

# Climate Resilient Carlisle

Planning Board, Conservation Commission,  
Board of Health and Zoning Board of Appeals

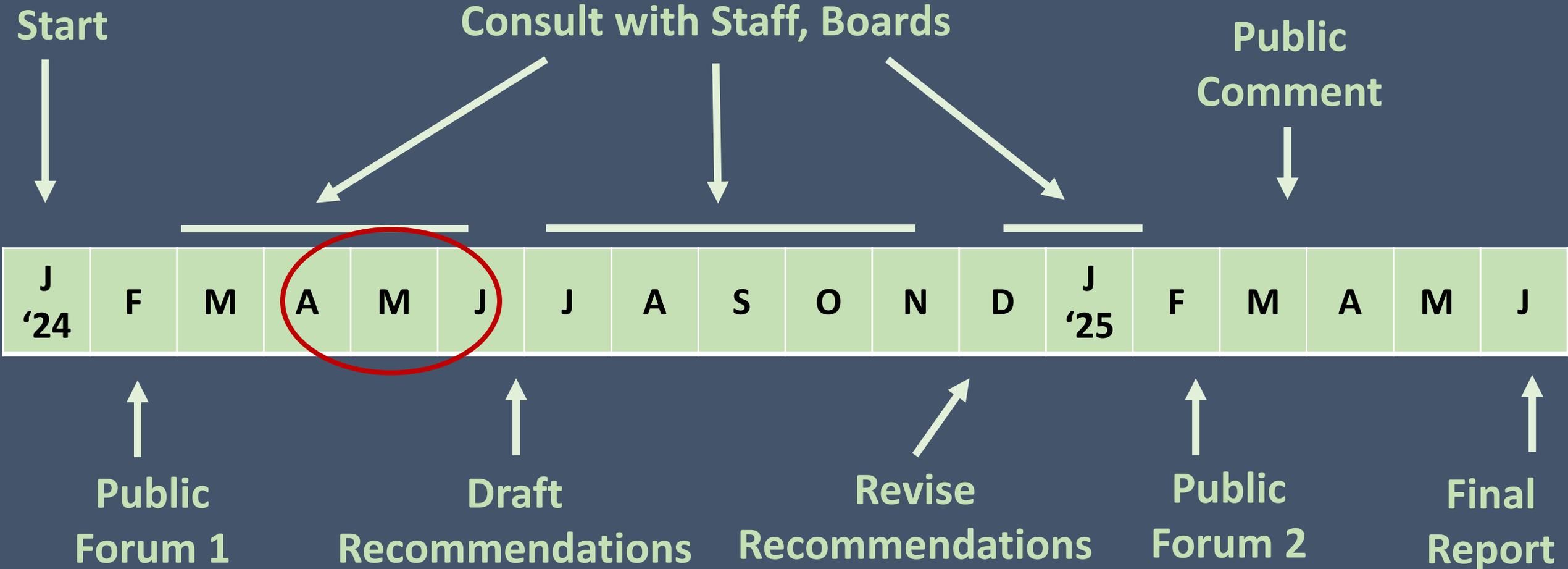
May 9, 2024, 6:30 pm



# Purpose – Climate Resilient Carlisle MVP Grant

Develop recommendations for Carlisle's bylaws, regulations, and policies that will help **make Carlisle more resilient to climate change.**

# Climate Resilient Carlisle – Timeline (Approx.)



# Discussion Topics

- Storm and Severe Weather Preparedness
- Flooding, Stormwater Management, and Wetland Protection
- Groundwater Protection

# Discussion Questions

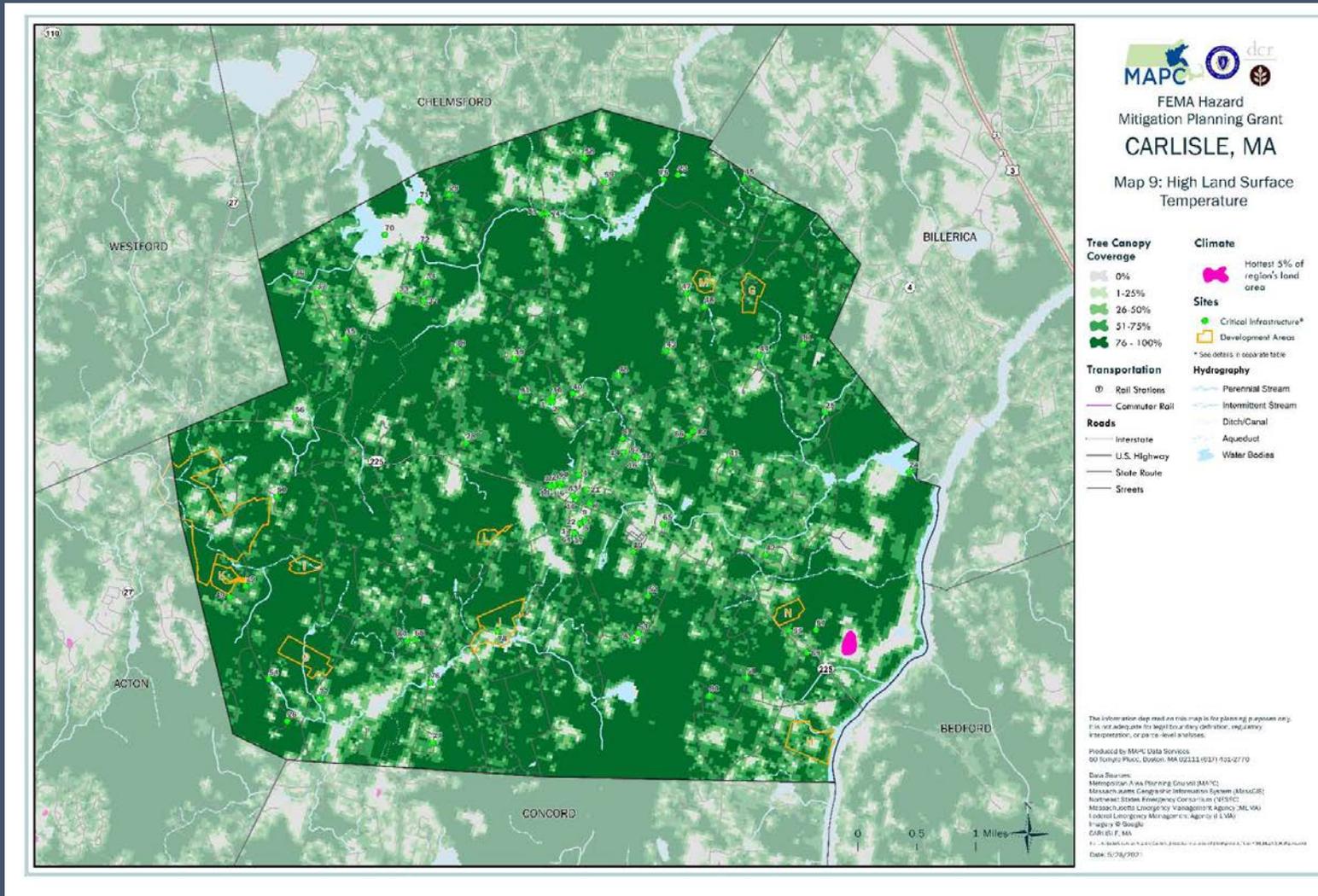
For each topic today, consider if the issue can be addressed through improvements in:

- Carlisle Bylaw/Regulation *(yes/no/explain)*
- Carlisle Policy *(yes/no/explain)*
- Education or training *(yes/no/explain)*
- Additional work on the part of a town department *(yes/no/explain)*
- Other

Did we miss an important topic for this discussion? Do you have any additional concerns?

# Storm and Severe Weather Preparedness

Carlisle frequently experiences power outages during severe storms, due to downed trees and limbs taking out power lines. In addition, downed trees disrupt roadway travel and emergency access throughout town, oftentimes leaving individuals or neighborhoods cut off for meaningful periods of time. Climate change is expected to increase the energy in storms, and this threat of power outages and disruption to access will continue and potentially increase.

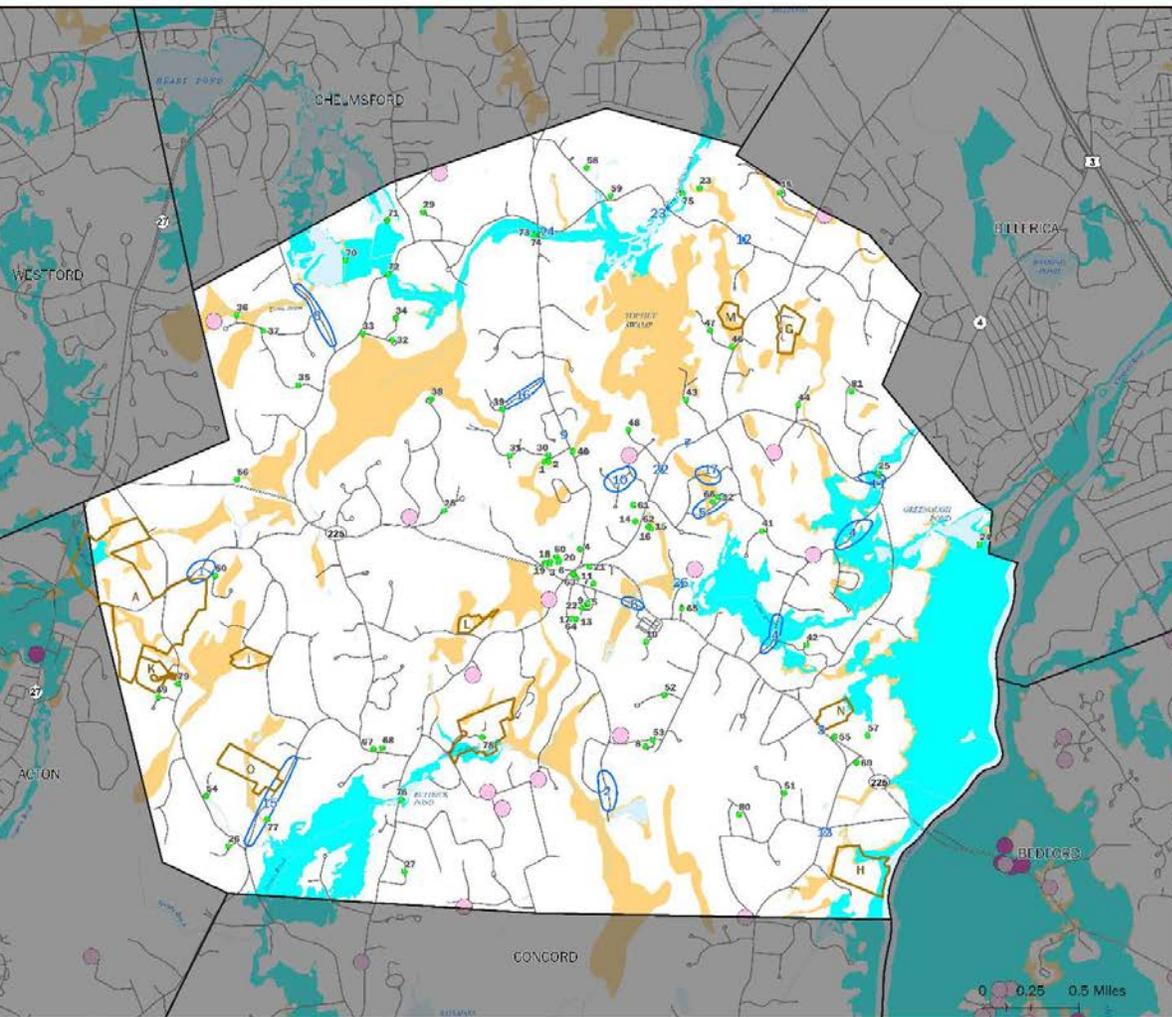


# Storm and Severe Weather Preparedness

## *Possible actions:*

- Tree protection/management policy or bylaw townwide
- Better mapping of flood hazards, alternative routes.
- Networks of neighbors, know your neighbor, neighborhood emergency preparedness planning, support for those in need and elderly residents.
- Require power lines to be buried.

# Flooding, Stormwater Management, and Wetland Protection



 **FEMA Hazard Mitigation Planning Grant**  
**CARLISLE, MA**

Map 3: Flood Zones

**Sites**

- Critical Infrastructure\*
- Repetitive Lost Sites
- Development Areas
- Locally Identified Flooding

**All Roads**

- Interstate
- U.S. Highway
- State Route
- Streets

**Rail**

- Stations
- Commuter Rail
- Trains

**March 2010 Flood Claims**

- Disaster Assistance
- Flood Insurance

**Water Bodies**

**(Annual Chance)**

- Zone Ae: 1%
- Zone AE: 1%
- Zone AH: 1%
- Zone AO: 1%
- Zone VE: 1% with Velocity Hazard
- 0.2% Annual Chance

\* See cartographer's notes for details.

The information depicted on this map is for planning purposes only. It is not adequate for legal, boundary, title, non-regulatory information, or actual flood insurance.

Prepared by: MAPCO Data Services  
60 Temple Place, Boston, MA 02111 (617) 451-0770

Data Sources:  
Metropolitan Area Planning Council (MAPCO)  
Massachusetts Geographic Information System (MassGIS)  
Flood Zones developer updated by MassGIS October 2008  
from "Inundation" provided by  
Federal Emergency Management Agency (FEMA)  
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Date: 07/2/2011

Carlisle's physical setting of ledge, till, high groundwater and widespread wetlands combined with historic country roads results in flooding challenges. A changing climate is already bringing more intense rainfall, an increase in overall annual rainfall, a shift in rainfall timing toward fall and winter and away from spring and summer. These conditions will increase the amount of surface runoff in a given storm event, and potentially widen floodplains and enlarge the areas impacted by nuisance flooding. Wetlands will continue to play an important sponge role in slowing and detaining stormwater.

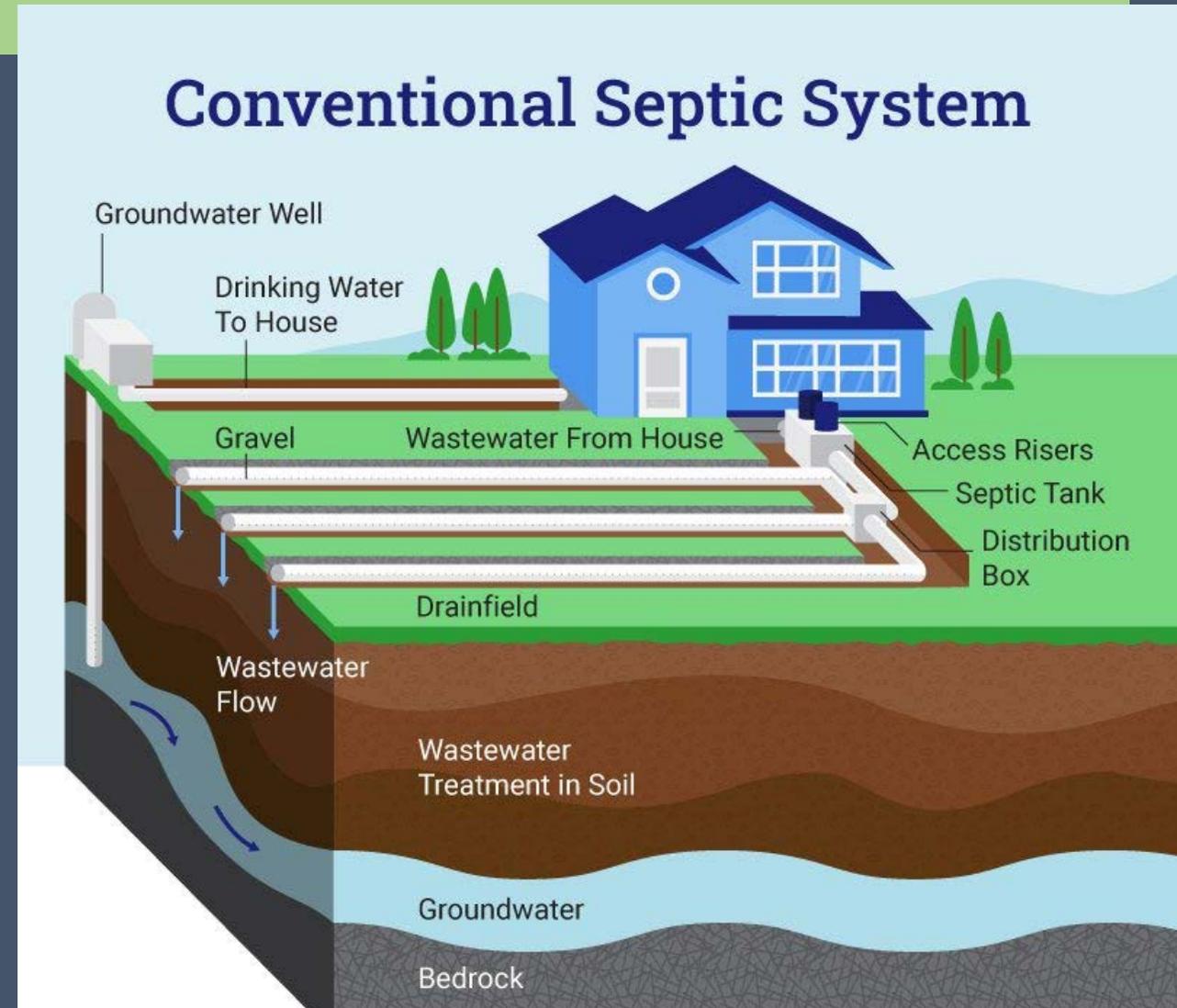
# Flooding, Stormwater Management, and Wetland Protection

## *Possible actions:*

- Improved mapping and protection of floodplains and wetlands, plus buffers to encompass potential future flooding.
- Strengthen wetlands and floodplain protections in bylaws/regulations.
- Improved municipal drainage system mapping and maintenance.
- Improved/strengthened stormwater management standards townwide.

# Groundwater Protection

Carlisle is dependent on individual drinking water wells for water supply townwide, making groundwater protection an essential task for the town and its residents. Drought conditions pose a risk to drinking water supply, particularly for shallower wells. Wastewater in Carlisle is managed through onsite wastewater systems that discharge into the ground through leach fields, and can also pose a risk to drinking water quality. Wastewater management systems, including traditional septic systems and particularly innovative and alternative systems, require consistent maintenance and upkeep to provide continued treatment.



# Groundwater Protection

## *Possible actions:*

- Allow the Town to institute watering bans.
- Consider a 'septic system utility' to manage testing, maintenance, repair and recordkeeping
- Gather data and develop better understanding of local hydrogeology

# Other Upcoming Meetings

May 15 at 6:30 pm (Note change from 7:00 pm)  
Historical Commission and Housing Trust

June 6 at 7 pm  
Environmental Sustainability Committee

See Carlisle MVP Webpage for more information:

<https://www.carlislema.gov/1162/Municipal-Vulnerability-Preparedness>

# Questions?

## Reach out if anything comes to mind!

Thank you!!

Contacts:

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