jobs. Large retail businesses go through site plan review and provide emergency planning information to the City emergency management.

2. Essential Services- Small Business

Westfield has a number of small businesses that supply essential services and supplies to residents in addition to providing jobs. Smaller businesses are generally more vulnerable to natural hazard events and may require additional support from the City during and after a natural hazard event. Mitigation to promote the resiliency of small businesses may present public/private partnership opportunities.

3. Large Employers

Major employers within Westfield help drive the local economy. When these businesses are forced to shut down due to a natural hazard event, services are interrupted and employee wages are lost. Mitigation strategies must focus on best practices and employee safety to minimize direct or indirect losses due to natural hazards.

4. Other Essential Services- Lodging, Transportation and Utilities

Westfield's transportation and utility providers are essential businesses for sustaining basic needs and economic viability. Lodging establishments are included to provide temporary housing for disaster recovery personnel or temporary housing for displaced individuals. It is essential that mitigation for utilities focus on ability to operate during and following a disaster to reduce the severity of impacts and accelerate economic recovery.

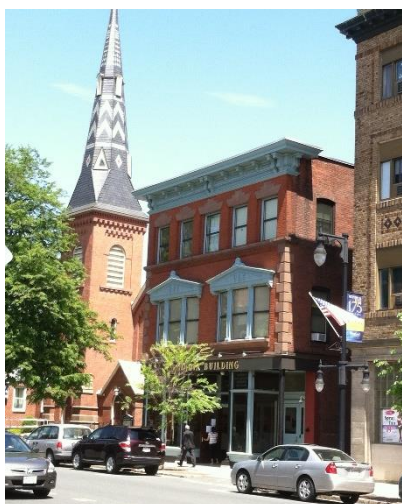


Figure 9: Downtown Westfield (photo courtesy of City of Westfield)

2.2.4 Environmental (Natural Environment)

Areas that provide protective function to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.

The workshop participants identified the following environmental sectors with vulnerabilities or strengths within the community:

1. **Hydrologic Resources**

Wetlands, floodplains and aquifer protection lands are vital environmental resources for Westfield sustaining the water supply, providing habitat, absorbing flood water and passive and active recreation. These assets may overlap with infrastructure, and mitigation crosses almost all categories from protection through structural projects. Nature based solutions are especially appropriate to protect hydrologic resources.

2. **Open Space and Conservation Lands**

Westfield currently has over 12% of the City protected as open space or conservation lands. Conservation of open space provides opportunities to meet other community objectives such as protecting sensitive habitat. Mitigation strategies include planning, education and property protection.

3. **Parks and Recreational Areas**

Environmental assets defined as parks and recreational areas are important to the identity of Westfield and quality of life. Mitigation actions should rely on nature-based solutions to the extent possible to protect functions that reduce hazard impacts and increase resilience in these areas.

4. **Forestry and Agriculture**

Forestry and Agriculture lands include state, municipal and private property. These assets must be preserved to mitigate heat, improve water quality and sustain food supplies. As with all of the environmental assets, mitigation actions should rely on nature-based solutions whenever possible.

5. **Environmental Health**

Air and water pollution, chemical use, illegal dumping and littering all impact environmental health. Surveillance, education, and providing alternatives are mitigation strategies that will help protect the health of the Westfield's environment and its citizens.

6. **Environmental Education**

From school programs, to educating business and municipal officials, environmental education is the cornerstone of a community environmental mitigation strategy. A variety of programs can include information on how the natural environment reduces the magnitude of hazard events, provides better quality of life, supports the economy through agriculture, tourism and recreation and supports ecosystem services such as clean air and water.



Figure 10: Westfield River Levee Multi-Use Trail (photo courtesy of City of Westfield)

Section 3

Current Concerns and Challenges Presented by Hazards and Climate Change

3.1 Climate Change Concerns

The pre-workshop survey results indicate that Westfield is concerned about climate change impacts on natural hazard risk. As shown in Figure 9, 50% of the survey respondents were very concerned with climate change, 38% were moderately concerned, and 12% were slightly concerned.

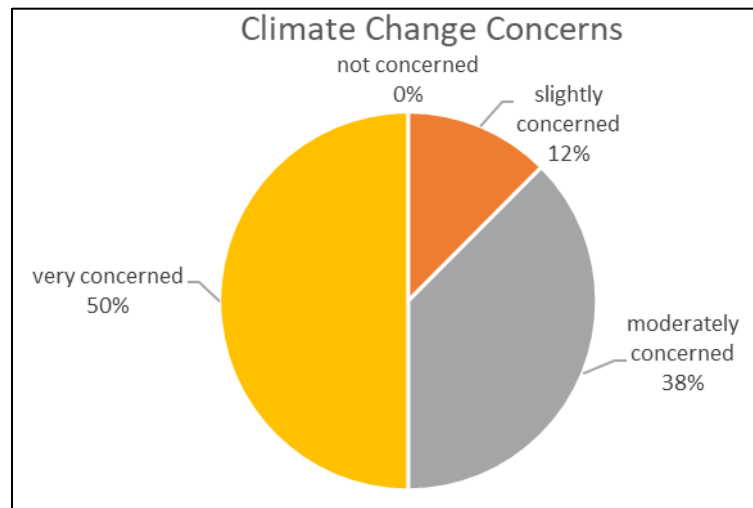


Figure 11: Westfield MVP Survey Results Climate Change Concerns

Specific events that were discussed by workshop participants include the following:

- Severe storms seem to be more frequent and have a great impact on the City. Attendees recalled many blizzards including the "Snowtober" event in October 2011, winter storms in February 2013 and January 2015.
- Flooding is a serious concern in Westfield. Tropical Storm Irene in August 2011 caused devastating flooding and wind damage.
- The community is feeling the impacts from extreme temperatures, including drought. Atmospheric hazards impact farmers, the public water supply, and private wells.
- Tropical storms and hurricanes impact Westfield, resulting in flooding and power outages.
- Invasive species are everywhere and harm the City's waterbodies and forests.
- Microbursts have occurred a number of times and had significant impacts to localized areas.

These hazards are anticipated to be amplified by climate change, as discussed on the resilient MA Climate Change Clearinghouse website (<http://www.resilientma.org/>):

Section 3 Current Concerns and Challenges Presented by Hazards and Climate Change



Changes in Precipitation: Changes in the amount, frequency, and timing of precipitation—including both rainfall and snowfall—are occurring across the globe as temperatures rise and other climate patterns shift in response.





Rising Temperatures: Average global temperatures have risen steadily in the last 50 years, and scientists warn that the trend will continue unless greenhouse gas emissions are significantly reduced. The 9 warmest years on record all occurred in the last 20 years (2017, 2016, 2015, 2014, 2013, 2010, 2009, 2005, and 1998), according to the National Oceanographic and Atmospheric Administration (NOAA).



Extreme Weather: Climate change is expected to increase extreme weather events across the globe, as well as right here in Massachusetts. There is strong evidence that storms—from heavy downpours and blizzards to tropical cyclones and hurricanes—are becoming more intense and damaging and can lead to devastating impacts for residents across the state.

The following table reproduced from the SHMCAP describes climate change interactions with natural hazards and associated impacts.

TABLE 4: Climate Change Interactions

Primary Climate Change Interaction	Natural Hazard	Other Climate Change Interactions	Representative Climate Change Impacts
 Changes in Precipitation	Inland Flooding	Extreme Weather	Flash flooding, urban flooding, drainage system impacts (natural and human-made), lack of groundwater recharge, impacts to drinking water supply, public health impacts from mold and worsened indoor air quality, vector-borne diseases from stagnant water, episodic drought, changes in snow-rain ratios, changes in extent and duration of snow cover, degradation of stream channels and wetland
	Drought	Rising Temperatures, Extreme Weather	
	Landslide	Rising Temperatures, Extreme Weather	
	Average/Extreme Temperatures	N/A	
	Wildfires	Changes in Precipitation	
	Invasive Species	Changes in Precipitation, Extreme Weather	
 Extreme Weather	Hurricanes/Tropical Storms	Rising Temperatures, Changes in Precipitation	Increase in frequency and intensity of extreme weather events, resulting in greater damage to natural resources, property, and infrastructure, as well as increased potential for loss of life
	Severe Winter Storm / Nor'easter	Rising Temperatures, Changes in Precipitation	
	Tornadoes	Rising Temperatures, Changes in Precipitation	
	Other Severe Weather (Including Strong Wind and Extreme Precipitation)	Rising Temperatures, Changes in Precipitation	
Non-Climate-Influenced Hazards	Earthquake	Not Applicable	There is no established correlation between climate change and this hazard

3.2 Massachusetts Climate Change Projections

Researchers from the Northeast Climate Adaptation Science Center (NECASC) at University of Massachusetts Amherst prepared projections for changes in temperature, precipitation, and sea level rise for the entire state, as well as each major watershed in recognition that there are differences regionally. EEA is encouraging municipalities, industry, non-government organizations, state government and others to utilize this information as a standard, peer-reviewed set of climate change projections and is recommending these projections be included in MVP planning efforts.

The City of Westfield is entirely included within the Westfield River watershed. The information specific to the Westfield River basin excerpted from Massachusetts Climate Change Projections, dated March 2018² is included in Appendix I.

3.3 Specific Concerns and Challenges

The CRB Workshops identified a total of 137 community assets that were especially important to recognize in the MVP plan. The complete list is included in Appendix F.

The vast majority (77) of the assets were seen as strengths to the community while 45 had specific vulnerabilities noted. Identified community assets that were vulnerable to the impacts of climate change within the City of Westfield fell within all 4 asset categories with the majority in the infrastructure category. Some examples are included below:

Societal Assets- out of a total of 20 specific social assets, 6 were noted with vulnerabilities, including:

- Disabled Population- challenges during transportation
- Economically Disadvantaged Families- may lack resources to adapt
- Home Day Care- support for working parents, but young children present vulnerabilities needing special care to provide for needs

Infrastructural Assets- out of a total of 25 specific infrastructural assets, 17 were noted with vulnerabilities, including:

- Flood Control Infrastructure- maintenance needs, subject to increased flood elevations
- City Fuel Depot- at risk for flooding
- Westfield Barnes Airport – stormwater discharge to public supply well recharge

Economic Assets- out of a total of 40 specific economic assets, 7 were noted with vulnerabilities, including:

- Essential Goods- Large Retail- located in floodplain, outdoor storage is risky
- Large Employers- vulnerable population in floodplain, chemicals on site
- Other Essential Service -Lodging- no generators

² <https://www.mass.gov/files/ma-statewide-and-majorbasins-climate-projections-final.pdf>

Section 3 Current Concerns and Challenges Presented by Hazards and Climate Change

Environmental Assets- out of a total of 52 specific economic assets, 15 were noted with vulnerabilities including:

- Coldwater Fisheries- warming, habitat loss
- Waterbodies with Boating- invasive aquatics, bank erosion
- Remaining Forested Lands, including Aquifer Recharge Areas- commercial development

3.4 Current Strengths and Assets

Westfield officials and emergency response staff are actively engaged in preparing the community to respond to and adapt to current and future natural hazards. Collaboration, communication, and responsiveness of these staff is viewed as a strength in Westfield. In addition, Westfield has an active and engaged resident base that helps facilitate outreach and education and provide input on ongoing planning processes. Westfield's public works staff are viewed as a strength in terms of their operation and management of the water and wastewater systems and assistance with emergency response.

Identified community assets that were strength to mitigate impacts of climate change fell within all 4 asset categories with the majority in the economy category. Some examples are included below:

Societal Assets- out of a total of 20 specific social assets, 11 were noted with strengths, including:

- Westfield State- community support in emergency
- Immigrant Community- supports diversity
- Elder Population- historical knowledge

Infrastructural Assets- out of a total of 25 specific infrastructural assets, 16 were noted with strengths, including:

- Flood Control Infrastructure- protects homes and businesses
- City Hall- alternate EOC location
- Solar Farms- alternate energy source
- Westfield Barnes Airport- large staging area, emergency response via airlift, backup emergency power, potential for intergovernmental partnership related to energy

Economic Assets- out of a total of 40 specific economic assets, 31 were noted with strengths, including:

- Essential Goods Large Retail- provide goods and have generators
- Essential Services- provide fuel and emergency repair service
- Other Essential Service transportation- supply distribution, trucking

Environmental Assets- out of a total of 52 specific economic assets, 19 were noted with strengths, including:

- Flood plains- floodwater storage, wildlife habitat

- Conservation Lands- heat island mitigation
- Columbia Greenway- evacuation route, flood protection, recreation

3.5 General Strategies to Improve Resiliency

CRB workshop participants were cognizant of the broad range of actions that can contribute to vulnerability preparedness. The measures which build resilience and mitigate hazards can generally be sorted into six categories, based on FEMA's Local Multi-Hazard Mitigation Planning Guidance:

1. **Prevention:** Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built, and direct public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and stormwater management regulations.
2. **Property Protection:** Modification or removal of existing buildings or infrastructure to protect them from a hazard. Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter resistant glass.
3. **Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about the potential risks from hazards and ways to mitigation them. Such actions include outreach projects, real estate disclosure requirements, hazard information centers, and school-age and adult education programs.
4. **Natural Resource Protection and Green Infrastructure:** Actions that, in addition to minimizing hazard losses, preserve or restore the functions of natural systems. These actions include low impact development, sediment and erosion control, stream corridor restoration, watershed management, urban forest and vegetation management, and wetland restoration and preservation.
5. **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.
6. **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

3.6 Top Recommendations to Improve Resilience for the City of Westfield

While several individual Mitigation Projects were identified in the CRB workshops, this section attempts to consolidate related, similar and overlapping actions and to sort them into the more broadly-scoped action categories that evolved from Westfield's process. The prioritization was guided by a post-workshop stakeholder survey which ranked the various projects.

HIGHEST PRIORITY

Undertaking Proactive Planning

- Update the City's Master Plan with a Climate Change chapter to address natural resource protection
- Update the Transfer of Development Rights zoning ordinance to be more usable, particularly for aquifer recharge areas and impervious limits
- Work with the Fire Department to develop plan to mitigate wildfire risk, especially in times of drought and a digital burning permit tracking system
- Update chemical hazard inventories and spill response plans
- Update the City's business/economic development goals to consider environmental impacts and balance development impacts (impervious surfaces/runoff, traffic, etc.) throughout the City

Increasing Outreach and Supporting Vulnerable Populations

- Pursue education and outreach to businesses regarding their emergency planning efforts
- Undertake a communication needs survey for reaching vulnerable populations (elderly/care givers, disabled, disadvantaged, etc.) and improve their access to communication networks
- Create grade-level appropriate curriculum through Westfield Public Schools on topics such as native species, natural systems, resources and their protection
- Develop back-up transportation measures for elderly or less-mobile populations during community-impacted or evacuation events
- Perform an ADA accessibility assessment for buildings that support community needs
- Educate boaters/general public on measures to control aquatic invasive species

Improving Local Oversight and Coordination

- Resurrect the regional Barnes Aquifer Protection Advisory Committee (BAPAC) and/or establish a new local Westfield Aquifer Protection Committee
- Increase penalties and enforcement to prevent dumping in forests and wetland areas; explore aerial surveying to supplement identification of areas where unauthorized activities are occurring

Strengthening Facilities and Infrastructure

- Inventory emergency back-up generators and evaluate generator capacity and needs (including new generators for schools, Athenaeum)
- Replace undersized water lines in downtown to improve fire protection and hydrant service
- Replace underperforming and/or undersized culverts with appropriately sized culverts that meet Massachusetts River and Stream Crossing Standards, including road crossing for wildlife
- Enhance erosion controls/add backflow prevention on vulnerable stormwater outfalls
- Ensure any detrimental stormwater runoff from the Airport is directed away from aquifer recharge areas

Improving Flooding Resiliency

- Implement the recommendations of the Levee Upgrade Study to analyze and prioritize properties at risk of development
- Ensure all flood control structures are adequate; identify and protect floodplains and wetlands as natural flood control
- Assist and ensure business emergency response flood plans are in place (East Main Street shopping plazas in floodplain)

Acquiring/Protecting Critical Lands and Supporting Natural Systems

- Create a master list of prioritized properties to acquire or protect (floodplains, aquifer lands, wildlife habitats/corridors, recreation potential, agricultural soils, proximity to other open space etc.)
- Coordinate with land trusts, CPA committee to assist with prioritization, acquisition efforts and funding
- Identify and preserve wildlife corridors
- Limit development near aquifers and wetlands, preserve/increase vegetated buffers
- Remove invasive species in Grandmother's Garden/Chauncey Allen and Stanley Parks, other areas; explore assistance from Massachusetts Student Conservation Association

MODERATE PRIORITY

Undertaking Proactive Planning

- Change zoning to improve floodplain protections and function, including upstream areas
- Revisit and update the 2009 Downtown Economic Plan, with climate resiliency perspective
- Develop plans for retaining a certain portion of land as open space (forest or farmlands)

Increasing Outreach and Supporting Vulnerable Populations

- Train board members and decision makers on strategies promoting water quality (stormwater management, infiltration, recharge)
- Develop public/homeowner education programs (through the Athenaeum, Channel 15, Farmers Market, newspaper articles, social media, etc.) on topics such as stormwater infiltration, rain gardens, invasive species and native plantings for wildlife habitat
- Formalize neighbor helping neighbor program
- Establish quarterly Westfield Clean Up Days (instead of just once a year on Earth Day) – to pick up trash, debris, etc. near riverbanks, Rt. 20, and problem areas
- Add roadside signage to identify water resource (aquifer) protection areas
- Measure air pollution around densely populated areas, schools, vulnerable populations
- Promote community awareness of available translation services

Improving Local Oversight and Coordination

- Establish a standing Open Space Committee to champion implementation of the Open Space and Recreation Plan
- Disseminate the Open Space and Recreation Plan as required reading for policy and decision makers
- Evaluate sustainability of the existing communication networks and develop redundancy
- Develop agreements with large athletic facilities or dorms/halls for short term emergency shelter use (Roots AC, WSU)
- Survey emergency lay-down capacity and use of local businesses
- Evaluate recycling and plastic bag usage at Westfield Transfer Station

Strengthening Facilities and Infrastructure

- Investigate opportunities to improve railroad crossings, particularly at Lockhouse Road and East Mountain Road
- Flood-proof municipal basements/facilities which may be prone to flooding
- Develop north side continuation of the Columbia Greenway Rail Trail as an evacuation route from downtown and link to businesses
- Harden critical infrastructure against flooding and wind threats
- Explore feasibility for solar backup power and energy efficient cooling, including grants/loans
- Undertake a building needs survey, including severe storms and wind damage vulnerability
- Remediate traffic congestion to facilitate emergency response actions (specifically at the intersection of Southampton Road and I-90/MassPike exit 3 ramps)

Section 3 Current Concerns and Challenges Presented by Hazards and Climate Change

- Westfield-Barnes Regional Airport/ANG Base Projects
 - Coordinate with state and federal efforts or programs to increase the Airport's resiliency
 - Maintain pavement and staging areas for use in emergencies

Improving Flooding Resiliency

- Acquire properties adjacent to levees to manage vegetation and limit encroachment, flood water dispersion, pressure
- Undertake hydraulic assessment and prioritization for protection and flood storage enhancement
- Identify incised stream channels to restore floodplain access and reduce flooding risk
- Require new construction in flood zones (such as along East Main Street) to meet flooding protections codes and standards
- Identify and inspect those facilities, bridges and culverts that need immediate work in low lying areas prone to flooding
- Mitigate flooding through extension of floodplain zones (100-year levels)

Acquiring/Protecting Critical Lands and Supporting Natural Systems

- Acquire land to preserve floodplain and provide recreation opportunities near population centers; specifically identified was 146 Main St. (portion)
- Acquire property along East Main Street corridor as flood zone buffer
- Add pollinator gardens to enhance wildlife corridors
- Develop Community Gardens
- Establish native plants in wooded area of Grandmother's Garden/Chauncey Allen Park (outside of the flower garden)
- Explore incentives to encourage new agriculture opportunities
- Reduce the use of chemicals on roads and landscapes; explore alternatives to pesticides

Improving the City's Tree Canopy

- Develop a comprehensive Tree Plan, including GIS database of inventory, assessment (individual trees and general canopy quality) and planting plan
- Increase the urban/street tree canopy, especially in environmental justice or disadvantaged neighborhoods for (cooling, aesthetics, etc.)
- Expand tree maintenance/management activities to increase resiliency (tree health and structure, minimizing threats to power line sustainability, etc.)

LOWER PRIORITY

- Install bicycle rental stations to encourage bike usage downtown

Section 3 Current Concerns and Challenges Presented by Hazards and Climate Change

- Explore local initiatives to prohibit the sale/planting of invasive ornamental plants (to supplement the Massachusetts state ban)
- Adopt Right-to-Farm legislation/establish a local Agricultural Commission
- Designate boat ramps
- Add rooftop gardens to small business buildings

Section 4

Workshop Details

4.1 Workshop Participants

A list of those invited to participate in the online virtual workshops is included in Appendix C. The following provides a list of participants and affiliation. Members of the workshop project team that had a role are also documented.

4.1.1 Workshop #1 Attendance

Workshop Host: Jay Vinskey; Westfield City Planner; Workshop Facilitator: Gabrielle Belfit, MVP Certified Provider – Tighe & Bond; Workshop Presentation: Emily Tully - Tighe & Bond Q&A Moderator: Kristin Dippold - Tighe & Bond

Table 5: Workshop #1: May 12, 2020

Westfield Societal Assets Webinar – May 12, 2020, 1:00 PM

Attendee	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Kate Phelon	Chamber of Commerce
Bill Carellas	Planning Board Chair
Peter Miller	Community Development Director
Doug Hutcheson	DCR Service Forester
Bridget Matthews-Kane	City Councilor, Ward 3
Kristen Mello	WRAFT (Westfield Residents Advocating for Themselves), City Councilor
Christina Jones	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Mary Ann Babinski	Former City Councilor
Bruce Bussiere	Baystate Noble Hospital
Corrin Meise-Munns	Pioneer Valley Planning Commission
Michael Sweeney	United Way of Pioneer Valley
Chris Rogers	Westfield Public Schools
Joe Mitchell	Eversource
Connie Adams	Yellow Stonehouse Farm
Kate Deviny	Athenaeum Director
Cheryl Crowe	Hampton Ponds Association, Planning Board
Heather Stayton	DPW Water Systems Engineer

Section 4 Workshop Project Team

4.1.2 Workshop #2 Attendance

Workshop Host: Jay Vinskey; Westfield City Planner; Workshop Facilitator: Gabrielle Belfit, MVP Certified Provider – Tighe & Bond; Workshop Presentation: Emily Tully - Tighe & Bond Q&A Moderator: Kristin Dippold - Tighe & Bond

Table 6: Workshop #2: May 19, 2020
Westfield Infrastructural Assets Webinar – May 19, 2020, 1:00 PM

Attendee	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Bill Carellas	Planning Board Chair
Peter Miller	Community Development Director
Tony Contrino	Westfield Gas & Electric
Bridget Matthews-Kane	City Councilor, Ward 3
Hillary McEwan	Stanley Park
Lt Col Jeremy Dugan	104 th Fighter Wing
Kristen Mello	WRAFT (Westfield Residents Advocating for Themselves), City Councilor
Christina Jones	Springfield Water and Sewer
Bob Weaver	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Paul Cacolice	Friends of Columbia Greenway Rail Trail
Mary Ann Babinski	Former City Councilor
Agma Sweeney	Westfield Spanish American Association, Former City Councilor
Matthew Gamelli	Engineering Department
Al Giguere	Westfield Flood Control Commission
Emily Slotnick	Pioneer Valley Planning Commission
Chris Willenborg	Westfield-Barnes Regional Airport
Mark Cressotti	City Engineer
Chris Rogers	Westfield Public Schools
Joe Mitchell	Eversource
Ben Warren	Fire Department
Cheryl Crowe	Hampton Ponds Association, Planning Board
Heather Stayton	DPW Water Systems Engineer

Section 4 Workshop Project Team

4.1.3 Workshop #3 Attendance

Workshop Host: Jay Vinskey; Westfield City Planner; Workshop Facilitator: Gabrielle Belfit, MVP Certified Provider – Tighe & Bond; Workshop Presentation: Emily Tully - Tighe & Bond Q&A Moderator: Kristin Dippold - Tighe & Bond

Table 7: Workshop #3: May 26, 2020
Westfield Economic Assets Webinar – May 26, 2020, 1:00 PM

Attendee	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Kate Phelon	Chamber of Commerce
Peter Miller	Community Development Director
Tony Contrino	Westfield Gas & Electric
Bridget Matthews-Kane	City Councilor, Ward 3
Hillary McEwan	Stanley Park
Christina Jones	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Tom Hibert	Health Department
Connie Adams	Yellow Stonehouse Farm
Carmel Steger	Friends of Columbia Greenway Rail Trail
Kimberly Puffer	Domus, Inc.
Paul Cacolice	Friends of Columbia Greenway Rail Trail
Lt Kevin Bard	Community Policing Division
Mary Ann Babinski	Former City Councilor
Agma Sweeney	Westfield Spanish American Association, Former City Councilor
Mark Cressotti	City Engineer
Joe Mitchell	Eversource
Heather Stayton	DPW Water Systems Engineer

Section 4 Workshop Project Team

4.1.4 Workshop #4 Attendance

Workshop Host: Jay Vinskey; Westfield City Planner; Workshop Facilitator: Gabrielle Belfit, MVP Certified Provider – Tighe & Bond; Workshop Presentation: Emily Tully - Tighe & Bond Q&A Moderator: Kristin Dippold - Tighe & Bond

Table 8: Workshop #4: June 2, 2020
Westfield Environmental Assets Webinar – June 2, 2020, 1:00 PM

Attendee	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Kate Phelon	Chamber of Commerce
Chris Willenborg	Westfield-Barnes Regional Airport
Peter Miller	Community Development Director
Jake Lehan	Westfield River Watershed Association
Bridget Matthews-Kane	City Councilor, Ward 3
Hillary McEwan	Stanley Park
Christina Jones	Springfield Water and Sewer
Bob Weaver	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Patty Gambarini	Pioneer Valley Planning Commission
Connie Adams	Yellow Stonehouse Farm
Carmel Steger	Friends of Columbia Greenway Rail Trail
Kimberly Puffer	Domus, Inc.
Emily Boss	Franklin Land Trust
Kristen Mello	WRAFT (Westfield Residents Advocating for Themselves), City Councilor
Mary Ann Babinski	Former City Councilor
Agma Sweeney	Westfield Spanish American Association, Former City Councilor
Mark Cressotti	City Engineer
Joe Mitchell	Eversource
Cheryl Crowe	Hampton Ponds Association, Planning Board
Heather Stayton	DPW Water Systems Engineer

4.2 Acknowledgements

Funding for the CRB workshop was provided through a Massachusetts EEA Municipal Vulnerability and Preparedness Planning Grant during Fiscal Year 20.

Many thanks to Jay Vinskey, Westfield Planning Department for serving as the lead for the MVP Planning Process. A special thanks to all MVP Core Team members and everyone who participated in the CRB workshops as presenters, facilitators and stakeholders. A special thanks for everyone's patience to complete the MVP in a virtual workshop setting.

4.3 Report Citation

Tighe & Bond (2020). *Community Resilience Building Workshop Summary of Findings*, City of Westfield, Massachusetts.

APPENDIX A

Westfield MVP Core Team Kickoff Meeting Agenda

To: MVP Core Team
LOCATION: Westfield City Hall
DATE: March 12, 2020
TIME: 10:00-11:45 AM

10:00 AM Welcome & Introductions

10:05 AM Presentation

Background
MVP Grant and Workshop Goals and CRB Process
Guidelines/Guidance
More about the workshops
Deliverables
What does Westfield get from this process?
Roles & Responsibilities
Schedule

10:30 AM Discussion Item: Natural Hazard Risks

10:45 AM Discussion Item: Community Asset Update

11:00 AM Discussion Item: Stakeholders and Workshop Dates

11:30 AM Next Steps

11:45 AM Conclude

Westfield MVP Core Team Kickoff Meeting Summary

To: File

ATTENDEES: See Sign In Sheet; Gabrielle Belfit and Emily Tully, Tighe & Bond

FROM: Gabrielle Belfit and Emily Tully, Tighe & Bond

DATE: March 16, 2020

On Thursday, March 12, the Westfield Municipal Vulnerability Preparedness (MVP) Core Team kick-off meeting was held in Room 201 at Westfield City Hall (59 Court Street). The purpose of the meeting was to introduce the MVP process, goals, and schedule to the Core Team, coordinate roles and responsibilities, and begin discussion on natural hazard risks, community assets, workshop stakeholders, formats, and dates, and next steps.

The following are comments and notes from this meeting. A sign-in sheet, pdf of the PowerPoint presentation slides, and meeting agenda are attached.

- Introductions/Background

After the Core Team was introduced, Tighe & Bond provided background information on the MVP program being formed through Executive Order 569 in 2016 and funded through the Environment Bond Bill in 2018. Over 80% of Massachusetts communities are now participating in the MVP program through Planning Grants or Action Grants, including Westfield, which was awarded \$32,000 for the MVP Community Resilience Building (CRB) Workshop process. Once Westfield completes the MVP Plan process, the City will be eligible for Action Grant funding to implement priority mitigation actions identified in the MVP Plan.

The MVP program looks at natural hazards that might impact assets in the City, and how those hazards will be affected by climate change. Climate change has already affected the overall temperature, length of growing season, and precipitation patterns in Massachusetts, and is related to and exacerbated by development. Climate change data used in the MVP process was developed by the Northeast Climate Adaptation Science Center (NECASC) on a basin level and can be found at ResilientMA.gov.

The MVP and CRB Workshop Process goals include building resiliency and preparedness for more frequent and intense weather events through improving understanding of a community's strengths and vulnerabilities and improving pre-event planning, response and recovery, and identifying long-term mitigation actions. The steps of the Process include establishing the Core Team, completing an evaluation of natural hazard risks, community assets, and multi-hazard vulnerability mapping, holding one or two workshops, drafting an MVP report, holding a listening session, and finalizing the MVP report.

MVP principles and the Community Resilience Building (CRB) workshop process were introduced: MVP is a community-led and accessible process that leverages existing partnerships and efforts, mainstreams climate change, addresses social equity, and frames coordinated statewide efforts. Input from groups that should be considered in the MVP planning process include vulnerable populations, environmental justice populations, watershed groups, universities, neighboring communities, and faith-based organizations.

Roles and responsibilities of the Core Team and MVP provider were discussed, including anticipated deliverables and commitments of the Core Team to review and provide input on work products.

Andrew Smith, the MVP Regional Coordinator for the Greater Connecticut River Valley Region, provided clarification on the public listening session format – previously had been presented as part of a City Council or Planning Board hearing, but MVP program would like to move toward having a special meeting in a more comfortable setting to discuss MVP planning results with the community, such as an auditorium at a school.

- Natural Hazard Risks

The natural hazard risks to Westfield will be evaluated during the MVP process, from a climate change perspective. In addition to natural hazards assessed in the City's HMP, the Massachusetts State Hazard Mitigation Plan looked at invasive species. The MVP will expand the HMP natural hazard risk assessment by adding events that have occurred since 2017, and evaluating the probability of future events occurring based on a comprehensive look at climate change. Per Andrew Smith, the HMP looks at historical risk, and the MVP is a chance to reflect, and use the NECASC data to address how climate change in the Westfield River Basin will impact the risk from natural hazards in the future.

The NRCS is currently evaluating two large flood control dams in the City from a climate change perspective; FEMA map updates were discussed, per statute, those are not future-looking and are only based on historical weather data. Approximately 25% of the Core Team was on the HMP Team – the rest of the Core Team should review the HMP, particularly Chapter 3 (Natural Hazards) and Chapter 4 (Critical Facilities).

- Community Asset Update

The City's existing HMP includes an inventory of community assets, identified by FEMA categories of People, Built Environment, and Economic Assets. The MVP will update the community asset inventory in the categories of Societal Assets, Infrastructural Assets, Economic Assets, and Environmental Assets.

Andrew Smith clarified distinctions between MVP and HMP processes, as the City's grant award from EEA was for MVP planning only, and does not include an HMP update. The MVP process will focus on climate change data in the Westfield River Basin.

- Mitigation Strategies

Nature based solutions for mitigation actions are preferred, such as open space preservation to mitigate riverine flooding, ecosystem restoration to mitigate erosion, and low impact development to mitigate stormwater flooding and heat island effects. Nature based solutions provide both mitigation and co-benefits such as enhanced safety and quality of life.

- Workshop Stakeholders and Logistics

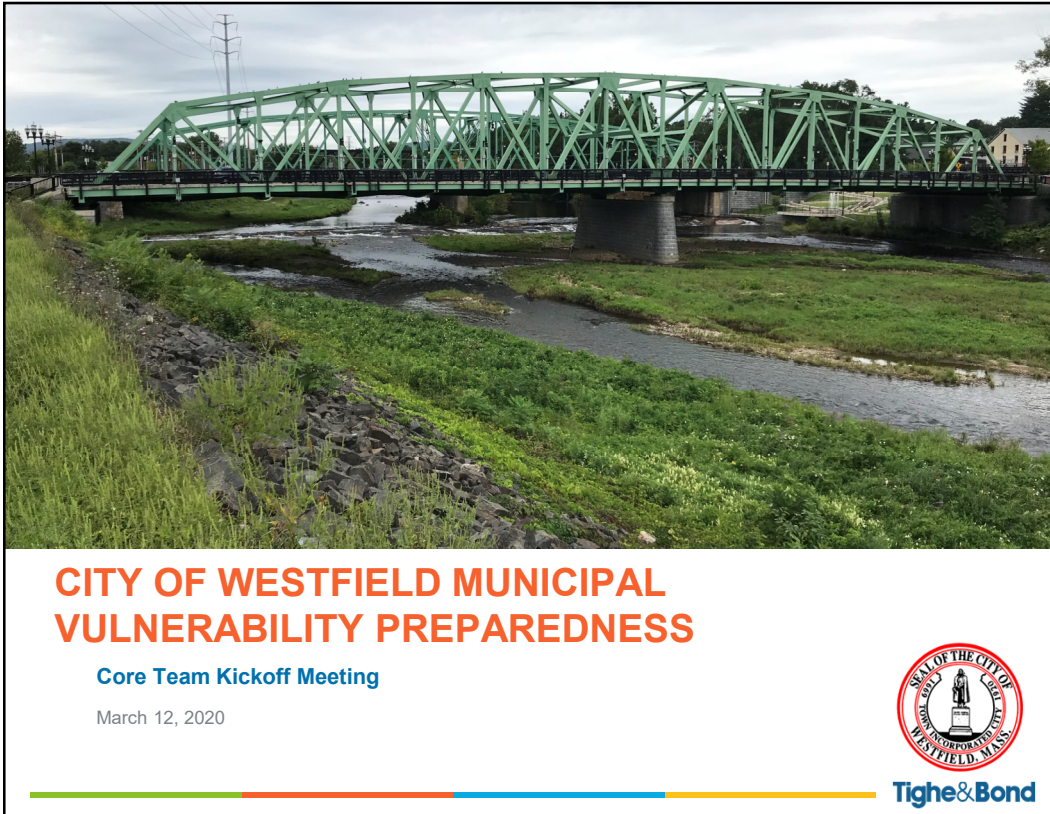
Potential workshop goals were discussed, such as starting with projects identified in the 2016/2017 HMP and evaluating them from a climate change perspective or using the workshops to examine how to integrate climate change planning into other City Plans and programs.

The CRB workshop stakeholders goal is attendance by 60 people. After a discussion of who to invite, it was determined that each Core Team member would identify 5 stakeholders by March 20, 2020. The language and format of the invitation were also discussed, with a suggestion to include an MVP fact sheet for consistent messaging. The City's Emergency Management Director, Jim Wiggs, pointed out that major employers in the City have already been involved in Emergency Management Planning, and asked if we could get participant input before the workshop. Tighe & Bond discussed pre-workshop interviews, Core Team will identify those stakeholders that should be reached out to for interviews.

Workshop deadlines may be delayed due to the Coronavirus and associated prohibitions on large group meetings; Andrew Smith said that he would provide an update on the MVP program's guidance on meeting format and deadline extensions.

- Next Steps
 - Core Team to each identify 5 stakeholders to add to list started by Jay by March 20 (completed)
 - Emily Tully to contact and interview identified stakeholders by March 25
 - Core Team meeting (conference call) by end of March (25th) regarding goals, format and date for workshop(s)
 - Impacts of COVID-19 are likely to impact this schedule.

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1



2

BACKGROUND

EXECUTIVE ORDER 569 9.16.16



ENVIRONMENTAL BOND BILL 8.21.18

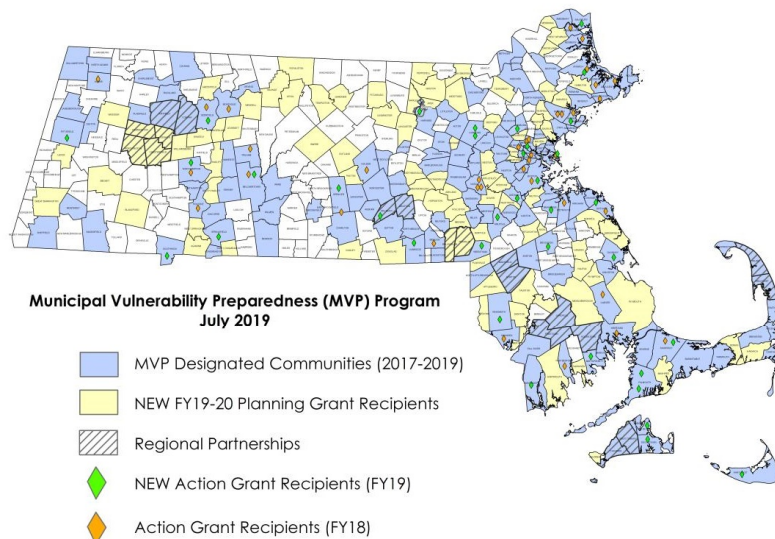


- \$2.4 billion bond bill with focus on climate change resiliency
- Over \$500 million authorized for climate change adaptation
- Codifies EO 569, including the MVP Program

Tighe&Bond

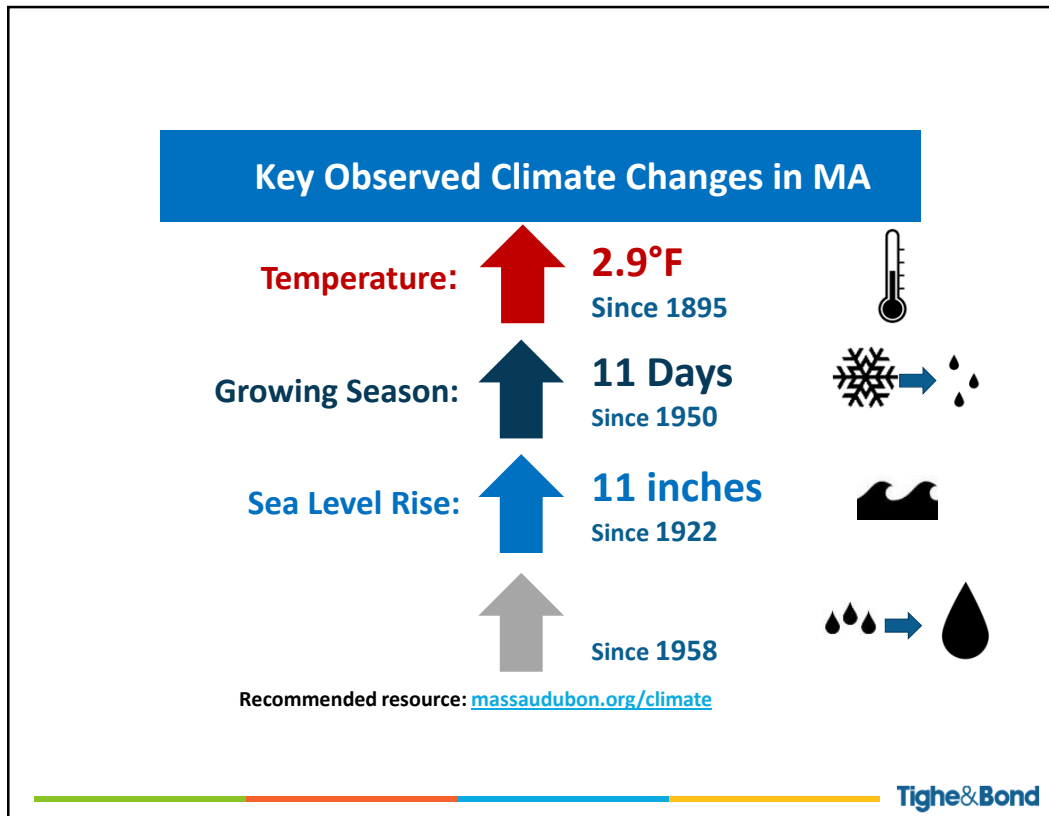
3

BACKGROUND

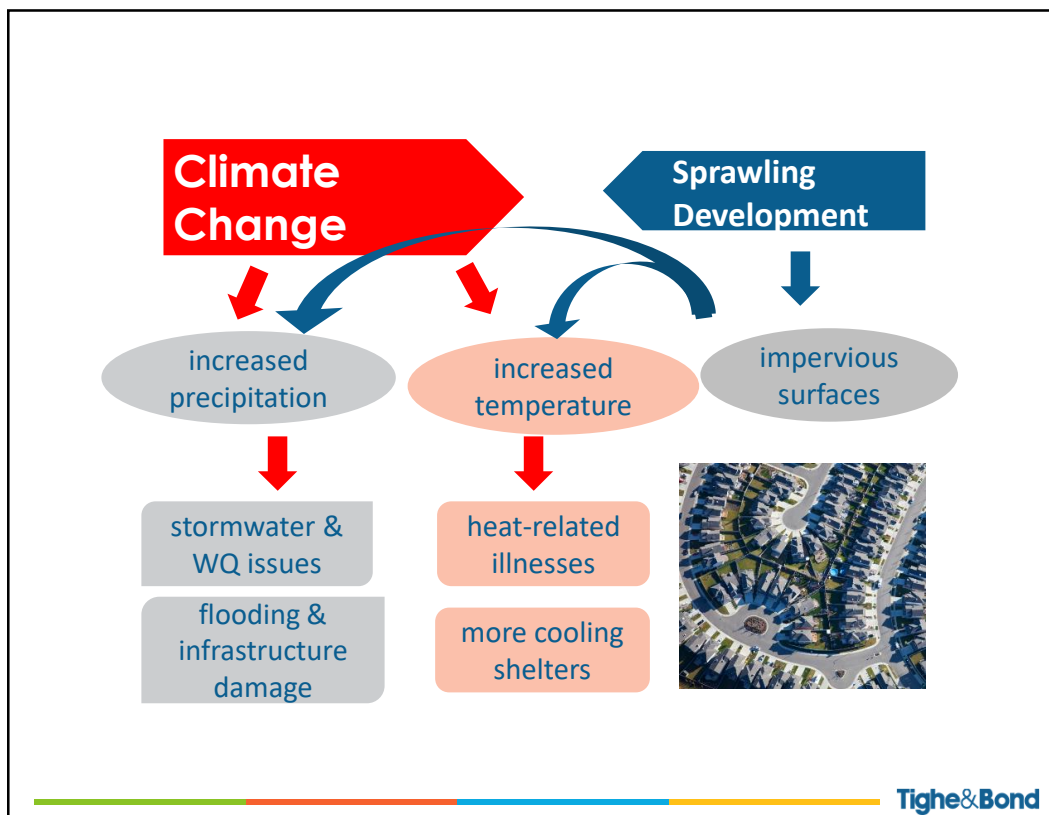


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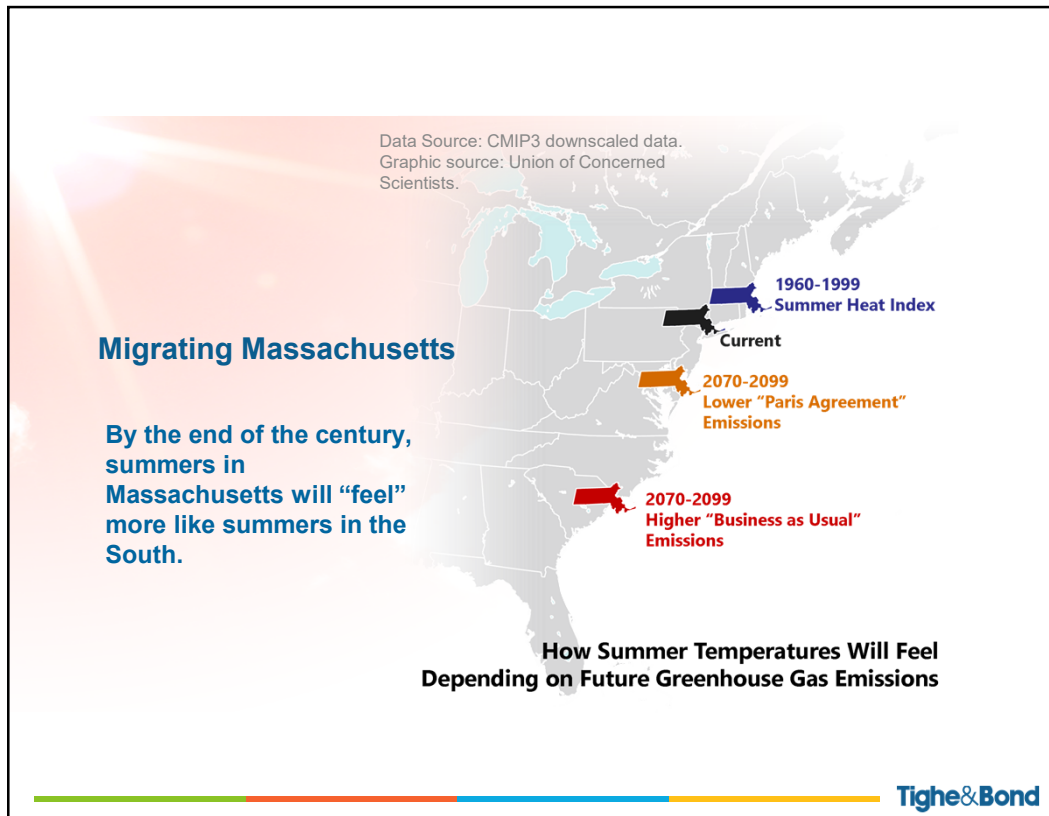
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5



6



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MVP GRANT AND WORKSHOP PROCESS GOALS

Build Resilience and Preparedness:

- Understand community assets and vulnerabilities
- Plan for more frequent and intense weather events
- Improve pre-event planning, response & recovery, and identify long-term mitigation actions

A prepared and resilient Westfield will be able to maintain functions, protect its residents, and be ready for future storm events and a changing climate



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MVP GRANT AND CRB PROCESS

1. Establish Core Team
2. Complete MVP Evaluation/Assessment
 - Natural Hazard Risks
 - Community Assets
 - Multi-Hazard Vulnerability Mapping
3. Hold one or two workshops
4. Draft MVP Report
5. Hold Listening Session
6. Final MVP Report



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MVP Principles

- **Community-led process** that employs local knowledge and buy-in
- **Accessible**
- **Utilizes partnerships** and leverages existing efforts
- **Mainstreams** climate change
- Addresses **social equity**, vulnerabilities, and strengths
- **Frames** coordinated statewide efforts.



Springfield MVP Workshop

www.communityresiliencebuilding.com

Tighe&Bond

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WHAT ARE THESE WORKSHOPS...?



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Copies available

Community Resilience Building WORKSHOP GUIDE



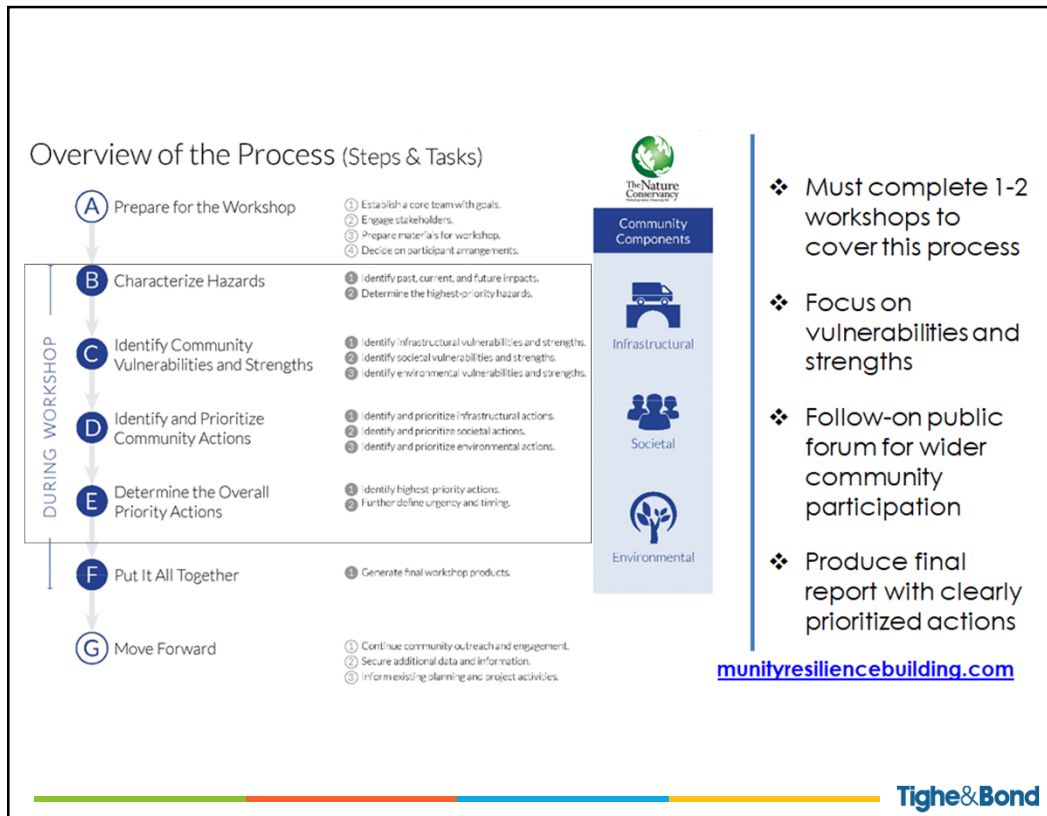
www.CommunityResilienceBuilding.org

ResilientMA.org



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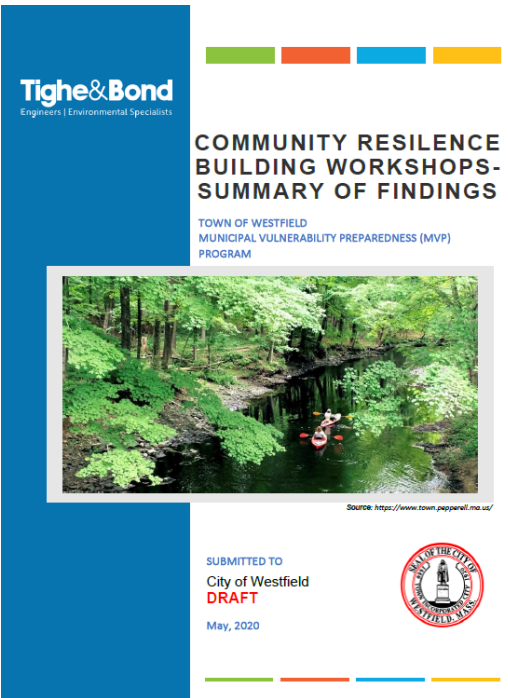
12



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DELIVERABLES


- MVP Report**
- Workshop Summary**
- Top Natural Hazards**
- Top Mitigation Project**



COMMUNITY RESILIENCE BUILDING WORKSHOPS-SUMMARY OF FINDINGS

TOWN OF WESTFIELD
MUNICIPAL VULNERABILITY PREPAREDNESS (MVP) PROGRAM

SUBMITTED TO
City of Westfield
DRAFT
May, 2020



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WHAT DOES WESTFIELD GET FROM THIS PROCESS?



**MVP Community Designation =
Eligibility for MVP Action Grants**



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WHY ARE YOU HERE?

See roles & responsibilities handout

- **Kickoff Meeting**
- **Conference calls to review / provide input on work products**
- **Attend the MVP Workshop**
- **Review draft reports & provide comments**
- **Attend the final listening session**



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SCHEDULE

Task	Date
1. Kickoff Meeting and MVP Focus	March 2020 (Core Team)
2. Engage Stakeholders	March 2020 (Interviews & Core Team call)
3. MVP workshops	April 2020 (Core Team attendance)
4. Draft and Final MVP Report	April - May 2020 (Core Team review)
5. Public Community Listening Session	May 30 2020 (Core Team to present)



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DISCUSSION ITEM: NATURAL HAZARD RISKS

Hazard Identification and Risk Analysis				
Type of Hazard	Location of Occurrence	Probability of Future Events	Impact	Hazard Risk Index Rating
Flooding- 100 Year	Medium	Very Low	Critical	2- High
Flooding- Localized	Small	Low	Limited	3- Medium
Severe Snowstorms/Ice Storms	Large	High	Critical	1-Very High
Severe Thunderstorms	Large	Very High	Minor	4-Low
High Wind	Large	High	Limited	4-Low
Tornadoes	Large	Low	Critical	4-Low
Microburst	Large	High	Limited	3-Medium
Hurricanes	Large	Very Low	Minor	4-Low
Wildfire / Brushfire	Large	Moderate	Minor	3-Medium
Earthquakes	Large	Low	Catastrophic	4-Low
Dam Failures	High hazard-Large	Low	Minor/Catastrophic	5-Very Low
Drought	Large	Very High	Minor	5-Very Low



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DISCUSSION ITEM: COMMUNITY ASSETS

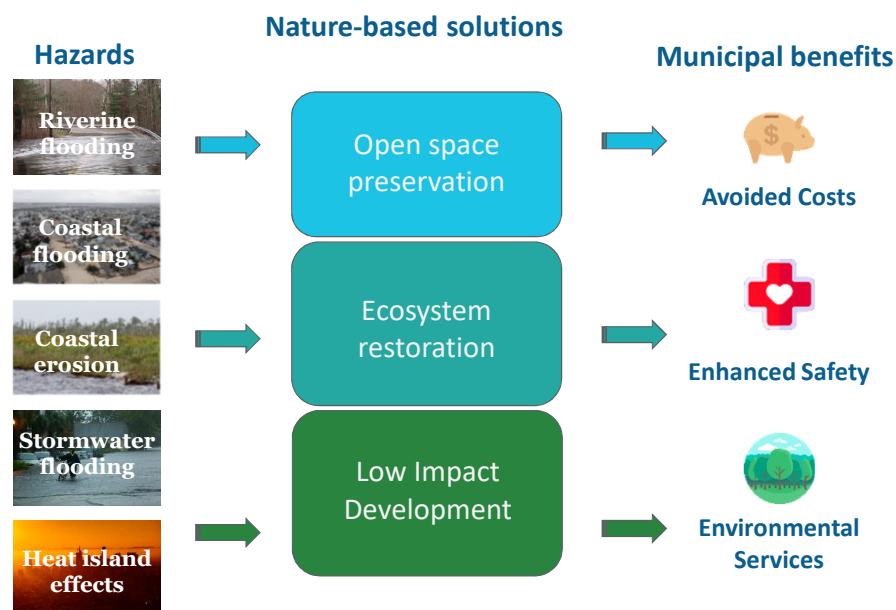
FEMA COMMUNITY ASSET CATEGORIES	CRITICAL SECTORS	CHARACTERISTICS OF COMMUNITY ASSETS
People- Societal Assets	Schools, Vulnerable Populations, Cultural and Historical Facilities	Areas of greater population density, or population with unique vulnerabilities or less able to respond and recover during a disaster.
Built Environment- Infrastructural Assets	Critical Municipal Facilities, Water, Wastewater, Energy, Stormwater, Transportation	Critical facilities necessary for a community's response to and recovery from emergencies, infrastructure critical for public health and safety, economic viability, or for critical facilities to operate.
Economic Assets	Seaport, Business District, Food and Medical Supplies, Building Supplies	Major employers, primary economic sectors and commercial centers where loss or inoperability would have severe impact on the community and ability to recover from a disaster.
Environmental Assets	Natural Resources	Areas that provide protective function to reduce magnitude of hazard impact and increase resiliency. Areas of sensitive habitat that are vulnerable to hazard events, protection of areas that are important to community objectives, such as the protection of sensitive habitat, provide socio-economic benefits, etc.



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DISCUSSION ITEM: Mitigation Strategies



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DISCUSSION ITEM: WORKSHOP GOALS

- Focus on top natural hazard prioritized in the HMP to further define Westfield's vulnerabilities and strengths.
- Review priorities and next steps in the 2017 Hazard Mitigation Plan (HMP). Further discuss, define, and strategize on how to accomplish the highest priority projects.
- Use the CRB Workshops to identify next steps and/or augment specific planning needs and priorities already identified in the 2017 HMP.
- Examine how to integrate climate change planning into other City plans and programs identified in the HMP Capabilities Assessment.
- Provide community outreach opportunity for Westfield's Hazard Mitigation Planning.



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YOUR CHANCE FOR INPUT TODAY ON LOGISTICS...

- **Plan for communication & workshops**
 - Identify stakeholders
 - Public notification- City Website, Press Releases, direct email
 - Logistics:
 - Location
 - Size
 - Facilitators and Scribes



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NEXT STEPS

- **Finalize Workshop Goals**
- **Finalize Dates for Workshop(s) and Listening Session**
- **Develop stakeholders list for Workshop**
- **Assign workshop support staff**



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OPEN DISCUSSION & QUESTIONS

Contact Information:

- **Gabrielle Belfit, CFM, Senior Environmental Scientist**
 - GCBelfit@tighebond.com
 - 508.304.6362
- **Emily Tully, Environmental Planner**
 - ERTully@tighebond.com
 - 413.875.1622



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**City of Westfield, MA
MVP Core Team
Sign-in Sheet**

Date: March 12, 2020 **Time:** 10:00 AM

Location: City Hall

RE: MVP Planning Grant

Attendees:

Name (please print)	Representing	Email
Joe Kietner	Westfield DRV	joseph.kietner@cityofwestfield.org
Ben Watten	Westfield Fire	fireprevention@cityofwestfield.org
Kailyn LaPointe	WSU Intern Planning Department	klapointe7048@westfield.ma.edu
Emily Tully	Tighe + Bond	etully@tighebond.com
MARY ANN BABINSKI	Westfield Residents	mababinski@comcast.net
Peter Miller	City of Westfield Community Development	p.miller@cityofwestfield.org
Jeremy Cigal	Westfield Engineering	j.cigal@cityofwestfield.org
MICHAEL MCCABE	WESTFIELD POLICE DEPT	M.MCCABE@CITYOFWESTFIELD.ORG
Meredith Borenstein	Westfield Conservation Comm.	meredith.borenstein@cityofwestfield.org
MATTHEW GAMELLI	WESTFIELD ENGINEERING	m.gamelli@cityofwestfield.org
THOMAS HIBERT	WESTFIELD HEALTH DEPT	T.HIBERT@cityofwestfield.org

City of Westfield, MA
MVP Core Team
Sign-in Sheet

Date: March 12, 2020 **Time:** 10:00 AM

Location: City Hall

RE: MVP Planning Grant

Attendees: The following were also in attendance but did not sign in

[illegible]

Core Team Meeting to review CRB Draft Summary of Findings Report

Attending 6/9/2020	Name	Title/Department/Affiliation
X	Jay Vinskey	City Planner
	Ben Warren	Fire Dept
	David Billips	DPW Director
X	Heather Stayton	DPW Water Division
	Jeremy Cigal	Engineering Department
	Jim Wiggs	Emergency Management Director
	Joe Rouse	Director Public Health
X	Joseph Kietner	DPW Stormwater Coordinator
	Lawrence Valliere	Chief of Police
X	Mary Ann Babinski	Former City Councilor
X	Mark Cressotti	City Engineer
X	Matthew Gamelli	Engineering Department
X	Meredith Borenstein	Conservation Coordinator
	Michael McCabe-	Police Captain
	Pat Egloff	Fire Chief
X	Peter Miller	Community Development Director
	Thomas Hibert	Public Health
X	Chris Rogers	Westfield Public Schools

APPENDIX B

MVP Grants – Virtual Public Engagement During COVID-19

TO: Andrew Smith, MVP Regional Coordinator, Executive Office of Energy and Environmental Affairs

FROM: Emily Tully, Environmental Planner, Tighe & Bond
Gabrielle Belfit, Senior Environmental Scientist, Tighe & Bond

COPY: Jay Vinskey, City Planner, Westfield

DATE: April 14, 2020

Due to the ongoing COVID-19 crisis, the Municipal Vulnerability Preparedness (MVP) program will need to be altered to accommodate social distancing and stay-at-home advisories. A key component to the MVP program is public engagement; however, during this time, meeting the various requirements for public engagement within the MVP program will require a multi-modal approach.

To meet the requirements of the program, it is necessary that a community is informed and engaged. The virtual public engagement plan proposed below recognizes equitable engagement within the MVP process as a top priority. The engagement methods proposed below allow participation from key stakeholders as well as vulnerable populations.

The MVP Planning Grant process typically includes at least three in-person, group meetings: Core Team Meeting, the Community Resilience Building (CRB) Workshop, and Public Listening Session. The sections below outline Westfield's proposed strategy to virtually meet the goals of the MVP engagement process. Westfield is seeking confirmation from EEA that the proposed virtual engagement strategy meets the requirements of the MVP contract.

Core Team Meetings

Typical Format	Proposed Format
In-person meeting at City Hall with representatives from municipal departments and any other core stakeholders.	Use Skype virtual meeting software to conduct meetings with representatives from the Core Team. Pre-meeting materials will be distributed electronically.

CRB Workshop

Typical Format	Proposed Format
One 8-hour, or two 4-hour, in person workshops with representatives from municipal departments, local organizations, State agencies, surrounding communities, and other stakeholders	Westfield's MVP provider will host four 1.5-hour Virtual CRB Workshop Webinars using Skype with identified stakeholders and the Core Team. These virtual workshops will address four categories: infrastructural, societal, natural environment, and economic. Stakeholders will be able to sign up for as many of the four workshops as they are interested in and able to participate in. During the workshop sign up process, stakeholders will have the

	<p>opportunity to indicate if they need materials to be translated, if they will only be able to participate via phone and if they have internet access and will be participating online. Workshop preparation materials will be distributed to participants prior to the webinar including instructions as to how to access the webinar. The Skype webinars will include question and answer periods, live polling and be recorded for later viewing. Material distribution will be via email, regular mail if requested and posted for downloading on a dedicated Community MVP website. After each webinar, the recorded meeting will be posted on the website. A post- workshop survey will be distributed to stakeholders via email and regular mail if requested. The survey may be completed online, via email, or completed surveys may be mailed in. If requested, meeting material translation will be provided in Russian, Portuguese, Spanish or Mandarin. If a stakeholder cannot participate in any of the Virtual CRB Workshop Webinars, they will still be offered the opportunity to respond to the surveys, submit comments on the slides and recorded meetings, and comment on the draft MVP Summary of Findings Report via the Community MVP website.</p>
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Public Listening Session

Typical Format	Proposed Format
Daytime or evening meeting open to all members of the public	Provide listening session meeting materials to stakeholders and the Core Team via email and post on the MVP community website including agenda, draft MVP report and instructions to access the Listening Session. Hold one, hour long meeting using Skype. The final draft MVP Summary of Findings Report will be available post-meeting for a 14-day review period to allow for additional comment from members of the community.

Overview of Proposed Virtual MVP Engagement Process

To meet the requirements of the three in-person meetings outlined above, Westfield will work with their MVP Provider, Tighe & Bond, to complete the following virtual engagement process:

1. **Provide an online space for MVP materials:** A municipal-specific MVP website will be designed and hosted by Tighe & Bond, linked from the City's official website, to provide all necessary materials for completing the MVP process. Reference material such as the Massachusetts State Hazard Mitigation and Climate Action Plan, ResilientMA.org, the MVP Workshop Guide, and the municipality's Hazard Mitigation Plan will be available for public access on this website. Municipal-specific information such as maps and the workshop matrix will also be provided via the online website or through email. Recorded meetings and Virtual CRB Workshop Webinars and the draft and final MVP Summary of Findings Report will be posted to the website.
2. **Survey to identify strengths and vulnerabilities:** Tighe & Bond will use Survey Monkey to create and distribute a survey to members of the Core Team and identified stakeholders. The survey questionnaire results will be used to develop a master list of strengths and vulnerabilities in the community. The survey will be distributed via email, the MVP website, or regular mail if requested.
3. **Distribute recorded presentation on background information:** Tighe & Bond will develop a pre-workshop video including information on climate change and the MVP process. The short video will be recorded and posted on the MVP website for viewing or downloads. This presentation will be made available to workshop participants for independent viewing prior to attending the Virtual CRB Workshop Webinars.
4. **Distribute Virtual CRB Workshop Webinar materials:** Tighe & Bond will develop all materials necessary to participate in the workshop. Materials will be distributed via email, posted on the MVP website or sent by regular mail if requested. Materials will include: (1) a partially, pre-populated CRB Matrix according to the Strengths and Vulnerabilities survey, (2) applicable slides to discuss natural hazard risk for the specific community asset sector featured in the workshop, and (3) a map of the municipality and featured community assets.
5. **Hold Webinars to meet the CRB Workshop requirement:** Tighe & Bond will develop and host 4 separate Virtual CRB Workshop Webinars using Skype. Each meeting will feature one of the Community Asset Categories: infrastructural, societal, natural environment, and economic. During the workshop, attendees will brainstorm mitigation actions for specific community assets, addressing top priority hazards. Stakeholders will be able to sign up for as many of the workshops as they are interested in attending.
6. **Prioritization Polling:** After the completion of all four Virtual CRB Workshop Webinars, Tighe & Bond will develop and distribute a Survey Monkey poll to the Core Team and stakeholders. This poll will include a list of mitigation actions developed during the webinar. Individuals will be asked to rank actions one through five in each of the four categories. This will develop a draft prioritization.
7. **Core Team Meeting:** Tighe & Bond will host a final Core Team meeting via Skype. The goal of the meeting will be to review the results of the prioritization polling and discuss the first Draft MVP Summary of Findings Report.
8. **Distribute Listening Session materials:** Tighe & Bond will distribute listening session materials to Core Team members and stakeholders electronically or through mailings if requested. Information about the Listening Session and directions to participate will also be publicly posted. Materials will include an agenda and copy of the Draft MVP Summary of Findings Report.

9. **Hold Listening Session:** If in-person meetings remain not practical, Tighe & Bond and the Core Team will host a live, one-hour Listening Session on Skype to present the draft MVP Summary of Findings Report and allow time for a Question & Answer session for community input. The Final Draft MVP Summary of Findings Report will be available on the MVP website for a 14-day public comment period. The session will also be broadcast or re-broadcast on the City's community access television.
10. **MVP Website:** Tighe & Bond will post the recorded Listening Session, Question & Answer dialog, and Final MVP Summary of Findings Report on the MVP website.

APPENDIX C

Name	Community	Work Phone	Cell Phone	Email
Jeremy Dugan*	104th Fighter Wing	413-568-9151 ext 698-1737	413-454-4985	jeremy.j.dugan2.mil@mail.mil
	A Duie Pyle	413-564-8170		
	Amelia Park Childrens Museum	413-572-4014		
Mary Nathan	American Red Cross, Disaster Program Manager	(413) 233-1017	265-8530; 233-1017	Mary.nathan@redcross.org
	Arbor Mobile Home Park	401-617-6550		
Beth Cardillo	Armbrook Village, Executive Director	413-568-0000		info@armbrookvillage.com
Amanda Bruso	Barnes ANGB			amanda.c.bruso.mil@mail.mil
Acting Manager*	Barnes Municipal Airport, Airport Manager	413-572-6275		
Bruce Bussiere*	Baystate Noble	568-2811 ext 5558	579-2531	bruce.bussiere@baystatehealth.org
	Big Y	413-562-5230 (E Main)	413-568-1001 (E Sliver)	
	Bonniventure Farms Inc			
Bill Parks	Boys & Girls Club, Director	(413) 562-2301		
Thomas Raymond	C&S Wholesale	413-564-2077	860-882-8835	thraymon@cswg.com
Susan West	Carson Center	413-572-4132		swest924@gmail.com
Kate Phelon*	Chamber of Commerce	413-568-1618	413-636-1367	kphelon@westfieldbiz.org
Lori Charette	City Animal Shelter/Control	564-3129		L.Charette@cityofwestfield.org
Peter Miller	City Community Development Director			p.miller@cityofwestfield.org
Tom Sharp	City Community Preservation Comm Chair/Cons Comm			thomas.earl.sharp@gmail.com
David Doe	City Conservation Commission Chair			david.doe@cityofwestfield.org
Meredith Borenstein	City Conservation Coordinator			Meredith.Borenstein@cityofwestfield.org
Tina Gorman*	City Council on Aging/Senior Center Director	562-6435		t.gorman@cityofwestfield.org
Dave Billips*	City DPW Director	642-9325		<a href="mailto:<d.billips@cityofwestfield.org>"><d.billips@cityofwestfield.org>
Scott Hathaway	City DPW/Natural Resources			scott.hathaway@cityofwestfield.org
Jim Wiggs	City Emergency Management Dir	568-1222	977-9189	<a href="mailto:<j.wiggs@cityofwestfield.org>"><j.wiggs@cityofwestfield.org>
Donald Humason	City Mayor			mayor.humason@cityofwestfield.org
Christopher Rogers*	City Public Schools	572-6418	246-9740	<a href="mailto:<c.rogers@schoolsofwestfield.org>"><c.rogers@schoolsofwestfield.org>
Stefan Czaporowski	City Public Schools, Superintendent	572-6403		s.czaporowski@schoolsofwestfield.org
Juanita Carnes	City Board of Health Chair			juanita.carnes@cityofwestfield.org
Carissa Lisee	City Building Commissioner	572-6251		c.lisee@cityofwestfield.org
Kevin Bard	City Community Police, lieutenant	413-562-5411		k.bard@cityofwestfield.org
Brent Bean II	City Council President			b.bean@cityofwestfield.org
Joe Kietner	City DPW/Stormwater			Joseph.Kietner@cityofwestfield.org
Heather Stayton	City DPW/Water			h.stayton@cityofwestfield.org
Mark Cressotti*	City Engineer	572-6219		m.cressotti@cityofwestfield.org
Patrick Egloff	City Fire - Chief - LEPC Chair	572-6330		firechief@cityofwestfield.org
Ben Warren	City Fire - Fire Prevention	572-6303	(w) 977-2400	fireprevention@cityofwestfield.org
Albert G. Giguere Jr*	City Flood Control Commission, Chairman	219-2138		brotheral01@hotmail.com
Thomas Hibert	City Health Dept			t.hibert@cityofwestfield.org
Joseph Rouse	City Health Director	572-6212	454-5141	<a href="mailto:<j.rouse@cityofwestfield.org>"><j.rouse@cityofwestfield.org>
Dan Kelly	City Housing Authority Director	413-568-9283		dkelly@westfieldhousing.com
Vincent Olinski	City Parks & Recreation Commissioner			vincent.olinski@cityofwestfield.org
Jay Vinskey	City Planner	642-9307	579-7494	j.vinskey@cityofwestfield.org
Bill Carellas	City Planning Board Chair		413-530-2826	William.Carellas@cityofwestfield.org
Anthony Contrino*	City WG&E, General Mgr	(413) 572-0207		acontrino@wgeld.org
Mike McCabe	City Police			m.mccabe@cityofwestfield.org
Larry Valliere	City Police, Chief			<a href="mailto:<l.valliere@cityofwestfield.org>"><l.valliere@cityofwestfield.org>
Andy Danforth	Cooperative Development Institute, NEORC Director	413-665-1271		
Ann Lentini*	Domus	568-4494		domusinc@verizon.net
Joe Mitchell	Eversource, Community Relations	413-787-9272	413-579-2389	joseph.mitchell@eversource.com
Henry Fini	Fini's Farm	532-7161		
Joy Duperault	Flood Hazard Management Program (FHMP)	(617) 626-1406		joy.duperault@state.ma.us
Mary Ann Babinski	Former City Councilor	568-8562	244-7201	mababinski@comcast.net
Emily Boss	Franklin Land Trust	413-625-9151		ecboss@franklinlandtrust.org
Dan Call	Friends of Columbia Greenway		364-0993	d-call@comcast.net
Joe Ruhl	Genesis HealthCare Nursing Home	562-5121	413-885-1080	joseph.ruhl@genesishcc.com
Kim Murphy	Greater Westfield Clergy Assoc	568-7557	579-4186	
Andrea Allard	Greater Westfield YMCA			aallard@westfieldymca.org
Barbara Huntoon	Hampden Village	413-562-5011		bhuntoon@hampdenvillage.net
Cheryl Crowe	Hampton Ponds Association/Planning Bd Member			cheryl.crowe@cityofwestfield.org
	Heritage Mobile Home Park			
Robert Hinckley	Hinckley Harvest	413-572-1719		hinckleyfarm@aol.com
	Home Depot Dist Center	413-562-9613		
Kristen Deboer	Kestral land Trust, Exec. Director	413-549-1097		
Gene/Sue Kosinski	Kosinski Farms	413-572-4344		
	Lowes Dist Center	413-788-3400		
Barbara Hopson	MA Department of Agricultural Resouces (MDAR)	413 726-2003		Barbara.Hopson@mass.gov
Chris Matera	Massachusetts Forest Watch	413-341-3878		christoforest@gmail.com
Rich Masse	MassDOT	413-582-0599		richard.masse@state.ma.us
Chris Gaines	Mestek	413-564-5865	860-878-5902	cgaines@mestek.com
Jim Lyons	NRCS			jim.lyons@usda.gov
David Pederson*	Pioneer Valley Railroad	413-572-8792		dpederson@pvrr.com
Patty Gambarini*	PVPC, Principal Environmental Planner/Section Manager	413-781-6045		pgambarini@pvpc.org
Emily Slotnick	PVPC, Senior Planner	413-781-6045		eslotnick@pvpc.org
Paul Burns	PVTA, Director of Transit Operations			pburns@pvta.com
Rob Levesque	R Levesque Assocaites	413-568-0985		robl@rlaland.com
	Riverbend Mobile Home Park	(860) 367-2220		
	Russian Evangelical Baptist Church	413-572-2748		
Jaimye Bartak*	Springfield Water & Sewer Commission	452-1302	835-1942	jaimye.bartak@waterandsewer.org
Matthew Collins	St. Mary's Schools, High School Principal	413-568-5692		mcollins@stmsaints.org
Robert C. McKean*	Stanley Park, Managing Director	413-568-9312 x 102		Director@stanleypark.org
Doug Hutcheson	State Forester, DCR	(413) 545-7020		
John Velis	State Representative, 4th Hampden	413-572-3920		john.velis@mahouse.gov
TBD	State Senator (elect)			

Name	Community	Work Phone	Cell Phone	Email
	Stop & Shop	413-562-2300		
	The Arbors Assisted Living	(413) 206-2914		
Robert Belitz	Tighe & Bond (Westfield)	413-572-6296		rsbelitz@tighebond.com
Jennifer Kinsman	United Way of Pioneer Valley, Director of Community Impact	413-693-0212		jkinsman@uwpv.org
Valenda Liptak*	Western MA Hospital	562-4131		valenda.liptak@state.ma.us
Linda Saltus	Westfield Athenaeum, Board of Directors		413-519-7875	lindasaltus@gmail.com
	Westfield Bank	568-1911		
Kristen Mello	WRAFT/City Council	413.564.4772		klm.wraft@gmail.com
Brian Conz*	Westfield River Watershed Asso, Pres /WSU Planning	572-8084		bconz@westfield.ma.edu
Rafael Rivera	Westfield Spanish American Association, President	413-729-9722		rrivera@wsaasoc.org
Ray Frappier	Westfield Sportmen's Club	413-562-0771		rainman562@comcast.net
David Drake	White Oak School, Headmaster	413-562-9500		ddrake@whiteoakschool.org
Tony Casciano	WSU Police Chief	572-5660		tcasciano@westfield.ma.edu
Maureen Socha*	WSU, Executive Director - Facilities & Operations	413-572-8792 or 572-5205		msocha@westfield.ma.edu
Connie Adams*	Yellow Stonehouse Farm	413-562-2164		claklee@gmail.com

* stakeholders identified for interviews

City of Westfield Pre-MVP Workshop Survey – Chamber of Commerce

Responses in *italics*

Community Characterization

1. What are the prominent geographic features of your community/ etc.?

Natural resources: Stanley Park, Columbia Greenway Rail Trail, Westfield River

Historical/cultural: Athenaeum, Children's Museum

2. What are the most important/ influential institutions, organizations, or businesses in your community?

Some institutions gravely impacted would be Baystate Noble Hospital, 104 Fighter Base National Guard Base, Westfield State University

Businesses in flood zone would be severely impacted

Drought would affect water use

Transportation – airport, railroad, Route 20 flood zone – Westfield almost like an island with the bridges

Natural hazard events – Westfield Sportsmen Club Fishing Derby, Canoe Races

3. What are the “Hot-button” social/ political/ leadership issues? Have these changed substantially over the past 5-10 years?

Drinking water safety – PFOS contamination

Aging population – 6,000-8,000 senior citizens – fixed expenses, taxes

Transportation on north side of Westfield – development

Community Hazards and Planning Information

4. What hazards have impacted you in the past?

Drought, heat, wind, storms, flooding in particular areas

Have had to have water bans in past – major problems for WSU, 6,000 employees affected

Flood of '55 – flood would cut off Westfield

Flooding from Westfield River, dam breaches, stormwater

Arm Brook Dam is on north side of Westfield – if were to breach, would flood to Elm Street

Drought and flooding most serious – water or lack of water

Westfield working to manage trees -- Scott Hathaway – arborist

Snowtober really shut down City due to trees

5. Have you seen any changes in the weather or how often events are occurring?

In 42 years in Westfield, have experienced flooding, and more and more heat waves – consecutive days of 90 and over

Amount of snow is less

When we do get bad storms, are more severe than before

In your opinion, which of the following categories are most susceptible to natural hazards in your community? (Please rank the community assets in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable.)

Category	Rank
People: Loss of life and/ or injuries	2
Economic: Business interruptions/ closures, job losses, etc.	1
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.	1
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	6
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	2
Governance: Ability to maintain order and/ or provide public amenities and services	5

Different based on the type of disaster

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing function of natural assets (streams, wetlands, beaches, etc.)		X			
Protecting historic and cultural landmarks			X		
Protecting and reducing damage to utilities	X				
Strengthening emergency services (police, fire, ambulance, etc.)	X				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses	X				

City of Westfield Pre-MVP Workshop Survey – City Engineer

Responses in *italics*

Community Hazards and Planning Information

1. What hazards have impacted you in the past?

- *Repeated natural hazards – floods, heavy storm events*
- *Flood structures require ongoing operations and maintenance, looking to convert to multi-use facilities to allow suitable users to keep an eye on condition and use*
 - *Levee as multi-use path, Arm Brook and Powder Mill Dams deficiencies are being assessed by NRCS, may accommodate bike trail on crests if possible*
- *Congestion is a strategic issue*
- *WG&E is proactive with regard to tree limb removal*
- *October Snowstorm was exception, power outages and downed tree branches*

2. Have you seen any changes in the weather or how often events are occurring?

- *Yes, 100 year storm is occurring more frequently than every 100 years*
- *Planning Board and Engineering Department are doing a good job of planning for larger, more frequent events*
 - *Williams ROW Pump Station behind the levee pumps during storm event, increases storm drain capacity – recent upgrades*
 - *Levees enhanced with multi-use trail*
 - *In the event that downtown is inundated by the 500 year storm, the levee path and Greenway would act as emergency routes*

In your opinion, which of the following categories are most susceptible to natural hazards in your community? (Please rank the community assets in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable.)

Category	Rank
People: Loss of life and/ or injuries	3
Economic: Business interruptions/ closures, job losses, etc.	2
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.	1
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	4
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	6
Governance: Ability to maintain order and/ or provide public amenities and services	5

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		<i>X</i>			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	<i>X</i>				
Preventing development in hazard areas		<i>X</i>			
Enhancing function of natural assets (streams, wetlands, beaches, etc.)		<i>X</i>			
Protecting historic and cultural landmarks		<i>X</i>			
Protecting and reducing damage to utilities	<i>X</i>				
Strengthening emergency services (police, fire, ambulance, etc.)		<i>X</i>			
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses		<i>X</i>			

It will be important to develop a big picture vision of how Westfield will respond to and mitigate natural hazards, it's a large community, so needs to have a cohesive strategy.

City of Westfield Pre-MVP Workshop Survey – Domus, Inc.

Responses in *italics*

About Domus

Under 25 employees, mostly part time for maintenance and site coordinators

Site coordinators at each rental location, working remotely, important for connection

Economically diverse, low-moderate and homeless or disabled (mental or physical) populations, 18-84 or more – Our House for homeless teens 18-24 on Broad Street

Demographically diverse, 14% black, 27% Hispanic, 57% white

3 homes for disabled persons

11 buildings in Town, all but 1 historic building

Community Characterization Survey Questions

1. What are the prominent geographic features of your community/ etc.?

A unique area with a long history

Farms, open space, downtown Westfield

2. What are the most important/ influential institutions, organizations, or businesses in your community?

Healthcare, restaurants, maintenance

WSU, Baystate Noble – large employers providing lots of jobs, lucky to have lots of manufacturing in Westfield

3. What are the “Hot-button” social/ political/ leadership issues? Have these changed substantially over the past 5-10 years?

NIMBYs

Development in north Westfield, land use in general

Downtown has catered to the college’s needs

Community Hazards and Planning Information

4. What local/ regional/ global management challenges are you currently dealing with (storm water - surface runoff, supply chain, development or redevelopment, transportation, coastal access, public health - do not include hazard threat and impact information)?

PVTA, transportation not a problem

Making sure tenets are connected to MassHealth and able to get care

Stormwater, surface runoff not a problem at rental locations

5. What hazards have impacted you in the past?

Asbestos, lead paint

No issues with electrical service during windstorms, WGE does a good job of maintenance and responding to storms

Not concerned about heat, most buildings have central A/C or tenets can install window A/C

6. What hazards have you experienced recently or are you concerned about experiencing soon?

Lucky to not have had a tornado, would be concerned about those impacts

One property near Trinity Church in flood zone, would be concerned during massive flooding event

7. Have you seen any changes in the weather or how often events are occurring?

Warmer weather

In your opinion, which of the following categories are most susceptible to natural hazards in your community? (Please rank the community assets in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable.)

Category	Rank
People: Loss of life and/ or injuries	2
Economic: Business interruptions/ closures, job losses, etc.	1
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.	3
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	5
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc. <i>East Mountain Road loss of forest, damage to wetlands, City needs to keep population informed on decisions and actions</i>	4
Governance: Ability to maintain order and/ or provide public amenities and services <i>Enhanced, open communication should be high on agenda</i>	6

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	X				
Preventing development in hazard areas	X				
Enhancing function of natural assets (streams, wetlands, beaches, etc.)	X				
Protecting historic and cultural landmarks			X		
Protecting and reducing damage to utilities	X				
Strengthening emergency services (police, fire, ambulance, etc.)	X				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses	X				

City of Westfield Pre-MVP Workshop Survey – DPW Director

Responses in *italics*

Community Hazards and Planning Information

1. What hazards have impacted you in the past?

June 2011 tornado, tropical storm Irene (2011), major snowstorms, droughts and floods.

2. What hazards have you experienced recently or are you concerned about experiencing soon?

Have had drought conditions recently. Also concerned about winter storms although none recently.

3. Have you seen any changes in the weather or how often events are occurring?

Less snow and warmer weather although the potential for snow still exist.

In your opinion, which of the following categories are most susceptible to natural hazards in your community?

Most vulnerable: Economic: Business interruptions/ closures, job losses, etc. & Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		<i>X</i>			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	<i>X</i>				
Preventing development in hazard areas				<i>X</i>	
Enhancing function of natural assets (streams, wetlands, beaches, etc.)				<i>X</i>	
Protecting historic and cultural landmarks		<i>X</i>			
Protecting and reducing damage to utilities	<i>X</i>				
Strengthening emergency services (police, fire, ambulance, etc.)		<i>X</i>			
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses		<i>X</i>			

City of Westfield Pre-MVP Workshop Survey – Flood Control Commission

Responses in *italics*

- *Chairman of Flood Control Commission, lot of flood control infrastructure in bad shape, many City residents don't realize that it exists*
- *"City of two rivers"*
- *Largest tributary in State, drains almost 2/3 of Berkshires*
- *Coalesces above City, bottlenecks below – City is floodplain*
- *Major flood in '55*
- *2011 close call with TS Irene*
- *Making progress on flood control infrastructure but not where should be*
- *2 levees – 1 Army Corps built in after math of flood of '55 (Little River), cottonwood trees > 4 ft*
- *Cobble Mountain Reservoir in Granville – no warning system related to dam, 15-20 minutes from reservoir to upper reaches in downtown Westfield, study done around 2000 – 30 ft of moving water at City Hall*
- *NRCS studies on Arm Brook and Little Brook Dams plan for full build out on North side*
- *May have to raise 4 feet – would have to wrap around cemetery*
- *Deforestation and reforestation*
- *On average, F3 once every 10 years in western Mass*
- *1953 tornado in Worcester, Bradley tornado in 1979*

Have you seen any changes in the weather or how often events are occurring?

- *Can't say with any certainty – changes seem more cyclical*
- *Wildlife changes (probably related to development) – lightning bugs, frogs, box turtles, snakes, increase in number of mosquitoes & ticks*
- *More drastic changes in seasons, less gradual transition*
- *On average, more rain now than previous 50 years*
- *National Weather Service – uses Albany instead of Taunton/Norton*

In your opinion, which of the following categories are most susceptible to natural hazards in your community?

Category	Rank
People: Loss of life and/ or injuries	1
Economic: Business interruptions/ closures, job losses, etc.	3
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc. <i>DPW fuel depot near Little River levee (not functional)</i>	2
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	6
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	4
Governance: Ability to maintain order and/ or provide public amenities and services	5

The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		X			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	X				
Preventing development in hazard areas <i>Developed too much in floodplains, haven't secured lands for flood storage capacity</i>	X				
Enhancing function of natural assets (streams, wetlands, beaches, etc.)	X				
Protecting historic and cultural landmarks	X				
Protecting and reducing damage to utilities	X				
Strengthening emergency services (police, fire, ambulance, etc.) <i>Already in good shape</i>	X				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses	X				

City of Westfield Pre-MVP Workshop Survey – Pioneer Valley Railroad

Responses in *italics*

1. What are “Hot-button” issues in Westfield or for your business? Have these changed substantially over the past 5-10 years?
 - *Trackage along woodlands Westfield – Holyoke – West Springfield and ability to continue providing materials and associated jobs depending on receiving materials*
2. What natural hazards have impacted you in the past or are you concerned about experiencing soon?
 - *Tornado, hurricane, windstorm, natural hazards that would affect the tracks (high winds)*
 - *Storm events that would cause substantial power outage – impact on warehouses*
 - *Flooding, washouts of tracks – inspect weekly or after storms, but if unexpected, washout could cause derailment*
 - *Beaver dams along tracks – challenging to manage*
 - *Most of PVRR tracks in Notre Dame section of Westfield – SW runoff onto track ROW deteriorates track bed*
3. Have you seen any changes in the weather or how often events are occurring?
 - *No change in how often events are occurring – mild winter this year but not unusual in larger scheme of seasonal changes*
4. Please rank the following categories in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable.

Category	Rank
People: Loss of life and/ or injuries	<i>1</i>
Economic: Business interruptions/ closures, job losses, etc.	<i>2</i>
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.	<i>3</i>
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	<i>6</i>
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	<i>5</i>
Governance: Ability to maintain order and/ or provide public amenities and services	<i>4</i>

- *City has room for improvement in coordination and communication during emergency events but does a good job, dependent on public investment and funding*
5. Please tell us how important each of the following statements is to you in terms of natural hazard planning and mitigation in Westfield by checking the appropriate box.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		<i>X</i>			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	<i>X</i>				
Preventing development in hazard areas		<i>X</i>			

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Enhancing function of natural assets (streams, wetlands, beaches, etc.)				<i>X</i>	
Protecting historic and cultural landmarks				<i>X</i>	
Protecting and reducing damage to utilities	<i>X</i>				
Strengthening emergency services (police, fire, ambulance, etc.)	<i>X</i>				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses	<i>X</i>				

City of Westfield Pre-MVP Workshop Survey – PVPC

Responses in *italics*

Community Characterization

1. What are the “Hot-button” social/ political/ leadership issues? Have these changed substantially over the past 5-10 years?

Drinking water safety

Barnes Aquifer protection

Food supply

Haloacetic acids in surface water supplies - SWSC

Community Hazards and Planning Information

2. What hazards have you experienced recently or are you concerned about experiencing soon?

Increased days over 90 degrees – heat islands and vulnerable populations

Change in 24 hour storm frequency and intensity – 100 year floodplain greater protections?

Invasive species

3. Have you seen any changes in the weather or how often events are occurring?

Greater shift in this area in precipitation in TP40 to Atlas 14

Concerns/issues:

Critical land protection – farms and forests – entity/process?

Where can impervious surface be reduced?

Climate change related population migration – hospitals, schools, water, emergency services

City of Westfield Pre-MVP Workshop Survey – SWSC

Springfield Water and Sewer Commission

Springfield Water and Sewer Commission provides drinking water retail to Springfield and Ludlow, and wholesale to Agawam, Longmeadow, and East Longmeadow, serving a total of 250,000 customers. Several communities, including Westfield, also rely on the Commission for partial, peak, or emergency water supply. The Commission's water treatment plant, West Parish Filters, is located on Granville Road in Westfield.

The Commission also provides wastewater collection and treatment for customers in Springfield, Agawam, East Longmeadow, Longmeadow, Ludlow, Wilbraham, and West Springfield. The Springfield Regional Wastewater Treatment Facility is located on the border of Agawam and West Springfield.

1. What are “Hot-button” issues in Westfield or for your business? Have these changed substantially over the past 5-10 years?

The Commission currently faces regulatory challenges relating to distribution system water quality. Recent climate changes have resulted in higher organics in the surface water treated at the Commission's Water Treatment Plant (West Parish Filters on Granville Road in Westfield). The higher organics resulted in higher haloacetic acids in the distribution system.

2. What natural hazards have impacted you in the past or are you concerned about experiencing soon?

Past hazards that have impacted West Parish Filters include the following:

- The 2016/2017 drought followed by intense rain events in 2018
- Hurricanes, including Hurricane Bob in 1991
- The October 2011 snowstorm
- The 2011 tornado (did not directly impact the facility, but was in the same region)

3. Have you seen any changes in the weather or how often events are occurring?

We would defer to the wealth of academic research on this subject, but the general consensus at this time is that weather in the Northeast U.S. is becoming more extreme, with more intense rain events, and more rain in the fall. The 2016/2017 drought, followed by intense rain events in 2018, resulted in a change in raw water quality at West Parish Filters.

4. Please rank the following categories in order of vulnerability, 1 being most vulnerable and 6 being least vulnerable.

As a water supplier, we are vulnerable to changes in the economy (revenue), changes in the environment (water supply), damage to infrastructure, and instability in governance. Our most critical asset is our operations staff who run the treatment processes.

Category	Rank
People: Loss of life and/ or injuries	4
Economic: Business interruptions/ closures, job losses, etc.	3
Infrastructure: Damage/ loss of roads, bridges, utilities, schools, etc.	1
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	6
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	2
Governance: Ability to maintain order and/ or provide public amenities and services	5

5. Please tell us how important each of the following statements is to you in terms of natural hazard planning and mitigation in Westfield by checking the appropriate box.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	X				
Preventing development in hazard areas			X		
Enhancing function of natural assets (streams, wetlands, beaches, etc.)	X				
Protecting historic and cultural landmarks			X		
Protecting and reducing damage to utilities	X				
Strengthening emergency services (police, fire, ambulance, etc.)	X				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses		X			

City of Westfield Pre-MVP Workshop Survey – WG&E

Responses in blue

What are the “hot-button” social/political/leadership issues? Have these changed substantially over the past 5-10 years? Hot Button issues that I face due to my position with Westfield Gas & Electric are mainly centered around customer rates and safe delivery of services. These issues have been of high importance during the past 15-20 years.

Community Hazards and Planning Information

What hazards have you experienced recently or are you concerned about experiencing soon? Clearly the COVID-19 pandemic and severe storms (ice, wind, lightning, heavy snow) which threaten continuity of service.

Have you seen any changes in the weather or how often events are occurring? Hazards appear consistent with previous years, however I’d need access to historical weather data to say with certainty.

	1	2	3	4	5	6
People: Loss of life and/or injuries					X	
Economic: Business interruptions/closures, job losses, etc.		X				
Infrastructure: Damage/loss of roads, bridges, utilities, schools, etc.	X					
Cultural/Historic: Damage or loss of libraries, museums, historic properties, etc.						X
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.				X		
Governance: Ability to maintain order and/or provide public amenities and services			X			

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/company, organization/agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	X				
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	X				
Preventing development in hazard areas		X			
Enhancing function of natural assets (streams, wetlands, beaches, etc.)				X	
Protecting historic and cultural landmarks		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services (police, fire, ambulance, etc.)	X				
Promoting cooperation among public agencies, citizens, non- profits, academia, and businesses	X				

City of Westfield Pre-MVP Workshop Survey – Yellow Stonehouse Farm

Responses in *italics*

Community Characterization

1. Other potential invitees/interviewees

City Council, Mayor, utility companies

Farms: Kosinski Farms, Kallabris, Finis

2. What are the “Hot-button” social/ political/ leadership issues? Have these changed substantially over the past 5-10 years?

Development and impervious cover creation and loss of wildlife corridors

Truck emissions and impacts on road surfaces

Drinking water quality – what will happen when there’s a drought, not doing a good enough job of protecting groundwater and aquifer

Community Hazards and Planning Information

3. What local/ regional/ global management challenges are you currently dealing with (stormwater - surface runoff, supply chain, development or redevelopment, transportation, coastal access, public health - do not include hazard threat and impact information)?

Water usage, surface water pollution, transportation, industrial development

Farm has water rights to source spring for the Arm Brook – NRCS looking at Dam

City should control pesticide use and habitat removal better, impacting insect and bird populations, important pollinators and insect control for organic farms

Would be great if City had a commitment to decrease carbon emissions – electric vehicles, asthma in kids downtown

Would be beneficial to pursue alternatives to trucks, like boosting rail

4. What hazards have impacted you in the past?

Flooding

Yellow Stonehouse Farm is located in the Brickyard Ponds area – Brickyard Brook and Ponds wetlands fill up and Manhan River fill up whenever there are flooding events – also get all the pollution

City has designated all remaining open land in Westfield as industrial – increasing amount of impervious surfaces, increasing runoff with pollution, stormwater systems can’t handle, ends up in meadow

Might need to use water from Brickyard Brook in event of drought but is polluted

Development adjacent to Barnes Aquifer – Old Dominion Truck Terminal

5. What hazards have you experienced recently or are you concerned about experiencing soon?

Not concerned about drought directly as are in high water table area, impacted by extreme wet weather

Had to buy new, lighter-weight tractor for use in the wet fields

Wetlands are key – high water table means not many places for water to go, filling up with silt, not going to be able to function

Development regulations in place but can always get exceptions

Food supply – with unpredictability of seasonality, certain types of foods might not be available

Drought and wind erosion

6. Have you seen any changes in the weather or how often events are occurring?

Tick populations survived winter in the leaf litter due to the warm winter, impacts more than people

Increased rain fall – infrastructure not built to account for sudden storms with increased rainstorms, stormwater drainage systems and roadways

In your opinion, which of the following categories are most susceptible to natural hazards in your community?

Most vulnerable: environmental (damage, contamination, or loss of forests, wetlands, waterways, etc.) and infrastructure (damage or loss of roads, bridges, utilities, etc.)

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. The following statements will help us determine your priorities regarding planning for natural hazards in your community/ company, organization/ agency. Please tell us how important each statement is to you by checking the appropriate box for each.

	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property		<i>X</i>			
Protecting critical facilities (transportation networks, hospitals, fire stations, etc.)	<i>X</i>				
Preventing development in hazard areas	<i>X</i>				
Enhancing function of natural assets (streams, wetlands, beaches, etc.)	<i>X</i>				
Protecting historic and cultural landmarks		<i>X</i>			
Protecting and reducing damage to utilities	<i>X</i>				
Strengthening emergency services (police, fire, ambulance, etc.)	<i>X</i>				
Promoting cooperation among public agencies, citizens, non-profits, academia, and businesses	<i>X</i>				

APPENDIX D



Municipal Vulnerability and Preparedness Planning for the City of Westfield Public Engagement Information

Municipal Vulnerability Preparedness Planning Background The City of Westfield was recently awarded a \$32,000 grant by the Executive Office of Energy and Environmental Affairs (EEA) Municipal Vulnerability and Preparedness (MVP) Planning Grant to complete a public engagement and climate resilience planning process before June 30, 2020. Westfield Planning Department is taking the lead on the MVP program, with participation of a Core Team of City Staff to plan for ways to better prepare and protect the City from natural and climate-related hazards. Once the plan is completed and approved by EEA, the City of Westfield will be designated as an MVP Community, joining 287 communities across Massachusetts that have been designated since the MVP program began in 2017.

Why plan for climate resilience? Climate resilience is the ability of a community to address the needs of its built, social and natural environment to anticipate, cope with, and rebound stronger from events and trends related to climate change hazards. Planning for climate resilience allows Westfield to build capacity to reduce the impacts from future climate events rather than just react to events as they occur.

How will the public engage in MVP? MVP is a Community Driven Process to understand climate vulnerabilities and identify priority actions. MVP provides structured opportunities for public engagement through review of community specific mapping and climate data, participation in unique Community Resilience Building Workshops, and developing priority action plans to improve their community's resilience with an emphasis on nature-based solutions.

Due to COVID-19, previously planned public meetings and workshops will be held online.

Westfield is utilizing a number of public engagement methods including:

- Posting online resources that will be used in the workshops
- Conducting pre- and post- workshop surveys
- Hosting virtual workshops focusing on climate resilience within the context of Westfield's societal, built infrastructure, natural resources and economic community assets.
- Hosting a community listening session

Read More [About EEA Municipal Vulnerability Preparedness \(MVP\) here](#)

[Click here](#) to review Westfield's

Final Draft MVP CRB Summary of Findings Report
Please send any comments to [Jay Vinskey](#) City Planner by June 25th, 2020

The Community Resilience Building Workshops Have Been Completed

Community Resilience Building Workshop Dates/Time

#1 Westfield Societal Assets - Vulnerable Populations and Cultural Facilities: Held May 12

- [Click here to view recording](#)
- [Click here for Workshop #1 Q&A](#)
- [Click here for Workshop #1 Draft Community Resilience Building Matrix](#)

#2 Westfield Infrastructural Assets - Critical Facilities and Built Environment: Held May 19th

- [Click here to view recording](#)
- [Click here for Workshop #2 Q&A](#)
- [Click here for Workshop #2 Draft Community Resilience Building Matrix](#)

#3 Westfield Economic Assets - Economic Sectors and Commercial Centers: Held May 26th

- [Click here to view recording](#)
- [Click here for Workshop #3 Q&A](#)
- [Click here for Workshop #3 Draft Community Resilience Building Matrix](#)

#4 Environmental Assets - Natural Resources and Open Space: Held June 2nd

- [Click here to view recording](#)
- [Click here for Workshop #4 Q&A](#)
- [Click here for Workshop #4 Draft Community Resilience Building Matrix](#)

To watch the pre-recorded webinars via the links above, please follow these steps:

1. Click on the "click here to view recording" link.
2. Select "Watch on the web instead".
3. Select "Join anonymously."

Note: the webinars may have a period of silence for a few minutes at the beginning of the recording.

Workshop Planning Resources (click on link to view or download)

- [Introductory Video](#) - Municipal Vulnerability Preparedness and climate change impact on local assets
- [Community Asset Maps](#) - Distribution of Local Community Assets
- [Community Asset Data Base](#) - Details on Local Community Assets
- [Flood Risk Maps](#) - FEMA 100-Year Flood Zones
- [Natural Hazard Risk Index](#) - Ranking of Natural Hazards that impact the local community
- [Basin specific climate data](#) - developed by Massachusetts Climate Adaptation Science Center

Westfield MVP CRB Workshop Sign In

Westfield Societal Assets Webinar – May 12, 2020 – 1:00 PM

Person	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Kate Phelon	Chamber of Commerce
Bill Carellas	Planning Board
Peter Miller	Community Development Director
Doug Hutcheson	DCR Service Forester
Bridget Matthews-Kane	City Council, Ward 3
Kristen Mello	WRAFT - Westfield Residents Advocating for Themselves
Christina Jones	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Mary Ann Babinski	Former City Councilor
Bruce Bussiere	Baystate “Noble” Hospital
Corin Meise-Munns	Pioneer Valley Planning Commission
Michael Sweeney	United Way of Pioneer Valley
Chris Rogers	Westfield Public Schools
Joe Mitchell	Eversource
Connie Adams	Yellow Stonehouse Farm
Kate Deviny	Athenaeum Director
Heather Stayton	DPW Systems Engineer

Westfield Infrastructural Assets Webinar – May 19, 2020 – 1:00 PM


Person	Affiliation
Jay Vinskey	City Planner
Joe Kietner	DPW Stormwater Coordinator
Bill Carellas	Planning Board
Peter Miller	Community Development Director
Emily Slotnick	Pioneer Valley Planning Commission
Tony Contrino	WGE
Bridget Matthews-Kane	City Council, Ward 3
Hillary McEwan	Stanley Park
Lt Col Jeremy Dugan	104 th Fighter Wing
Kristen Mello	WRAFT
Bob Weaver	Springfield Water and Sewer
Christina Jones	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Paul Cacolice	Friends of Columbia Greenway Rail Trail
Mary Ann Babinski	Former City Councilor
Heather Stayton	Systems Engineer
Agma Sweeney	Former City Councilor , Westfield Spanish American Association
Matt Gamelli	Engineering Department
Al Giguere	Westfield Flood control Commission
Mark Cressotti	City Engineer
Chris Willenborg	Westfield-Barnes Regional Airport
Ben Warren	Fire Department
Chris Rogers	Westfield Public Schools
Joe Mitchell	City Advancement Officer, Eversource

Westfield Economic Assets Webinar – May 26, 2020 – 1:00 PM

Person	Affiliation
Jay Vinskey	City Planner
Kate Phelon	Chamber of Commerce
Joe Kietner	DPW Stormwater Coordinator
Tony Contrino	WGE
Bridget Matthews-Kane	City Council, Ward 3
Hillary McEwan	Stanley Park
Christina Jones	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Tom Hibert	Health Department
Connie Adams	Yellow Stonehouse Farm
Carmel Steger	Friends of Columbia Greenway Rail Trail
Kimberly Puffer	Domus, Inc.
Paul Cacolice	Friends of Columbia Greenway Rail Trail
Lt Kevin Bard	Community Policing Division
Mary Ann Babinski	Former City Councilor
Heather Stayton	DPW Systems Engineer
Agma Sweeney	Former City Councilor
Mark Cressotti	City Engineer
Peter Miller	Community Development Director
Joe Mitchell	Eversource , City Advancement Officer



Westfield Natural Environment Assets Webinar – June 2, 2020 – 1:00 PM

Person	Affiliation
Jay Vinskey	City Planner
Kate Phelon	Chamber of Commerce
Joe Kietner	DPW Stormwater Coordinator
Chris Willenborg	Westfield-Barnes Regional Airport
Bridget Matthews-Kane	City Council, Ward 3
Hillary McEwan	Stanley Park
Christina Jones	Springfield Water and Sewer
Bob Weaver	Springfield Water and Sewer
Meredith Borenstein	Conservation Commission
Connie Adams	Yellow Stonehouse Farm
Carmel Steger	Friends of Columbia Greenway Rail Trail
Patty Gambarini	Pioneer Valley Planning Commission
Kimberly Puffer	Domus, Inc.
Mary Ann Babinski	Former City Councilor
Jake Lehan	Westfield River Watershed Association
Heather Stayton	Systems Engineer
Emily Boss	Franklin Land Trust
Agma Sweeney	Former City Councilor
Kristen Mello	WRAFT
Mark Cressotti	City Engineer
Peter Miller	Community Development Director
Joe Mitchell	City Advancement Officer , Eversource



**CITY OF WESTFIELD MUNICIPAL
VULNERABILITY PREPAREDNESS**

Community Resilience Building Workshop – Societal Vulnerability & Strengths
May 12, 2020

1

TODAY'S AGENDA

1:00 Introduction & Workshop Goals




1:10-1:20 Natural Hazard Risks and Identified Community Assets -Survey Summary

1:20-1:30 Confirm Societal Assets List and Strengths and Vulnerabilities (submit comments via Q&A)

1:30-1:45 Mitigation Action Definitions and Examples

1:45-2:15 Discussion on Mitigation Actions (submit comments via Q&A)

2:15-2:30 Wrap up and Participant Homework (post workshop survey)

2

WHY DO THIS PLANNING?

Help Westfield Build Resilience and Preparedness:

- Build on the City's existing emergency management capabilities
- Plan for more frequent and intense weather events that are linked to climate change
- Engage multiple stakeholders in the planning process
- Improve access to funding for mitigation and adaptation



Tighe & Bond

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A brief thanks to Westfield's MVP Core Team



Jay Vinskey- Planning /MVP Lead
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Joe Rouse – Director Public Health
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Matthew Gamelli- Engineering
Meredith Borenstein- ConCom
Michael McCabe- Police Capt
Pat Egloff – Fire Chief
Peter Miller- Comm Development
Thomas Hibert- Health Dept

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WESTFIELD'S MVP WEBSITE

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Read More [About EEA Municipal Vulnerability Preparedness \(MVP\) here](#)

How do I participate in the Community Resilience Building Workshops?

1. Reserve your spot to participate one or more of the 90-minute workshops by clicking on the dates below.

Community Resilience Building Workshop Dates/Time

- #1 Westfield Social Assets - Vulnerable Populations and Cultural Facilities: May 12 - 1:00-2:30PM
- #2 Westfield Infrastructure Assets - Critical Facilities and Built Environment: May 19 - 1:00-2:30PM
- #3 Westfield Economic Assets - Economic Sectors and Commercial Centers: May 26 - 1:00-2:30PM
- #4 Environmental Assets - Natural Resources and Open Space: June 2 - 1:00-2:30PM

2. View the planning resources linked below, especially the video. You may wish to download the maps and data for easy reference during the workshops and save these to your desktop.

Workshop Planning Resources (click on link to view or download)

- [Introduction Video](#) - Municipal Vulnerability Preparedness and climate change impact on local assets
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- [Community Asset Data Base](#) - Details on Local Community Assets
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3. If you have not already done so, please take the pre-workshop survey, by clicking [here](#). The results of the survey will be used in the workshops.



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Session #1 Presentation



Identify Natural
Hazards, Risk Areas
and Community
Strengths

1:10 PM

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6

WHAT ARE NATURAL HAZARDS?

Poor Urban Drainage
Regional Flooding
Culvert Failure



Inland Flooding



Tsunami



Severe Winter Storm



Blizzards
Snow
Ice Storms



Drought



Average/Extreme
Temperatures



Tornadoes



Landslide



Wildfires



Other Severe Weather



Nor'easters
High Wind
Heavy Precipitation
Microbursts



Coastal Flooding



Invasive Species



Earthquake



Coastal Erosion



Hurricanes/Tropical Storms



Tighe&Bond

7

TOP NATURAL HAZARDS – PAST & PRESENT



Thunderstorms



High wind



Extreme temperatures



Nor'easters / ice storms



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8

TOP NATURAL HAZARDS – FUTURE



Flooding / extreme temperatures (tie)



High wind / invasive species (tie)



Dam Overtopping



Hurricanes / tropical storms



Tighe & Bond

9

WESTFIELD'S TOP NATURAL HAZARDS THE SURVEY SAYS....

EXTREME TEMPERATURES

HIGH WINDS / STORMS

FLOODING

INVASIVE SPECIES



**CLIMATE
CHANGE**



AMPLIFIED RISKS

- > Community and regional infrastructure
- > Local and regional economies
- > Public Health
- > Natural resources and our environment



Tighe & Bond

10

WHAT ARE COMMUNITY ASSETS?



Societal



Infrastructure



Economy



Natural
Resources



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PEOPLE – SOCIETAL ASSETS

- Child Care
- Nursing Homes/ Elderly Housing
- Churches
- Emergency Shelters
- Food Pantry
- Historical Places
- Westfield- Barnes Airport
- Forum House
- Senior Center
- Mobile Home Parks
- Westfield District Court
- Schools
- Westfield Athenaeum
- Veterinary Hospitals



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Session #1 Discussion



Societal Assets:
Strengths and
Vulnerabilities

1:20 PM

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13

Switch to Community Resilience Building Workshop Risk Matrix to review societal assets and their strengths and vulnerabilities

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14

Session #2 Presentation



Identify Actions to
Address Vulnerabilities
and Protect Strengths

1:30 PM

Tighe&Bond

15

TYPES OF MITIGATION ACTIONS

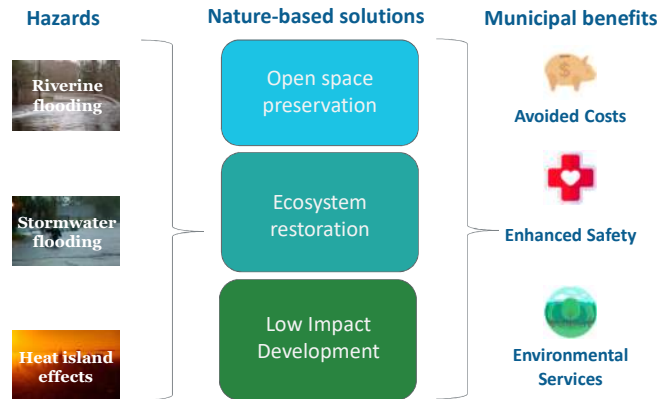
1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure (nature-based solutions)
5. Structural Projects
6. Emergency Services Protection



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DISCUSSION ITEM: Mitigation Strategies



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17

Switch to Community Resilience Building Workshop Risk Matrix to populate mitigation strategies

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18



Session #3

Wrap up and
Assignments

2:15 PM

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19

PARTICIPANT ASSIGNMENTS

- **Take the Post Workshop Survey!**

- <http://services.tighebond.com/mvp/westfield/>



- **Sign up for Additional Workshops**

- Infrastructural assets: May 19th 1:00-2:30 PM
- Economic assets: May 26th, 1:00-2:30 PM
- Environmental assets: June 2nd, 1:00-2:30 PM

- **Review the Draft Findings CRB Report**

- Available on the website in mid-June

- **Attend the Listening Session**



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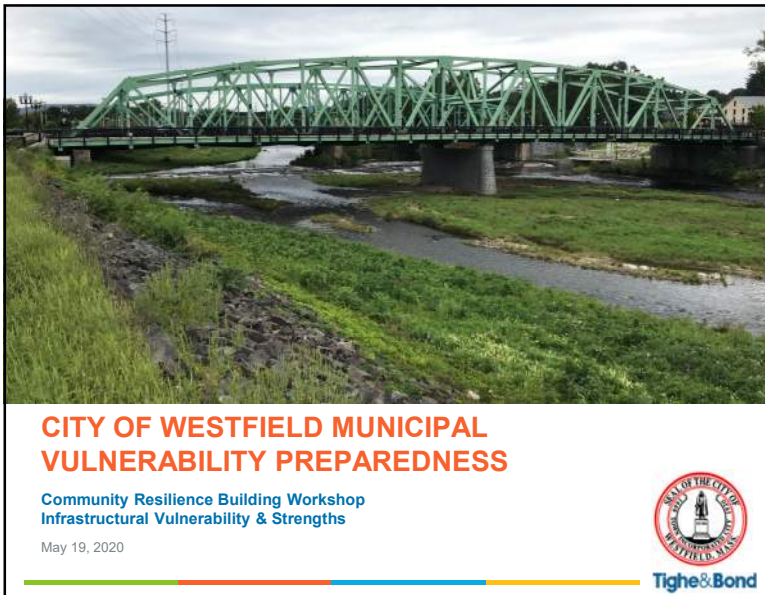
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 - GCBelfit@tighebond.com
 - 508.304.6362
- **Emily Tully, Environmental Planner**
 - ETully@tighebond.com
 - 413.875.1622



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1

TODAY'S AGENDA

- 1:00** Introduction & Workshop Goals
- 1:10-1:20** Natural Hazard Risks and Identified Community Assets -Survey Summary
- 1:20-1:30** Confirm Infrastructural Assets List and Strengths and Vulnerabilities (submit comments via Q&A)
- 1:30-1:45** Mitigation Action Definitions and Examples
- 1:45-2:15** Discussion on Mitigation Actions (submit comments via Q&A)
- 2:15-2:30** Wrap up and Participant Homework (post workshop survey)

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2

WHY DO THIS PLANNING?

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- Build on the City's existing emergency management capabilities
- Plan for more frequent and intense weather events that are linked to climate change
- Engage multiple stakeholders in the planning process
- Improve access to funding for mitigation and adaptation



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How do I participate in the Community Resilience Building Workshops?

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Community Resilience Building Workshop Dates/Time

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- #4 Environmental Assets - Natural Resources and Open Space: June 2 - 1:00-2:30PM

2. View the planning resources linked below, especially the videos. You may wish to download the maps and data for easy reference during the workshops and save these to your desktop.

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Session #1 Presentation



Identify Natural
Hazards, Risk Areas
and Community
Strengths

1:10 PM

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6

WHAT ARE NATURAL HAZARDS?

Poor Urban Drainage
Regional Flooding
Culvert Failure



Blizzards
Snow
Ice Storms

Nor'easters
High Wind
Heavy Precipitation
Microbursts



Tighe&Bond

7

TOP NATURAL HAZARDS – PAST & PRESENT



Thunderstorms



High wind



Extreme temperatures



Nor'easters / ice storms



Tighe&Bond

8

TOP NATURAL HAZARDS – FUTURE



Flooding



High wind / extreme temperatures (tie)



Dam Overtopping / invasive species (tie)



Hurricanes / tropical storms



Tighe & Bond

9

WESTFIELD'S TOP NATURAL HAZARDS THE SURVEY SAYS....

EXTREME TEMPERATURES

HIGH WINDS / STORMS

FLOODING

INVASIVE SPECIES



**CLIMATE
CHANGE**



AMPLIFIED RISKS

- >Community and regional infrastructure
- >Local and regional economies
- >Public Health
- >Natural resources and our environment



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WHAT ARE COMMUNITY ASSETS?



Societal



Infrastructure



Economy



Natural
Resources



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INFRASTRUCTURAL ASSETS

- Emergency Management Headquarters
- Westfield Fire Department Stations
- Westfield Police Department Stations
- Public Works Department
- Cell Towers
- Westfield Levee
- Little River Levee
- Westfield-Barnes Airport
- City Hall
- Fire Ponds
- Substations
- Helicopter Landing Sites
- Evacuation Routes
- Williams Riding Way Flood Control Pumping Station
- Westfield Water Pollution Control Plant
- Drinking Water Supply Wells



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Session #1 Discussion



Infrastructural Assets: Strengths and Vulnerabilities

1:20 PM

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13

Switch to Community Resilience Building Workshop Risk Matrix
to review infrastructural assets and their strengths and
vulnerabilities

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14

Session #2 Presentation



Identify Actions to Address Vulnerabilities and Protect Strengths

1:30 PM

Tighe&Bond

15

TYPES OF MITIGATION ACTIONS

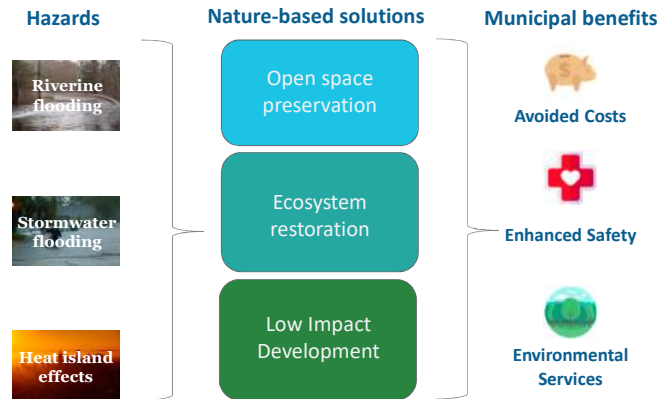
1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure (nature-based solutions)
5. Structural Projects
6. Emergency Services Protection



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DISCUSSION ITEM: Mitigation Strategies



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17

Switch to Community Resilience Building Workshop Risk Matrix to populate mitigation strategies

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18

Session #3

Wrap up and
Assignments

2:15 PM

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19

PARTICIPANT ASSIGNMENTS

• Sign up for Additional Workshops

- Economic assets: May 26th, 1:00-2:30 PM
- Environmental assets: June 2nd, 1:00-2:30 PM



• Take the Post Workshop Survey

- <http://services.tighebond.com/mvp/westfield/>
- Will be posted after all workshops are completed

• Review the Draft Findings CRB Report

- Available on the website in mid-June

• Attend the Listening Session

- Anticipated to be held in mid-June



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**CITY OF WESTFIELD MUNICIPAL
VULNERABILITY PREPAREDNESS**

Community Resilience Building Workshop
Economic Vulnerability & Strengths

May 26, 2020



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1

TODAY'S AGENDA

1:00 Introduction & Workshop Goals

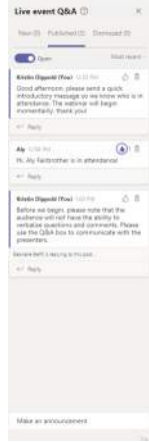

1:10-1:20 Natural Hazard Risks and Identified Community Assets -Survey Summary

1:20-1:30 Confirm Economic Assets List and Strengths and Vulnerabilities (submit comments via Q&A)

1:30-1:45 Mitigation Action Definitions and Examples

1:45-2:15 Discussion on Mitigation Actions (submit comments via Q&A)

2:15-2:30 Wrap up and Participant Homework (post workshop survey)

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2

WHY DO THIS PLANNING?

Help Westfield Build Resilience and Preparedness:

- Build on the City's existing emergency management capabilities
- Plan for more frequent and intense weather events that are linked to climate change
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Thomas Hibert- Health Dept

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WESTFIELD'S MVP WEBSITE

<http://services.tighebond.com/mvp/westfield/>

Due to COVID-19, previously planned public meetings and workshops will be held online.

Westfield is utilizing a number of public engagement methods including:

- Posting online resources that will be used in the workshop
- Conducting pre and post workshop surveys
- Hosting virtual workshops focusing on climate resilience within the context of Westfield's societal, built infrastructure, natural resources and economic community assets.
- Hosting a community listening session

Read More [About EEA Municipal Vulnerability Preparedness \(MVP\) here](#)

How do I participate in the Community Resilience Building Workshops?

1. Reserve your spot to participate one or more of the 90-minute workshops by clicking on the dates below.

Community Resilience Building Workshop Dates/Time

#1 Westfield Societal Assets- Vulnerable Populations and Cultural Facilities: Held May 12

- [Click here to view recording](#)
- [Click here for Worksheet #1 \(M\)](#)
- [Click here for Worksheet #2 \(M\)](#)

#2 Westfield Infrastructure Assets- Critical Facilities and Built Environment: May 26 - 1:00-2:00PM

#3 Westfield Economic Assets- Economic Sectors and Commercial Districts: May 26 - 2:00-3:00PM

#4 Environmental Assets- Natural Resources and Open Space: June 2 - 1:00-2:00PM

2. If you have not already done so, please take the pre-workshop survey by clicking [here](#). The results of the survey will be used in the workshops.

- [Watch Survey Results can be seen here](#)



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5

Session #1 Presentation



Identify Natural
Hazards, Risk Areas
and Community
Strengths

1:10 PM

Tighe&Bond

6

WHAT ARE NATURAL HAZARDS?

Poor Urban Drainage
Regional Flooding
Culvert Failure



Inland Flooding



Tsunami



Severe Winter Storm

Blizzards
Snow
Ice Storms



Drought



Average/Extreme
Temperatures



Tornadoes



Landslide



Wildfires



Other Severe Weather

Nor'easters
High Wind
Heavy Precipitation
Microbursts



Coastal Flooding



Invasive Species



Earthquake



Coastal Erosion



Hurricanes/Tropical Storms



Tighe&Bond

7

TOP NATURAL HAZARDS – PAST & PRESENT



Thunderstorms



High wind



Extreme temperatures



Nor'easters / ice storms



Tighe&Bond

8

TOP NATURAL HAZARDS – FUTURE



Flooding



High wind / extreme temperatures (tie)



Dam Overtopping / invasive species (tie)



Hurricanes / tropical storms



Tighe & Bond

9

WESTFIELD'S TOP NATURAL HAZARDS THE SURVEY SAYS....

EXTREME TEMPERATURES

HIGH WINDS / STORMS

FLOODING

INVASIVE SPECIES



**CLIMATE
CHANGE**



AMPLIFIED RISKS

- Community and regional infrastructure
- Local and regional economies
- Public Health
- Natural resources and our environment



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WHAT ARE COMMUNITY ASSETS?



Societal



Infrastructure



Economy



Natural
Resources



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ECONOMIC ASSETS

- Air National Guard 104th Fighter Wing
- Barnes Airport Industrial Park
- Big Y Foods
- Big Y Shopping Center
- C & S Wholesale
- City of Westfield
- Home Depot
- Little River Plaza
- Tekoa Country Club
- Tighe & Bond
- Wal-Mart
- Western Massachusetts Hospital
- Westfield Shops
- Westfield School Department
- Westfield State University
- Westgate Plaza
- YMCA



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12



Session #1 Discussion



Economic Assets: Strengths and Vulnerabilities

1:20 PM

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13

Switch to Community Resilience Building Workshop Risk Matrix
to review economic assets and their strengths and
vulnerabilities

Tighe&Bond

14

Session #2 Presentation



Identify Actions to Address Vulnerabilities and Protect Strengths

1:30 PM

Tighe&Bond

15

TYPES OF MITIGATION ACTIONS

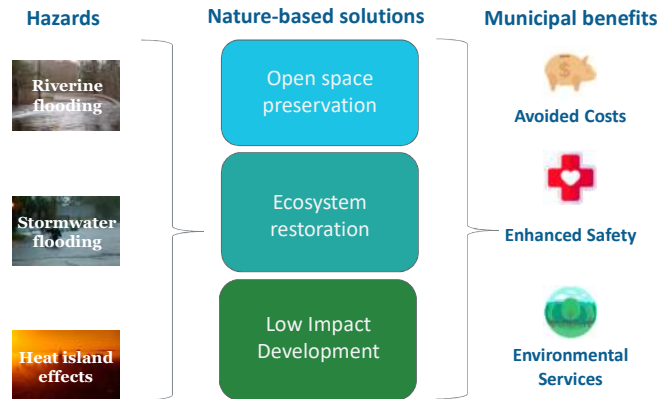
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5. Structural Projects
6. Emergency Services Protection



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16

DISCUSSION ITEM: Mitigation Strategies



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17

Switch to Community Resilience Building Workshop Risk Matrix to populate mitigation strategies

Tighe&Bond

18



Session #3

Wrap up and
Assignments

2:15 PM

Tighe&Bond

19

PARTICIPANT ASSIGNMENTS

- **Sign up for Additional Workshops**

- Environmental assets: June 2nd, 1:00-2:30 PM



- **Take the Post Workshop Survey**

- <http://services.tighebond.com/mvp/westfield/>
- Will be posted after all workshops are completed

- **Review the Draft Findings CRB Report**

- Available on the website in mid-June

- **Attend the Listening Session**

- Anticipated to be held in mid-June



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**CITY OF WESTFIELD MUNICIPAL
VULNERABILITY PREPAREDNESS**

Community Resilience Building Workshop
Environmental Vulnerability & Strengths

June 2, 2020

1

TODAY'S AGENDA

1:00 Introduction & Workshop Goals




1:10-1:20 Natural Hazard Risks and Identified Community Assets -Survey Summary

1:20-1:30 Confirm Environmental Assets List and Strengths and Vulnerabilities (submit comments via Q&A)

1:30-1:45 Mitigation Action Definitions and Examples

1:45-2:15 Discussion on Mitigation Actions (submit comments via Q&A)

2:15-2:30 Wrap up and Participant Homework (post workshop survey)

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Community Resilience Building Workshop Dates/Time

#1 Westfield Societal Assets- Vulnerable Populations and Cultural Facilities: Held May 12

- [Click here to view recording](#)
- [Click here for Workshop #1 Q&A](#)
- [Click here for Workshop #1 Draft Community Resilience Building Matrix](#)

#2 Westfield Infrastructural Assets -Critical Facilities and Built Environment: Held May 19

- [Click here to view recording](#)
- [Click here for Workshop #2 Q&A](#)
- [Click here for Workshop #2 Draft Community Resilience Building Matrix](#)

#3 Westfield Economic Assets – Economic Sectors and Commercial Centers: Held May 26

- [Click here to view recording](#)
- [Click here for Workshop #3 Q&A](#)
- [Click here for Workshop #3 Draft Community Resilience Building Matrix](#)

#4 Environmental Assets – Natural Resources and Open Space: June 2 – 1:00-2:30PM

Public Listening Session- June 16 ,Planning Board Meeting 7:00 PM

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5



Session #1 Presentation



Identify Natural
Hazards, Risk Areas
and Community
Strengths

1:10 PM

Tighe&Bond

6

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Invasive Species



Earthquake



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Hurricanes/Tropical Storms



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- >Natural resources and our environment



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WHAT ARE COMMUNITY ASSETS?



Societal



Infrastructure



Economy



Natural
Resources



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11

ENVIRONMENTAL ASSETS

- Watershed protection lands
- Trustees of Reservations properties
- Wetlands and floodplains
- Westfield, Little, and Connecticut Rivers
- Local farms
- Barbara Swords Park
- Columbia Greenway
- East Mountain Wildlife Mgmt Area
- Gateway Entrance Park
- Hampton Ponds State Park
- Honey Pot Conservation Area
- Mungo Cow Pasture
- Parker Park
- Ponders Hollow Trailside
- Stanley Park
- Westfield River Walk
- Westfield Sportsmen's Club



Tighe & Bond

12



Session #1 Discussion



Economic Assets: Strengths and Vulnerabilities

1:20 PM

Tighe&Bond

13

Switch to Community Resilience Building Workshop Risk Matrix
to review environmental assets and their strengths and
vulnerabilities

Tighe&Bond

14

Session #2 Presentation



Identify Actions to Address Vulnerabilities and Protect Strengths

1:30 PM

Tighe&Bond

15

TYPES OF MITIGATION ACTIONS

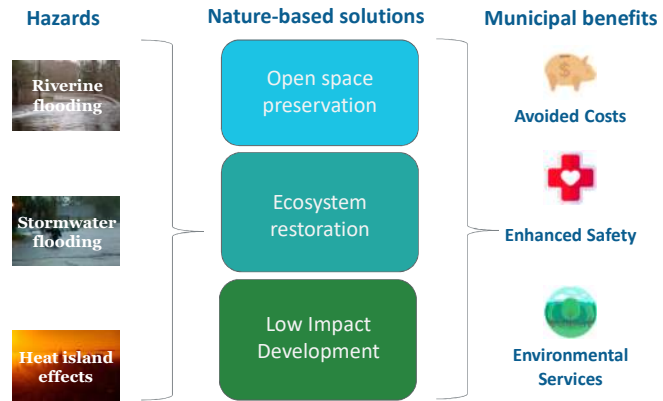
1. Prevention
2. Property Protection
3. Public Education and Awareness
4. Natural Resource Protection and Green Infrastructure (nature-based solutions)
5. Structural Projects
6. Emergency Services Protection



Tighe&Bond

16

DISCUSSION ITEM: Mitigation Strategies



Tighe&Bond

17

Switch to Community Resilience Building Workshop Risk Matrix to populate mitigation strategies

Tighe&Bond

18

Session #3

Wrap up and
Assignments

2:15 PM

Tighe&Bond

19

PARTICIPANT ASSIGNMENTS

- **Take the Post Workshop Survey**
 - <http://services.tighebond.com/mvp/westfield/>
- **Review the Draft Findings CRB Report**
 - Available on the website in mid-June
- **Attend the Listening Session**
 - June 16th, 7 PM, Planning Board meeting



Tighe&Bond

20

STILL HAVE QUESTIONS OR COMMENTS?

Contact Information:

- **Gabrielle Belfit, CFM, Senior Environmental Scientist**
 - GCBelfit@tighebond.com
 - 508.304.6362
- **Emily Tully, Environmental Planner**
 - ETully@tighebond.com
 - 413.875.1622



Tighe & Bond

Westfield Societal Assets Webinar – Mary 12, 2020

Kristin Dippold (You)

12:50 PM

Good afternoon and welcome. Please send a quick introductory message so we know who is in attendance. Feel free to share your affiliation (resident, business owner, municipal staff, etc.) We appreciate your cooperation with us as we navigate this online format.

Jay Vinskey

12:52 PM

City planner

Joe Kietner

12:52 PM

Good Afternoon. I am the Stormwater Coordinator for the City of Westfield DPW.

Anonymous

12:54 PM

Where do we announce ourselves? This is Kate from the Chamber

Kristin Dippold (You)

12:55 PM

Please note that the audience will not have the ability to verbalize questions and comments. Please use this Q&A box to communicate with the presenters.

Anonymous

12:56 PM

Hi, Bill Carellas, Planning Board here

Peter Miller

12:58 PM

Peter Miller, Community Development Director is here.

Doug Hutcheson

12:59 PM

DCR Service Forester for Westfield

Bridget Matthews-Kane

1:00 PM

City Council, Ward 3

Kristen Mello

1:00 PM

Kristen Mello, is here for WRAFT

Christina Jones

1:01 PM

Springfield Water and Sewer

Meredith Borenstein

1:02 PM

Good afternoon, Meredith Borenstein, Conservation Commission

Mary Ann Babinski is on board

1:02 PM

Mary Ann Babinski is on board

Kristin Dippold (You)

1:03 PM

As we work through this session, please type in your questions and responses in the Q&A section. You may need to continually scroll down to see the moderator's questions and other participants comments. If you have an issue with Microsoft Teams, please send a text message to our IT support at 508-499-8193

Anonymous

1:04 PM

Bruce Bussiere Baystate Noble

Corrin Meise-Munns, Senior Planner Pioneer Valley Planning Commission

1:05 PM

Corrin Meise-Munns, Senior Planner at Pioneer Valley Planning Commission

Anonymous

1:07 PM

Michael Sweeney, United Way of Pioneer Valley

Chris Rogers

1:13 PM

Hi all - Chris Rogers from Westfield Public Schools here.

Kristin Dippold (You)

1:24 PM

Please review the list of assets. Are there other types of vulnerable populations that should be listed? Is this list missing anything? Should any items be deleted?

Peter Miller

1:26 PM

Youth & Family Organizations- Boys & Girls Club; YMCA

Peter Miller

1:26 PM

Churches- strengths

Peter Miller

1:27 PM

Amelia Park Ice Arena- strength as a large building to provide shelter, cooling

Kate Deviny

1:27 PM

The Athenaeum (6 Elm St) has the strength of knowledgeable staff, provides shelter & restrooms,

Peter Miller

1:28 PM

Shopping area is a vulnerability as it is in a flood plain

Joe Mitchell

1:28 PM

The Airport and Rail is a strength

Connie Adams

1:28 PM

What about adding farms & open space

Peter Miller

1:28 PM

Westfield State University as a strength- high and dry with large modern spaces

Anonymous

1:29 PM

Hospital, Barnes ARNG, Westfield State University all strengths

Joe Mitchell

1:29 PM

Waste Water Treatment Plant is a strength. Its location in the flood plain may be a vulnerability.

Meredith Borenstein

1:29 PM

is the library or city hall listed?

Kate Phelon

1:29 PM

WSU-Strength; housing, backup generator, food services

Peter Miller

1:30 PM

Specifically Route 20 big boxes

Jay Vinskey

1:30 PM

Westfield State Univ, dormitories other facilities as strength

Meredith Borenstein

1:31 PM

yes, Main street is all in floodplain

Joe Mitchell

1:31 PM

Shopping area (East Main street) is also a strength as it is large and air conditioned.

Meredith Borenstein

1:33 PM

home depot, walmart, big y, tj max are in floodplain

Connie Adams

1:33 PM

what about farms for food...?

Bill Carellas

1:33 PM

MA State Police as a Strength

Chris Rogers

1:33 PM

Climate controlled schools like Westfield Middle and Westfield Intermediate are strengths

Peter Miller

1:34 PM

Housing Authority properties would need to be investigated. Unsure how equipped they are for extreme heat with vulnerable populations.

Peter Miller

1:34 PM

Noble Hospital and Western Mass Hospital

Anonymous

1:34 PM

Baystate Noble

Doug Hutcheson

1:35 PM

Barnes Facility-strength

Connie Adams

1:36 PM

Senior Center?

Heather

1:36 PM

What about the website and public access channels as assets for information dissemination?

Connie Adams

1:36 PM

Do you consider private facilities like the Roots stadium?

Doug Hutcheson

1:39 PM

Hampton Ponds parking lot is a large staging area-strength

Bridget Matthews-Kane

1:39 PM

Mass Turnpike

Kristen Mello

1:40 PM

The public schools provide large buildings and parking lots, commercial kitchens, and a well-developed communication network including in several languages

Jay Vinskey

1:42 PM

Barnes Air NG base as a societal strength?

Chris Rogers

1:43 PM

Kristen is correct - but again climate controlled schools-WIS and WMS

Kristin Dippold (You)

1:44 PM

Thank you all for your input so far! We have gathered some great information. Do not worry if we did not have the time to directly address your comment. The entire Q&A will be saved.

Kate Deviny

1:45 PM

The Athenaeum has staff who speak Spanish and Russian, fyi

Kristin Dippold (You)

1:53 PM

We will now brainstorm mitigation actions for each of the societal assets. Please submit your ideas via the Q&A.

Connie Adams

1:54 PM

Mobile Home parks - have some sort of shelter on-site, emergency back-up power

Kristen Mello

1:54 PM

We have environmental justice populations living in areas likely to flood in the event we lose structural integrity to our levees and flood control dams. Along with rehab to our structures, which i know the flood control commission is working on, setting aside as much land as possible in the watershed areas... environmental restoration, would help to protect those populations.

Jennie

1:54 PM

Does the anthaneum have a generator?

Peter Miller

1:54 PM

Consider acquiring properties along riverfront to deal with flood

Kate Deviny

1:54 PM

seems like Covid has taught us that we need organization-city wide that puts the different strengths in order

Jennie

1:54 PM

Is there a way to communicate better with senior citizens who may not be tech savvy?

Connie Adams

1:54 PM

elderly Living alone - develop a buddy system, friendly neighbor check-in etc.

Bridget Matthews-Kane

1:55 PM

extreme temp - plant trees in EJ communities

Doug Hutcheson

1:56 PM

Maintain vegetative buffers along stream corridors

Kate Deviny

1:56 PM

the Athenaeum would need back up power supply

Bridget Matthews-Kane

1:58 PM

change zoning so can't build in floodplain or update codes so buildings more flood resistant

Joe Mitchell

1:58 PM

Acquiring land in the downtown area, would benefit the EJ community as well as the immigrant population as they live in the low-lying downtown area.

Heather

1:58 PM

Adding cooling and backup generators to the other schools

Doug Hutcheson

1:58 PM

Conduct an inventory of hazard trees, begin removals and replanting program

Connie Adams

1:58 PM

regarding housing authority properties - need to do a scan of properties and ensure that they have cooling - also plant trees

Bridget Matthews-Kane

1:59 PM

identify community leaders in immigrant communities to disseminate information during emergency

Mary Ann

1:59 PM

Develop a concrete plan to list the amount of impervious surfaces which contribute to storm water runoff , flooding and heat. Save our trees.

Bridget Matthews-Kane

2:00 PM

have master gardeners do workshops on rain gardens to mitigate water runoff

Anonymous

2:02 PM

Acquire power generators for all buildings identified

Connie Adams

2:02 PM

Regarding all community organizations - organize in advance and identify unique strengths that can be used to solve individual issues, i.e. some churches have a food kitchen/pantry others might have housing.

Jay Vinskey

2:03 PM

Farms - adopt a right-to farm ordinance and agricultural commission to represent farm/food production interests

Anonymous

2:03 PM

Removing solid materials (dirt/debris) from street drains in flood zones

Connie Adams

2:04 PM

add on to zoning suggestion - decrease amount of non-permeable paving allowed to improve water absorption during rainfall

Bridget Matthews-Kane

2:06 PM

extreme temp - give grants to houses to use "old fashioned" ways to cool house - attic fan, awnings, shade trees, things that are not huge energy usage

Meredith Borenstein

2:08 PM

restore floodplains-remove pavement and old nonfunctional buildings from BLSF

Connie Adams

2:08 PM

regarding rail - have they identified what parts of the rail are susceptible to flooding and washout

Meredith Borenstein

2:08 PM

relocate bus storage facility from floodplain

Connie Adams

2:10 PM

Westfield State University - do we need to have an agreement with them in place ahead of time if we needed to use their facility?

Connie Adams

2:10 PM

Provide an advocate

Doug Hutcheson

2:13 PM

For economically disadvantaged families-Start a Community Wood Bank for free/low cost firewood. Source of wood could be hazard tree removals

Kristin Dippold (You)

2:14 PM

The entire Q&A will be saved, published, and posted. All comments will be addressed in the MVP process, even if we did not have time to address them today.

Anonymous

2:14 PM

Baystate Noble has three generators, commercial kitchen and space to house staff and others

Anonymous

2:14 PM

acquire SP

Kristen Mello

2:17 PM

Thank you for all your work on this.

Anonymous

2:18 PM

Anonymous - Agma Sweeney. Thank you, look fw to next week

Bill Carellas

2:18 PM

Thank You!

Westfield Webinar #2 – Infrastructural Q&A

Mary Ann Babinski

12:55 PM

Hello!

Bill Carellas

12:56 PM

Planning Board

Mark Cressotti

12:56 PM

I'm here. Will there be sound?

Gabrielle Belfit (Moderator)

12:56 PM

Yes, there will be sound once the meeting starts. Enjoy a moment of peace!

Anonymous

12:56 PM

Hello, This is Ben Warren from the Fire Department

Joe Mitchell

12:57 PM

Joe Mitchell has joined.

Kristen Mello

12:58 PM

here, representing Westfield Residents Advocating For Themselves (WRAFT)

Kristin Dippold (You)

12:58 PM

Welcome! Please note that the audience will not have the ability to verbalize questions and comments. Use this Q&A section to communicate with the presenters. You may need to continually scroll down to see the moderator's questions and other participants comments.

Bob Weaver

12:58 PM

SWSC

Jay Vinskey

12:59 PM

here!

Kristin Dippold (You)

12:59 PM

If you have an issue with Microsoft Teams, please send a text message to Marc, our IT support at 508-499-8193

Christina Jones

1:00 PM

SWSC

Chris Willenborg

1:02 PM

Chris has joined from Westfield-Barnes Regional Airport

Joe Kietner

1:02 PM

Stormwater Coordinator

Peter Miller

1:03 PM

Here

Mary Ann Babinski

1:03 PM

Have you started?

Kristin Dippold (You)

1:04 PM

Hi Mary Ann - Yes, we have just started to webinar.

Emily Slotnick

1:03 PM

PVPC, here!

Tony Contrino - WGE

1:04 PM

Present

Bridget Matthews-Kane

1:04 PM

Westfield City Council, Ward 3

Hillary McEwan

1:05 PM

Stanley Park is here

Lt Col Jeremy Dugan

1:05 PM

104th Fighter Wing is on today. Thanks

Chris Rogers

1:06 PM

Here!

Chris Rogers

1:06 PM

Westfield Schools

Meredith Borenstein

1:07 PM

ConCom is here!

Paul Cacolice

1:07 PM

Representing Friends of Columbia Greenway RailTrail

Al Giguere

1:12 PM

Westfield Flood Control Commission... via cell phone

Matt Gamelli

1:16 PM

Here as well, on behalf of Westfield's Engineering Department.

Kristin Dippold (You)

1:18 PM

Based on the survey, here are the infrastructural assets for the City of Westfield. Are there other assets that should be added? Should anything be deleted?

Anonymous

1:25 PM

Mainline Dr is prone to flooding

Tony Contrino - WGE

1:25 PM

Fiber based communications infrastructure (Whip City Fiber) strength & vulnerability

Emily Slotnick

1:26 PM

i don't remember if it was listed at the top of the table, but did we include culverts yet? probably a strength and weakness

Al Giguere

1:27 PM

FLOOD CONTROL INFRASTRUCTURE

Al Giguere

1:27 PM

I did not hear Flood Control Infrastructure or 2 levees, 2 PL566 Flood Control Dams, Flood Control Pump Station mentioned as critical infrastructure.

Jay Vinskey

1:27 PM

Solar Farms (3) as a strength

Agma Sweeney in attendance

1:27 PM

Pleasant street prone to flooding

Heather Stayton

1:28 PM

Bridges connecting to downtown and other locations. Surrounded by rivers, would be vulnerable without these assets

Peter Miller

1:28 PM

Bridges- Cowles Bridge currently a vulnerability due to deteriorated state

Peter Miller

1:28 PM

Multiple broadband providers- strength

Joe Kietner

1:29 PM

Multiple locations, possible back up base of operation

Al Giguere

1:30 PM

ARM BROOK F.C. DAM, POWDERMILL F.C. DAM, WILLIAMS RIDING WAY FLOOD CONTROL PUMP STATION, LITTLE RIVER LEVEE, WESTFIELD RIVER LEVEE, MAINLINE DRIVE F.C. DRAINAGE

Al Giguere

1:30 PM

STRENGTH AND WEAKNESSES

Al Giguere

1:30 PM

SORRY ABOUT CAPS... VIA PHONE

Kristen Mello

1:30 PM

the municipal wells tap an unconfined aquifer which is vulnerable to contamination especially from storm or flood waters.

Lt Col Jeremy Dugan

1:31 PM

Is proximity to I-90 and a dedicated exit a transportation infrastructure strength?

Al Giguere

1:31 PM

Vulnerability Meadow Street and nearby side streets, they are lowest point in the flood control protected areas of downtown

Peter Miller

1:32 PM

Army National Guard Armory- Franklin Street- Strength

Emily Slotnick

1:33 PM

elaborating on that last one - stormwater infrastructure, like culverts, are often aged and undersized for current conditions, and therefore vulnerable to collapse/failure as a result of increased intensity rainfall events. culverts that have been right-sized to future projected rainfall and flood conditions are a strength in mitigating flood damage, and providing safe habitat passage (hopefully)

Peter Miller

1:33 PM

Undersized water supply lines in downtown- fire vulnerability

Mary Ann Babinski

1:33 PM

Low railroad bridges (ie East Mountain Rd) Vulnerability to impeding truck traffic route

Heather Stayton

1:35 PM

Groundwater wells much less vulnerable to flood and stormwater impacts than surface water sources.

Chris Willenborg

1:35 PM

The Airport is also home to the Air Methods who provide air ambulance services and Army National Guard Helicopter Unit that has airlift capabilities. The 104th Fighter Wing is based at the Airport too and have been called on by the Governor to assist in disaster recovery operations across Western MA.

Agma Sweeney in attendance

1:37 PM

close to I-90 is a strength, in my opinion yes

Agma Sweeney in attendance

1:39 PM

which side streets in downtown Westfield are referenced?

Gabrielle Belfit (Moderator)

1:41 PM

Agma, I'm not sure at this time, but the matrix will be put online for your review by the end of the week. Be sure to check it out and let us know if you have any comments

Kristin Dippold (You)

1:41 PM

Does anyone have any thoughts on mitigation strategies that could be implemented for a specific asset?

Bridget Matthews-Kane

1:42 PM

pleasant street - improve drainage and plant trees in area

Joe Kietner

1:42 PM

hardening of critical infrastructure against flooding

Bridget Matthews-Kane

1:43 PM

Meadow Street - change zoning so harder to build new properties there/reduce density in area

Jay Vinskey

1:44 PM

City wells - acquire or protect land in the aquifer recharge areas

Bridget Matthews-Kane

1:45 PM

information campaign to make sure more people who own residences in flood plain have flood insurance

Peter Miller

1:45 PM

Replace undersized water lines in downtown to improve fire hydrant service

Meredith Borenstein

1:45 PM

change zoning or purchase properties to decrease development and prevent downstream flooding

Mary Ann Babinski

1:46 PM

Signage to mark/identify the Water Resource Protection Zone

Peter Miller

1:46 PM

Improve Ponders Hollow Levee

Bridget Matthews-Kane

1:46 PM

consider buying houses in areas most likely to flood

Meredith Borenstein

1:47 PM

purchase properties that are high risk to flooding and convert back to floodplain

Joe Mitchell

1:47 PM

Purchase land in the flood plain to decrease development and create a flood buffer.

Heather Stayton

1:47 PM

Replace failing culverts that are undersized with appropriately sized culverts. Add backflow prevention on vulnerable outfalls.

Kate Phelon has joined.

1:48 PM

For extreme temperatures: cooling stations should be identified and communicated to vulnerable populations.

Bridget Matthews-Kane

1:48 PM

For extreme temperatures - plant trees in neighborhoods, especially low income

Tony Contrino - WGE

1:49 PM

Natural Gas Receipt Station - 158 Union Street - hardening of critical infrastructure against flooding

Heather Stayton

1:49 PM

Purchase properties or portions thereof encroaching on the levees to remove woody vegetation and structures.

Al Giguere

1:50 PM

that is Little River Levee not ponders hollow levee

Gabrielle Belfit (Moderator)

1:50 PM

thanks for clarifying

Agma Sweeney in attendance

1:51 PM

Inspect all bridges. Identify those that need immediate work in low lying areas prone to flooding

Kristen Mello

1:51 PM

Update chemical hazard information for properties everywhere, especially flood prone areas.

Mary Ann Babinski

1:52 PM

Identify and Preserve trees that serve to protect vulnerable areas from stormwater runoff and air pollution.

Meredith Borenstein

1:53 PM

restore floodplains/wetlands along the river

Peter Miller

1:54 PM

Fire and Police HQs as vulnerabilities.

Heather Stayton

1:54 PM

Public campaign to encourage homeowner on site stormwater management, i.e. rain gardens, decreased impervious surfaces, etc.

Peter Miller

1:55 PM

They are aged and structurally insufficient

Bridget Matthews-Kane

1:56 PM

Consider adding awnings to city properties to protect from extreme heat - as Noble Hospital did

Meredith Borenstein

1:57 PM

update stormwater bylaw to include stormwater mgt of single family homes

Al Giguere

1:57 PM

Purchase undeveloped lands in Floodplain adjacent to little River and Westfield for flood water dispersion/reduced heights and pressures on levees

Al Giguere

1:58 PM

NO PONDS HOLLOW IS A ROAD, LITTLE RIVER LEVEE BISECTS IT. ITS A USACE-BUILT CITY OWNED LEVEE... FLOOD CONTROL CHAIR

Al Giguere

1:59 PM

Flood mitigation through wetland protection/extension in floodplain zones at 100 year levels

Agma Sweeney in attendance

1:59 PM

Identify the dozens of trees planted in tree belt areas downtown 15 years ago by Cynthia Hartdegen.

Christina Jones

2:02 PM

Along with hardening power infrastructure for wind, think about maintaining tree branches, large trees, etc. (if that's not already on the list)

Tony Contrino - WGE

2:02 PM

Yes, utility infrastructure is prone to wind & ice damage

Meredith Borenstein

2:03 PM

utilize recent levee upgrade study done for the Flood Commission to analyze and prioritize properties at risk of development which could also serve to function as properties to prevent downstream flooding

Kristen Mello

2:04 PM

work to ensure stormwater and other drainage from airport is diverted away from municipal well recharge areas

Emily Slotnick

2:04 PM

If it doesn't exist, conduct a comprehensive public tree inventory to document vulnerable trees and support management and planting plans

Gabrielle Belfit (Moderator)

2:05 PM

Thanks, great comment

Chris Willenborg

2:05 PM

The critical issue for protecting the airport is maintaining pavement and staging areas for use in emergencies. The Airport is not in the flood plain and is not susceptible to flooding.

Paul Cacolice

2:07 PM

Extend Greenway to the north side of the city - as an elevated route - to provide a pedestrian route out of lower elevations.

Kristen Mello

2:08 PM

Incentivize native beneficial plantings in vulnerable and overdeveloped areas. maybe with local growers and the tech academy/university intersectional project

Agma Sweeney in attendance

2:09 PM

Identify large trees that could be problematic in high winds or storms

Bridget Matthews-Kane

2:09 PM

zoning/ordinance to forbid planting invasive ornamentals

Bridget Matthews-Kane

2:11 PM

Rebuilding the police station is already being discussed - flooding in basement from underwater streams

Al Giguere Flood Control Comm Chair

2:13 PM

Vulnerabilities: City Hall, Police HQ, Fire HQ, Little River Fire Station, DPW and Water Resources+ City Fuel Depot all at risk for flooding...

Kristen Mello

2:14 PM

Are property specific, physical, flood protection installations around WG&E assets near river on Union (gas) and Meadow (Elec)?

Mary Ann Babinski

2:14 PM

Welcome to Streamfield!

Al Giguere Flood Control Comm Chair

2:16 PM

Little River Levee is not viable at this time and needs substantial repairs, placing city assets I mentioned at potential risk along with public schools, businesses and homes in downtown areas

Lt Col Jeremy Dugan

2:16 PM

I'm sorry. I need to jump off now. I have another meeting to attend at 2:30. Thanks for letting me listen in and participate

Kristin Dippold (You)

2:17 PM

Thank you for participating!

Al Giguere Flood Control Comm Chair

2:19 PM

THOSE FLOOD CONTROL ASSETS ARE ALL PARTS OF WESTFIELD RIVER LEVEE

Westfield – Webinar #3 - Economic Assets – Q&A

Kristin Dippold (You)

12:54 PM

Good afternoon, please send a quick introductory message so we know who is in attendance. Feel free to share your affiliation (resident, business owner, municipal staff, etc.) The webinar will begin momentarily, thank you!

Jay Vinskey

12:55 PM

here!

Agma Sweeney, WSAA

12:56 PM

Agma Sweeney here

Mark Cressotti

12:56 PM

Here

Mary Ann Babinski

12:56 PM

Present!

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

12:57 PM

Lt. Kevin Bard Westfield PD. Commander of the Community Service Unit.

Heather Stayton

12:58 PM

this message was broadcasted

Here from DPW-Water

Christina Jones

1:00 PM

SWSC

Joe Mitchell

1:00 PM

Joe Mitchell is here.

Hillary McEwan

1:00 PM

Stanley Park here

Paul Cacolice

1:01 PM

Paul Cacolice - from Friends of Columbia Greenway Rail Trail here. Hello everyone!

Kimberly Puffer domus Inc.. Hi everyone

1:01 PM

Just so you all know I do not have a speaker or a web cam. Kim . Domus Inc

Kristin Dippold (You)

1:02 PM

Welcome! As we work through this session, please type your questions and responses in the Q&A section. You may need to continually scroll down to see other's comments. Note that the audience will not have the ability to verbalize questions and comments.

Bridget Matthews-Kane

1:03 PM

Hi - Bridget Matthews-Kane - Westfield City Council - ward 3

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:03 PM

If anyone needs to ask me a question please do so via this messaging. I can barely hear what is being said on the Webinar. Thanks

Meredith Borenstein

1:03 PM

Conservation Coordinator is here!

Tom Hibert

1:03 PM

Tom Hibert From Health Dept. Here

Kristin Dippold (You)

1:04 PM

If you have an issue with Microsoft Teams, please send a text message to our IT Support at 508-499-8193

Kimberly Puffer domus Inc.. Hi everyone

1:04 PM

Here

Connie Adams, Yellow Stonehouse Farm

1:05 PM

Present

Kimberly Puffer domus Inc.. Hi everyone

1:05 PM

jay can you talk a little louder please

Peter Miller

1:09 PM

Community Development Director

Joe Kietner

1:09 PM

Stormwater Coordinator DPW

Agma Sweeney, WSAA

1:23 PM

Columbia Manufacturing Inc. strength furniture manuf.

Anonymous

1:24 PM

Westfield-Barnes Regional Airport should be listed individually. The 104th Fighter Wing and Gulfstream are both tenants at the Airport. The Airport has 2,100 direct/indirect jobs with an economic output of \$236M each year. The Airport is a strength as it would provide venue for emergency response and staging area for supplies.

Gabrielle Belfit (Moderator)

1:25 PM

thank you, we'll be sure to include the details

Joe Mitchell

1:24 PM

Home Depot Distribution Center is a strength. High elevation.

Agma Sweeney, WSAA

1:25 PM

Columbia Manuf. located at One Cycle st.

Jay Vinskey

1:25 PM

Correction - 1111 Southampton is the old Digital Building, not Home Depot . HD distribution center is on Campanelli Dr

Kimberly Puffer domus Inc.. Hi everyone

1:25 PM

westfield G & E and own internet service

Heather Stayton

1:25 PM

East Main Home Depot is in flood plain

Joe Mitchell

1:25 PM

Home depot retail ins the vulnerable one.

Bridget Matthews-Kane

1:26 PM

Governor's Center as vulnerability as vulnerable population in floodplain

Connie Adams, Yellow Stonehouse Farm

1:26 PM

Mestek & Prolamina might be considered a risk as it is near the river and at risk for flooding They ay have a fair amount of chemicals on site which could cause pollution.

Kimberly Puffer domus Inc.. Hi everyone

1:26 PM

Wesstfield G & E and whip city fiber

Connie Adams, Yellow Stonehouse Farm

1:26 PM

What about Westfield University?

Kate Phelon - Greater Westfield Chamber of Commerce

1:27 PM

With regards to a natural disaster before, during and after - our communications systems with WEMA, Community Cable TV and Westfield G&E would be strengths.

WG+E is in attendance

1:27 PM

Gas & Electric - Strength as a large employer and emergency management experience; Vulnerability due to dependence on receipt of physical gas and electric supplies from interstate transmission systems.

Connie Adams, Yellow Stonehouse Farm

1:28 PM

The Solar field?

Kate Phelon - Greater Westfield Chamber of Commerce

1:28 PM

We also have a solid workforce base; does this fit?

Mary Ann

1:29 PM

Prolamina is now ProAmpac

Jay Vinskey

1:29 PM

Downtown, generally, as an economic center/asset

Agma Sweeney, WSAA

1:29 PM

PVTA Bus Depot at 10 Arnold st (S) transportation (V) located flood area?

Bridget Matthews-Kane

1:30 PM

Home Day Care Centers - vulnerable as small children

Mary Ann

1:31 PM

Hampden Ponds Plaza 1029 North Rd

Mark Cressotti

1:31 PM

Columbia Greenway will be an economic asset

Meredith Borenstein

1:31 PM

Outdoor storage at home depot and walmart could be considered a vulnerability bc they are both in the floodplain

Mary Ann

1:32 PM

Strength= economic center

Jay Vinskey

1:32 PM

Aquifer zone as vulnerability- limits industrial/business uses

Carmel Steger

1:32 PM

Hi, Signing on late to the meeting but I am the Chair of the Columbia greenway if any questions came up

Agma Sweeney, WSAA

1:33 PM

Columbia Greenway also transportation

Kate Phelon - Greater Westfield Chamber of Commerce

1:33 PM

The Turnpike Exchange - s or v ; not sure if would be affected by a flood?

Connie Adams, Yellow Stonehouse Farm

1:33 PM

Hospitals?

Mark Cressotti

1:33 PM

Interchange 3 is n economic asset

Kristin Dippold (You)

1:34 PM

The comments that came in after we moved on will be recorded in the Q&A and included in the matrix after the webinar has ended. Thank you all for your great comments!

Mark Cressotti

1:41 PM

Acquire 146 Main St to preserve flood plane, environmental enhancement and opportunity for active n passive recreation

Paul Cacolice

1:41 PM

One way to protect the aforementioned Greenway, and also allow better escape from flooding, it to develop an elevated north side continuation of the Columbia Greenway. It also allows for economic development in its path much like what has been done already.

Jay Vinskey

1:43 PM

Downtown - revisit/update 2009 downtown economic plan, incl climate resiliency considerations

Mark Cressotti

1:44 PM

Remedie any traffic congestion to expedite response actions

Joe Mitchell

1:44 PM

Assist businesses with contingency planning.

Kimberly Puffer domus Inc.. Hi everyone

1:44 PM

Roof top gardens

Kate Phelon - Greater Westfield Chamber of Commerce

1:45 PM

Ensure all dams that would impact businesses' operations are up to or exceed code for flooding.

Joe Mitchell

1:45 PM

Communicate w/ Westfield State, Home Depot, Lowes for use of their properties for materials, and emergency laydown areas.

Agma Sweeney, WSAA

1:46 PM

Thinking about roof damage in Holyoke - inspect the buildings in these economic assets so they can withstand severe storms and wind damage

Mark Cressotti

1:47 PM

Traffic congestion at interchange 3 and southampton rd

Connie Adams

1:47 PM

Limiting more development that increasing impermeable surfaces around wetlands and near the aquifers

Peter Miller

1:48 PM

PVRR- investigate opportunities to improve structure of crossings (East Mountain Rd, Lockhouse Rd)

Kimberly Puffer domus Inc.. Hi everyone

1:48 PM

Bike rental stations ? to encourage more bike usage vs cars

Connie Adams

1:48 PM

Make sure that chemical and fuel storage locations are identified and that they are protected against flooding etc. to prevent groundwater pollution

Agma Sweeney, WSAA

1:49 PM

address traffic congestion at the entrance and exit ramps of I-90 Exit 3

Jay Vinskey

1:50 PM

Coordinate/piggyback with state/fed efforts or programs to increase the airport's resiliency

Connie Adams

1:50 PM

Flood plains should be identified and protected as a natural flood control

Kimberly Puffer domus Inc.. Hi everyone

1:53 PM

Incentives to bring new agriculture here

Meredith Borenstein

1:53 PM

coordinate with CPA commission to utilize available funds for property/floodplain acquisition

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:54 PM

If anyone needs to get in contact with me they can call my office number @ 413-642-9383 or my cell phone number @ 413-246-3795. Thanks.

Meredith Borenstein

1:55 PM

CPA= Community Preservation Act

Connie Adams

1:55 PM

Is it appropriate to require certain entities like Supermarkets to have generators to protect frozen food etc... - not sure where this fits.

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:55 PM

What was the question?

Kristin Dippold (You)

1:55 PM

Hi Kevin - Are you having technical issues?

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:56 PM

I found some earbuds so that has improved my ability to hear better. Thanks

Kristin Dippold (You)

1:56 PM

Great! Thank you

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:56 PM

I can see what is being typed and the issues being addressed

Jay Vinskey

1:56 PM

many shopping areas are in floodplain - assist/ensure response plans in place, flood control structures are adequate

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:58 PM

If there is a specific question that needs to be ask, they can do so in the next few minutes. I have another appointment to attend to. Thanks.

Kate Phelon - Greater Westfield Chamber of Commerce

1:59 PM

Jay - what about requiring new construction in the flood zone (RT 20) to meet flooding occurrence like McDonald's did. I don't know that the current zoning is.

Connie Adams

1:59 PM

question - should we be reviewing/regulating new construction in the floodplain?

Agma Sweeney, WSAA

1:59 PM

economic asset - Add E.Mountain Country Club

Mary Ann

2:00 PM

Is there (or do we need) a plan to get businesses involved in this process? Encourage them to suggest measures they can take to help.

Kevin Bard, Lieutenant of the WPD and commander of the Community Service Unit.

1:59 PM

It is my pleasure to be involved in this webinar. Thanks once again.

Meredith Borenstein

2:04 PM

thank you!!!

Westfield – Webinar #4 – Natural Environment – Q&A

Kristin Dippold (You)

12:53 PM

Good afternoon - Thank you for joining us. Please send a quick introductory message so we know who is in attendance. The webinar will begin momentarily.

Joe Kietner

12:53 PM

DPW Stormwater Coordinator

Chris Willenborg

12:55 PM

Westfield-Barnes Regional Airport is on

Anonymous

12:56 PM

Kate Phelon

Mary Ann Babinski

12:56 PM

Present!

Anonymous

12:56 PM

Greater Westfield Chamber of Commerce is here

Heather Stayton

12:56 PM

DPW-Water is here

Hillary McEwan

12:57 PM

Stanley Park is here

Anonymous

12:58 PM

Jake Lehan w/ Westfield River Watershed Association here

Meredith Borenstein

12:58 PM

Conservation Coordinator

Joe Mitchell

12:59 PM

Joe Mitchell is here.

Mark Cressotti

12:59 PM

I'm here

Jay Vinskey

1:00 PM

City Planner

Christina Jones

1:00 PM

SWSC

Bob SWSC

1:01 PM

Bob SWSC

Kimberly Puffer Domus Inc

1:02 PM

Hello

Mary Ann Babinski

1:02 PM

Hello!

Agma Sweeney, Westfield Spanish American Assoc. WSAA

1:03 PM

Agma Sweeney WSAA

Kristen Mello

1:03 PM

hello

Peter Miller

1:04 PM

Community Development- here

Connie Adams

1:05 PM

Hi

Bridget Matthews-Kane

1:05 PM

Hello

Friends of Columbia Greenway Rail Trail here!

1:11 PM

Friends of Columbia Greenway Rail Trail here

Anonymous

1:16 PM

Patty Gambarini - PVPC - here!

Kristin Dippold (You)

1:19 PM

Please share your comments here. Are there any assets missing from this list? Should any be deleted? Please identify strengths and vulnerabilities as well.

Connie Adams

1:20 PM

We should add the land that is protected with an agricultural restriction - APR land which much of the farmland in East farms into Wyben

Connie Adams

1:21 PM

APR lands are under covenant with the state of MA

Patty

1:21 PM

For forests and trees, would note that vulnerability given potential for invasion by pests with climate change, particularly gypsy moth...

Bridget Matthews-Kane

1:21 PM

Cemeteries (Pine Hill, STM, Old Buryig Ground) S - cooling in area

Bridget Matthews-Kane

1:22 PM

Wetlands near Noble Hospital

Anonymous

1:22 PM

Columbia Greenway Trail is a strength

Mary Ann

1:22 PM

Westfield Fair Grounds - Russellville Rd. Strength Open space and recreation

Peter Miller

1:22 PM

Add Water Department properties- municipally owned, protected. Strength.

Connie Adams

1:23 PM

What about the remaining wooded land which is considered "prime" real estate for commercial development?

Jay Vinskey

1:23 PM

Brickyard ponds - unique natural area/wildlife strength

Chris Willenborg

1:23 PM

Part of the Barnes Aquifer is located under Westfield-Barnes Regional Airport and is tied to the drinking water recharge area. The Airport is both a strength and vulnerability. It is a strength from the standpoint of significant pervious surface and but this can also be a vulnerability

Mark Cressotti

1:24 PM

Flood Plane =Protection/acquisition

Jay Vinskey

1:27 PM

Waterbodies, esp. boating water - vulnerability for invasive aquatic species

Anonymous

1:27 PM

Coldwater fisheries (streams) V- to warmer and habitat loss

Agma Sweeney, Westfield Spanish American Assoc. WSAA

1:27 PM

Park Square (S) Tree shade, open space (V) Maybe a vulnerability if prone to flooding, even after renovations

Anonymous

1:28 PM

strength too- for coldwater climate refugia

Patty

1:28 PM

For drinking water recharge areas, strength and vulnerability...given that have these great resources for groundwater drinking water, but also vulnerability given certain land uses and development pressures.

Connie Adams

1:28 PM

lands surrounding both Brickyard Brook and Armbrook are wetlands and need to be maintained as flood plains

Connie Adams

1:29 PM

Also true for all the other streams and rivers throughout Westfield

Bridget Matthews-Kane

1:29 PM

Stanley Park and Grandmother's Garden are vulnerable in that they both have many invasive species already in wooded areas

Agma Sweeney, Westfield Spanish American Assoc. WSAA

1:30 PM

It was a question: Is Park Square prone to flooding even after renovation?

Bridget Matthews-Kane

1:30 PM

Riverbank of Little River and Westfield River filled with invasive plants

Hillary McEwan

1:31 PM

Stanley Park home to wildlife - various species and forest areas

Anonymous

1:31 PM

FLT: Private Farms V: to development for those not permanently conserved

Anonymous

1:32 PM

Natural Heritage Estimated/Priority Habitat's along river corridors. V- to habitat loss. S - vegetated buffer, cooling, flood control, wildlife (Mainly Westfield main stem, little river, great brook)

Meredith Borenstein

1:32 PM

boating also causes bank erosion....

Connie Adams

1:32 PM

Brikyard ponds and Hampden Ponds are also filled with invasive species of water plants

Anonymous

1:32 PM

thanks

Connie Adams

1:33 PM

Don't forget the Manhan River

Meredith Borenstein

1:33 PM

prioritization of lots to acquire based on NHESP mapped rare species habitat and adjacency to other conserved parcels

Kristen Mello

1:34 PM

The wetlands around the Powdermill Brook provide some flood protection for the Environmental Justice community in the N Elm/Union St flood plain. Vulnerable to development and pollution. Strength for flood control, wildlife, open space,etc

Anonymous

1:35 PM

FLT: Tekoa Park & Westfield Water Supply land - S: wildlife habitat; recreation (for TP); clean air; clean water

Agma Sweeney, Westfield Spanish American Assoc. WSAA

1:37 PM

Wetlands on Walnut street, downhill from the Hospital V flooding

Paul Cacolice

1:40 PM

Under 'Structural Projects' would be the Westfield River levee, tied into the Greenway. Being elevated, the Greenway offers that type of protection while also allowing egress from the area of flooding. If extended to the north side of the city, the Greenway would offer the same to the north side of town as it currently does in the south side of town.

Mary Ann

1:51 PM

Dust off the 2018-2025 City of Westfield Open Space and Recreation Plan and make it required reading for department, council and commission members. It can be referenced to direct the pros and cons of their decision-making.

Connie Adams

1:52 PM

Not sure how to do this but there needs to be more balance to development - less concentration of development in certain wards that impacts flood and temp mitigation

Anonymous

1:53 PM

Trees: climate change impact resilience & adaptation planning (forests & street trees)

Patty

1:53 PM

not just prime on farmland

Hillary McEwan

1:53 PM

For Stanley Park - in a bad drought situation, wildfire risk in the forest area; work a plan with fire dpt

Connie Adams

1:54 PM

when doing culvert work it would be great to include road crossings for wildlife - even if it is just another tunnel

Jay Vinskey

1:54 PM

Also could establish a standing Open Space committee charged with seeing the OSRP materialize

Connie Adams

1:55 PM

Make sure that Westfield Business goals include environmental considerations

Kristen Mello

1:55 PM

Identify and maintain a master list of priority properties for protection/acquisition maximizing water/forest/air/species & flood protection

Connie Adams

1:56 PM

Have Westfield reduce their use of chemicals on roads and parks and grasses - no herbicides and natural alternatives to pesticides

Jay Vinskey

1:56 PM

Aquifer -Promote education for homeowners about infiltration, installing rain gardens

Meredith Borenstein

1:56 PM

update city's open space plan and prioritize parcels to be acquired

Connie Adams

1:57 PM

Westfield needs to measure things like air pollution around schools' playgrounds and densely populated areas

Patty

1:57 PM

FYI, for later clarification on farmland soils: Perhaps emulate Hatfield which went beyond targeting prime farmland soil base to include critically important statewide and locally important designated agricultural soils.

Emily Boss

1:57 PM

Farmland: identify soils of local significance for farming

Emily Boss

1:58 PM

Pollinator gardens and corridors

Kristen Mello

1:59 PM

Educate residents and businesses about native plantings and species supportive gardening to create a patchwork of habitat across the City where we cannot set aside conservation land

Jay Vinskey

1:59 PM

Update transfer of development ordinance to be more usable, particularly for aquifer areas/impervious limits

Bridget Matthews-Kane

1:59 PM

replant natives' plants in Grandmother's garden

Connie Adams

2:00 PM

Identify wildlife corridors and preserve

Agma Sweeney, Westfield Spanish American Assoc. WSAA

2:01 PM

Educational outreach to the community can also take place in the Westfield Athenaeum (in addition to at the Farmer's Market etc)

Bridget Matthews-Kane

2:02 PM

clarification: native plants should go in wooded area/natural area of Grandmother's Garden : not the flower garden

Connie Adams

2:03 PM

We also need to evaluate recycling, plastic bag usage and Westfield's dump

Patty

2:03 PM

For Aquifer, add: Training for board members to understand how stormwater infiltration BMPs for certain land uses can actually threaten drinking water quality. Need to understand stormwater management strategies that can be used to avert problems. It can be counterintuitive with the great push for LID!

Mary Ann

2:04 PM

Also use Channel 14 for outreach and education

Anonymous

2:04 PM

Is Tree Warden an active position?

Anonymous

2:04 PM

Is there a tree planting plan?

Mary Ann

2:05 PM
that's 15

Anonymous

2:05 PM
Is there a city tree inventory?

Kristen Mello

2:05 PM
Create grade level appropriate curriculum on native species, natural resources and their protection for the Westfield Public Schools.

Mary Ann

2:06 PM
Yes there is a tree warden!

Kate Phelon

2:06 PM
Scott Hathaway is working on the tree issue, but I don't have the details.

Jay Vinskey

2:06 PM
City street tree inventory could be added as a GIS layer

Anonymous

2:06 PM
what about access to plywood to protect storm fronts and windows in a case of a tornado

Patty

2:07 PM
Sorry, that I've got to go. This was a very efficient way to go through this process! Thanks!

Meredith Borenstein

2:07 PM
contact land trusts to help with land acquisition

Meredith Borenstein

2:07 PM
and prioritization

Connie Adams

2:07 PM
We have a problem with dumping in our wild areas and wetlands - causes pollution - we need to increase penalties and enforcement

Connie Adams

2:08 PM
Do an aerial survey to identify and problem areas

Agma Sweeney, Westfield Spanish American Assoc. WSAA

2:08 PM
Plywood in the event of a hurricane which can bring high winds

Meredith Borenstein

2:08 PM

We have a tree warden-Scott Hathaway

Connie Adams

2:08 PM

any problem areas - side note there are some illegal mines in town

Meredith Borenstein

2:09 PM

We could also publish articles in the local paper for education

Agma Sweeney, Westfield Spanish American Assoc. WSAA

2:10 PM

Education - in FB page associated with Westfield

Mary Ann

2:12 PM

I repeat! Signage to identify water resource protection areas

Kristin Dippold (You)

2:12 PM

Your comment will be added. Thanks!

APPENDIX E

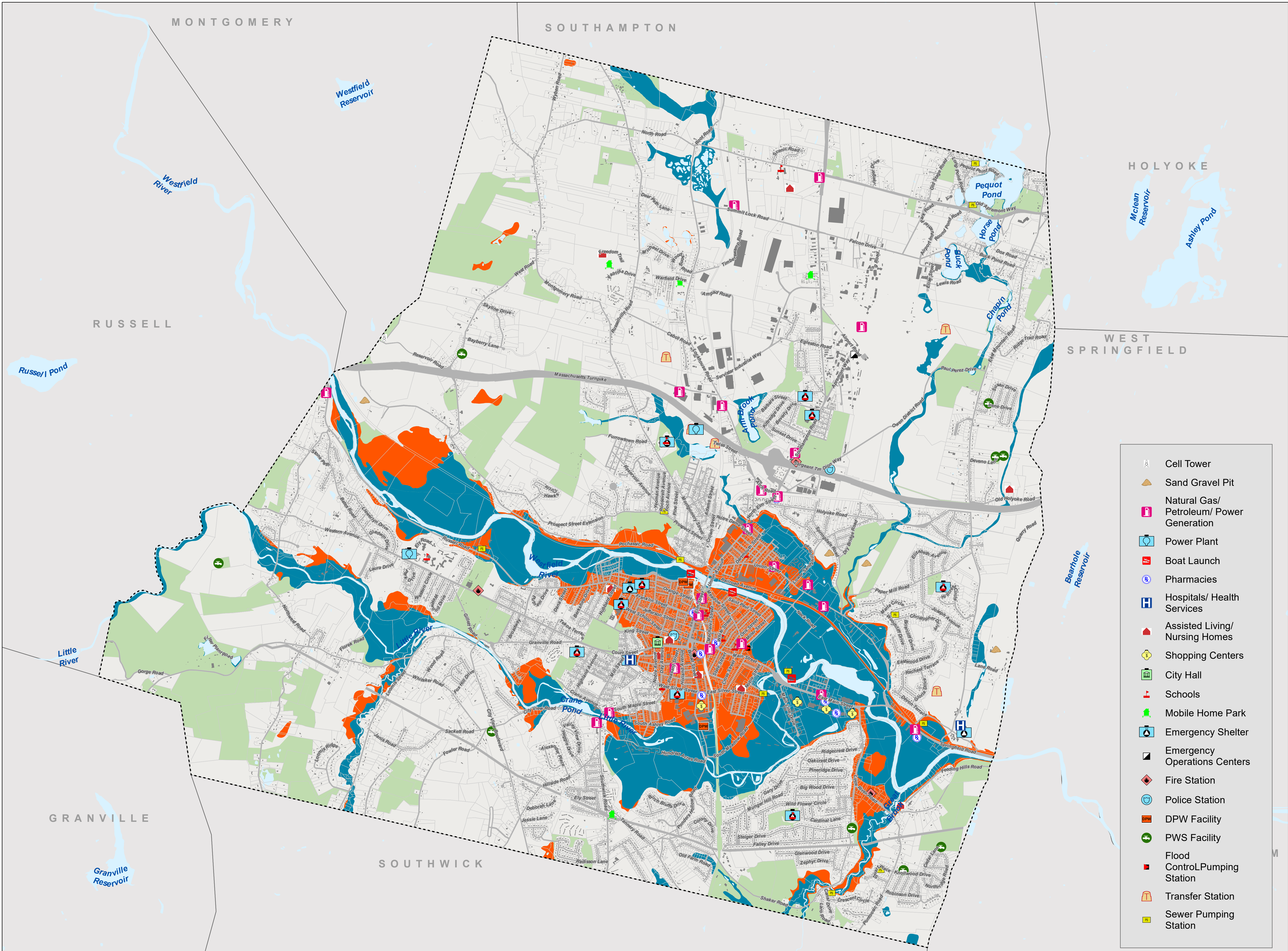
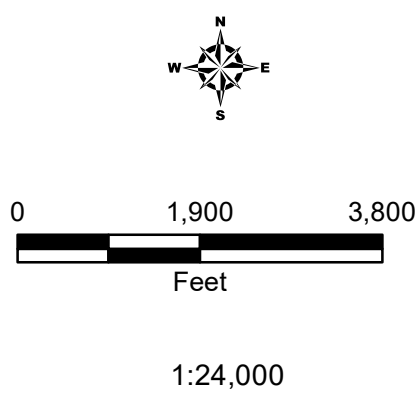
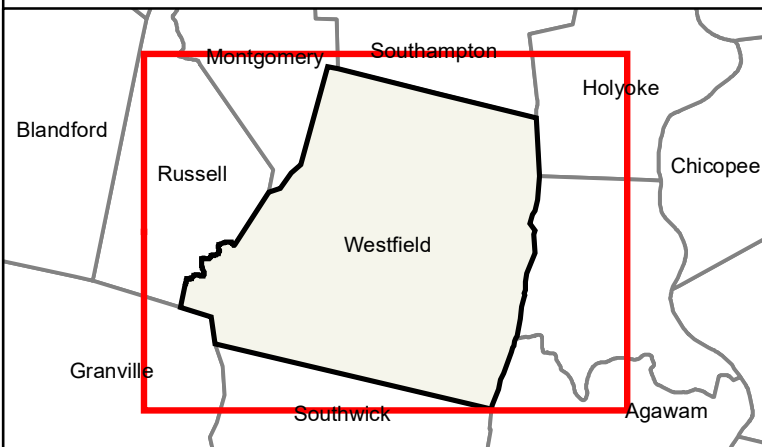


Figure 3
Community Assets
& Flood Zones

LEGEND

- Waterbody
- 100 Year Flood Zone
- 500 Year Flood Zone
- Open Space/
Recreation
- Parcel Boundary
- Town Boundary

LOCUS MAP



NOTES

Based on datalayers provided by MassGIS,
Pioneer Valley Planning Commission, and
Town of Westfield, MA

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Community Assets
Municipal Vulnerability Preparedness
Planning Grant
Westfield, Massachusetts

May 2020

Tighe&Bond

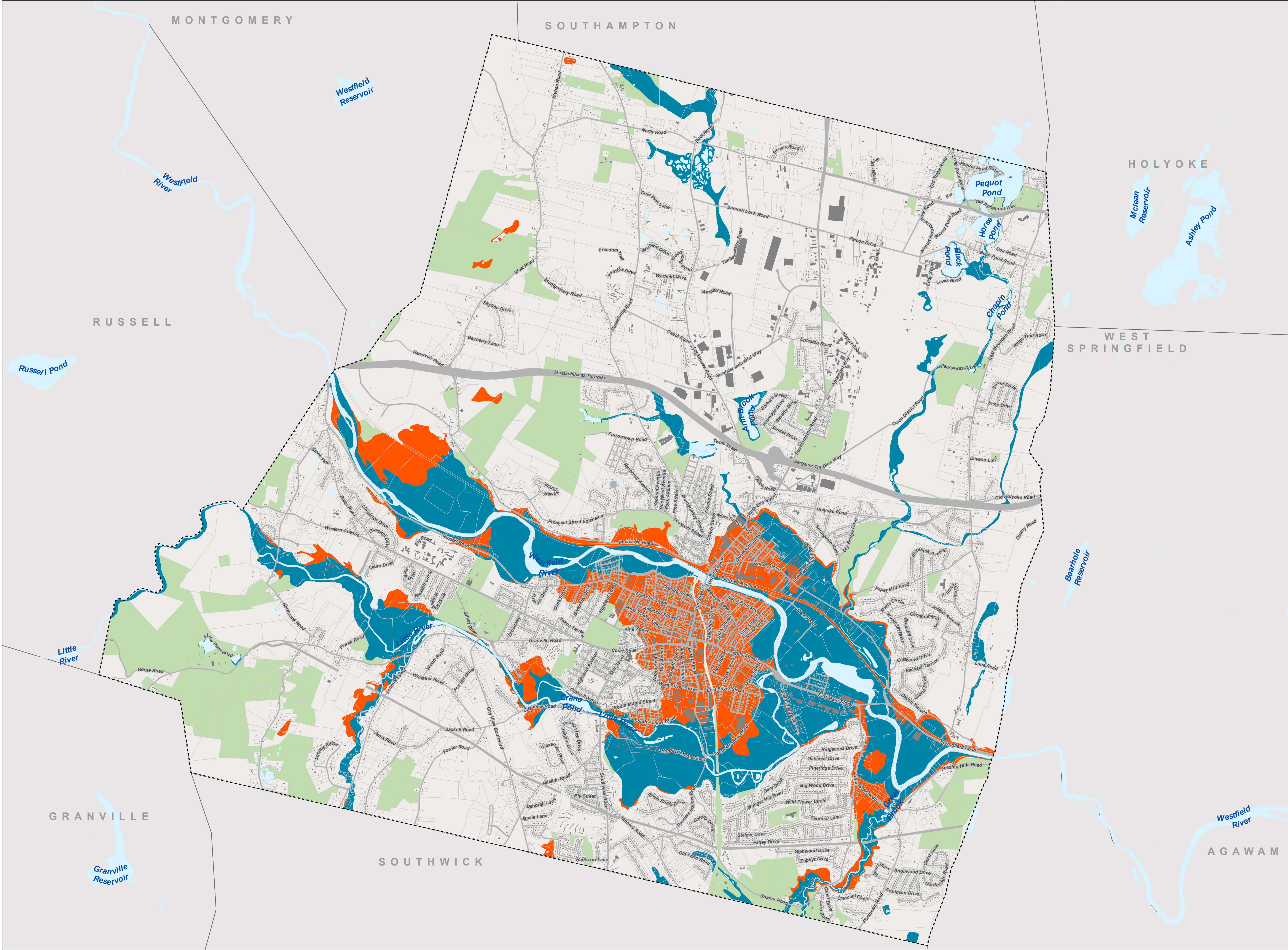
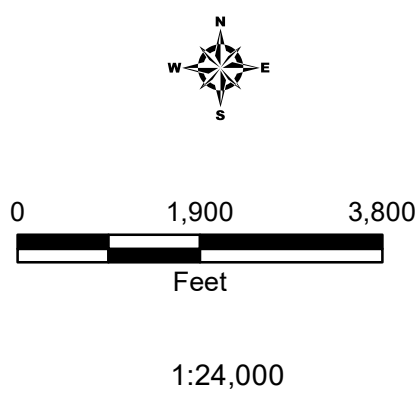
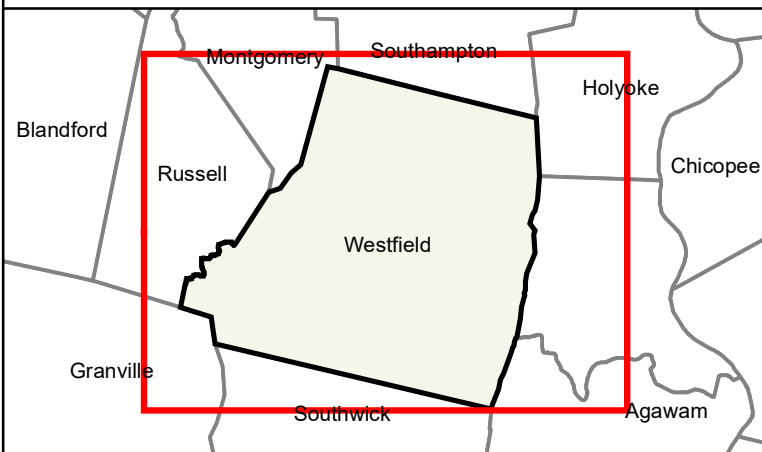


Figure 2
FEMA Flood
Hazard Zones

LEGEND

- Waterbody
- 100 Year Flood Zone
- 500 Year Flood Zone
- Open Space/
Recreation
- Parcel Boundary
- Town Boundary

LOCUS MAP



NOTES

Based on datalayers provided by MassGIS,
Pioneer Valley Planning Commission, and
Town of Westfield, MA

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Community Assets
Municipal Vulnerability Preparedness
Planning Grant
Westfield, Massachusetts

May 2020

Tighe&Bond

APPENDIX F

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Societal	Special Needs Population	101 Meadow Street
	Special Needs Population	284 East Mountain Road
	Special Needs Population	Colony Circle
	Special Needs Population	Cowles Court
	Special Needs Population	Clifton Street
	Forum House	55 Broad Street
	Highland Valley Elder Services, Nutrition Site	16 Court Street
	Westbrook Services	306 Elm Street
	Westbrook Services	George Street
	East Mountain View Senior Housing	138 East Mountain Road
	Governor's Center	66 Broad Street
	Harborside Healthcare Westfield	60 East Silver Street
	Renaissance Manor of Westfield	37 Feeding Hills Road
	The Arbor	40 Court Street
	Westfield Meadows Home for the Elderly	74 Old Holyoke Road
	Arm Brook Village	5 North Road
	Amelia Park Children's Museum	99 Elm Street
	Boy's & Girl's Club of Greater Westfield	28 West Silver Street
	Hampton Ponds State Park	
	Senior Center	Noble Street
	Stanley Park	
	Westfield Athenaeum (Library)	6 Elm Street
	Westfield District Court	224 Elm Street
	Westfield Fairgrounds	
	Abner Gibbs Elementary School	50 West Silver Street
	Alternative School	12 West Silver Street
	Fort Meadow School Early Childhood Center	35 White Street
	Franklin Avenue Elementary School	22 Franklin Avenue
	Highland Elementary School	34 Western Avenue
	Munger Hill Elementary School	33 MallaRoad Lane
	North Middle School	350 Southampton Road
	Paper Mill Elementary School	148 Paper Mill Road
	Parkside Academy	22 Ashley Street
	South Middle School	30 West Silver Street
	Southampton Road Elementary School	330 Southampton Road
	St. Mary's High School	Bartlett
	The White Oak School	533 North Road
	Westfield Area Head Start	390 Southampton Road
	Westfield High School	177 Montgomery Street
	Westfield State University	577 Western Avenue
	Westfield Technical Academy	33 Smith Avenue
	Russell Elementary School	Russell, MA
	Boys & Girls Club of Greater Westfield, Inc.	28 West Silver Street
	Church of the Atonement Nursery School	36 Court Street
	Cotugno, Kathi M. Daycare	7 Avery Street
	Creative Kid's Daycare	1251 East Mountain Road
	Diamond, Kimberly A. Daycare	62 Butternut Road
	Jensen - Curran, Kimberly M. Daycare	84 Tannery Road
	Kirbys Kids Family Child Care	92 Union Street
	Little Explorers Learning Center Daycare	1029 North Road
	Open Door Preschool Daycare	35 White Street
	Sampson, Nicole Daycare	684 North Road
	Santiago, Ana L. Daycare	26 Sackett Street
	The Growing Tree Learning Center Daycare	6 Mainline Drive
	The Kids Place Daycare	184 Southampton Road
	Westfield Area Head Start	390 Southampton Road
	Y's Kids Franklin Ave. School	22 Franklin Avenue
	Y's Kids Munger Hill Daycare	33 MallaRoad Lane
	Y's Kids Papermill Daycare	148 Mill Road
	Y's Kids Daycare	30 Southampton Road
	Y's Kids Daycare	67 Court Street
	YMCA Nursery School	67 Court Street
	Advent Christian Church	11 Washington Street
	Central Baptist Church	115 Elm Street
	Christ the King Church	297 Russell Road
	Christian Church of New Jerusalem Assembly of God	6 King Avenue
	Church of Atonement	36 Court Street
	Church of TJC	14 Bartlett Street

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Societal	Emanuel Pentecostal Church	30 Montgomery Street
	First Congregational Church	18 Broad Street
	First United Methodist Church	16 Court Street
	First United Pentecostal Church	118 Meadow Street
	Full Gospel Church	110 Union Street
	Genesis Spiritual Life Center	53 Mill Street
	Greater Grace of the Pioneer Valley	848 North Road
	Holy Trinity Church	335 Elm Street
	Kingdom Hall of Jehovah's Witnesses	117 Southwick Road
	New Life Christian Center Assembly of God	157 Dartmouth Street
	Our Lady of The Blessed Sacrament Parish	Union Street
	Pioneer Valley Baptist Church	265 Ponders Hollow Road
	Russian Evangelical Baptist Church	866 North Road
	Second Congregational Church	487 Western Avenue
	St. John's Lutheran Church	60 Broad Street
	St. Joseph's Polish National Church	
	St. Mary Parish	30 Bartlett Street
	St. Peter Parish - St. Casimir Parish	24 State Street
	Tabernacle of David	Elm Street
	The Fullness of Truth Church	
	Westfield Alliance Church	297 Russell Road
	Westfield Evangelical Free Church	568 Southwick Road
	Word of Grace Church	848 North Road
	Wyben Union Church	Montgomery Road
	Historic Buildings/Sites - Dewey House	87 South Maple Street
	Downtown Historic District	
	Historic Buildings/Sites - Hangar 2 (Barnes Airport)	
	Mechanic Street Cemetery (Old Burying Ground)	Mechanic St
	Middle Farms Cemetery	North or Russellville Road
	Mundale Cemetery	Granville Road
	Old Westfield Courthouse	27 Washington Street
	Owens District Cemetery	East Mountain Road
	Pilgrim Candle	Depot Square, 16
	Pine Hill Cemetery	140 West Silver Street
	St. Joseph's Cemetery	
	St. Mary's Cemetery	203 Southampton Road
	Westfarms Schoolhouse	
	Westfield Athenaeum (Library)	6 Elm Street
	Westfield City Hall	59 Court Street
	Westfield Women's Club	Court Street
	Westfield Whip Factory	360 Elm Street
	Historic Buildings/Sites - YMCA Mansion	Court Street
	Arbor Mobile Home Park	
	Klondike Avenue Mobile Home Park	
	Hampden Village Mobile Home Park	138 Root Road
	Oaks Mobile Homes	
	Southwick Road Mobile Home Park	Southwick Road
	Heritage Mobile Home Park	868 Southampton Road
	River Bend Mobile Home Park	189 Springfield Road
	Boardman Fields	177 Montgomery Road
	Columbia Greenway Rail Trail	Southwick Line to Main Street
	Sadie Knox Playground	50 Prospect Street
	Paper Mill Playground	148 Paper Mill Road
	Whitney Playground	Shepard/Sackett Streets
	Municipal Playground (abuts Bullens Field)	Greylock / Franklin / Hubbard Streets
	Cross St Playground	Cross Street
	Hampton Ponds Playground	Old Stage Road
	Chapman Playground	St. Paul / Fowler Streets
	Little River Playground	Little River Road

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Infrastructural	Emergency Management Headquarters	179 Apremont Way
	City Hall	59 Court Street
	Westfield Fire Department - Central Headquarters	34 Broad Street
	Westfield Fire Department - North Side Substation	129 Southampton Road
	Westfield Fire Department - Little River Substation	366 Little River Road
	Westfield Fire Department - Mechanics Station	Western Avenue
	Westfield Police Department	15 Washington Street
	Dispatch Center	179 Apremont Way
	Community Police Station - Downtown	Elm Street
	Community Police Station - Powdermill	126 Union Street
	Community Police Station - 50 Southampton Road	50 Southampton Road
	Public Works Department	12 Ponders Hollow Road
	Sewage & Wastewater Treatment Department	30 Sackett Street
	Westfield Water Pollution Control Plant	149 Neck Road.
	Westfield-Barnes Airport	110 Airport Road
	Department of Public Works	12 Ponders Hollow Road
	Westfield Levee	
	Little River Levee System	
	Williams Riding Way Flood Control Pumping Station	
	Local Emergency Planning Committee Headquarters	179 Apremont Way
	Munger Hill Elementary School	33 MallaRoad Lane
	Noble Hospital	115 West Silver Street
	North Middle School	350 Southampton Road
	Paper Mill Elementary School	148 Paper Mill Road
	South Middle School	30 West Silver Street
	Western Massachusetts Hospital	91 East Mountain Road
	Westfield High School	177 Montgomery Street
	Westfield State University	577 Western Avenue
	Portable generators	
	Franklin Ave School	22 Franklin Street
	Highland School	34 Western Avenue
	Munger Hill	33 MallaRoad Lane
	Noble Hospital	115 West Silver Street
	North Westfield Middle School	350 Southampton Road
	Paper Mill School	148 Paper Mill Road
	South Middle School	30 West Silver Street
	Southampton Road School	330 Southampton Road
	Western Massachusetts Hospital	91 East Mountain Road
	Westfield High School	177 Montgomery Street
	Westfield State University	577 Western Ave.
	Westfield Voc Tech High	33 Smith Avenue
	Fire ponds - Hampden Pond	
	Fire ponds - North Road	
	Fire ponds - Whitney Playground	
	Fire ponds - Loomis Ridge - Cistern	
	Westfield Gas and Electric Substation	Meadow Street
	Westfield State University Power Plant	Western Avenue
	DCP Midstream Odorizing Natural Gas Plant	30 Charles Medeiros Way
	Hampton Ponds Plaza Parking Lot/ Access Road - Helicopter Landing Site	N42 10.5 W 072 41.6

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Infrastructural	South Middle School - Helicopter Landing Site	30 West Silver Street, N42 06.6 W 072 45.0
	Walmart - Helicopter Landing Site	141 Springfield Road,N42 06.4 W 072 42.4
	Westfield High School - Helicopter Landing Site	N42 08.7 W 072 45.3
	WSU/Second Congregational Church Parking Lot - Helicopter Landing Site	577 Western Avenue, N42 07.6 W 072 47.6
	Westfield Barnes Airport (AANG Field) - Helicopter Landing Site	110 Airport Road
	Westfield Police Department	15 Washington Street
	Westfield Fire Department - Central Headquarters	34 Broad Street
	North Side Substation	129 Southampton Road
	Little River Substation	366 Little River Road
	Emergency Management Technology Center	179 Apremont Way
	Westfield Water Pollution Control Plant	149 Neck Road
	Granville Reservoir	
	WG&E Tower	Turnpike Industrial Road
	Private Tower on Turnpike Industrial Road	
	Private Tower on North Elm Street	
	Cell Tower	Granville Road
	Cell Tower	East Main Street
	Rt 20 Evacuation Route	
	Route 10-202 Evacuation Route	
	Interstate 90 Evacuation Route	
	Route 187 Evacuation Route	
	Columbia Greenway Rail Trail Evacuation Route	
	Elm Street (Route 202 &10) Evacuation Route	Westfield River & Conrail/Amtrak Railroad tracks
	Little River Road (Route 187) Bridge on Evacuation Route	Great Brook
	North Elm Street (Route 202 &10) Bridge on Evacuation Route	Pioneer Valley Railroad tracks
	Route 90 Bridge on Evacuation Route	East Mountain Road
	Route 90 Bridge on Evacuation Route	Pioneer Valley Railroad tracks
	Southampton Road (Route 202 &10) Bridge on Evacuation Route	Intersection with Route 90
	Southwick Road (Route 202 & 10) Bridge on Evacuation Route	Little River
	Springfield Road (Route 20) Bridge on Evacuation Route	Little River
	Springfield Road (Route 20) Bridge on Evacuation Route	Westfield River
	Problem Culvert - Union Street (Frog Hole)	Union Street
	Problem Culvert - North Elm Street	Route 202-10 railroad underpass
	Problem Culvert - City View Road	City View Road
	Problem Culvert - Great Brook	Near 506 Shaker Road
	Problem Bridge - PVRR tracks	Lockhouse Road
	Problem Bridge - Little River (Route 202 & 10)	Southwick Road
	Problem Bridge - PVRR	Dry Bridge Road
	Problem Underpass - PVRR	Chapel Street
	Problem Underpass - PVRR	Thomas Street
	Problem Underpass - PVRR	Orange Street
	Problem Underpass - Conrail/Amtrack RR tracks by W Mass Hospital	East Mountain Road
	Problem Underpass - PVRR	East Mountain Road
	Granville Reservoir	
	Well #1	Off Holyoke Road.
	Well #2	Union Street
	Well #3	Shaker Road.
	Well #4	Shaker Road.
	Well #5	Off Northwest Road.
	Well #6	Off Northwest Road.
	Well #7	Behind East Mountain Country Club
	Well #8	Behind East Mountain Country Club
	Private Wells (mostly on the north side of the city)	
	Transfer Station	Twiss St
	Westfield Gas & Electric (municipal utility company administrative offices)	100 Elm Street

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Economic	Atlas Copco Compressors Inc	94 North Elm Street # 4
	Barnes Airport Industrial Park	
	Big Y Foods	475 East Main Street (Route 20)
	Big Y Shopping Center	10 East Silver Street
	Boise-Cascade	33 Fowler Street
	C & S Wholesale	53 Summit Lock Road
	City of Westfield	59 Court Street
	Commercial Distributing Co	46 South Broad Street
	Connleaf's Inc	48 Hundred Acres Road
	Governor's Center	66 Broad Street
	Gulfstream Aerospace Corp	33 Elise Street
	Home Depot	1111 Southampton Road
	Home Depot	514 East Main Street
	Little River Plaza	485 East Main Street
	Loomis Fargo & Co	28 Ponders Hollow Road
	Mestek, Inc.	260 North Elm Street
	Noble Hospital	115 West Silver Street
	Prolamina	132 North Elm Street + 175 Ampad Road
	Renaissance Manor	37 Feeding Hills Road
	Savage Arms Inc	100 Springdale Road # 1
	Super Stop & Shop	57 Main Street
	Tekoa Country Club	459 Russell Road
	Tighe & Bond	53 Southampton Road # 3
	Wal-Mart	141 Springfield Road
	Western Massachusetts Hospital	91 East Mountain Road
	Westfield School Department	94 North Elm Street
	Westfield Shops	475 East Main Street
	Westfield State University	577 Western Ave
	Westfield Youth Service Center	51 East Mountain Road
	Westgate Plaza	261 East Main Street
	YMCA	67 Court Street

Westfield Community Asset Database

Community assets selected from the 2017 Westfield Hazard Mitigation Plan and 2018 Open Space and Recreation Plan

Community Asset Category	Name	Street Address
Natural Resources	Chauncey Allen Park	Smith Avenue / King Street
	Steiger Dr Property	Steiger Drive
	Gateway Entrance Park	N. Elm St / Union Avenue
	Half Mile Falls Park	N. Elm St / Union Avenue
	Westfield River Esplanade	Elm St to Whitney Playground
	Westfield River Walk	Shepard Street to Williams Riding Way
	Tekoa Park	Rt 20 / Russell boRoader
	Mary Noble Sanctuary	Munger Hill Road
	Barbara Swords Park (Highland Sanctuary)	Oak Avenue Ext
	Chapin Pond and Dam	E. Mountain Road
	Hampton Ponds State Park	North Road
	Robinson State Park	Feeding Hills Road
	Honey Pot Conservation Area	Honey Pot Road

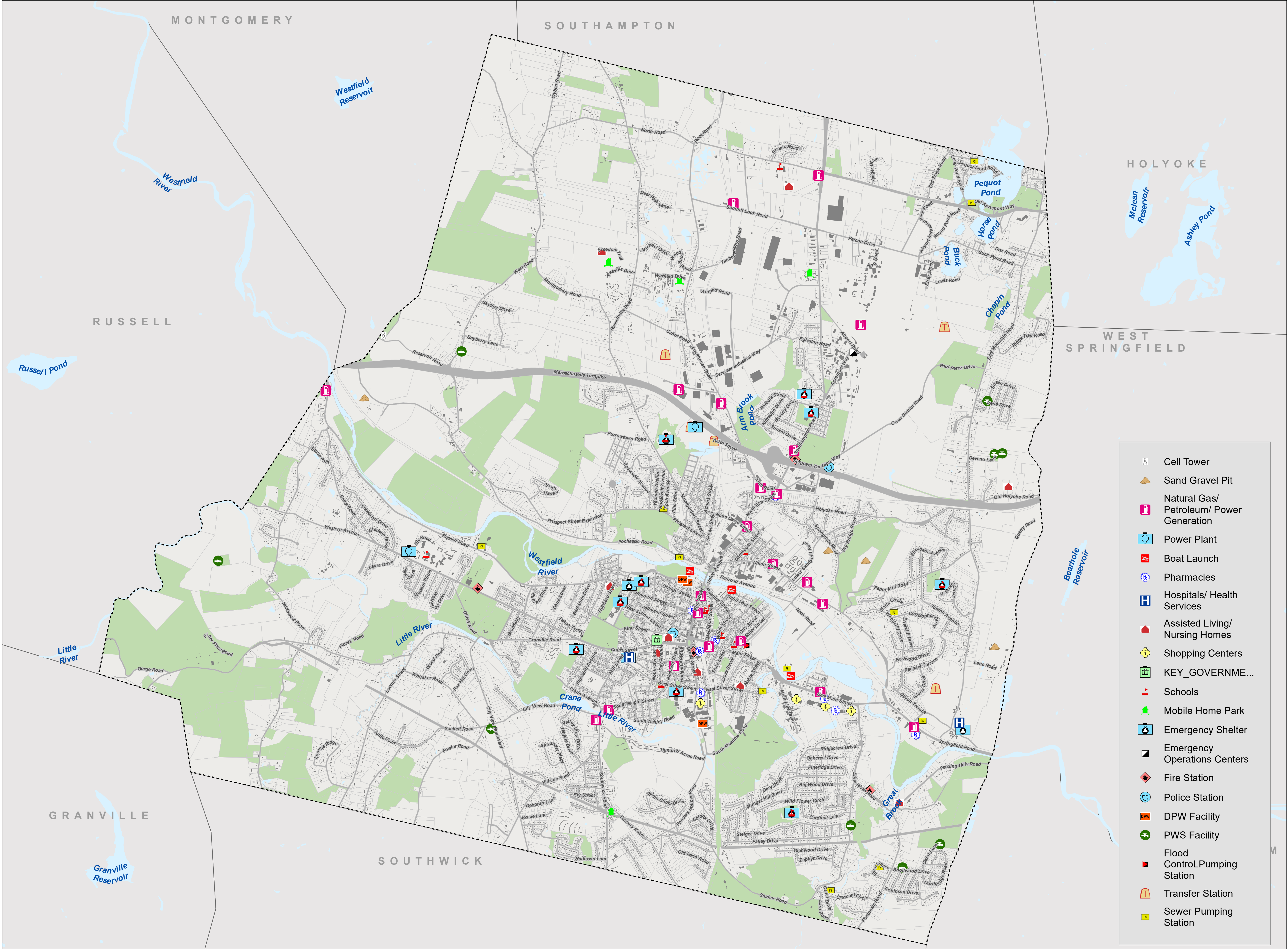
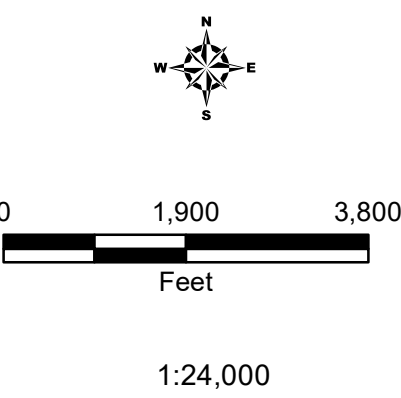
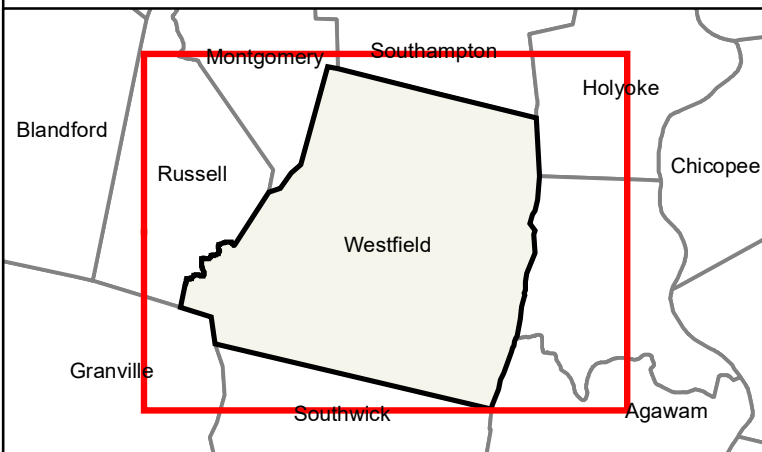


Figure 1
Community Assets

LEGEND

- Open Space/ Recreation
- Waterbody
- Parcel Boundary
- Town Boundary

LOCUS MAP



NOTES

Based on datalayers provided by MassGIS, Pioneer Valley Planning Commission, and Town of Westfield, MA

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Community Assets
Municipal Vulnerability Preparedness
Planning Grant
Westfield, Massachusetts

May 2020

Tighe&Bond

APPENDIX G

Community Resilience Building Risk Matrix						
<div>High - Medium - Low priority for action over the Short or Long term (and Ongoing)</div> <div>Vulnerability or Strength</div> <div>www.CommunityResilienceBuilding.org</div>						
Westfield's Priority Assets				Actions to Address Westfield's Top Hazards		
Name	Location	Ownership (City, State, Federal, Private)	V or S	Severe Winter Weather Severe Weather - Wind Related Floods - Poor Urban Drainage, Culvert Failure, and 100-Year Flood Events Extreme Temperatures and Drought	Priority of Action	Timeframe
					H - M - L	S - L - O
Societal						
Public Education Sources				Develop public access channels through websites for information dissemination, focus on what residents can do to mitigate hazards on their property and how to be prepared for hazards that cant be mitigated	M	O
Schools	Munger Elementary, Westfield Middle and Westfield Intermediate	City	S- Site houses shelter, provides information to vulnerable communities, public access for communications; climate controlled building; parking; commercial kitchen; well developed	New Generator and cooling for other schools; adding backup generator	H	S
Westfield State University	577 Western Ave	State	S- High & dry with large modern spaces, provides support during snowstorms, cafeteria open to public, not in floodplain	Update Chemical Hazard Inventory	H	S
				Develop MOU for mutual beneficial use	M	L
				Update chemical hazard inventory	H	S
Buildings that Support Societal Needs				Inventory emergency back-up generators; hazard trees; ADA accessibility, and networking resource for mitigation	H	L
Athenaeum	6 Elm Street	City	S- Knowledgeable staff, shelter and restrooms	Backup emergency generator Encourage use of current translation services (Spanish and Russian) community wide Add awnings to City properties to protect from heat	H	S
Amelia Park Ice Arena	99 Elm Street	City	S- Large building to provide emergency short-term shelter, cooling, mass-casualty storage	Maintain emergency back-up generator	H	S
Housing Authority Properties	Multiple locations	City	V- Not sure if equipped for extreme heat and vulnerable populations	Survey properties to assess cooling needs, increase tree planting Add awnings to City properties to protect from heat	M	S
Mobile Home Parks	Multiple locations	Private	V- Within flood zone	On-site elevated shelter, emergency backup power	L	L
Churches	Multiple locations	Private	S- Support for community; some have food kitchen/pantry	Develop a list of resources churches across the City can provide	L	S
Youth & Family Organizations	Boys & Girls Club, YMCA, Westfield Youth Service Center	Private	S- Support for community, YMCA is potential shelter	Communications network for public education for hazard mitigation *see public education sources	M	S
Vulnerable Populations				Plant trees in low income neighborhoods Information campaign to ensure that residents who live in floodplain have flood insurance Change zoning or purchase properties in floodplain upstream of downtown to reduce flooding in downtown Purchase houses in areas most likely to flood, convert back to floodplain Add awnings to City properties to protect from heat (like Noble Hospital did) Update SW bylaw to include SW mgmt on single family residential properties Incentivize native beneficial plantings in vulnerable and overdeveloped areas in coordination with local growers and tech academy	M	O
Senior Citizens & Seniors Living Alone	Multiple locations	Private	S- Historic knowledge, adaptable V- Challenged during transportation	Senior communication needs survey Develop friendly-neighbor check in system Support Senior Center services Identify and communicate locations for cooling stations to vulnerable populations Develop back-up transportation measures for elderly or less-modbile populations during community-impacted or evacuation events	H	O
Disabled population	Multiple locations	Private	V- Challenged during transportation	Caregiver support communication needs survey Develop back-up transportation measures for elderly or less-modbile populations during community-impacted or evacuation events	H	S
Economically disadvantaged families	Multiple locations	Private	V- May lack resources to adapt	Grants for energy savings cooling appliances, provide an advocate; start a community wood bank for free/low cost firewood Identify and communicate locations for cooling stations to vulnerable populations Plant trees in low income neighborhoods	M	L
Homeless population	Multiple locations	Private	V- Exposure to elements	Support services for emergency shelters	L	O
Immigrant communities	Multiple locations	Private	V- Potential communication issues S- Diversity within the community	Identify community leaders to spread information during emergencies Acquire land in downtown area as immigrant population currently live in the low-lying areas Increase vegetative buffer, zoning to prevent development in flood plain, update code so bids are flood resistant, encourage more use of pervious surfaces Rain garden workshop	M	L
Environmental justice populations	Along the Westfield River North and south of the Westfield River near downtown	Private	V- Within flood zone	Acquire land for flood protection; plant trees to mitigate heat island impacts; environmental restoration in these communities Increase vegetative buffer Zoning to prevent development in flood plain Update code so bids are flood resistant Encourage more use of pervious surfaces Rain garden workshop	M	L
General	N/A	N/A		Information campaign to ensure that residents who live in floodplain have flood insurance Change zoning or purchase properties in floodplain upstream of downtown to reduce flooding in downtown Purchase houses in areas most likely to flood, convert back to floodplain Update SW bylaw to include SW mgmt on single family residential properties	M	L
Support Services						
BHN/ The Carson Center	77 Mill Street	Private	S- mental health services support post-disaster			
Home Daycare Centers	Multiple locations	Private	S- support for working parents V- young children			
Farms	Multiple locations	Private	S- Food Supply	Adopt a right to farm ordinance and agricultural commission to represent farm and food production interests Incentivize native beneficial plantings in vulnerable and overdeveloped areas in coordination with local growers and tech academy	L	L


Community Resilience Building Risk Matrix						
<div>High - Medium - Low priority for action over the Short or Long term (and Ongoing)</div> <div>Vulnerability or Strength</div> <div>www.CommunityResilienceBuilding.org</div>						
Westfield's Priority Assets				Actions to Address Westfield's Top Hazards		
Name	Location	Ownership (City, State, Federal, Private)	V or S	Severe Winter Weather Severe Weather - Wind Related Floods - Poor Urban Drainage, Culvert Failure, and 100-Year Flood Events Extreme Temperatures and Drought	Priority of Action	Timeframe
					H - M - L	S - L - O
Roots Stadium	Roots Road	Private	S- Use as a short term emergency shelter	Develop MOU with owners for mutual beneficial use	M	L
Hospital	Noble Hospital & Western Mass Hospital	Private/Public	S- Emergency Care, community resource for public health education			
Infrastructurel						
Flood control infrastructure						
Columbia Greenway	Columbia Greenway	City	V- within the flood plain S- emergency evacuation route, higher than floodplain	Complete planned expansion Extend Greenway to north side of City as an elevated route to provide a pedestrian evacuation route	M	L
Levees	Little River Levee Westfield River Levee	City	V- flooding risk to public assets, business and homes in downtown area. Needs substantial repair S- protect homes from flooding once implemented	Implement recommendations of Levee Upgrade Study Perform needed repairs to make viable Purchase adjacent properties in order to remove woody vegetation, encroaching structures, flood water dispersion, reduced height and pressure on levee Utilize recent Levee Upgrade Study done for Flood Commission to analyze and prioritize properties at risk of development - could also serve as identification of properties to acquire for flooding prevention	H/M	L
Williams Riding Way Flood Control Pumping Station	Williams Riding Way	City	S- flood control- pumping stormwater and wastewater from downtown during river flood event			
Storm Drains	30 Day Avenue, Pleasant Street	City	V - storm drains overwhelmed by heavy rains, temporary flooding, build up of dirt and debris causes clogging and flooding during storm and flood events	Improve stormwater drainage, plant trees	M	L
Culverts	Varies	City	S - transport surface water V - flooding, aged and often undersized relative to existing and future rainfall conditions	Replace undersized culverts with appropriately sized culverts Add backflow prevention on vulnerable outfalls	H	L
Dams	Arm Brook Dam Powder Mill Brook Dam	City	S - flood protection	Make sure dams are up to code for flooding, particularly those that would impact business operations	M	S
Transportation Corridors						
Roadways	Union Street, Route 20, Main Line Drive, East Mountain Road, North Elm Street, Meadow Street (and side streets), North Road, Northwest Road, East Main Street	City / State	V - roadways prone to flooding and washouts, could prevent travel and close businesses	Change zoning to reduce density/make it harder to build new properties in floodplains Remediate traffic congestion to facilitate emergency response actions (intersection of 3 and Southampton Rd, I-90 exit 3 ramps)	M	L
Bridges	Connecting to downtown Cowles Bridge	City / State	V - have been damaged during storms, surrounded by rivers; Cowles Bridge is deteriorated	Hardening (of critical infrastructure) against flooding Inspect, identify those that need immediate work in low lying areas prone to flooding	M	L
I-90 transportation corridor	I-90	State	S - evacuation route	Remediate traffic congestion to facilitate emergency response actions (intersection of 3 and Southampton Rd, I-90 exit 3 ramps)	M	L
Rail	Railroad	Private	S - transportation of goods / supply chain V- low railroad bridges may impede transportation along truck traffic routes @ East Mountain Road			
Critical Facilities						
Fire Department Headquarters	34 Broad Street	City	V - aged, structurally insufficient	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
Little River Fire Station	366 Little River Road	City	V - at risk of flooding	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
City Hall	59 Court Street	City	V - at risk of flooding S - alternate location for Emergency Operations Center	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
Police Department Headquarters	12 Washington Street	City	V - aged, structurally insufficient	Update chemical hazard inventory Floodproofing in basement	H M	S S
City Public Water Supply Wells	Multiple locations	City	S - provision of clean drinking water, groundwater less vulnerable to flood and stormwater impacts than surface water sources V - unconfined aquifer vulnerable to contamination from storm or flood waters, at risk from flooding, undersized water supply lines downtown- fire vulnerability	Acquire or protect land in recharge areas Replace undersized water lines in downtown to improve fire hydrant service Implement signage to identify water resource protection zones Update chemical hazard inventory Ensure stormwater drainage from airport is directed away from recharge areas	H	L
Westfield Water Pollution Control Plant	149 Neck Road	City	S - wastewater treatment	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
City Fuel Depot	12 Ponders Hollow Road	City	V - at risk of flooding	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
Westfield Barnes Regional Airport	110 Airport Road	Various	S - emergency fueling station, Westfield Emergency Mgmt Center, staging area for supplies in event of natural disaster, evacuation location, transportation hub, elevated, logistics. Airport is home to Air Methods -ambulance service, Army National Guard- airlift and 104th Fighter Wing assists in disaster recovery operations across Western MA.	Ensure stormwater drainage from airport is directed away from municipal well recharge areas Maintain pavement and staging areas for use in emergencies Update chemical hazard inventory	H	S
Noble Hospital	115 West Silver Street	Private	S - emergency response V - vulnerable population	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
Private Wells	Multiple locations	Private	V- Shallow wells, no municipal service available	Implement Water Conservation Plan	M	S
Army National Guard Armory	Franklin St	Federal	S - logistics	Update chemical hazard inventory Identify and protect fuel and chemical storage locations against flooding	H	S
Communications and Energy						
Natural gas receipt station	158 Union St	Private	S - fuel supply V - hazardous material	Hardening of critical infrastructure against flooding	M	L
Power/communications infrastructure	Whip City Fiber, broadband providers	Private	V - power loss during storms S - provides necessary utilities to the town	Hardening (of critical infrastructure) against flooding, wind Tree maintenance - removal of dead and/or dangerous tree branches	M	L

Community Resilience Building Risk Matrix						
<div>High - Medium - Low priority for action over the Short or Long term (and Ongoing)</div> <div>Vulnerability or Strength</div> <div>www.CommunityResilienceBuilding.org</div>						
Westfield's Priority Assets				Actions to Address Westfield's Top Hazards		
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					H - M - L	S - L - O
Solar farms	Varies	Private	S - renewable energy source			
Substations	Multiple locations	Private	S - energy V - fuel, chemicals, vulnerable to damage from tree branches and flooding	Identify and protect fuel and chemical storage locations against flooding	M	L
Economic						
Essential Goods- Large Retail				Require new construction in flood zone (e.g., Rt 20) to meet flooding occurrence (zoning)	M	L
Big Y Shopping Center	10 East Silver Street	Private	S - supplies	Generator(s) to protect frozen food	L	L
Super Stop & Shop	57 Main Street	Private	S - supplies	Generator(s) to protect frozen food	L	L
C & S Wholesale	53 Summit Lock Road	Private	S - supplies			
Home Depot	514 East Main Street	Private	S - supplies, generators V - located in floodplain, issues with flood control doors, outdoor storage at risk due to location in floodplain	Communicate regarding plan for emergency laydown areas and use	M	S
Wal-Mart	141 Springfield Road	Private	S - supplies V - outdoor storage at risk due to location in floodplain			
Essential Services- Small Business				Add rooftop gardens to small business buildings	L	L
Agriculture		Private	S - food supply	Incentives to encourage new agriculture in Westfield Adopt Right-to-farm legislation/establish a local Agricultural Commission	M/L	L
Gas stations		Private	S - fuel			
Hardware stores		Private	S - supplies			
Grocery/ pharmacy/ medical		Private	S - support for economic recovery			
Large Employers		Private				
Boise-Cascade	33 Fowler Street	Private	S - building supplies			
City of Westfield	59 Court Street	City	S - coordination, emergency management			
Commercial Distributing Co	46 South Broad Street	Private	S - supply distribution, trucking			
Connleaf's Inc	48 Hundred Acres Road	Private	S - supply distribution, trucking			
Columbia Manufacturing	1 Cycle St	Private	S - furniture manufacturing			
Governor's Center	66 Broad Street	State	V - vulnerable population in floodplain			
Home Depot Distribution Center	Campanelli Drive	Private	S - supplies, generators; high elevation			
Lowe's Distribution Center	Servistar Way	Private	S - building supplies	Communicate regarding plan for emergency laydown areas and use	M	S
Mestek, Inc.	260 North Elm Street	Private	V - at risk for flooding, chemicals on site			
Noble Hospital	115 West Silver Street	Private	S - emergency response services			
ProAmpac	132 North Elm Street + 175 Ampad Road	Private	V - at risk for flooding, chemicals on site			
Tighe & Bond	53 Southampton Road # 3	Private	S - generator, engineering support services			
Western Massachusetts Hospital	91 East Mountain Road	Private	S - emergency response services			
Westfield Downtown -Economic Center	Main Street	Private	S - economic base	Acquire 146 Main St to preserve floodplain, provide opportunity for passive recreation Revisit and update 2009 Downtown Economic Plan, add climate change resiliency considerations	M	L
				Install bicycle rental stations to encourage bike usage downtown	L	L
Westfield State University	577 Western Ave	State	S - generator, potential shelter, public education	Communicate regarding plan for emergency laydown areas and use	M	S
Workforce base	N/A	N/A	S - economic resiliency			
Other Essential Services- Utilities, Transportation, Lodging						
Hampton Inn Hotel	Lodging	Private	S - lodging V- no generators			
Air National Guard 104th Fighter Wing	Transportation	Federal	S - generator, disaster response coordination			
Pioneer Valley and CSX Railroad	Transportation	Private	S - supply chain, alternative form of transportation	Investigate opportunities to improve railroad crossings, particularly Lockhouse Rd and East Mountain Rd	M	L
PVTA bus depot	Transportation	State	S - transportation V - located in flood area			
Westfield-Barnes Regional Airport	Transportation	Various	S - large employer, venue for emergency response, staging for emergency supplies	Coordinate with state and federal efforts or programs to increase resiliency	M	S
Solar field	Utilities	Private	S - backup energy source			
Westfield Gas & Electric	Utilities	Private	S - independent internet provider, communication, large employer, emergency mgmt experience V - dependent on receipt of physical gas and electric supplies from interstate transmission systems			
Whip City Fiber	Utilities	Private	S - broadband provider			
Shopping Plazas						
Little River Plaza Hampden Ponds Plaza Westgate Plaza	485 East Main Street 1029 North Rd 261 East Main Street	Private	S - supplies, large and air conditioned V- Flooding, flood plain location	Assist and ensure emergency response plan in place, flood control structures adequate (apply to all shopping plazas in floodplain) Create and maintain flood safety and evacuation route information for business owners and employees	H	S
				Acquire land for flood protection	M	L
Environmental						
Hydrologic Resources						
Floodplains	Various	Various	S - floodwater storage, protection V - banks of Little and Westfield River have invasive plants	Identify and protect floodplains as natural flood control Coordinate with CPA commission to utilize funding for property/floodplain acquisition Flood mitigation through extension in floodplain zones at 100-year levels Change zoning or purchase properties in floodplain upstream of downtown Acquire property on East Main St as flood zone buffer Identify incised stream channels where floodplain access could be restored to reduce flood risk Create and update a master list of prioritized properties for acquisition for flood protection	H	L

Community Resilience Building Risk Matrix						
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					H - M - L	S - L - O
Wetlands	Adj to Brickyard Brook and Arm Brook Adj to Powdermill Brook (N Elm/Union St)	Various	S - flood mitigation/habitat, flood protection for EJ community, wildfire, and open space V - vulnerable to development, pollution	Flood mitigation through wetland protection	H	L
Wetlands adjacent to Brickyard Brook and Arm Brook	Brickyard Road	Various	S - flood mitigation, habitat			
Wetlands adjacent to Powdermill Brook	N Elm / Union St floodplain	Various	S - flood protection for EJ community, wildlife, open space V - vulnerable to development, pollution			
Water Supply Protection Areas	Water Dept Properties/Barnes Aquifer/Drinking Water Recharge Area/Chapin Pond/Great Brook Property/ North West Road Property	City	S - water supply protection, wildlife habitat, clean air and water, recreation, drinking water V - Development pressures, significant impervious surface at airport, land uses	Add signage to identify water resource protection areas	M	S
				Resurrect Barnes Aquifer Protection Committee/establish Westfield Barnes Aquifer Protection Committee	H	S
				Education for homeowners on infiltration, rain gardens	M	L
				Training for board members on how SW infiltration can impact water quality - SW management strategies that can be used to promote recharge while protecting quality	M	O
				Acquire or protect land in recharge areas	M	L
				Ensure stormwater drainage from airport is directed away from recharge areas	H	S
Brickyard Ponds	Brickyard Road	Various	S - wildlife V - invasive aquatic species			
Water Dept properties	Various	City	S - water supply protection, wildlife habitat, clean air and water, recreation	Add signage to identify water resource protection areas	M	S
Barnes Aquifer	Various	Various	S - drinking water S, V - significant impervious surface at airport above aquifer	Resurrect Barnes Aquifer Protection Committee / establish Westfield Barnes Aquifer Protection Committee	H	S
				Education for homeowners on infiltration, rain gardens	M	O
				Training for board members on how SW infiltration can impact water quality - SW mgmt strategies that can be used to promote recharge while protecting quality	M	O
Drinking Water Recharge Area	Various	Various	S - drinking water V - land uses, development pressures	Conduct assessment to comprehensively identify vulnerabilities and develop action plans to increase resilience of natural resources and long-term water quality and quantity	M	S
				Acquire or protect land in recharge areas	M	L
				Ensure stormwater drainage from airport is directed away from recharge areas	H	L
				Add signage to identify water resource protection areas	M	S
Chapin Pond	E. Mountain Road	City	S - water supply protection	Add signage to identify water resource protection areas	M	S
Waterbodies that allow boating	Various	Various	V - invasive aquatic species, bank erosion	Education for boaters/public on invasive species control	H	O
				Designated boat ramps	L	L
North West Road Property	North West Road	City	S - water supply protection	Add signage to identify water resource protection areas	M	S
Great Brook Property	Shaker Road	City	S - water supply protection	Add signage to identify water resource protection areas	M	S
Turnpike Industrial and Cabot Rd property	Turnpike Industrial and Cabot Rd	City	S - keeps land secure upstream of Powdermill Flood Control Dam, wildlife and forest			
Coldwater fisheries	Various	Various	V - warming, habitat loss	Hydraulic assessment and prioritization for protection and flood storage enhancement	M	L
				Replace underperforming culverts so that they meet MA River and Stream Crossing Standards	H	L
Conservation land	Adjacent to Munger Hill School	City	S - heat island mitigation			
Columbia Greenway	Sackett Street	City	S - evacuation route, flood protection, recreation	Develop elevated north side continuation of greenway as evacuation route and link to businesses	M	M
Mungo Cow Pasture	Off Munger Hill Road	City	S - conservation land along riverfront			
NHESP Priority/Estimated Habitat Lands	along Little River, main stem Westfield, Great Brook, Manhan River	Various	S - vegetated buffer, cooling, flood control, wildlife V - habitat loss	Prioritization of lots to acquire based on NHESP mapped habitat and adjacency to other conserved parcels	M	L
Grandmother's Garden	Chauncey Allen Park	City	S - open space and recreation V - invasive species (plants and insects) already present in wooded areas	Remove invasive species Replant native plants in wooded area (not flower garden)	H	S
Stanley Park	Western Avenue	Private	S - open space, recreation, conservation, forested areas, wildlife V - invasive species (plants and insects) already present in wooded areas	Work with fire dept to develop plan to mitigate wildfire risk in times of drought	H	S
				Invasive species removal	H	S
Tekoa Park	Rt 20 / Russell border	City	S - water supply protection, wildlife habitat, clean air and water, recreation	Add signage to identify water resource protection areas	M	S
Hampton Ponds State Park	North Road	State	V - invasive aquatic species			
Park Square	Main / Broad Streets	City	S - tree shade, open space V - prone to flooding, even after renovations?			
Westfield Fairgrounds	Russell Road	City	S - open space and recreation			
Open Space and Recreation Plan (OSRP)	N/A	City	S - outlines plan for the City V - could use updates	Update City's Master Plan with a Climate Change chapter to address natural resource protection	H	L
				Make OSRP required reading for City employees / government to direct decision making	M	S
				Develop standing OS Committee to see OSRP goals materialized	M	S
Forest & Agriculture						
Forest/Trees	Various	Various	S - erosion prevention and sediment control V - invasive species (Gypsy moth), potential commercial development	Identify and protect trees that serve as protection against stormwater and air pollution, survey tree belt areas downtown to develop planting plans Increase urban tree canopy in low to moderate income neighborhoods Conduct City tree inventory, canopy assessment - GIS layer, develop meaningful strategies for tree health and planting where canopy is lean Climate change impact and resilience planning for forest and street trees Develop or update Tree Planting Plan Zoning/ordinance to forbid sale of / planting of invasive ornamentals (State ban)	M	L
					L	L
				Remove invasive ornamentals - assistance from Massachusetts Student Conservation Association Education program at Farmers Market/Grandmother's Garden/Stanley Park on invasive plant species	H	O



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<div>High - Medium - Low priority for action over the Short or Long term (and Ongoing)</div> <div>Vulnerability or Strength</div> <div>www.CommunityResilienceBuilding.org</div>						
Westfield's Priority Assets				Actions to Address Westfield's Top Hazards		
Name	Location	Ownership (City, State, Federal, Private)	V or S	Severe Winter Weather Severe Weather - Wind Related Floods - Poor Urban Drainage, Culvert Failure, and 100-Year Flood Events Extreme Temperatures and Drought	Priority of Action	Timeframe
					H - M - L	S - L - O
Remaining wooded land	Various	Various	V - commercial development	Create a plan that includes maintaining a certain % of forested land in the City	M	L
Local farms/APR Lands	Baker, Fini, Bonnieventure, Boisseau, Davis, Yellow Stonehouse, Bullard, Farmland in East farms into Wyben	Private	S - food supply, protected agricultural lands V - vulnerable to development if not perm conserved	Work with prime farmland soils map to determine how to protect from development to preserve soils best suited for growing food	L	L
				Emulate Hatfield - go beyond prime farmland soils, identify soils of local significance for farming		
Cemeteries	Various	City	S - cooling	Create a plan that includes maintaining a certain % of agricultural land in the City	M	L
Environmental Health and Education						
Environmental Education	N/A	N/A		Education program on native plantings to create patchwork of habitat across City in areas where conservation land not possible	M	S
				Education and outreach through Athenaeum, Ch 15, Farmers Market, articles in local newspaper, social media	M	S
				Evaluate recycling and plastic bag usage at Westfield Transfer Station	M	S
				Create grade-level appropriate curriculum on native species, natural resources, and their protection through Westfield Public Schools	H	S
				Establish quarterly Westfield Clean Up Days instead of just once a year on Earth Day - pick up trash, debris, etc. near river banks, Rt. 20, and many others.	M	S
Other measures	N/A	N/A		Add pollinator gardens in corridors	M	L
				Identify and preserve wildlife corridors	H	L
				When replacing culverts, include road crossing for wildlife	H	L
				Contact Land Trust to help with land acquisition and prioritization	H	L
				Update transfer of development ordinance to be more usable, particularly for aquifer areas / impervious limits	H	L
Environmental Health	N/A	N/A		Update Westfield business goals to include environmental considerations	H	L
				Balance development - ensure development not concentrated in one area of City that impacts flood and temperature mitigation	H	L
				Reduce use of chemicals on roads, vegetation - alternatives to pesticides	M	O
				Measure air pollution around densely populated areas, schools, vulnerable populations	M	L
				Increase penalties and enforcement to prevent dumping in forests and wetland areas	H	L
				Aerial survey to identify problem areas of dumping, illegal mining	H	S

APPENDIX H



**CITY OF WESTFIELD MUNICIPAL
VULNERABILITY PREPAREDNESS PLANNING**

Listening Session
June 16, 2020

1

WELCOME

Westfield awarded **\$32 K grant** for Municipal Vulnerability (MVP) Community Resilience Building (CRB) Workshop Process

First step in unlocking **additional funding opportunities** for Westfield from FEMA/EMMA and Commonwealth of Massachusetts



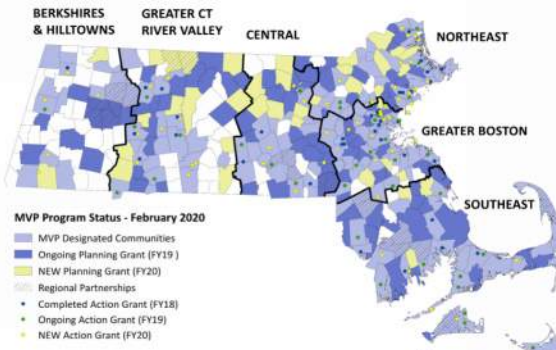
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BACKGROUND ON MVP PROGRAM

MVP Designations
82% of the
Commonwealth
287 communities

Action Grant Projects
FY 18: 37
FY 19: 36
FY 20: 54

Total Awards
\$33M+ in planning and
action grants to date



3

MVP GRANT AND CRB PROCESS

1. Establish Core Team
2. Complete Evaluation/Assessment
3. Hold Workshops
4. Draft MVP Report
5. **Hold Listening Session**
6. Final MVP Report



4

A brief thanks to Westfield's MVP Core Team



Jay Vinskey - Planning /MVP Lead
Ben Warren - Fire Dept
David Billips – DPW Director
Heather Stayton – DPW Water
Jeremy Cigal - Engineering Dept
Jim Wiggs - Emergency Mgmt
Joe Rouse – Director Public Health
Joseph Kietner - DPW
Lawrence Valliere – Chief of Police
Mary Ann Babinski - Resident
Mark Cressotti – City Engineer
Matthew Gamelli - Engineering
Meredith Borenstein - ConCom
Michael McCabe - Police Capt
Pat Egloff – Fire Chief
Peter Miller - Comm Development
Thomas Hibert - Health Dept

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NATURAL HAZARDS AND CLIMATE CHANGE



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WHAT ARE NATURAL HAZARDS?

Poor Urban Drainage
Regional Flooding
Culvert Failure



Inland Flooding



Tsunami



Severe Winter Storm

Blizzards
Snow
Ice Storms



Drought



Average/Extreme
Temperatures



Tornadoes



Landslide



Wildfires



Other Severe Weather

Nor'easters
High Wind
Heavy Precipitation
Microbursts



Coastal Flooding



Invasive Species



Earthquake



Coastal Erosion



Hurricanes/Tropical Storms



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TOP NATURAL HAZARDS – PAST & PRESENT



Thunderstorms



High wind



Extreme temperatures



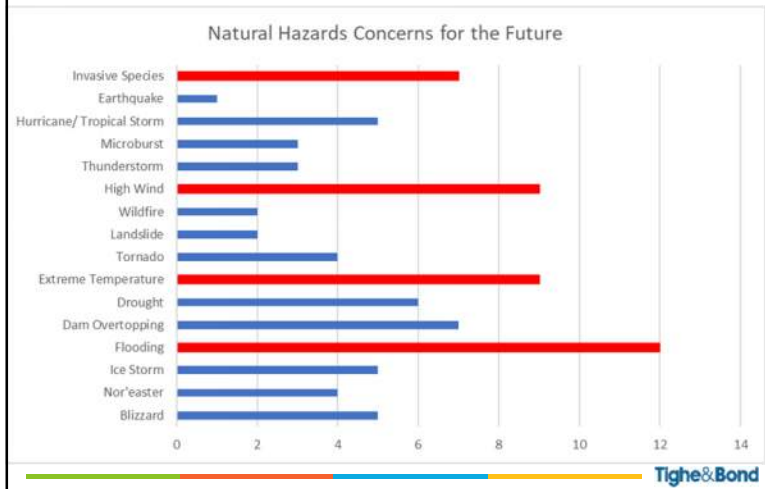
Nor'easters / ice storms



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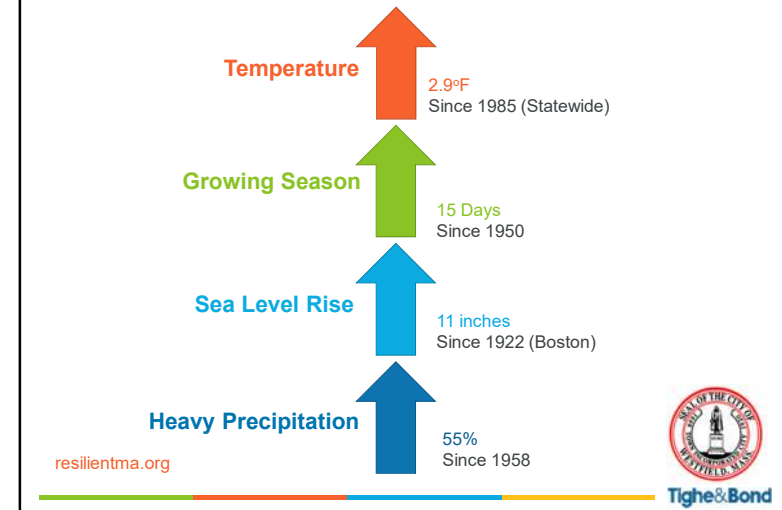
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TOP NATURAL HAZARDS – FUTURE



9

MASSACHUSETTS OBSERVED CLIMATE CHANGES



10

CHANGES IN PRECIPITATION

Westfield Basin		Observed Baseline 1971-2000 (Inches)	Projected Change in 2030s (Inches)	Mid-Century	Projected Change in 2070s (Inches)	End of Century	Projected Change in 2090s (Inches)
Total Precipitation	Annual	50.7	-0.2 to +5.1	+1.2 to +6.9	+2.0 to +8.1	+2.1 to +9.1	
	Winter	11.2	-0.4 to +2.3	+0.2 to +2.8	+0.3 to +3.2	+0.8 to +4.1	
	Spring	13.4	+0.0 to +2.2	+0.3 to +2.2	+0.7 to +3.0	+0.7 to +3.1	
	Summer	13.2	-0.1 to +2.0	-0.1 to +2.1	-0.1 to +2.1	-0.6 to +2.0	
	Fall	12.9	-1.4 to +1.7	-1.4 to +2.0	-1.7 to +2.0	-2.1 to +1.7	

IMPACTS:

- Episodic droughts
- Concerns over food production and drinking water supply
- Stress on ecosystems
- Flooding



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RIISING TEMPERATURE



IMPACTS:

- Heat-related illnesses
- Vector borne-diseases
- Health of plants, animals, ecosystems
- Reduced crop production
- Larger energy demand
- Droughts and wildfires



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EXTREME STORMS

Blizzards

- More than 5 in MA since 2011

Nor'easters and Hurricanes

- Upward trend since the 1970s



IMPACTS:

- **Public safety concerns, including increased injuries and mortality**
- **Economic damages and business disruption**
- **Property and infrastructure damage**
- **Impacts on natural resources**



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CLIMATE CHANGE + NATURAL HAZARDS = AMPLIFIED RISK

CLIMATE CHANGES	RELATED NATURAL HAZARDS	PROJECTIONS BY THE END OF THIS CENTURY
Changes in precipitation 	<ul style="list-style-type: none"> – Inland flooding – Drought – Landslide 	<ul style="list-style-type: none"> – Annual precipitation: Increase up to 16% (+7.3 inches) – Days with rainfall accumulation 1+ inch: Increase up to 57% (+4 days) – Consecutive dry days: Increase 18% (+3 days) – Summer precipitation: Decrease
Sea level rise 	<ul style="list-style-type: none"> – Coastal flooding – Coastal erosion – Tsunami 	<ul style="list-style-type: none"> – Sea level: Increase 4.0 to 10.5 feet along the Massachusetts coast
Rising temperatures 	<ul style="list-style-type: none"> – Average/extreme temperatures – Wildfires – Invasive species 	<ul style="list-style-type: none"> – Average annual temperature: Increase up to 23% (+10.8 degrees Fahrenheit) – Days/year with daily minimum temperatures below freezing: Decrease up to 42% (-62 days) – Winter temperatures: Increase at a greater rate than spring, summer, or fall – Long-term average minimum winter temperature: Increase up to 66% (+11.4 degrees Fahrenheit) – Days/year with daily maximum temperatures over 90 degrees Fahrenheit: Increase by up to 1,260% (+64 days) – Growing degree days: Increase by 23% to 52%
Extreme weather 	<ul style="list-style-type: none"> – Hurricanes/tropical storms – Severe winter storms/nor'easters – Tornadoes – Other severe weather 	<ul style="list-style-type: none"> – Frequency and magnitude: Increase

Note: This plan also assesses earthquakes, but there is no established correlation between climate change and earthquakes.
Source of Climate Change Projections: Northeast Climate Adaptation Science Center at the University of Massachusetts, Amherst.



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COMMUNITY ASSET INVENTORY



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WHAT ARE COMMUNITY ASSETS?



Societal



Infrastructure



Economy



Natural Resources



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PEOPLE – SOCIETAL ASSETS

- Public Education Facilities and Resources
- Buildings that Support Community Needs
- Vulnerable Populations
- Support Services



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INFRASTRUCTURAL ASSETS

- Flood Control Infrastructure
- Transportation Corridors
- Critical Facilities
- Communication and Energy



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ECONOMIC ASSETS

- Essential Goods – Large Retail
- Essential Service – Small Business
- Large Employers
- Other Essential Services – Lodging, Transportation and Utilities



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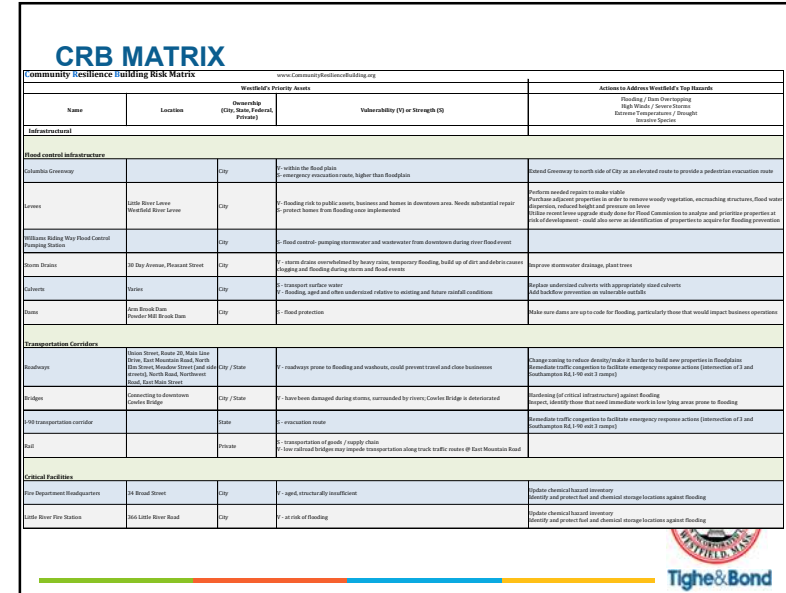
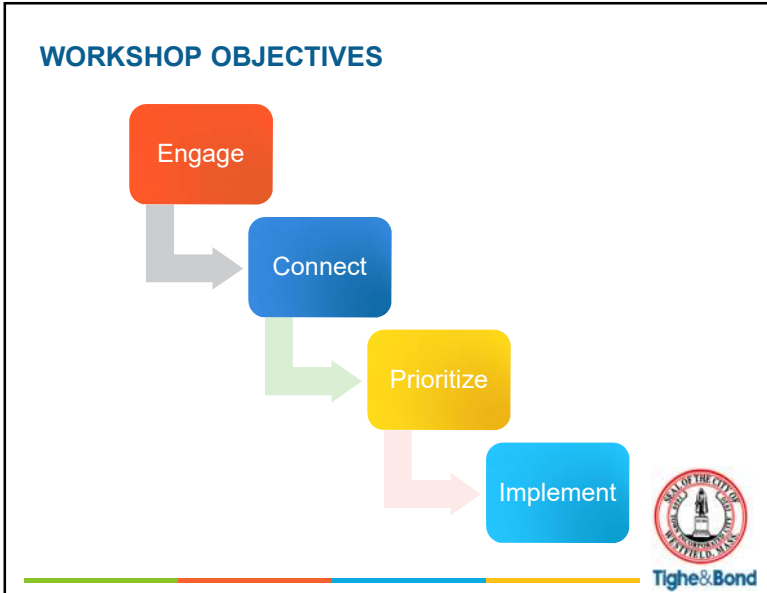
ENVIRONMENTAL ASSETS

- Hydrologic Resources
- Open Space and Conservation Lands
- Parks and Recreation Areas
- Forestry and Agriculture
- Environmental Health
- Environmental Education



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IDENTIFIED STRENGTHS AND VULNERABILITIES



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MITIGATION STRATEGIES



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TYPES OF MITIGATION ACTIONS



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EXAMPLE MITIGATION ACTIONS IN WESTFIELD

- **Prevention**
 - Update City Master Plan with Climate Change chapter to address natural resource protection
- **Public Education and Awareness**
 - Use public access channels, focus on what residents can do to mitigate hazards on their property and be prepared for hazards that cannot be mitigated
- **Natural Resource Protection**
 - Increase tree planting to mitigate heat island impacts, especially in low to moderate income neighborhoods
- **Structural Projects**
 - Extend Columbia Greenway to north side of City as an elevated route for pedestrian evacuation
- **Emergency Services Protection**
 - Update chemical hazard inventory for at risk facilities

Full list available in draft MVP Report on website



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TOP SURVEY RESULTS FOR MITIGATION ACTIONS

Societal	Infrastructural	Economic	Environmental
<ul style="list-style-type: none"> • Provide ADA accessibility • Conduct communication needs survey for elders • Enable vulnerable population access to communication networks • Provide evacuation transport for the elderly or non-mobile population 	<ul style="list-style-type: none"> • Analyze and prioritize at-risk properties adjacent to levee • Enlarge undersized culverts • Update chemical hazards inventory • Acquire or protect land in wellhead protection areas, implement signage 	<ul style="list-style-type: none"> • Limit commercial development in aquifer / wellhead protection areas • Chemical hazard inventory • Spill response plans • Emergency response plans for businesses • Flood control structures adequately designed 	<ul style="list-style-type: none"> • Create master list of prioritized properties for acquisition for flood protection • Replace under-performing culverts to meet MA Stream Crossing Standards • Establish Westfield Aquifer Protection Committee • Update City Master Plan with Climate Change Chapter



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WHAT'S NEXT?




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NEXT STEPS BEFORE JUNE 30, 2020

- **DRAFT** MVP Summary of Findings Report online for public review
- Submit comments to Jay Vinskey by **June 25th**
- **Final** MVP Summary of Findings Report
- Submit documents to EEA




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MVP ACTION GRANT OPPORTUNITIES




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MVP ACTION GRANTS

- Detailed Vulnerability and Risk Assessment*
- Community Outreach and Education
- Local Bylaws, Ordinances, Plans, and Other Management Measures**
- Redesigns and Retrofits***
- Nature-Based Flood Protection, Drought Mitigation, Water Quality, and Water Infiltration Techniques
- Nature-Based, Infrastructure and Technology Solutions to Reduce Vulnerability to Extreme Heat and Poor Air Quality



* Most common project type
 ** Second-most common project type
 ***Third-most common project type



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MVP ACTION GRANTS (CONT)



- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency

NEW IN 2019

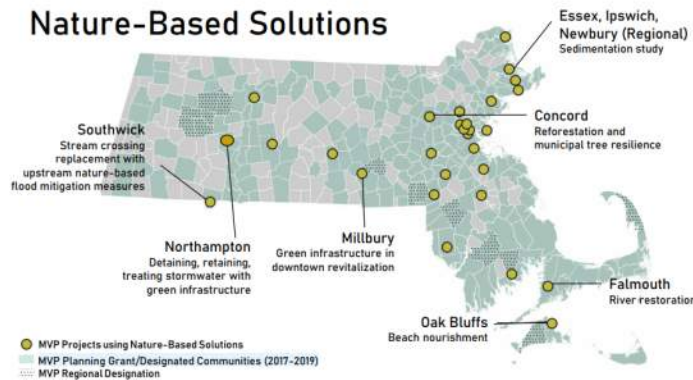
- Energy Resilience
- Chemical Safety
- Land Acquisition for Resilience
- Subsidized Low-Income Housing Resilience Strategies
- + Expanded eligibility of project location



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Nature-Based Solutions



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FOR MORE INFORMATION

- **Jay Vinskey, City Planner**
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 - 413.579.7494
- **Gabrielle Belfit, CFM, Senior Environmental Scientist Scientist**
 - GCBelfit@tighebond.com
 - 508.304.6362
- **Emily Tully, Environmental Planner**
 - ETully@tighebond.com
 - 413.875.1622
- <http://services.tighebond.com/mvp/westfield/>



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AND NOW FOR QUESTIONS AND ANSWERS



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APPENDIX I

**Massachusetts Statewide and Major Basins Climate
Projections**

Westfield River Basin Summaries

**Prepared by: New England Climate Adaptation Science
Center, March 2018**

**Prepared for: Massachusetts State Hazard Mitigation and
Climate Adaptation Plan, 2019**

MUNICIPALITIES WITHIN WESTFIELD BASIN:

195

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971- 2000 (°F)	Projected Change in 2030s (°F)	Mid-Century Projected Change in 2050s (°F)	Projected Change in 2070s (°F)	End of Century Projected Change in 2090s (°F)
Average Temperature	Annual	45.0	+2.3 to +4.6	+3.1 to +6.6	+3.6 to +9.2	+4.2 to +11.2
	Winter	23.3	+2.5 to +5.5	+3.2 to +8.3	+4.1 to +9.9	+4.5 to +11.2
	Spring	43.2	+1.8 to +3.6	+2.5 to +5.7	+3.1 to +7.7	+3.6 to +9.4
	Summer	65.7	+2.3 to +4.5	+3.0 to +7.1	+3.5 to +10.2	+4.0 to +12.5
	Fall	47.4	+2.3 to +5.3	+3.8 to +6.9	+3.8 to +9.9	+4.2 to +12.1
Maximum Temperature	Annual	55.8	+2.1 to +4.4	+2.8 to +6.7	+3.3 to +9.3	+3.8 to +11.3
	Winter	32.9	+2.0 to +4.9	+2.8 to +7.4	+3.4 to +8.9	+3.8 to +10.0
	Spring	54.4	+1.7 to +3.5	+2.4 to +5.6	+3.0 to +8.0	+3.6 to +9.7
	Summer	77.3	+2.1 to +4.7	+2.8 to +7.3	+3.3 to +10.6	+3.9 to +13.0
	Fall	58.3	+2.5 to +5.2	+3.6 to +7.3	+3.6 to +10.2	+4.2 to +12.5
Minimum Temperature	Annual	34.2	+2.4 to +4.8	+3.4 to +6.8	+4.1 to +9.0	+4.5 to +11.1
	Winter	13.6	+2.7 to +6.2	+3.7 to +8.9	+4.8 to +10.8	+5.2 to +12.0
	Spring	32.1	+1.9 to +3.8	+2.6 to +6.0	+3.3 to +7.6	+3.7 to +9.2
	Summer	54.2	+2.5 to +4.6	+3.3 to +7.1	+3.6 to +9.8	+4.1 to +12.0
	Fall	36.6	+2.0 to +5.3	+3.7 to +6.8	+3.9 to +9.5	+4.2 to +11.8

- The Westfield basin is expected to experience increased average temperatures throughout the 21st century. Maximum and minimum temperatures are also expected to increase throughout the end of the century. These increased temperature trends are expected for annual and seasonal projections.
- Seasonally, maximum summer and fall temperatures are expected to see the highest projected increase throughout the 21st century.
 - Summer mid-century increase of 2.8 °F to 7.3 °F (4-9% increase); end of century increase of 3.9 °F to 13.0 °F (5-17% increase).
 - Fall mid-century increase of 3.6 °F to 7.3 °F (6-13% increase); end of century increase by 4.2 °F to 12.5 °F (7-21% increase).
- Seasonally, minimum winter and fall temperature projections are expected to see increases throughout the 21st century.
 - Winter mid-century increase of 3.7 °F to 8.9 °F (27-65% increase); end of century increase by 5.2 °F to 12.0 °F (38-88% increase).
 - Fall mid-century of 3.7 °F to 6.8 °F (10-19% increase); end of century increase of 4.2°F to 11.8 °F (11-32% increase).

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971- 2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Maximum Temperature Over 90°F	Annual	3	+4 to +13	+6 to +24	+7 to +42	+9 to +60
	Winter	0	+0 to +0	+0 to +0	+0 to +0	+0 to +0
	Spring	<1 ⁹⁹	+<1 ⁹⁹ to +<1 ⁹⁹	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +2	+<1 ⁹⁹ to +3
	Summer	3	+4 to +11	+5 to +21	+6 to +36	+8 to +49
	Fall	<1 ⁹⁹	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +2	+<1 ⁹⁹ to +6	+1 to +8
Days with Maximum Temperature Over 95°F	Annual	<1 ⁹⁹	+1 to +4	+1 to +9	+2 to +20	+2 to +33
	Winter	0	+0 to +0	+0 to +0	+0 to +0	+0 to +0
	Spring	0	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹	+<1 ⁹⁹ to +<1 ⁹⁹	+0 to +1
	Summer	<1 ⁹⁹	+1 to +4	+1 to +9	+1 to +18	+2 to +30
	Fall	<1 ⁹⁹	+<1 ⁹⁹ to +<1 ⁹⁹	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +2
Days with Maximum Temperature Over 100°F	Annual	0	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +2	+<1 ⁹⁹ to +5	+<1 ⁹⁹ to +11
	Winter	0	+0 to +0	+0 to +0	+0 to +0	+0 to +0
	Spring	0	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹
	Summer	0	+<1 ⁹⁹ to +1	+<1 ⁹⁹ to +2	+<1 ⁹⁹ to +5	+<1 ⁹⁹ to +11
	Fall	0	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹	+0 to +<1 ⁹⁹	+0 to +1

- Due to projected increases in average and maximum temperatures throughout the end of the century, the Westfield basin is also expected to experience an increase in days with daily maximum temperatures over 90 °F, 95 °F, and 100 °F.
 - Annually, the Westfield basin is expected to see days with daily maximum temperatures over 90 °F increase by 6 to 24 more days by mid-century, and 9 to 60 more days by the end of the century.
 - Seasonally, summer is expected to see an increase of 5 to 21 more days with daily maximums over 90 °F by mid-century.
 - By end of century, the Westfield basin is expected to have 8 to 49 more days.

⁹⁹ Over the observed period, there were some years with at least 1 day with seasonal Tmax over a certain threshold while in all the other years that threshold wasn't crossed seasonally at all.

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971- 2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Minimum Temperature Below 0°F	Annual	13	-5 to -9	-7 to -10	-7 to -11	-8 to -12
	Winter	12	-5 to -8	-6 to -10	-7 to -11	-7 to -11
	Spring	1	-0 to -1	-0 to -1	-0 to -1	-0 to -1
	Summer	0	-0 to -0	-0 to -0	-0 to -0	-0 to -0
	Fall	<1 ¹⁰⁰	-0 to -0	-0 to -0	-0 to -0	-0 to -0
Days with Minimum Temperature Below 32°F	Annual	167	-11 to -28	-20 to -38	-22 to -53	-24 to -62
	Winter	86	-1 to -5	-2 to -8	-3 to -14	-3 to -17
	Spring	46	-5 to -10	-6 to -15	-8 to -20	-9 to -22
	Summer	<1 ¹⁰⁰	-0 to -0	-0 to -0	-0 to -0	-0 to -0
	Fall	34	-5 to -13	-10 to -16	-10 to -22	-10 to -24

- Due to projected increases in average and minimum temperatures throughout the end of the century, the Westfield basin is expected to experience a decrease in days with daily minimum temperatures below 32 °F and 0 °F.
- Seasonally, winter, spring and fall are expected to see the largest decreases in days with daily minimum temperatures below 32 °F.
 - Winter is expected to have 2 to 8 fewer days by mid-century, and 3 to 17 fewer days by end of century.
 - Spring is expected to have 6 to 15 fewer days by mid-century, and 9 to 22 fewer days by end of century.
 - Fall is expected to have 10 to 16 fewer days by mid-century, and 10 to 24 fewer days by end of century.

¹⁰⁰ Over the observed period, there were some years with at least 1 day with seasonal Tmin under a certain threshold while in all the other years that threshold wasn't crossed seasonally at all.

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971- 2000 (Degree- Days)	Projected Change in 2030s (Degree-Days)	Mid-Century Projected Change in 2050s (Degree-Days)	Projected Change in 2070s (Degree-Days)	End of Century Projected Change in 2090s (Degree-Days)
Heating Degree- Days (Base 65°F)	Annual	7620	-658 to -1335	-901 to -1866	-1031 to -2442	-1186 to -2821
	Winter	3775	-207 to -512	-279 to -758	-366 to -897	-417 to -1027
	Spring	2017	-151 to -313	-217 to -491	-269 to -636	-317 to -753
	Summer	206	-69 to -120	-93 to -154	-109 to -178	-120 to -189
	Fall	1621	-187 to -431	-313 to -535	-305 to -743	-328 to -853
Cooling Degree- Days (Base 65°F)	Annual	317	+176 to +362	+231 to +631	+271 to +978	+314 to +1311
	Winter	0	-1 to +3	+1 to +7	-0 to +4	+0 to +11
	Spring	15	+6 to +20	+12 to +39	+15 to +68	+15 to +99
	Summer	275	+139 to +299	+176 to +493	+204 to +755	+241 to +961
	Fall	25	+19 to +63	+28 to +104	+35 to +184	+45 to +251
Growing Degree- Days (Base 50°F)	Annual	2013	+382 to +764	+517 to +1204	+620 to +1807	+702 to +2283
	Winter	3	-1 to +7	+1 to +8	+0 to +12	+2 to +18
	Spring	223	+54 to +118	+80 to +207	+102 to +307	+102 to +409
	Summer	1451	+209 to +410	+276 to +647	+316 to +931	+364 to +1144
	Fall	326	+102 to +261	+155 to +374	+158 to +570	+204 to +710

- Due to projected increases in average, maximum, and minimum temperatures throughout the end of the century, the Westfield basin is expected to experience a decrease in heating degree-days, and increases in both cooling degree-days and growing degree-days.
- Seasonally, winter historically exhibits the highest number of heating degree-days and is expected to see the largest decrease of any season, but spring and fall are also expected to see significant change.
 - The winter season is expected to see a decrease of 7-20% (279 -758 degree-days) by mid-century, and a decrease of 11-27% (417 -1027 degree-days) by the end of century.
 - The spring season is expected to decrease in heating degree-days by 11-24% (217-491 degree-days) by mid-century, and by 16-37% (317-753 degree-days) by the end of century.
 - The fall season is expected to decreases in heating degree-days by 19-33% (313-535 degree-days) by mid-century, and by 20-53% (328 -853 degree-days) by the end of century.
- Conversely, due to projected increasing temperatures, summer cooling degree-days are expected to increase by 64-180% (176 -493 degree-days) by mid-century, and by 88-350% (241-961 degree-days) by end of century.

- Seasonally, summer historically exhibits the highest number of growing degree-days and is expected to see the largest decrease of any season, but the shoulder seasons of spring and fall are also expected to see an increase in growing degree-days.
 - The summer season is projected to increase by 19-45% (276-647 degree-days) by mid-century, and by 25-79% (363-1144 degree-days) by end of century.
 - Spring is expected to see an increase by 36-93% (78-207 degree-days) by mid-century and 46-184% (102-409 degree-days) by end of century.
 - Fall is expected to see an increase by 47-115% (155-374 degree-days) by mid-century and 62-218% (204-710 degree-days) by end of century.

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Days with Precipitation Over 1"	Annual	8	+<1 ¹⁰¹ to +2	+1 to +4	+1 to +3	+1 to +5
	Winter	1	-0 to +1	+<1 ¹⁰¹ to +1	+<1 ¹⁰¹ to +1	+<1 ¹⁰¹ to +2
	Spring	2	-0 to +1	+<1 ¹⁰¹ to +1	+<1 ¹⁰¹ to +1	+<1 ¹⁰¹ to +2
	Summer	2	-0 to +1	-0 to +1	-0 to +1	-0 to +1
	Fall	2	-0 to +1	-0 to +1	-0 to +1	-0 to +1
Days with Precipitation Over 2"	Annual	1	-0 to +1	-0 to +1	+<1 ¹⁰¹ to +1	+<1 ¹⁰¹ to +1
	Winter	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
	Spring	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	+<1 ¹⁰¹ to +<1 ¹⁰¹	+<1 ¹⁰¹ to +<1 ¹⁰¹
	Summer	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
	Fall	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
Days with Precipitation Over 4"	Annual	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
	Winter	0	-0 to +0	-0 to +0	-0 to +0	-0 to +0
	Spring	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
	Summer	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹
	Fall	<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹	-0 to +<1 ¹⁰¹

- The projections for expected number of days receiving precipitation over one inch are variable for the Westfield basin, fluctuating between loss and gain of days.
 - Seasonally, the winter season is generally expected to see the highest projected increase.
 - The winter season is expected to see an increase in days with precipitation over one inch of 0-1 days by mid-century, and an increase of 0-2 days by the end of century.
 - The spring season is expected to see an increase in days with precipitation over one inch 0-1 days by mid-century, and of an increase of 0-2 days by the end of century.

¹⁰¹ Over the observed period, there were some years with at least 1 day with seasonal precipitation over a certain threshold while in all the other years that threshold wasn't crossed seasonally at all.

WESTFIELD BASIN

Westfield Basin		Observed Baseline 1971-2000 (Inches)	Projected Change in 2030s (Inches)	Mid-Century Projected Change in 2050s (Inches)	Projected Change in 2070s (Inches)	End of Century Projected Change in 2090s (Inches)
Total Precipitation	Annual	50.7	-0.2 to +5.1	+1.2 to +6.9	+2.0 to +8.1	+2.1 to +9.1
	Winter	11.2	-0.4 to +2.3	+0.2 to +2.8	+0.3 to +3.2	+0.8 to +4.1
	Spring	13.4	+0.0 to +2.2	+0.3 to +2.2	+0.7 to +3.0	+0.7 to +3.1
	Summer	13.2	-0.1 to +2.0	-0.1 to +2.1	-0.1 to +2.1	-0.6 to +2.0
	Fall	12.9	-1.4 to +1.7	-1.4 to +2.0	-1.7 to +2.0	-2.1 to +1.7

- Similar to projections for number of days receiving precipitation over a specified threshold, seasonal projections for total precipitation are also variable for the Westfield basin.
 - The winter season is expected to experience the greatest change with an increase of 2-25% by mid-century, and of 7-36% by end of century.
 - Projections for the summer and fall seasons are more variable, and could see either a drop or increase in total precipitation throughout the 21st century.
 - The summer season projections for the Westfield or basin could see a decrease of 0.1 to an increase of 2.1 inches by mid-century (decrease of 1% to increase of 16%) and a decrease of 0.6 to an increase of 2.0 inches by the end of the century (decrease of 5% to increase of 15%).
 - The fall season projections for the Westfield basin could see a decrease of 1.4 to an increase of 2 inches by mid-century (decrease of 10% to increase of 15%) and a decrease of 2.1 to an increase of 1.7 inches by the end of the century (decrease of 16% to increase of 13%).

Westfield Basin		Observed Baseline 1971-2000 (Days)	Projected Change in 2030s (Days)	Mid-Century Projected Change in 2050s (Days)	Projected Change in 2070s (Days)	End of Century Projected Change in 2090s (Days)
Consecutive Dry Days	Annual	17	-0 to +1	-0 to +2	-1 to +2	-0 to +3
	Winter	12	-1 to +1	-1 to +1	-1 to +1	-1 to +1
	Spring	12	-1 to +1	-1 to +1	-1 to +1	-1 to +1
	Summer	11	-1 to +1	-0 to +1	-1 to +2	-2 to +2
	Fall	12	-0 to +2	-0 to +2	-0 to +3	-0 to +3

- Annual and seasonal projections for consecutive dry days, or for a given period, the largest number of consecutive days with precipitation less than 1 mm (~0.04 inches), are variable throughout the 21st century.
 - For all the temporal parameters, the Westfield basin is expected to see a slight decrease to an increase in consecutive dry days throughout this century.
 - Seasonally, the fall and summer seasons are expected to continue to experience the highest number of consecutive dry days.
 - The fall season is expected to experience an increase of 0-3 days in consecutive dry days by the end of the century.

