



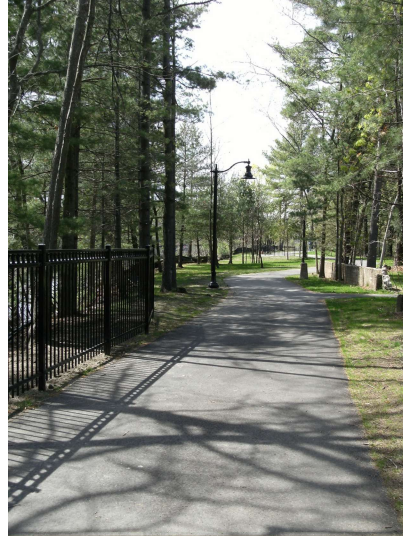
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Thank You to Ludlow's MVP/HMP Core Team

- Ellie Villano
- Marc Strange
- Doug Stefancik
- Penny Lebel
- Andrea Crete
- Paulina Matusik
- Brian Shameklis
- Jim Goodreau
- Jocelyn Zepke
- Seth Falconer



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Today's Agenda



Presentation: Overview of workshop goals, MVP program, climate change, and Ludlow natural hazards



Group exercise: Review and finalize list of mitigation actions



Group exercise: prioritize mitigation actions

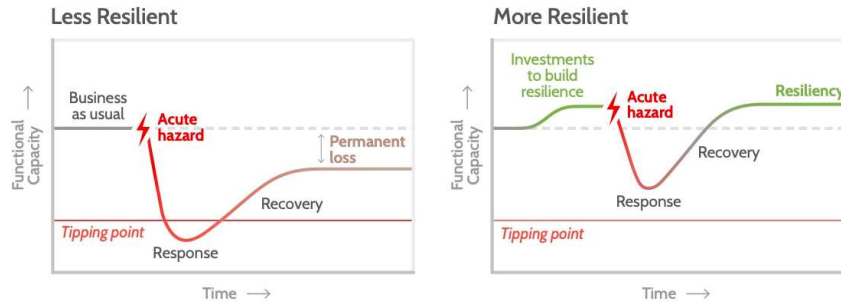


Wrap-up and next steps

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Why Are We Here?

- Help the Town of Ludlow improve preparedness for and resilience to natural hazard events



Resilient communities don't just recover—they continuously build capacity to reduce the impacts of future climate events

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MVP Planning Grant

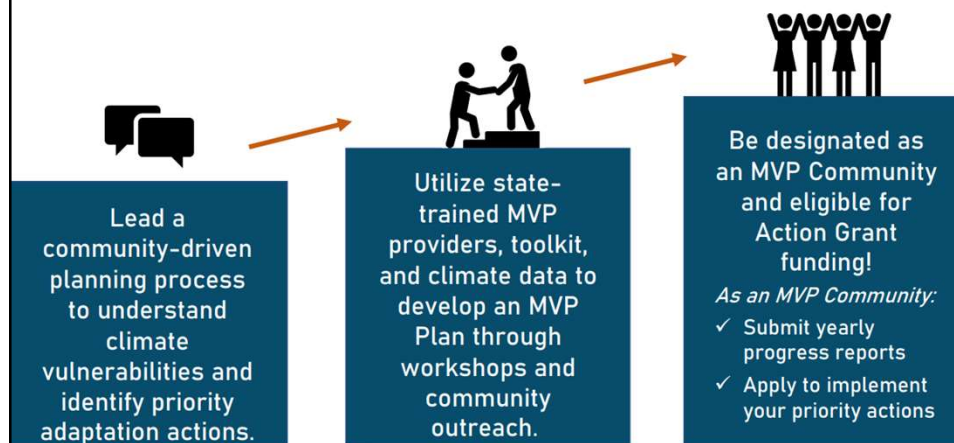
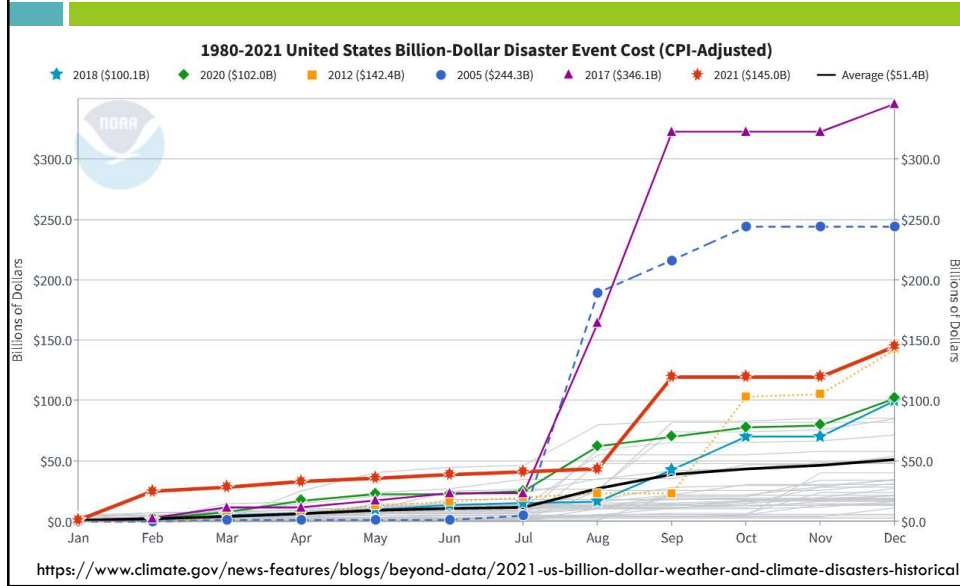


Image from the MVP Program's Pre-FY23 RFR Webinar

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The Future of Natural Hazards



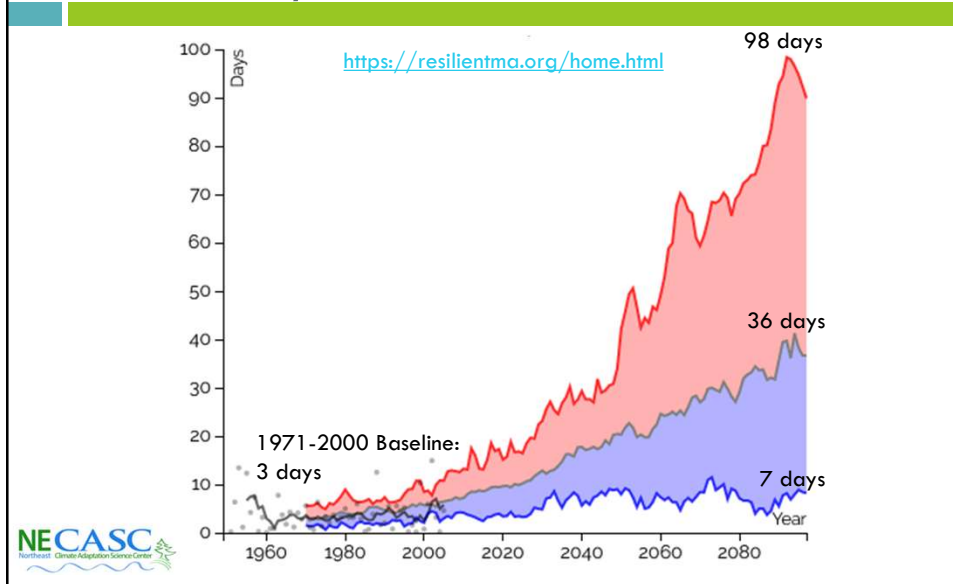
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Climate Change - Statewide

| Massachusetts Climate | Observed Changes | Projected Changes by 2090 |
|-----------------------|----------------------|---------------------------|
| Temperature | ↑ 2.9° F since 1895 | ↑ 7.2° F annual average |
| Growing Season | ↑ 15 days since 1950 | |
| 90° Days | | ↑ 34 days annually |
| Sea Level Rise | ↑ 11 in since 1922 | ↑ 4 to 10.2 ft above MSL |
| Heavy Precipitation | ↑ 55% since 1958 | ↑ 47% annually |

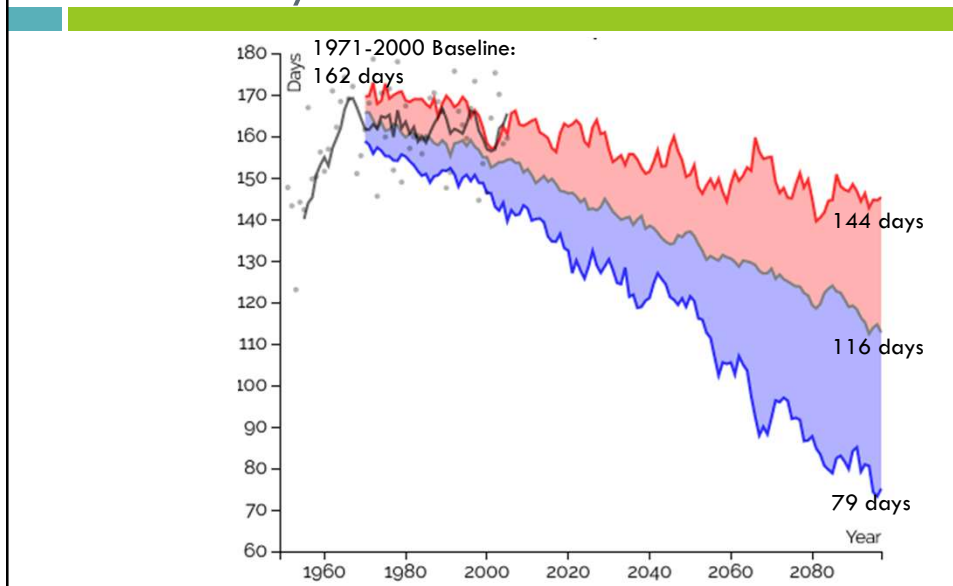
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Climate Change – Chicopee River Basin, Annual Days Over 90° F



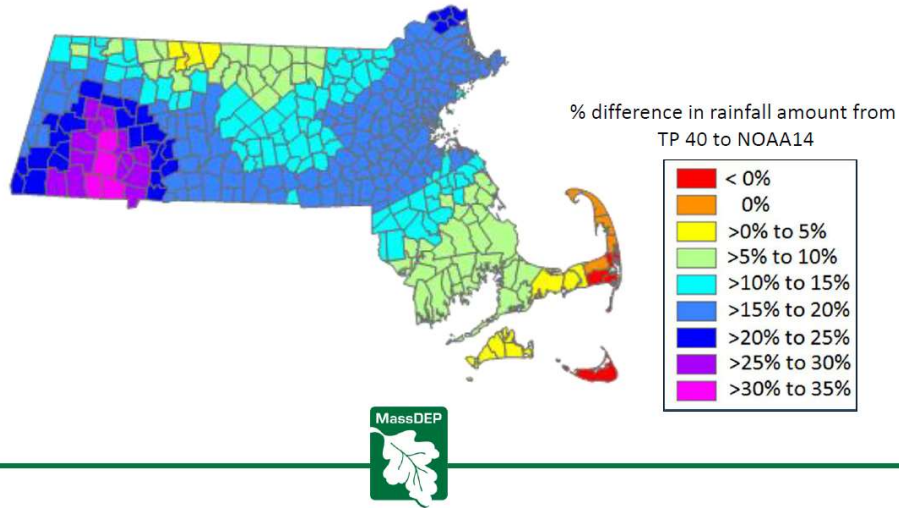
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Climate Change – Chicopee River Basin, Annual Days Below 32° F



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100-Year Storm Rainfall Model Changes



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Top Natural Hazards in Ludlow

Hurricane /
Tropical Storm

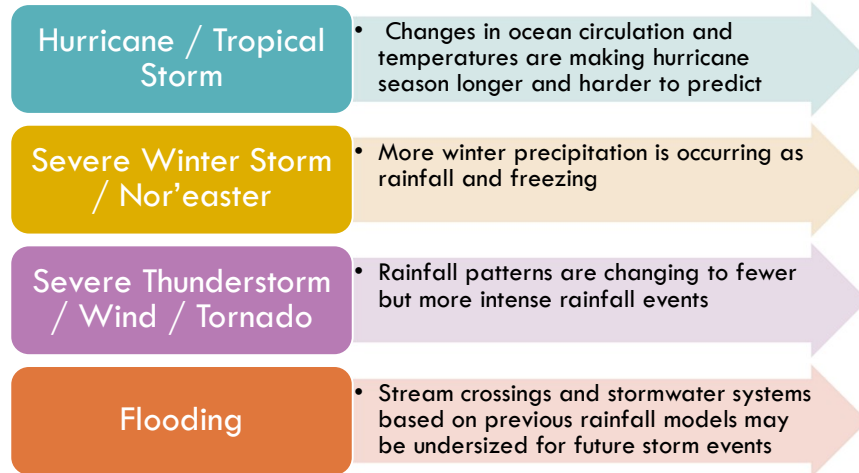
Severe Winter
Storm /
Nor'easter

Severe
Thunderstorm /
Wind / Tornado

Flooding

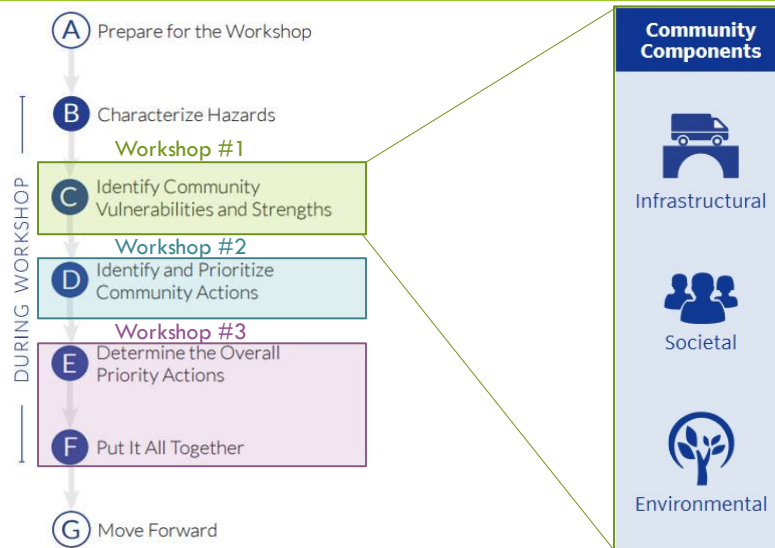
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Changing Risk of Top Natural Hazards



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So, What Now?



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Infrastructure Assets

| Dam Name | Owner | Hazard Rating | Condition per ODS ¹ | Notes |
|--------------------------------------|-------------------------|---------------|--------------------------------|---|
| Ackerman Upper Pond Dam | Private | N/A | N/A | Non-jurisdictional ² |
| Alden Pond Dam | Camp Alden Association | Low | Fair | |
| Cherry Valley Dam | SWSC | High | Satisfactory | Most recent EAP ³ in 2019, SWSC in process of combining ⁴ |
| Collins Pond Dam | Private | Significant | | FERC (hydroelectric) ⁵ |
| Gauthier Pond Dam | Edward & Nancy Gauthier | Low | Poor | |
| Harris Pond Dam | Town of Ludlow | Significant | Fair | Most recent EAP in 2020 |
| Indian Orchard Dam | Private | High | | FERC (hydroelectric) |
| Ludlow Manufacturing Association Dam | Private | High | | FERC (hydroelectric) |
| Ludlow Reservoir Dam | SWSC | High | Satisfactory | Most recent EAP in 2019, SWSC in process of combining |
| Nash Hill Reservoir Dam | MWRA | N/A | N/A | Non-jurisdictional |
| Red Bridge Dam | Private | High | | FERC (hydroelectric) |

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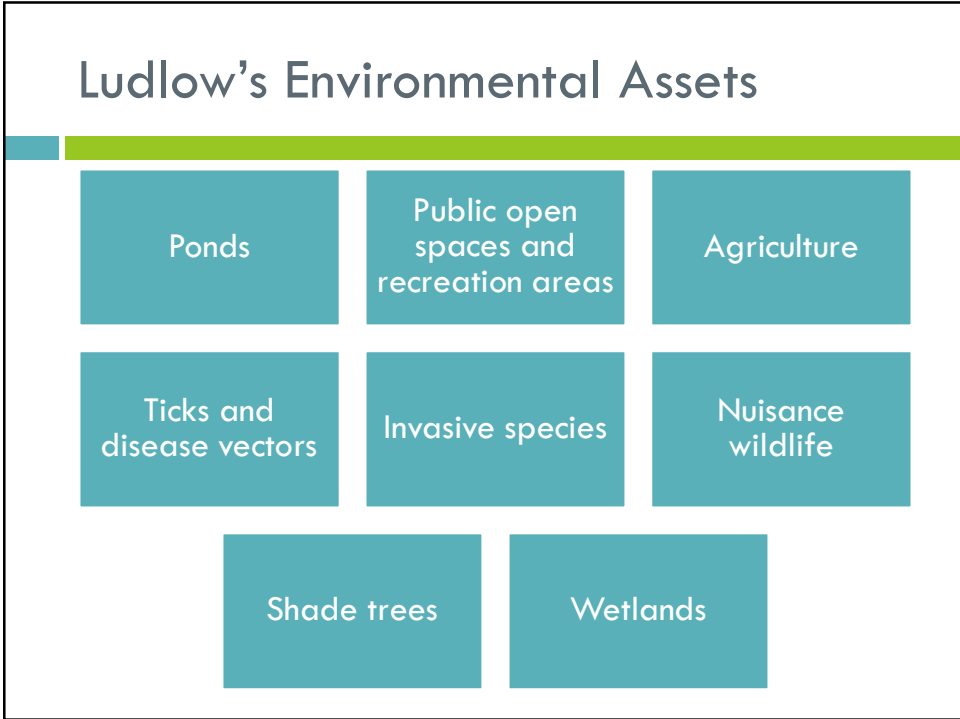
Ludlow's Infrastructural Assets

| | | |
|------------------------------------|---------------------------------|--|
| Bridges, culverts, and underpasses | Natural gas plant and pipelines | Gas stations, dynamite storage, jet fuel storage |
| Wastewater pump stations | MMWEC Stony Brook Energy Center | Drinking water – half private, half public |
| Large scale solar facilities | Electric distribution lines | Transfer station |

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Mitigation Actions to Build Resiliency

RESILIENCE

The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner.

=

MITIGATION

aims to reduce the causes of climate change

+

ADAPTATION

involves modifying our decisions, activities and ways of thinking to adjust to a changing climate



Definitions taken from the Massachusetts 2018 State Hazard Mitigation and Climate Adaptation Plan and Credits in a Changing Climate report (Adaptation.NRCan.gc.ca)

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MVP Action Grant Project Types



Planning, Assessments, Capacity Building, and Regulatory Updates



Design and Permitting



Construction and On-the-Ground Implementation

Note: Demonstrate necessary permits & permissions have been secured

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MVP Program Core Principles



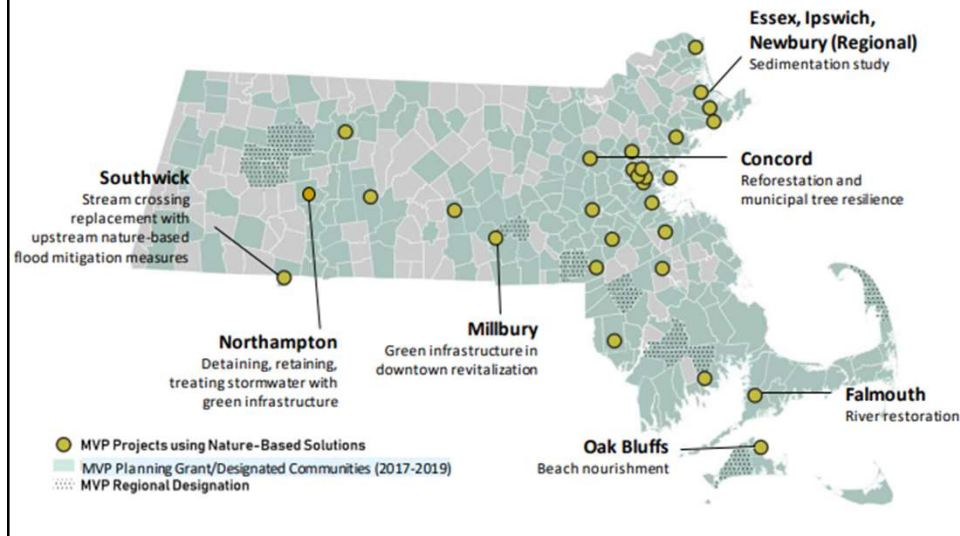
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Nature-Based Solutions



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Nature-Based Solutions in Action



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Projects That Are Not MVP Competitive

- Diesel generators
- Tree removal
- FEMA HMPs
- Academic studies that are not directly linked to implementation
- Feasibility or design of solar or solar + battery systems (installation ok)
- Emergency preparedness projects that don't incorporate climate projections/planning
- Projects that repair to previous conditions without consideration of climate projections

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Group Exercise: Finalize and Prioritize Mitigation Actions

- ▣ Review and finalize list of mitigation actions
- ▣ Determine priority and timeframe



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Wrap-Up and Next Steps

Core Team will continue to meet to finalize draft MVP/HMP Plan

Public listening session will be held in May/June to get input on mitigation actions and priorities

MVP/HMP Plan will be finalized and submitted

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THANK YOU!

<https://www.ludlow.ma.us/html/mvp/index.htm>

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