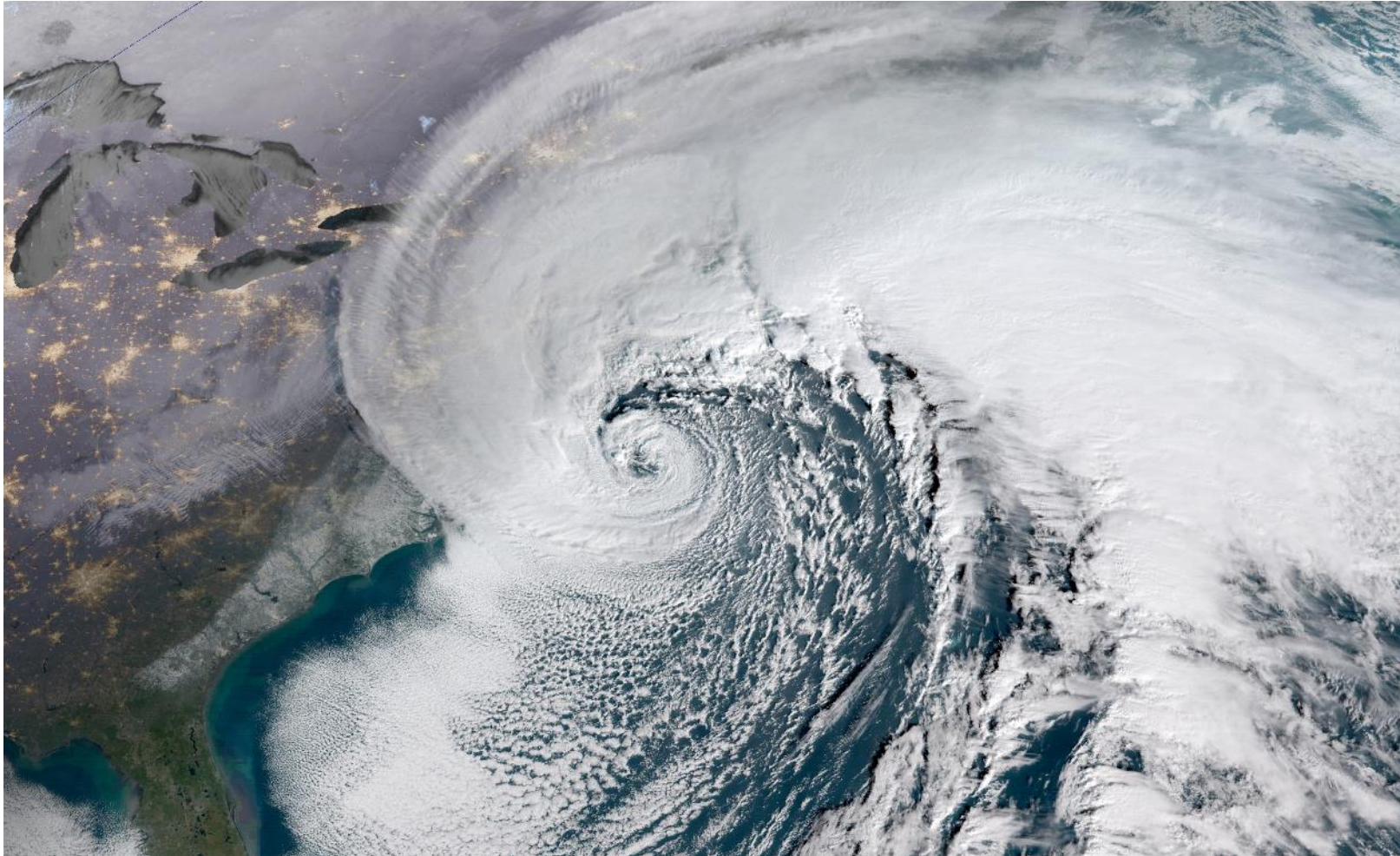




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# Town of Groveland MVP Program Public Listening Session to Summarize Planning Grant Outcomes

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# Agenda

- MVP Program Overview
- Climate Change Projections
- Summary of Results
  - Goals
  - Top Hazards, Challenges, Strengths
  - Prioritized Recommendations
- Next Steps & Comments





# MVP Program Overview

## EXECUTIVE ORDER 569 2016



- Reducing greenhouse gas emissions to combat climate change
- Preparing for the impacts of climate change
  - State Adaptation Plan
  - Climate Coordinators
  - Agency Vulnerability Assessments
  - Municipal Support

## ENVIRONMENTAL BOND 2018



- \$2.4 billion bond bill with focus on climate change resiliency
- Over \$200 million authorized for climate change adaptation
- **Codifies EO 569, including the MVP Program**

# MVP Program Overview

## Obtain Planning Grant



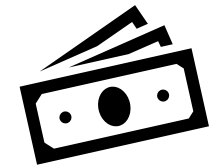
## Complete Workshop

- Identify Actions to Address Vulnerabilities
- Write Report



## Become Certified MVP Community

- Eligible for Grant Funding to Implement Actions

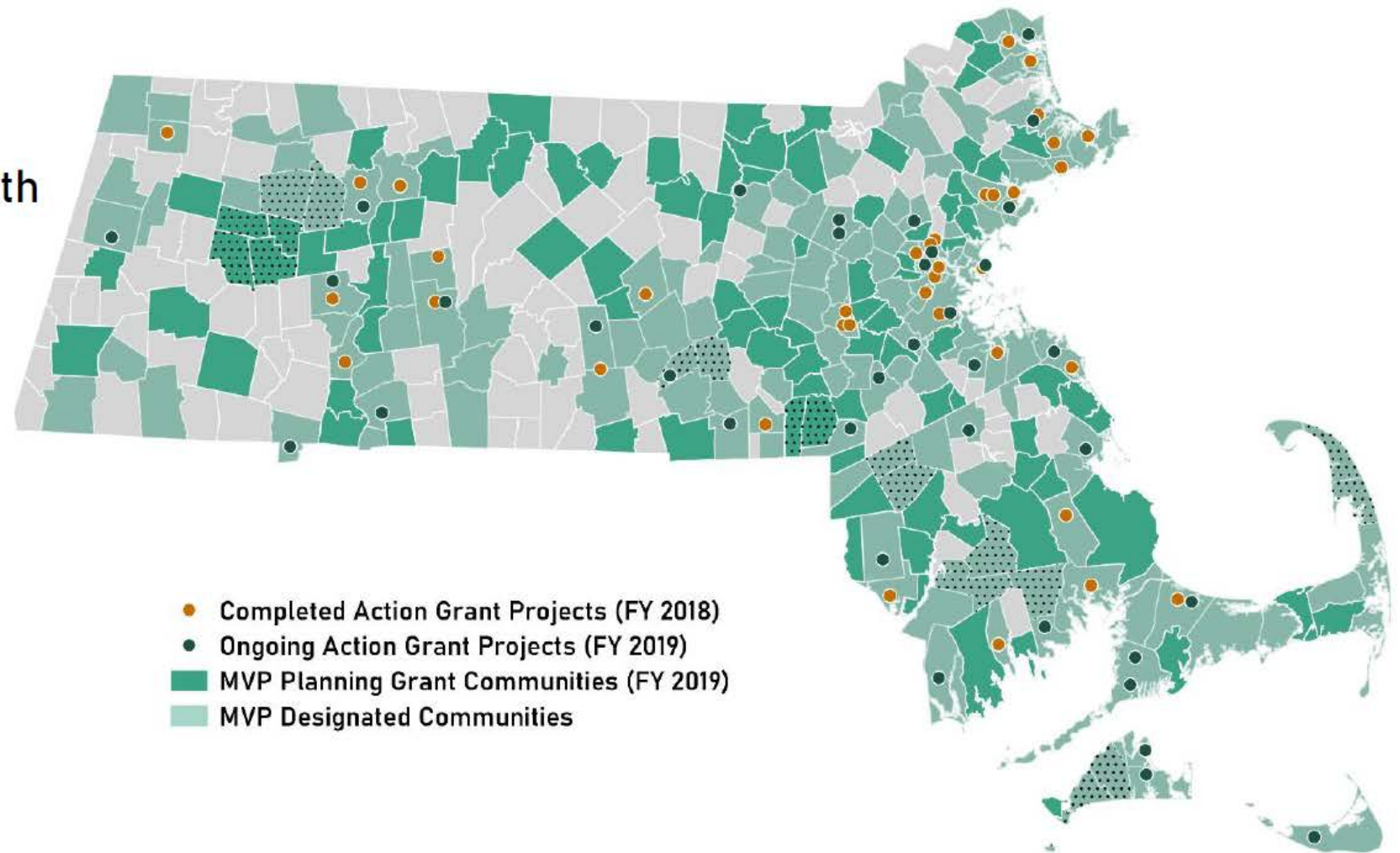


# Three Years of MVP

MVP Designations  
71% of the Commonwealth  
249 communities

Action Grant Projects  
FY 18: 37  
FY 19: 36

Total Awards  
\$17M+ in planning and  
action grants to date





# MVP Action Grants: Project Types

- 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



# MVP Action Grants: Project Types (cont.)

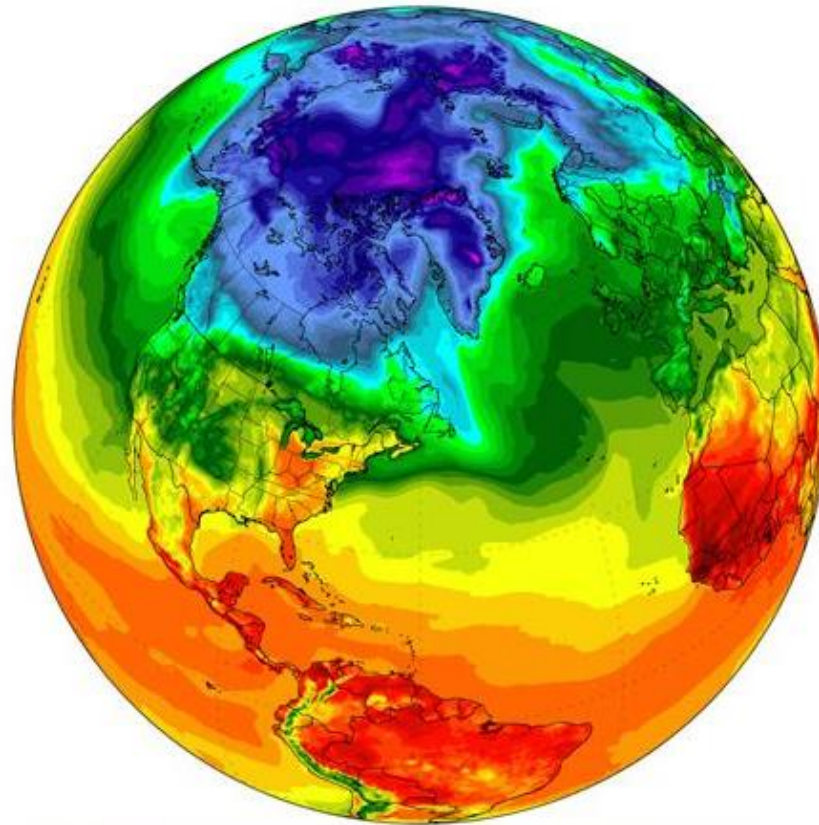


- Nature-Based Solutions to Reduce Vulnerability to other Climate Change Impacts
- Ecological Restoration and Habitat Management to Increase Resiliency

## NEW IN 2019

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

# Clim a te Proj e c tio ns





# Massachusetts Observed Climate

Temperature:



**2.9°F**

Since 1895 (Statewide)

Growing Season:



**15 Days**

Since 1950

Sea Level Rise:



**11 inches**

Since 1922 (Boston)

Heavy Precipitation:



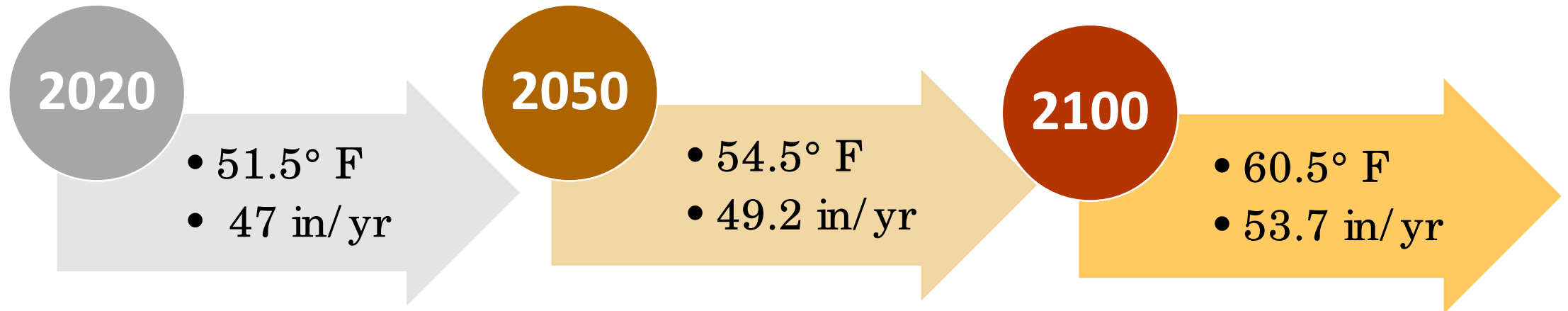
**55%**

Since 1958

Source: Climate Science Special Report, 2017; NOAA NCEI nClimDiv; NOAA Ocean Service

# Groveland Projected Climate

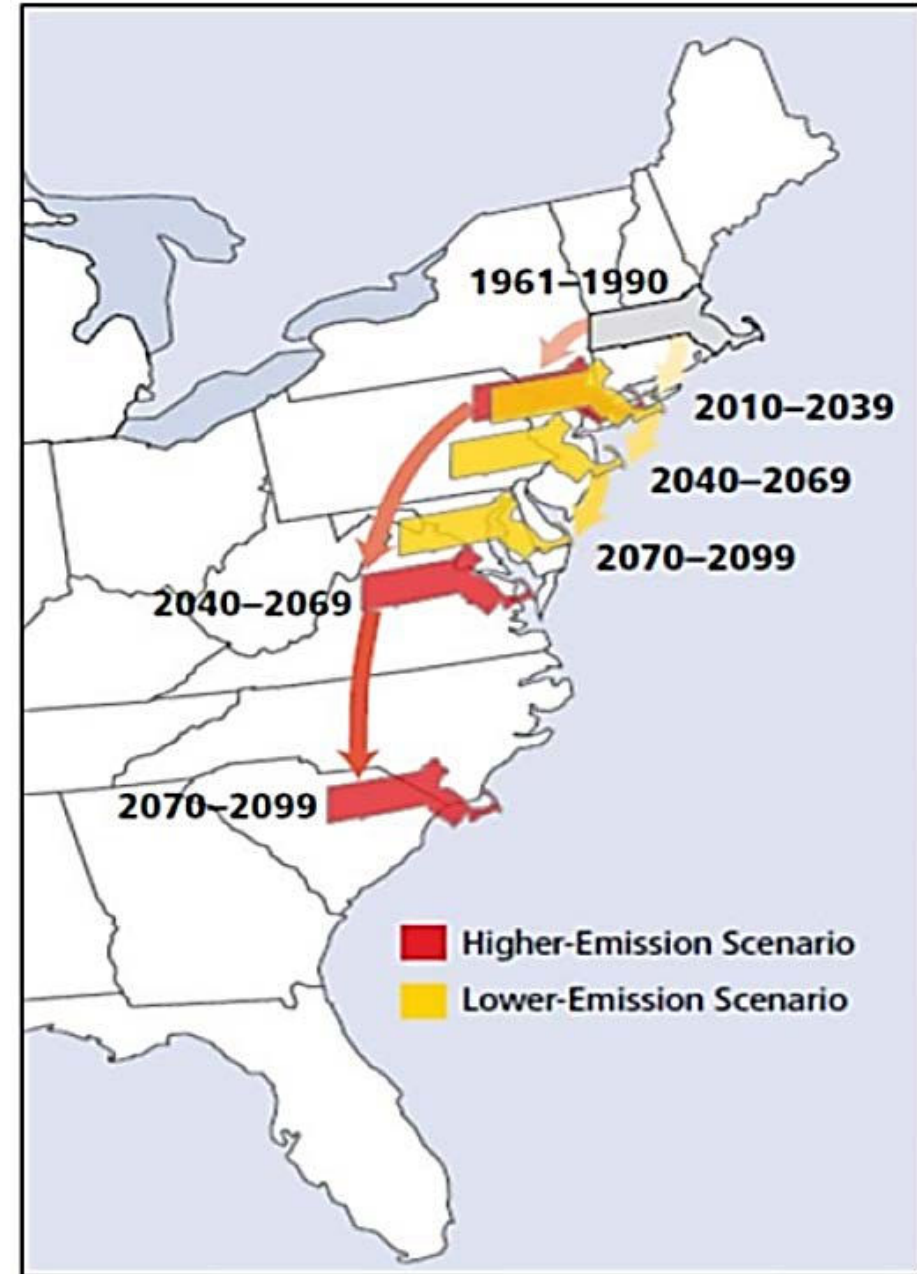
Average annual temperature and precipitation projections for Essex County





# What do these Projections Mean?

*(relative to temperature)*



# Potential Consequences of Climate Change



## Changes in precipitation

- Inland flooding
- Drought



## Rising Temperatures

- Wild fires
- Invasive species/pests



## Extreme Weather

- Hurricanes/tornadoes
- Severe winter storms



## Human-induced hazards

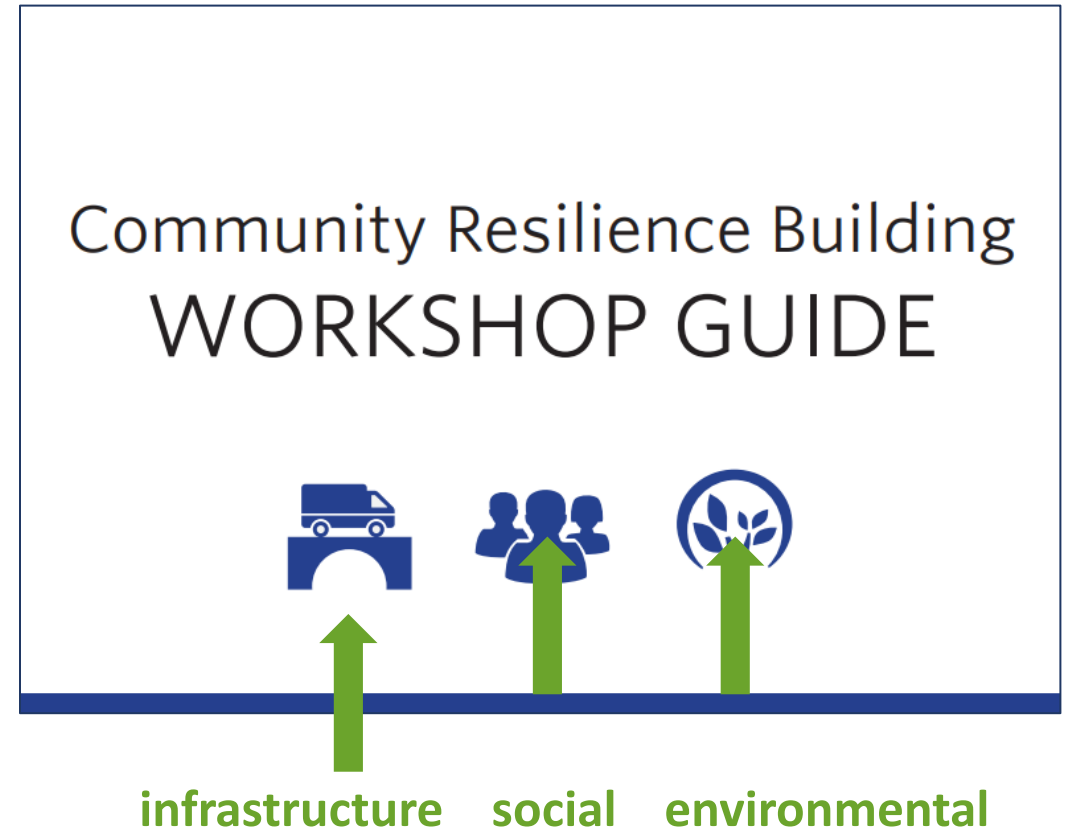
- Loss of habitat/flood plains
- Overuse of fertilizers/pesticides



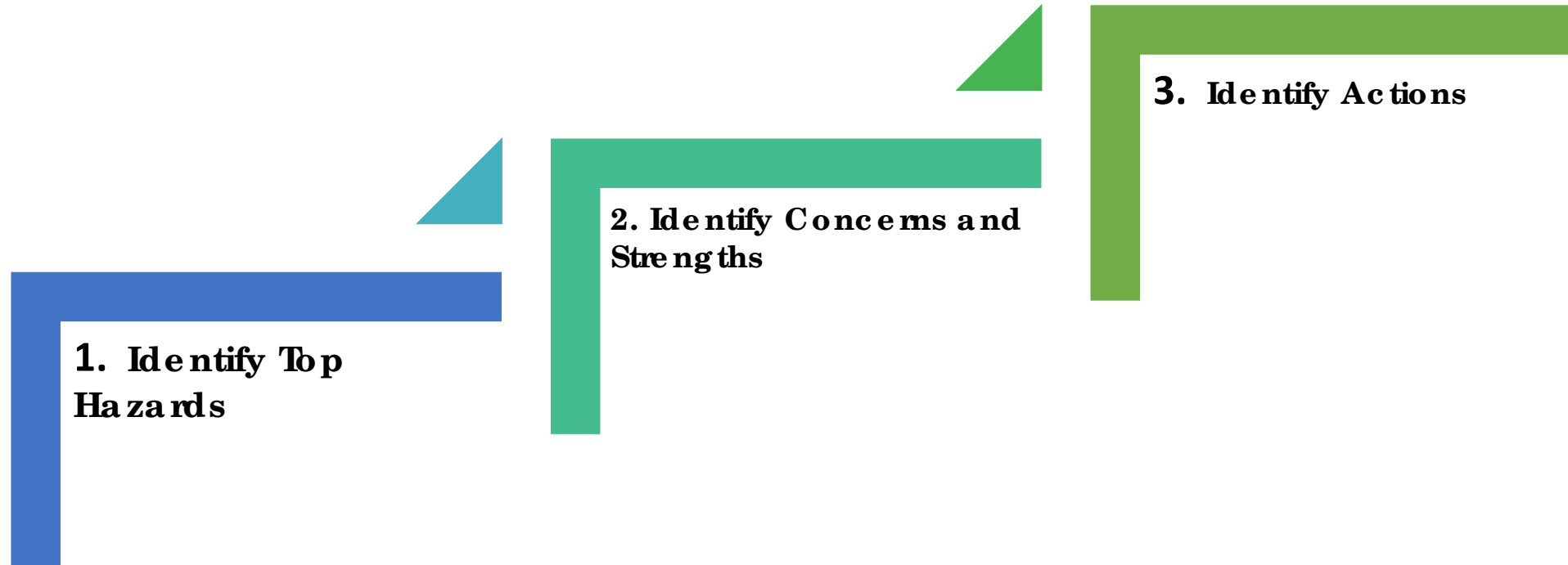
# CRB Workshop Purpose

## Use Community Resilience Building Workshop Guide to:

- Complete **baseline assessment** of climate change and natural hazard vulnerability
- Develop **specific actions** to address priority hazards/vulnerabilities



# CRB Workshop Goals





# CRB Workshop Risk Matrix

[illegible]

# Workshop Results

*(Workshop Held on December 5, 2019)*

## Community Resilience Building WORKSHOP GUIDE



# Workshop Attendees

Name	Department/Committee	Team
Stephen Sargent	Police Department, Emergency Management	Green
Joseph Santapaola	Fire Department	
Robert Valentine	Fire Department Chief	
Colin Stokes	Superintendent, Water and Sewer Dept.	
Rebecca Oldham	Town Planner, Planning Dept.	
Kevin Snow	Manager, Electric Dept.	Blue
Mike Dempsey	Conservation Commission	
Renny Carroll	Superintendent, Highway Dept.	
Claire Walsh	Public Health Nurse, Board of Health	
Rosemary Decie	Conservation Agent	
Bob Hartzel	CEI	Facilitators
Elisha Musgraves	CEI	
David Roman	CEI	





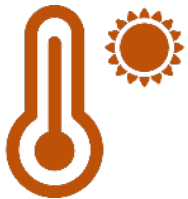
# Top Hazards



- **Flooding:** Wide spread historical flooding (e.g., Mother's Day Flood of 2006)



- **Strong Storms:** Heavy rainfall, high winds, winter storms (e.g., 2006 ice storm caused widespread power outages)



- **Extreme Temperatures:** Potential impacts to vulnerable populations



# Community Resilience Building Risk Matrix



www.CommunityResilienceBuilding.com

H-M-L priority for action over the Short or Long term (and Ongoing)

V = Vulnerability S = Strength

Top Priority Hazards (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

H-M-L priority for action over the Short or Long term (and Ongoing)				Time				
V = Vulnerability S = Strength				H-M-L Short Long Ongoing				
Features	Location	Ownership	V or S	Flooding	Severe storms	Extreme Temps.	Priority	Time
Infrastructural				(Multi-town; Hawthill)				
Johnson Creek floodplain mgt (erosion)	" "	Town + multiple	V	Flow controls; data decision support plan			H	S/L
Stormwater outfalls to Merionck		Town	V	stabilize banks year/frequency study outfall protection	costing etc.		H	L
Municipal power utility		Town	S/V	Substation: ~ 500-yr FPD	raise controls approx 2' w/ new lightning protection	ET: Increase substation capacity	L	O
Aging/undersized infrastructure		Town	V	Center St. culvert retrofit (LCS)			M	S
Salem St. dam (High Hazard)		Town	V	W/R assess for SW inf. Retrofit dam outlet control			H	S
DPW yard location (500-yr floodplain)		Town	V	develop alternate egress? linked to Johnson Creek			M	L
Societal								
Water supply wells (sewage overflows)	Merionck floodplain	Town	V	re-build; new wells: standards (V/R) I/E: sewage/tankers			L	L
South Grandland: potential flood isolation			V				M	O
Emergency shelters (Payroll School)	Town Hall / Fire Station		V	new HS (elementary) upgrade sewage + septic	develop with potential for var. size emergencies		M	S
Equipment / Community Assistance (contractors)			S	Coordination Emergency mgt: work annually @ all dep agencies			M	O
Local Control of Response Actions			S					
Senior Housing: High Ground			S					
Environmental								
Protected Land (Crane Pond wetlands, etc)			S	continue to acquire CE for key parcels			L	O
Blakings / Wood turtle habitat			V	upgrade Rd / wildlife some state RD / benches			M	S
spread of invasive pests (Asian Longhorn beetle)			V	DCR state funding council on place to protect		" "	M	S
insect risks (mosquito, ticks)			V	W/R mgt plan for town-owned forest I/E: better sewage at Town Properties				
				better S/E junction w/ (Hawthill); spruce populations				

Detailed V/R assessments / Public Ed. / Bylaws / Re-design/Retrofits of Vulnerable Infrastructure / Energy Resilience / Nature-Based Solutions / Land Acquisition / Ecological Restoration / Chemical Safety

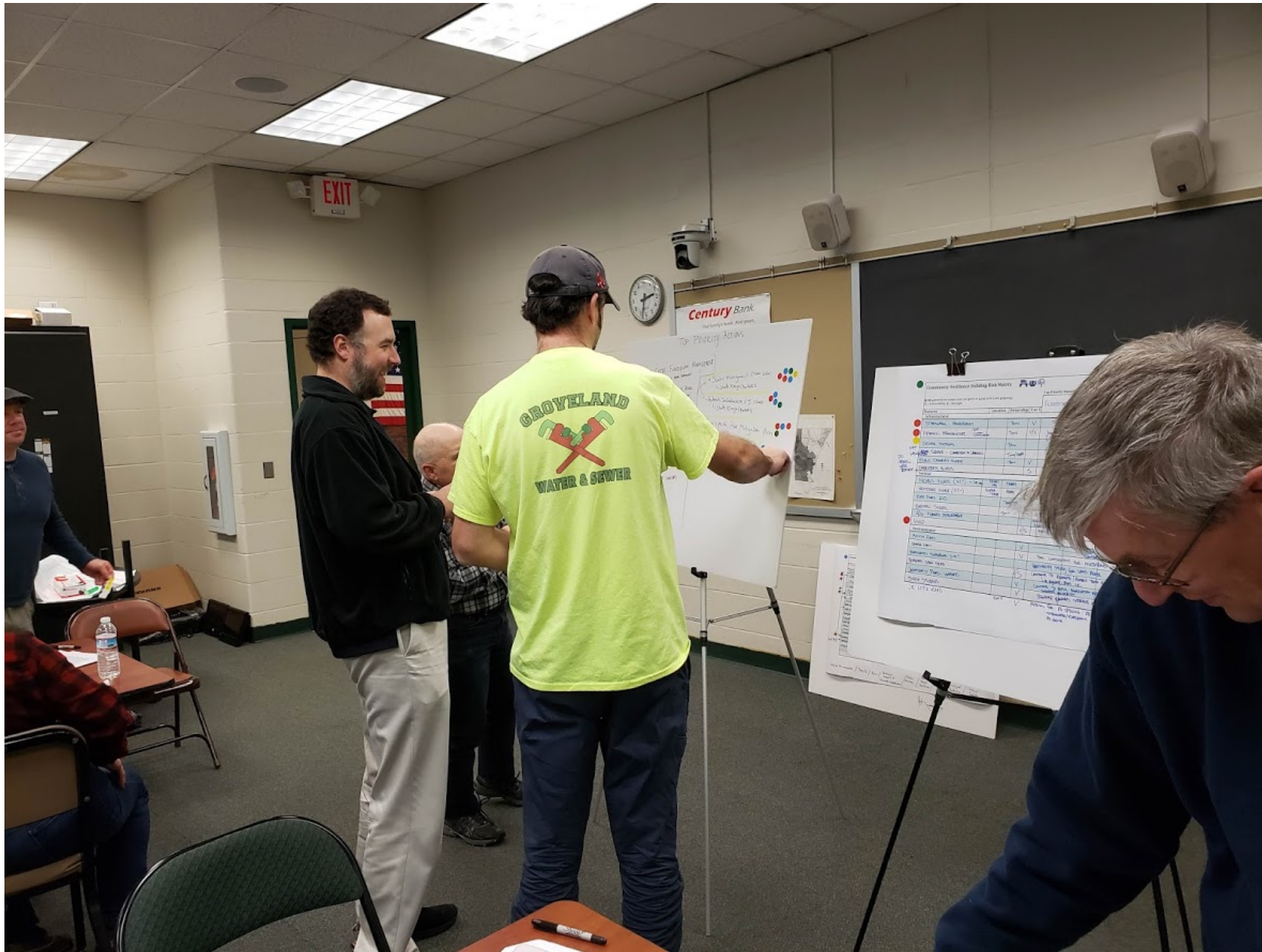
H-M-L priority for action  
V = Vulnerability S = S

## Concerns / Strengths

**Top Priority Hazards** (tornado, floods, wildfire, hurricanes, earthquake, drought, sea level rise, heat wave, etc.)

Concerns / Strengths				Hazard				Priority		Time	
H = High priority for action; M = Medium priority; L = Low priority; V = Vulnerability; S = Strength				Flooding		Severe Storms		Extreme Temperatures		Other	
Features				Location		Ownership		V or S		Actions	
Infrastructural											
Johnson Creek Floodplain Management		Johnson Creek		Town + Private		V		Flow controls; suport plan and retrofits		Flow controls; suport plan and retrofits	
Stormwater Outfalls on Merrimack River (erosion)		Bank of river		Town		V				Stabilize banks/outfalls; engineered feasibility redesign study	
Municipal Power Utility		944 Salem St		Town		S/V		Substation within 500 yr floodplain: raise controls apprx. 2 ft; increase lightening protection and substation capacity			
Aging/Undersized Infrastructure		Multiple, Washington St, Salem, St		Town		V		center street culvert retrofit/ town wide assessment of stormwater infrastructure			
Salem Street Dam (High Hazard)		Salem St		Town		V		Retrofit dam outlet control			
DPW Yard Location in 500 yr floodplain		Center St		Town		V		Develop alternate egress; link to Johnson Creek management			
Societal											
Water Supply Wells		Merrmiack Floodplain		Town		V		Relocate; new wells; standpipes			
South Groveland: Potential flood isolation		South of 47		Town/private		V		Create signage/mailings to disseminate information; update emergency plans			
Emergency Shelters		Town Hall/Fire Station/Bagnall School		Town		V		New shelter (regional school); upgrade Bagnall School generators; develop written protocol for varying size emergencies			
Equipment/Community Assistance (contractors)		Multiple		Private		S		Increase communication and coordination for all departments involved in Emergency Management			
Local Control of Response Actions						S					
Senior Housing: High Ground		Whitestone village, Nic		Private		S		Continue to protect and support flooding controls			
Environmental											
Protected Land (Crane Pond, wetlands, floodplains, etc.)		Multiple		Town/state		S		Continue to acquire and manage key parcels			
Blandings/Wood Turtle Habitat		Multiple				V					
Forest Management: spread of invasive pests (asian longhorn beetle, etc)						V		Coordinate with DCR and local forestry management mechanisms on plans to protect/remediate; management plan for town-owned forest			
Insect risks (mosquitos, ticks)						V		Better signage at town properties; better educational info distribution (i.e. with taxes, targeting specific populations)			





Workshop Participants Vote on Top Priority Actions

# Top Concerns: *Infrastructural*



- **Stormwater Infrastructure:**
  - Undersized and Aging Pipes / Culverts
  - Historical Flooding (e.g., Johnson Creek)
  
- **Significant Hazard Dams:**
  - Need operation management strategies
  
- **Water Supply:**
  - Flood risk to wells near Merrimack River
  - WQ Issues (iron and manganese)
  
- **Sewer System:**
  - Half of town is on septic, potential WQ issues

# Top Concerns: *Social*



- **Hazard Mitigation Planning:**
  - Need town-specific HMP
  
- **Vulnerable Communities:**
  - Senior living facilities may pose evacuation challenges
  
- **Emergency Shelters**
  - Improve capacity and amenities



# Top Concerns: *Environmental*



## ■ **Forest Management:**

- Historical brush fires in conservation areas
- Increase in invasive pests
- Nuisance flooding from beaver dams

## ■ **Land Conservation:**

- Protect existing undeveloped land to maintain flood storage and biodiversity

# Top Strengths



- **Emergency Services:**

- Excellent response track record

- **Conservation Areas:**

- 1,620 acres of Town or State Conservation Land and Open Space

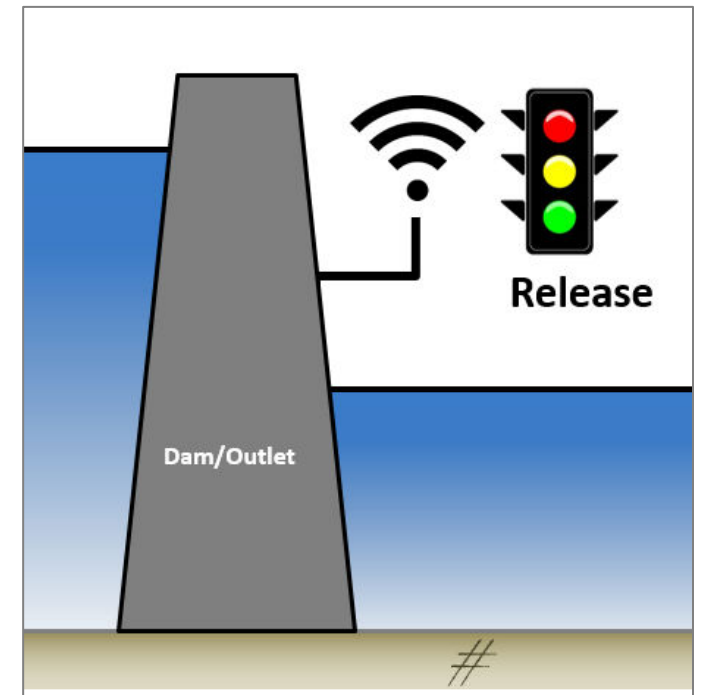
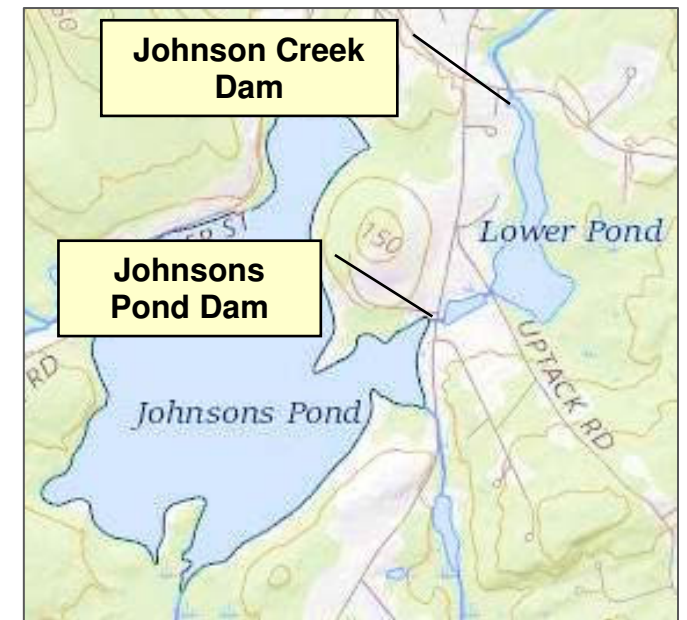
- **Electrical Supply:**

- Responsive town department

# Top Recommended Actions

## 1. Johnson Creek Floodplain Management

- **Problem:** No floodplain management strategies in place to operate two (2) high hazard dams
- **Solution:** Develop management plan, including implementation of decision support for increased resiliency



# Top Recommended Actions

## 2. Town-wide Vulnerability and Resiliency Assessment

- **Problem:** Town's current HMP is regional. Need prioritized list of town-specific actions for CIP planning
- **Solution:** Perform Town-wide assessment with prioritized actions, format for FEMA approval





# Top Recommended Actions

## 3. Town-wide Stormwater System

### Vulnerability Assessment

- **Problem:** Aging or undersized pipes / culverts and other potential flood issues.
- **Solution:** Perform Town-wide assessment: condition inspections, flood modeling, prioritize recommendations



## Other High Priority Actions

- Upgrade Johnson Creek Culvert at Center Street
- Develop plan to improve emergency shelter capacity
- Develop emergency response notification tree
- Conduct feasibility study for potential sewer expansion
- Improve resilience against insect-borne illness (outreach)

# What's Next?

- MVP Community Designation
- Implement Prioritized Recommendations
- Apply for Action Grant Funding

# Comments or Feedback?

- **MVP Planning Grant Files:**

- <https://www.grovelandma.com/planning-department>

- **Contact:**

- Rebecca Oldham (Town Planner): [rolldham@grovelandma.com](mailto:rolldham@grovelandma.com), (978-556-7215)

- David Roman, PE, CFM (CEI), [droman@ceiengineers.com](mailto:droman@ceiengineers.com), (508-281-5176)

