



# Springfield Community Resilience Building Workshops Summary of Findings

May 2017-June 2018

# Springfield

## Community Resilience Building Workshops

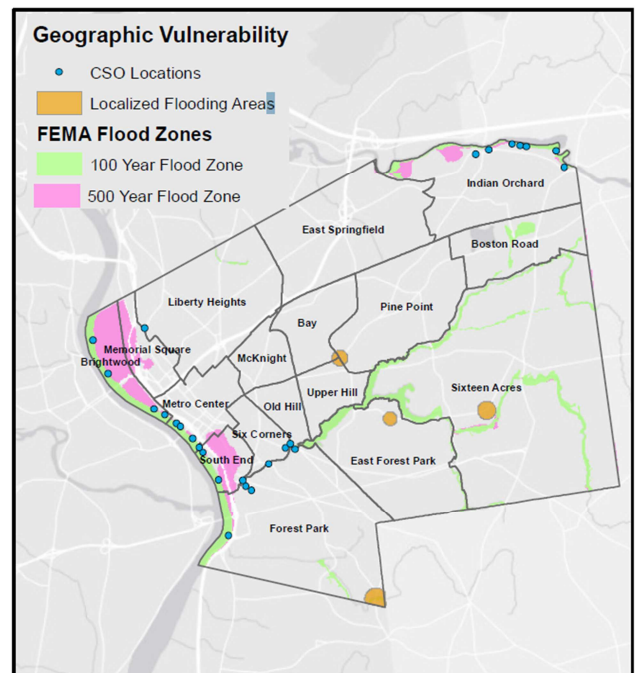
### Summary of Findings

#### Overview:

Clearly, the need for municipalities, regional planning organizations, the state and federal agencies to increase resilience and adapt to extreme weather events and mounting natural hazards is strikingly evident in the City of Springfield which experienced five presidentially-declared weather disasters from 2011-2013, including an EF3 tornado. Recent events such as Tropical Storm Irene, Hurricane Sandy, the October snow storm, and the tornado have reinforced this urgency and compelled leading communities like the City of Springfield to proactively plan and mitigate potential risks through a community driven process. Ultimately, this commendable type of leadership will reduce the exposure of Springfield's citizens, infrastructure and ecosystems and serve as a model for cities and towns across Massachusetts, New England, and the Nation.

Since 2015, the city of Springfield has been collaborating with the Pioneer Valley Planning Commission, Arise for Social Justice, the Public Health Institute of Western Mass, the University of Massachusetts-Amherst, the Commonwealth of Massachusetts, numerous Springfield-based businesses and organizations and the federal government to increase awareness of risks associated with extreme weather and natural and climate-related hazards, working to assess the risks, strengths and vulnerabilities within the City of Springfield.

This focus was actualized through collaborative work on the city's FEMA funded Natural Hazards Mitigation plan (which built on the city's ReBuild Springfield plan, commissioned by the Springfield Redevelopment Authority and DevelopSpringfield, and facilitated by Concordia from 2011-2012 after the Tornado), a series of city vulnerability assessments, collaborative work on the city's successful application to the National Disaster Resilience Competition, and the development of the City's **Strong, Healthy & Just: Climate Action & Resilience Plan**. Through years of interactive community-driven presentations, individual interviews, workshops, group meetings, on-line engagement and outreach to build stakeholder willingness and participation followed by a series of community meetings, focus groups, stakeholder interviews, and culminating in a phase one Community Resilience Building (CRB) Workshop in May 2017 followed by phase 2 in April 2018. The core directive of this effort was the engagement with and between community stakeholders in order to facilitate the education, planning and ultimately implementation of priority adaptation actions. To reinforce this directive the Community Resilience Building workshop had several central objectives including:



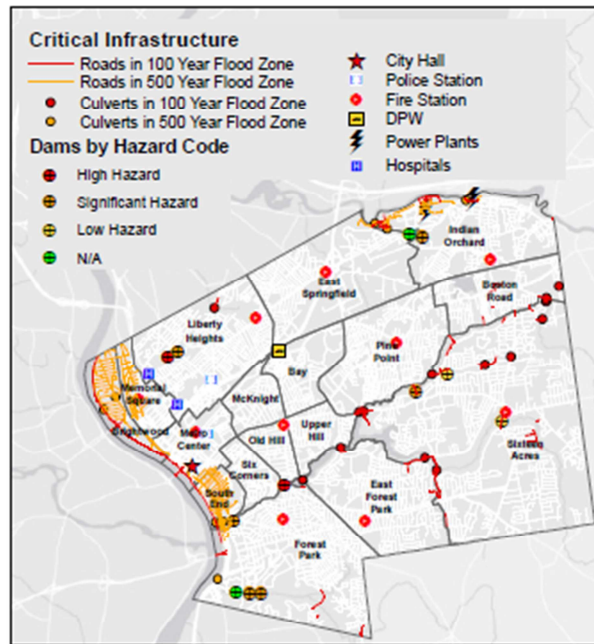
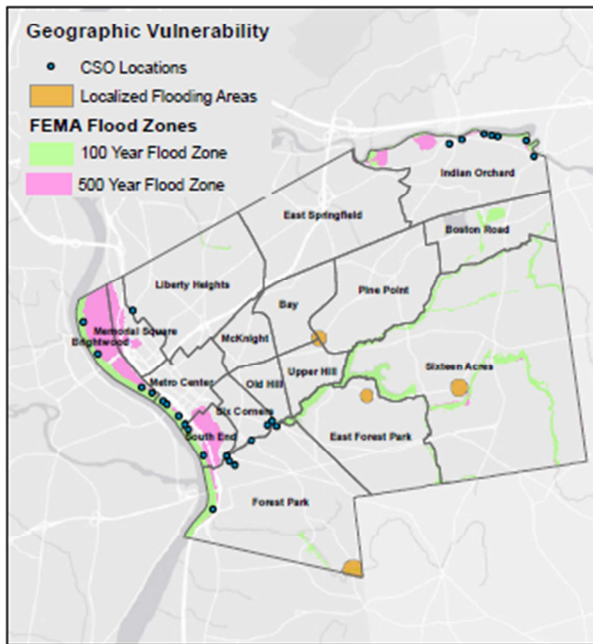
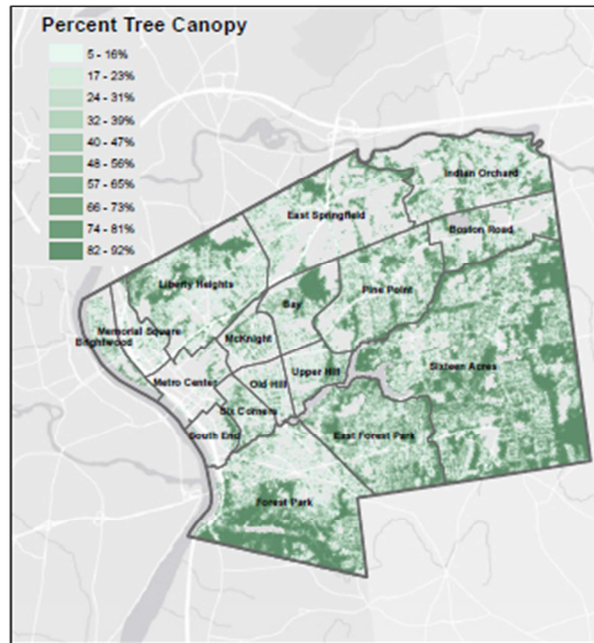
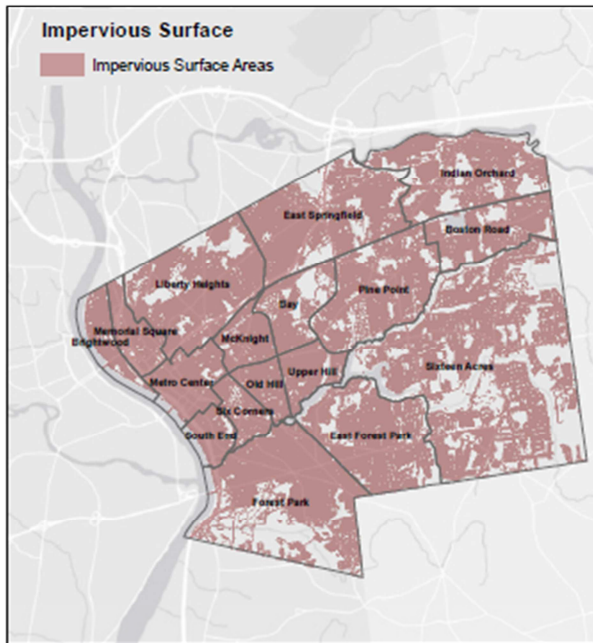
- Affirm community consensus of extreme weather and local natural and climate-related hazards of concern;
- Identification of existing and future vulnerabilities & strengths;
- Develop and prioritize actions for the City and a broad stakeholder network;
- Identify immediate opportunities to collaboratively advance actions to increase resilience



The results of the CRB workshops are summarized in a Risk Matrix (at the end of this document). The Risk Matrix was integrated into the CRB Workshop process to provide both decision-support and risk visualization for the City of Springfield. The report provides an overview of the top hazards, current concerns and challenges, current strengths, and actions to improve the City of Springfield's resilience to natural and climate-related hazards today and in the future. Much more detail is available in the Complete Risk Matrix, the City's recently completed Strong, Healthy, and Just: Springfield's Climate Action & Resilience Plan and Strategic Action Chart, the City's updated Vulnerability Assessment, the City's 2016 federally approved Hazard Mitigation Plan and on [www.resilientspringfield.org](http://www.resilientspringfield.org).



# Geographic Vulnerability & Critical Infrastructure Panel Map- Springfield, MA



Data sources: Info USA Data Services, Massachusetts Office of Geographic Information Systems, Pioneer Valley Planning Commission, U.S. Department of Agriculture Forest Service.



## Summary of Findings

### Top Hazards and Vulnerable Areas for Springfield

During the CRB workshops (and including the events and outreach held as part of the City's recently completed local hazard mitigation planning process, as well as those held as part of the City's coordinated effort to secure \$17 million in National Disaster Recovery funds for re-building after the tornado, and the community planning process for the Strong, Healthy & Just: Springfield's Climate Action & Resilience Plan), participants from the community were asked to identify the top hazards for the Greater Springfield region. Inland flooding was identified as the top hazard by the majority of the participants. Extreme weather events in the form of tropical storms, severe wind, snow and ice storms, and extreme heat were also listed universally across most workshop teams. (Box A) According to the participants, these hazards are already having a direct impact on several neighborhoods, natural areas (streams, wetlands, and parks), roads, and other critical facilities within the City of Springfield (Box B).

#### **Box A: Top Hazards for Greater Springfield Region**

- #1 Frequency and Severity of Inland Flooding
- #2 Hurricanes/Severe Wind-->power outage
- #3 Severe Snow/Ice Storms-->power outage
- #4 Extreme Heat (moving up on the list of concerns)

#### **Box B: Vulnerable Areas in City of Springfield**

**Neighborhoods:** Brightwood, Memorial Square, Liberty Heights, Metro Center, South End, Old Hill, Upper Hill, Bay, McKnight, Six Corners, Indian Orchard

**Dams:** Watershops Pond, Van Horne Dam, Connecticut River dikes and flood control system

**Roads:** Columbus Avenue, Main Street, Mill Street, Riverside Road, Water Street, Viaducts and Bridge Crossings

**Facilities:** Baystate Medical Center, Springfield Housing Authority residences in Brightwood neighborhood, Grochmal Mobile Home park, Eastman Manufacturing, Sisters of Providence Health Facility on Mill Street, Buckeye Pipeline, CSX Rail line, Transportation, Shelters and Cooling Stations, Nursing Homes, Gas Stations, Low Income Housing, Wastewater Treatment, Brownfields



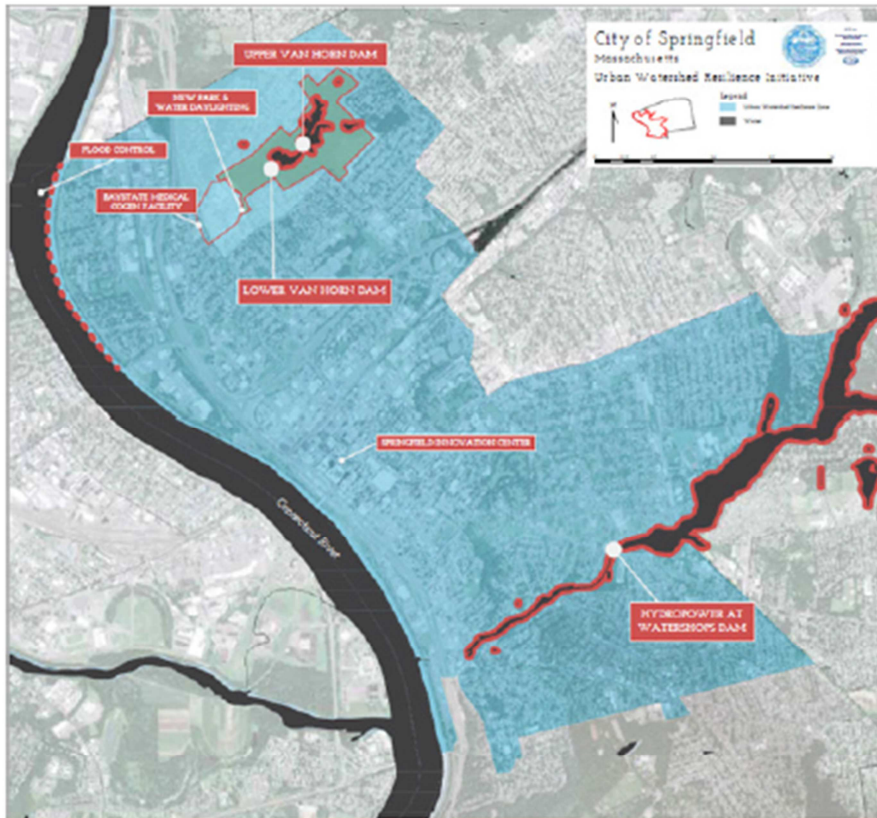


Figure 3. Springfield's Urban Watershed Resilience Zone, from NDRC application.

## **Current Concerns and Challenges Presented by Hazards**

The City of Springfield currently has several concerns and challenges related to the impact of hazards in the community. Many of these were brought to the fore during the recent experiences of a tornado (June, 2011), Tropical Storm Irene (August, 2011) and the October snow storm (2011).

Aged infrastructure and out of date data, combined with the recognition of the need to more aggressively integrate nature based solutions were the key concerns of city officials raised at the May 12 2017 and April 25 2018 Community Resilience Building workshops. City Public Works Director Chris Cignoli stated "We're still using stormwater standards from 1950!" Springfield sits along the Connecticut River and is protected by 12 dams and the CT River dike system. Challenges facing the city are massive, including storm systems, reconstruction and repair of the levee system and flood control drainage systems on and off the CT river, roadway cross sections, street lights, electrical distribution system (limiting expansion of solar), gas lines, and housing stock.

The city has been working pro-actively to replace culverts, and this is an ongoing effort. Springfield has been making good use of zoning and subdivision regulations to prevent/constrain development in sensitive areas and is moving forward with a systematic and deliberate integration of green infrastructure. Loss of power is a concern and the city has invested additional resources in tree management as one of the many lessons learned after the 2011 'year of disasters', when over 100,000 trees were lost, and the need to inventory and plant more trees emerged as a high priority. Associated risks to public health and safety included potential for disease outbreaks due to overflowing and standing sewage, surface and ground water contamination, mold outbreaks in flooded basements, mobilized debris in the streets and clogging storm drains, and the potential for release of toxic materials from brownfields and other storage facilities in flood-prone areas.

Because of the city's success with the National Disaster Resilience funding, the city is implementing many key resilience projects, including upgrading the newly re-built Brookings school in the historically African-American Mason Square



neighborhoods: Old Hill, Six Corners, Bay, McKnight and Upper Hill as a neighborhood based emergency shelter, supporting the Combined Heat and Power (CHP) project at Baystate which will yield 30 days of back-up power in the event of extended power outages, and other initiatives detailed below.

Vulnerabilities in the city are complicated due to the diversity of the City's demographics: the significant number of economically disadvantaged residents who do not have access to a vehicle and are dependent on the PVTA whose funding is being cut, who live in poorly insulated homes necessitating higher spending on energy, and who may not be proficient English speakers. Actionable news updates and instructions originating from city officials and emergency managers and delivered by trusted messengers (technology plus process) were identified as key to ensure preparedness and proactive responses by an informed and aware citizenry.

And lack of confidence in city government has also emerged as a key vulnerability. After the tornado, residents of color reported feeling like majority white neighborhoods were better protected by police and received faster assistance from DPW than their predominantly African American and Hispanic neighborhoods/blocks. In addition, the city's dubious distinction (documented in a 2013 University of Michigan study) as the most segregated in the nation in terms of white and Hispanic separation, and 22nd in terms of black and white segregation and 57th in terms of white and Asian segregation, was lifted up as a serious vulnerability. Segregation results in disparate access to opportunity, leaving residents of color less able to 'bounce back' after a disaster.



## **Current Strengths and Assets within Springfield**

The City of Springfield views its recent experiences with increasingly extreme weather patterns and hazard events as ongoing issues to be addressed boldly and with urgency. Actions that the City has already initiated are focused on several key areas of preparedness:

### **Existing Assets/Initiatives-strengths**

- Re-developed the tornado-destroyed Brookings School into an emergency shelter with back-up power;
- Assisted Baystate Hospital with NDR funding to develop Combined Heat & Power facility with long-term back-up power in the event of prolonged power outage;
- Mayor formed City Disaster Resilient Department Head working team and was one of only 13 entities across the country successful in securing \$17 million in NDR funds;
- Very effective use of zoning and subdivision regulations to prevent development in hazard areas;
- Robust existing plans with numerous recommendations, that, when implemented, will dramatically reduce the City's vulnerability;
- On-going dialogue between federal, regional, municipal and neighborhood levels on response and preparedness;
- Strong social services network: community-based organizations, faith-based community, sheltering facilities, and hospitals;
- Broad network of education resources that can assist with public awareness and outreach: public library network, universities and colleges, and schools;
- Rich natural resources, recreational areas, and green infrastructure that provide buffering, water storage and protective capacity to the City;
- Commitment to Green Infrastructure by the City DPW, including securing funds from EOEEA to launch development of a Green Streets/Green Infrastructure Guidebook for the city;
- City has been very active in PVPC led Ct River Clean-up Committee and CT River Stormwater Committee and has been working cooperatively with PVPC, MA DEP, and neighboring cities and the federal government to secure funds to separate city combined sewer outfalls;
- City is committing NDR funds to work with economically disadvantaged residents and landlords who own properties where poor people live, to make sure these homes are as healthy and as resilient as possible;
- City has robust 311 service and many residents use NextDoor app for communication.





# **Top Recommendations to Improve Springfield's Resilience to Hazards**

The responses from the Workshop's participants regarding recommended actions to reduce exposure to natural hazards fell into four categories: Building Resilient Infrastructure; Managing the Urban Forest, Back-up Power, and Building Human Resilience. Pervasive throughout the discussion was the need to proactively manage the risk posed by these hazards as well as the need to comprehensively assess the return on actions within an economic, societal, and ecological context. Because Springfield ran their CRB workshops over a 12 month period, the top recommendation is already underway, that if working to develop a Springfield-specific Green Streets/Green Infrastructure Guide for city and private development work in the city. While Springfield was not certified as an MVP community, the city was given credit for their work on the CRB workshop held in 2017, enabling the city to allocate a portion of their MVP planning grant toward the Green Infrastructure Design guide.

## **STRATEGIES to Build Resilient Infrastructure**

1. Develop a Springfield-specific Green Infrastructure (GI) policy and design manual, which should include:
  - Standards by location & city-wide
  - Set of criteria to assist developers and the City in determining what type of infrastructure system is appropriate for a given location and project type. This set of criteria should set GI as the standard, requiring developers to prove they have completed a thorough site analysis and alternatives assessment regarding infrastructure systems design.
  - Neighborhood-specific content, designed to educate Springfield's 17 neighborhood groups at the concept-level.
2. Highlight projects already in the city to help build the case and educate neighborhood residents and developers alike. Monitor public and private installations.
3. Set up "pop up green infrastructure" demonstrations along public roadways, in public plazas and parks, in public and commercial parking lots, and in other highly trafficked and/or highly impervious sites.

## **STRATEGIES to Manage the Urban Forest**

1. Identify and secure funding for a city-wide survey of trees.
2. Identify and secure sustainable funding sources for annual tree planting.
3. Identify and secure sustainable funding sources for tree care and maintenance of public trees.
4. Focus planting efforts in neighborhoods with the greatest risk of urban heat island (UHI) effect and the lowest rate of tree canopy cover.
5. By 2022, plant 5,600 trees on public property and by 2060 achieve 100% stocking levels and have planted an additional 55,000 trees on public property.
6. By 2022, plant 300 trees per neighborhood on private property for a total of 5,400 trees across Springfield's 18 neighborhoods.
7. Secure funding and develop an incentive program for planting trees on private properties.
8. Implement a city-wide green infrastructure policy, as identified in Strategy 1 of the Building Resilient Infrastructure goal.

### **Additional work to do:**

9. Enhance opportunities of forestry-related job and skills trainings for Springfield's youth and residents and collaborations with area academic institutions
10. Increase public education efforts pertaining the value and importance of trees, shrubs, and fruit producing vegetation regarding:
  - Food access and security
  - Mental and community health co-benefits
  - Urban ecosystem services



## STRATEGIES to Build Human Resilience

- 1 City will work deliberately to restore faith in city government, especially with respect to explaining what the city is doing to be resilient and to protect residents from the effects of disasters, including communicating with residents on resilience initiatives and providing details to residents on how they can reduce their own vulnerability and enhance their individual, family and neighborhood strength.
- 2 City work to address perceived cultural insensitivity and work to develop cultural competence and understand diversity as a strength and not a weakness.
- 3 Work to improve access to transportation for residents who do not have access to an automobile, to assure mobility in the event of prolonged power outages and the need to evacuate, including ongoing advocacy for increased funding for the Pioneer Valley Transit Authority and East/West rail, as well as programs to encourage employers to offer subsidies for bus passes and ValleyBike Share membership and ongoing aggressive participation in the MassDOT Complete Streets funding program.
- 4 Establish a program, spearheaded by utilities, to provide super energy efficient air conditioners to homeowners and renters who do not have access, contingent upon completion of Mass Save HEA and full implementation of recommended energy efficiency home improvements to maximum \$2,000 incentive.
- 5 City, SHJ Implementation team, businesses, and anchor institutions create a program to provide low or no cost (as needed) property insurance coverage to all vulnerable homeowners and renters.
- 6 Assess the feasibility of adopting a building requirement for air conditioning in all new developments and as part of any major rehabilitation work over a certain size (excluding single family homes).

## STRATEGIES to Develop Back-up Power

Create a Springfield micro-grid working group to advance this initiative. Members should agree to implement the following detailed action plan:

- Meet with Eversource and ISO New England to understand grid connection and other issues.
- Research how other cities are implementing micro-grids, and conduct site visits and conference calls to exchange ideas. Possible site visits include the Codman Square CDC project in Dorchester and the fuel-cell micro-grid in Woodbridge CT.
- Research funding opportunities from Massachusetts Clean Energy Center, Department of Energy Resources, and other sources. Apply for feasibility study grants.
- Investigate battery storage for micro-grid and emergency back-up power, especially for nursing homes and grocery stores in vulnerable neighborhoods.
- Engage UMASS researchers as appropriate.
- Engage the largest property owners and energy users, such as MassMutual, Baystate Hospital, MGM, Picknelly, Mass Visitors & Convention Bureau, and the Greater Springfield Chamber.
- Focus on Downtown/Metro Center and integrate EV car charging stations
- Conduct research to understand the level of retro-fitting necessary in existing buildings in order to connect to micro-grid.
- Assess the feasibility of a regulatory option requiring new developments to be 'micro-grid ready'.
- Oversee feasibility study.
- Launch project by 2019 for completion in 2020.

The City of Springfield continues to work to advance implementation of these recommendations. Additional detail is available at [www.resilient.springfield.org](http://www.resilient.springfield.org)



## **Workshop Participants: City Departments, Organizations and Other Entities**

All City of Springfield Departments  
Pioneer Valley Planning Commission  
DevelopSpringfield  
Springfield Partners for Community Action  
Columbia Gas  
Eversource  
Regional Employment Board of Hampden County  
Springfield Technical Community College  
American International College  
Baystate Hospital  
Springfield City Council  
LiveWell Springfield  
ReGreen Springfield  
Co-op Power  
Center for Eco-Technology  
City Neighborhood Councils  
Public Health Institute of Western MA  
Arise for Social Justice  
University of Massachusetts Amherst LARP/Design Engagement

Note: Additional groups were represented during portions of the workshops; those listed above participated in one or both full workshop sessions and/or stakeholder sessions

## **Workshops Project Team: Organization and Principal Contact**

City of Springfield - Tina Quagliato, Director of Disaster Recovery  
Chris Cignoli - Director Department of Public Works  
Patrick Sullivan - Director Buildings, Parks and Recreation  
Bob Hassett - Emergency Management Director  
Shayvonne Plummer - Office of Planning and Economic Development  
Geraldine McCafferty - Director Department of Housing

Certified CRB Provider: Pioneer Valley Planning Commission– Catherine Ratté (Project Lead)

## **Acknowledgements:**

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## Public Listening Session

On June 5, 2018, the City held its MVP Public Listening Session. Facilitated by PVPC staff, community members expressed the following concerns and suggestions.

Overall the public were supportive of the city's MVP action grant proposal, especially the proposal to focus resources to improve city Departments communication with residents by: a) hiring a Public Relations firm to work with city Department heads and key staff to develop a shared approach to Facebook communication; b) stipends and training for Community Resilience Ambassadors, c) hiring the Healing Racism Institute of the Pioneer Valley (or comparable entity) to facilitate a series of community conversations on race and resilience and d) funding to Neighborhood Councils to organize Diversity Festivals in targeted neighborhoods.

The public also supported the city's request for a tree inventory and for more funding focused on nature based solutions to managing stormwater and potential flooding.

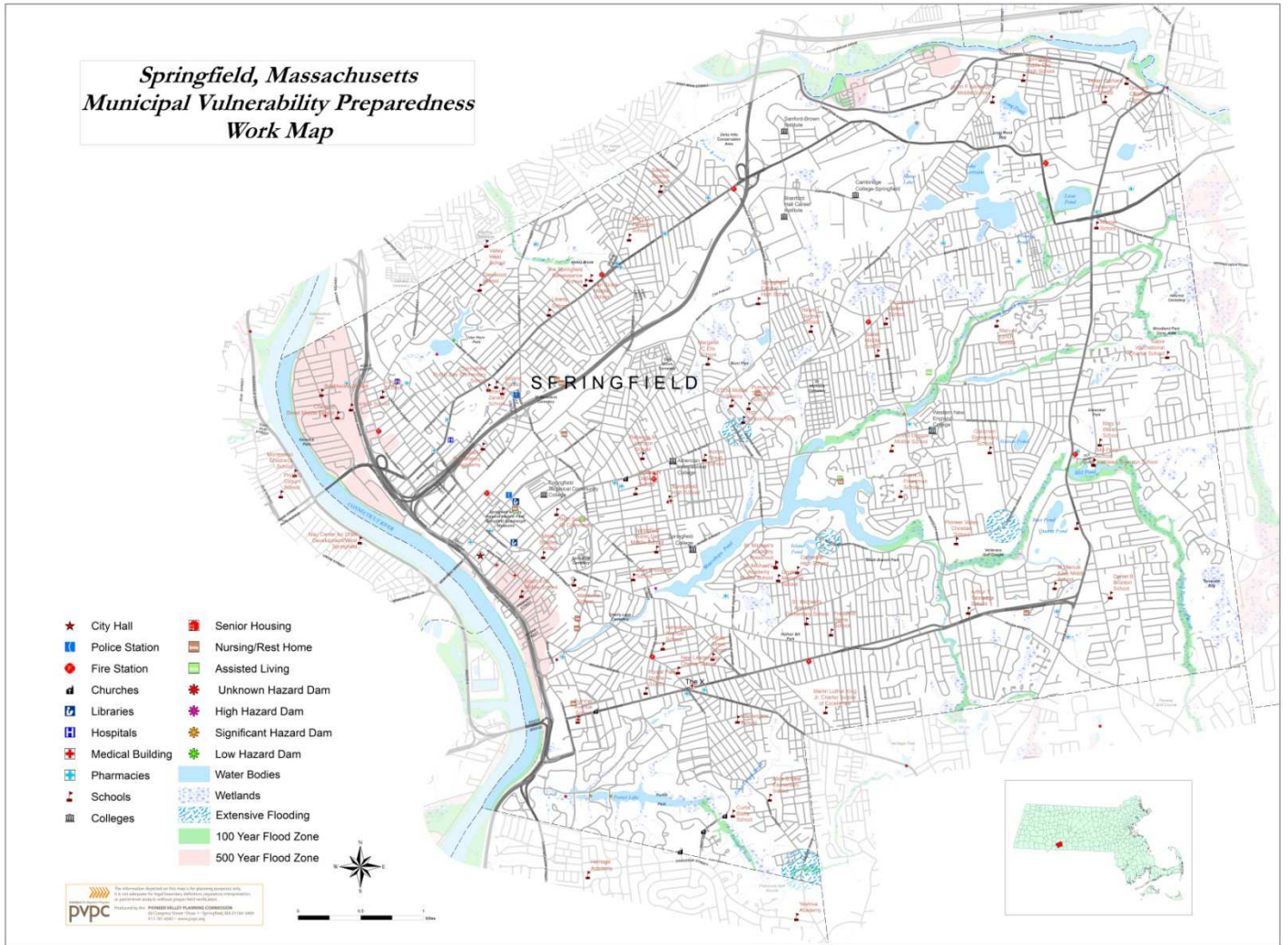
In addition, the public suggested:

- Form diverse work teams to address issues across the city and publicize their work very aggressively.
- Consider pilot participatory budgeting or other established participatory processes to develop neighborhood specific resilience action plans with possible mini-grants for resident led projects, similar to the Eco District process well established in Oregon
- Consider recognizing that many residents do not speak English, even after years of living in Springfield and the region, and do more bi-lingual signage and publicity
- Support Resident Leadership Capacity Building programs, such as those run by LiveWellSpringfield and Wayfinders
- Research and integrate, as appropriate, the Alternative to Violence Project
- More aggressively research and implement local regulations to mitigate traffic pollution, both physical, such as barriers and planting trees as well as regulations, possibly prohibiting the siting of schools near high volume roads
- Support for a carbon fee and/or other innovative financing mechanisms to raise funds for new ways to reduce GHG emissions given the low socio-economic status of the majority of Springfield's residents



# Appendix

## Base Maps and Community Resilience Building (CRB) Risk Matrix



Community Resilience Building Matrix										
www.CommunityResilienceBuilding.com										
Top priority needs: roads, flood, water, fire, power, etc. (see last page, etc.)										
High Vulnerability: 10+ mph										
Features	Location	Ownership	V or S	Estimated Heat	Inland Flooding	Water Damage	High Winds (power outage etc.)	Priority	Time	
Features	Location	Ownership	V or S	Estimated Heat	Inland Flooding	Water Damage	High Winds (power outage etc.)	Priority	Time	
Reliability of City Storm Systems > 75 years old. Resiliency requires complete replacement or redundancy of systems. Current capacity issues indicate local stormwater collection and treatment of wastewater facilities.	Citywide	City	V	Continue to develop all long-term Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Keep existing stormwater ponds and ponds from FEMA and State and provide better	NEED permit req	H	10	
Age of Electrical Distribution Systems (no limiting expansion of old or new city) & upgrading gas lines	Citywide	City/Utilities	V	Accelerate city transition to green, safe, sustainable energy via Community Choice Aggregation, PACE and Solarize	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Explore various micro-grid and distributed generation	Upgrade CIP	H	10	
Age of Infrastructure - water and sewer lines, pipes, roads, sidewalks, streets, etc.	Citywide	City	V	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Low tree canopy	Citywide	City	V	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Condition of sewer	N. End, Midway, etc.	City	V	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Roofing and other building development	Terrebonne area & citywide	Private	V	Code Enforcement	Code Enforcement	Conduct a comprehensive assessment of the state of all roofs	Improve inspection and compliance	Coordinate re-development	M	10
Necessity re-construction of roads	Roadside	City	V	Keep existing CBPO and CE programs as well as new projects like "Complete" and "ORISS"	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Necessity re-construction and repair of sewer systems and flood control drainage system on and off CT River	N. End	City	V	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Regain Health Center	N. End	Private or city, state, and gov	S	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Age of Housing stock	Citywide	Private	V	Address issues on housing stock	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
High rates of impervious surface 34% most in region	Citywide	City	V	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Breakage School lights power @ Wintehope Park	Old Hill	City	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Upper and Lower Yon Haven Reservoir Dams with planned red-line reworking	Liberty Heights	City	V	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	H	10	
North End Drainage System and Flood pump repair and sewer	N. End	City	V	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	H	10	
North End Cycle Track and Sewerage Works/Walkway Access	N. End	City	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	H	10	
Restoration Union Station	Mid-City	City/State/Fed	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Fairly like Shire and new Pedestrian Wayfinding	Mid-City	City/State/Fed	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Springfield will participate in Future City CT Challenge/State plan and MEM has committed to a grant out of	Mid-City	City/State/Fed	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Complete daylight works in City to revitalize streets around building	Citywide	Private/City	S	Implement CIP	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
High Flood Dams	Citywide	City	V	Work w/ Office Dam Safety and MEMA, FEMA to address, assess	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	M	10	
Features	Location	Ownership	V or S							
Forest	Citywide	City	V	Increase small business incentives, or focus on new sustainable business dev	Support and expand RED Job training			M	10	
Forestry: Medium household income \$48,438, 35% MA \$65,339, Family rate \$48,438 MA 11.9%, 2. Black 6%, 6. 3 other high income - MA 2012 and 4. Family for City Residents 13.7% \$48,438 v. 9% MA, S. End 38.3%, MA 2012 27.1%	Citywide	City	V	Expand RED to include Urban Forest	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Regain open space access to opportunity for residents of color, including areas of ownership and diversify income ability to house back	N. End	City/Private	V	Expand RED to include Urban Forest	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Unemployment: 10.9% MA 6.7%	NR, SE, Main St	City/Private	V	Increase small business incentives, or focus on new sustainable business dev	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Lack of access to vehicle combined with lack of transit support for PTA and other RTA - rate in funding	Citywide	City/Private	V	Continue to advocate to support increased funding for RTA, esp PTA and consider alternatives to E-buses	Advocate for E-bus	Advocate for E-bus	Advocate for E-bus	H	10	
Low tree canopy of 3% v. MA 42.2% @ Statewide Housing 16.2% v. 9.1% MA	Citywide	City	V	Continue to advocate to support increased funding for RTA, esp PTA and consider alternatives to E-buses	Advocate for E-bus	Advocate for E-bus	Advocate for E-bus	M	10	
High energy costs	Citywide	City/Private	V	Accelerate city transition to green, safe, sustainable energy via Community Choice Aggregation, PACE and Solarize	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	L	10	
Low rates - per road, low, high weight and high impact mortality	Citywide	City	V	Continue to work with FEMA and state grant for roads	Address Green Infrastructure/Stormwater Solutions & Policy Regulations	Continue to apply for Complete Streets Funding	Upgrade existing performance requirements for existing roads, in one funding and high winds - 7 Forward and Zero req	H	10	
Very high asthma rates (18.9% MA 10.4% v. 17.2% \$48,438 students)	Citywide	City	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Low student ability rate (36.8% MA 55.6%)	Citywide	City	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
High rate of obesity (33.7% MA 22.7%)	Citywide	City	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Small businesses lost after Toronto	Terrebonne	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Healthy Homes Initiative	Terrebonne	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Springfield Innovation Center 14 new small businesses	Mid-City	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
RED Job Training	Mid-City	City/State/Fed	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Red Family Information, Technology job training	Mid-City	City/State/Fed	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Lack of coordination in government by residents, esp Police	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Factor homelessness	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Hoarding & Coaling/Concern and commitment to improve community	Citywide	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Reduce, Reuse, Recycle - multi-level and reduce	Citywide	Private	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	L	10	
City government has higher % of state funding supporting local municipalities than any other city - 100% of 2010 House Budget (state like over 70% maybe more supporting with MA 30)	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	L	10	
City Council recent years selected Green Committee	Citywide	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	L	10	
High % of non-native English speakers	Citywide	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Existing Structure of Neighborhood Councils	Citywide	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Features	Location	Ownership	V or S							
Non-structural	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Resilience in flooding due to pre- and post-flood damage and volume of rainfall	Terrebonne	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Max extent of flood	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Environmental degradation from past decades - loss of tree canopy (100,000 trees lost in 2000) and water, debris and sediment on, below and	Terrebonne	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Redwood, Springfield is planting trees and planting Citizens for climate	Terrebonne	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Green City Council and Infrastructure - Outbreak under Development with work on Redwood Policy pending	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Planned daylighting of water at Yon Haven Park	Liberty Heights	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Commitment in RED proposal to increase green space and reduce impervious surfaces at Riverfront Park & Riverside Drive bike path	Mid-City	City	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Greenfield contaminated soil	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Remove Spore and mold	Citywide	City/Private	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	M	10	
Widely protected, covered and single water supply	Citywide	Private	S	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	H	10	
Funding & budget	Citywide	All	V	Monitor air quality and long-term strategies to improve air quality	Support and expand RED Job training	Support and expand RED Job training	Support and expand RED Job training	L	10	

