

Climate Resilient Carlisle

Select Board

January 14, 2025



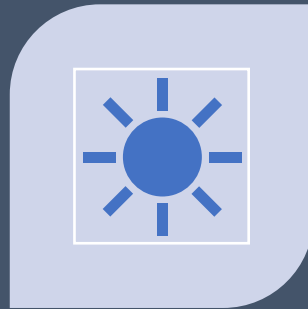
Agenda

- Recap: What we have learned
 - Existing conditions and trends
 - Resilience goals
 - Tools and methods
- Final Report Structure
- Discussion: Recommended Actions
 - Feedback
 - Successful implementation

Existing Conditions and Trends: Climate Change



Greater annual
rainfall with more
intense rainfall
events



More frequent and
intense drought



More frequent and
intense storms
with high winds



Warmer winters
and warmer
summers

Existing Conditions and Trends: Land Use and Demographics

- Heavily forested
- Significant floodplains and wetlands
- Private well water and septic
- Large houses on large lots
- Aging residents

Resilience Goals

Ecosystem
protection

Social
resilience

Housing
resilience

Flood
mitigation

Forest fire
protection
/mitigation

Water
resource
protection

GHG emissions
reduction
/efficiency

Resilient
energy
systems

Multi-modal
transportation

Emergency
response

Local
food/farming

Tools and Methods



Change in
Local Code

Change in
Town Policy



Education

Town Initiative,
Program, or
Action



Resilience actions

...are
interdisciplinary

- Most actions advance multiple goals

...can be advanced
in many ways

- Each action will be advanced through one or more of the tools/methods

...need champions

- We want to develop a roadmap that you can (and will!) implement

RECOMMENDATIONS / ACTIONS		Ecosystem Protection	Social Resilience	Housing Resilience	Flood Mitigation	Forest Fire Protection / Mitigation	Water Resource Protection	Carbon Emissions Reduction / Efficiency	Resilient Energy Systems	Multi-Modal Transportation	Emergency Response	Local Food / Farming	Change in Local Code	Change in Town Policy	Education	Town Action	ZBA	PB	Select Board	Historic	Housing	BOH	MVP Core	ESC	LEPC	Com Com	Town S	
		Resilience Goals											Tools / Methods				RACI											
1	Use 0.2% annual chance flood boundary as the floodplain boundary in all local regulatory codes			X	X								X				X	X	X				X			X		
2	Remove wetlands from the Wetlands and Floodplain Zoning District	X			X								X				X	X	X				X					
3	Increase the use of green infrastructure on public and private property	X			X	X							X		X			X	X		X		X	X		X	X	
4	Preserve and reuse existing structures and building materials						X						X	X	X			X	X	X	X		X	X				
5	Ensure that open spaces required by various development approvals are valuable and connected	X			X		X						X		X		X	X	X				X	X		X		
6	Encourage resilient lawns and landscaping for residential and other properties	X			X	X	X						X		X	X							X	X			X	
7	Provide enhanced protections of wetlands	X			X		X						X						X				X	X			X	
8	Promote ADUs to strengthen climate resilience		X	X			X						X		X		X	X			X		X					
9	Facilitate updates to historic structures geared toward energy efficiency, renewable energy, climate resilience		X	X	X		X	X		X				X	X	X		X					X					
10	Clarify ownership and implement maintenance program for roadside ditches/swales	X			X						X			X		X							X		X	X		
11	Move power lines underground, starting in a strategic locations							X						X		X							X		X			
12	Promote safe installation and use of onsite energy storage batteries as well as electric vehicles and electric scooters.			X		X		X						X	X								X	X	X		X	
13	Promote residential preservation, reuse and development of smaller homes			X			X								X		X	X			X	X	X	X				
14	Better understand the protections offered by and constraints created by local septic system standards	X		X			X								X						X	X						
15	Educate homeowners on forest fire risk and mitigation options			X		X									X								X		X			
16	Work with large landowners and conservation organizations to develop forest management plans for forest fire mitigation					X		X							X	X							X	X	X	X		
17	Cultivate community and social connections to strengthen social resilience		X			X		X							X	X							X		X			
18	Increase the number of fire fighting water tanks throughout town					X	X									X							X	X				
19	Create more roadway interconnections to offer alternative routes		X					X		X						X							X	X				
20	Study potential first/last mile transportation options to the MBTA station(s)							X		X					X	X							X				X	
21	Explore the development of a septic system utility to maintain and report on all on-site wastewater systems	X					X									X						X	X				X	

Final Report Structure

Roadmap for a Climate Resilient Carlisle

- Intro: Existing Conditions and Trends
- Resilience Goals
- Tools and Methods
- Actions

Actions are most likely to be implemented when they:

- ✓ Are clearly defined, especially the immediate next steps
- ✓ Are important, urgent, or high priority
- ✓ Have champions with the capacity and the authority to advance them

Today's Discussion

- Review the actions associated with Select Board
- Feedback
- Implementation
 - What's the next step?
 - What is highest priority?
 - What is low hanging fruit?
 - What can you own and champion?

Fire Protection: Increase the number of fire fighting water cisterns throughout town

Goals Advanced

- Forest fire protection/mitigation
- Water resource protection
- Emergency response

Groups Involved

- Local Emergency Preparedness Committee
- Planning Board

Tools and Methods

- Map cistern locations and service areas, document water sources
- Code update – fire protection water source standards in Subdivision Regulations

Fire Protection: Promote safe installation/use/storage of onsite energy storage batteries, EVs, and electric scooters

Goals Advanced

- Housing Resilience
- Forest Fire Prevention/Mitigation
- Resilient Energy Systems

Groups Involved

- Planning Board, ESC, LEPC, Town staff

Tools and Methods

- Register equipment and map locations
- Education



Flood Protection: Use 0.2% annual chance (“500-year”) flood boundary in all codes

Goals Advanced

- Housing Resilience
- Flood Mitigation

Groups Involved

- Conservation Commission, Planning Board, Zoning Board of Appeals, Select Board,

Tools and Methods

- Change in local code



Maintaining Power: Move power lines underground, starting with strategic locations

Goals Advanced

- Resilient Energy Systems

Groups Involved

- LEPC
- Town staff

Tools and Methods

- Actively engage w/Eversource
- Town action



Housing: Promote small scale density, reuse existing buildings/materials, variety of housing options

Goals Advanced

- Social resilience
- Housing resilience
- Carbon emissions reductions/efficiency

Groups Involved

- Planning Board, Affordable Housing Trust, Municipal Vulnerability Preparedness Core Team, Environmental Sustainability Committee

Tools and Methods

- Code or policy changes
- Education



Septic Systems: Consider a septic system utility to maintain and report on all on-site wastewater systems

Goals Advanced

- Ecosystem protection
- Water resource protection
- Resilient housing

Groups Involved

- Board of Health
- Town staff

Tools and Methods

- Town action

Well/Septic Standards: Clarity about protections offered and constraints created

Goals Advanced

- Ecosystem protection
- Housing resilience
- Water resource protection

Groups Involved

- Board of Health, Planning Board, Affordable Housing Trust, Environmental Sustainability Committee

Tools and Methods

- Education
- Possible Code Update

Social Resilience: Cultivate community and social connections to strengthen social resilience

Goals Advanced

- Social Resilience
- Emergency Response

Groups Involved

- LEPC
- Town staff
- Other volunteers (Carlisle Cultural Council?)

Tools and Methods

- Education
- Facilitate social networks with funds and admin tools

Questions?

Reach out if anything comes to mind!

Thank you!!

Contacts:

Julie Mercier, Town Planner, jmercier@carlislema.gov

Sarah Wasserman, Sustainability Coordinator, swasserman@carlislema.gov

Ellie Baker, Horsley Witten Group, ebaker@horsleywitten.com

Gabriella Spitzer, Horsley Witten Group, gspitzer@horsleywitten.com