

Andover 2018 Town Plan Review
Identified Goals and Recommendations Related to Hazard Mitigation

- Bring at least 15% of Andover's non-compliant hydrologically connected road segments into full Municipal Roads General Permit (MRGP) compliance every five (5) years until full compliance is achieved.
- New development adjacent to streams or rivers must be designed to cause minimal damage to the stream environment. Any such development shall be planned so as to avoid undue sedimentation, nutrient loading, or other forms of pollution.
- Any alteration to rivers, lakes, streams, ponds and/or wetlands shall be carried out in compliance with all Federal, State and local regulations.
- Contingent upon the availability of sufficient external funding, surface water resources shall be protected and improved in accordance with the policies and actions outlined in the most recent version of the Vermont Department of Environmental Conservation (VT DEC) Williams River Watershed Tactical Basin Plan (TBP).
- Review and amend zoning regulations to protect rivers and streams, ponds and wetlands not already protected under state law.
- Include high elevation streams and buffer areas in a plan for open space conservation.
- Encourage the conservation of contiguous properties and discourage practices that fragment mapped forest blocks and habitat connectors.
- Residential, commercial and industrial development along ridgelines and/or on slopes greater than 15% shall be prohibited.
- The siting of public utilities shall be sensitive to Andover's aesthetic and natural resources. Specifically, the location of a utility scale wind or power generation facility is prohibited from the ridge lines of Terrible Mountain, East Hill, and Markham Mountain.
- Update the zoning and subdivisions regulations on an as needed basis to address growth issues.
- Consider acquisitions of at risk properties, with assistance from applicable grant funding sources.
- Retrofit/replace existing drainage systems to allow for greater water passage.
- Evaluate existing regulations and standards to ensure that the goal and policies of this Subchapter are adequately addressed.
- Maintain enrollment in the National Flood Insurance Program.
- Update the bridge and culvert inventory and condition assessment and maintain an annual culvert upgrade and maintenance program to address the priority needs identified in the inventory.
- Encourage flood resiliency by prioritizing land conservation efforts for those lands that serve important flood retention or attenuation functions.
- Andover should consider updating zoning bylaws to protect river corridors and establish stream setbacks.

- New development adjacent to streams or rivers must be designed to cause minimal damage to the stream environment. Any such development shall be planned so as to avoid undue sedimentation, nutrient loading, or other forms of pollution.
- Any storing or transporting of chemicals or other hazardous material shall be done in such a manner so as to have no adverse impact on streams or other water resources.
- The use of road salts and other chemicals adjacent to sensitive areas such as wetlands, streams, and steep slopes shall be minimized to the most reasonable extent possible.
- Any alteration to rivers, lakes, streams, ponds and/or wetlands shall be carried out in compliance with all Federal, State and local regulations.
- Contingent upon the availability of sufficient external funding, surface water resources shall be protected and improved in accordance with the policies and actions outlined in the most recent version of the Vermont Department of Environmental Conservation (VT DEC) Williams River Watershed Tactical Basin Plan (TBP).

Recommendations

- Review and amend zoning regulations to protect rivers and streams, ponds and wetlands not already protected under state law.
- Include high elevation streams and buffer areas in a plan for open space conservation.

Flood Resilience

Statutory Basis:

The intent of this Subchapter is to address statutory requirements of the flood resiliency element approved as Act 16 by the Legislature in 2013. This Subchapter will meet that requirement by:

1. Identifying areas in the Town of Andover that are at significant risk for flooding and/or fluvial erosion;
2. Designate those areas to be protected from such hazards; and,
3. Articulate policies and strategies that promote community flood resilience.

Background:

In 2013, the Vermont House and Senate passed H.401, which the Governor then signed into law (Act 16). Act 16 requires town plans to include a flood resilience component that identifies flood and fluvial erosion hazard areas and recommends strategies to protect these areas and “to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.” To prevent future damage to private property and municipal infrastructure, the town shall adopt policies or ordinances in order to strengthen flood resilience in Andover.

Hazard Areas:

Areas in Andover that are particularly at risk of flooding and fluvial erosion are discussed below, and within the Andover Local Hazard Mitigation Plan, and are shown on the Water Resources Map. These hazard areas are based on mapping data from FEMA, local input, and the Vermont Agency of Natural

Resources (ANR). Mapping data for the below can be found on the ANR Natural Resource Atlas and Flood Ready Vermont websites.

1. Flood Hazard

The areas in Andover that are at higher risk of flooding (i.e. Special Flood Hazard Areas) are shown on FEMA’s Flood Insurance Rate Map (FIRM), as most recently amended. These maps are also available through FEMA’s online [Flood Map Service Center](#). The Flood Hazard Map depicts the Special Flood Hazard Areas (SFHA).

2. River Corridors

Rivers are dynamic and, as a result, development that is located too close to river/stream banks are at risk of potential bank erosion and/or channel migration. The River Corridor (RC), which is shown on the River Corridor Map, depicts the portions of Andover that are at risk of this type of fluvial erosion damage. The RC term is defined under State statute as “the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with the river corridor protection procedures” (24 V.S.A. §4303).

3. Williams River Stream Geomorphic Assessment and River Corridor Plan

A Phase II Stream Geomorphic Assessment (SGA) and River Corridor Plan (RCP) for the Williams River and associated tributaries, examining erosion hazards, floodplain access, bridge and culvert conditions, and other related concerns, was finalized in September, 2016. Findings from these studies, as they relate to flood resiliency in Andover, include:

- Man-made earthen berms and undersized stream crossing structures in the vicinity of Horseshoe Acres Campground is exacerbating flooding in Andover.
- The encroachment percentage along much of the Middle Branch in Andover is extreme (>75%).
- The percentage of bank erosion along much of the Middle Branch in Andover is high (>20%).

Designated Areas to be Protected:

In accordance with the Act, the following areas of Andover are designated for their role in reducing the risk of flood damage to infrastructure and improved property.

1. Special Flood Hazard Areas

Floodway and floodway fringe areas (i.e. Special Flood Hazard Areas) as shown on the most current FIRM developed by FEMA represent areas that are subject to Andover’s flood hazard review procedures in order to protect properties from future flood damages. This generally requires raising living spaces to be one (1) foot above the Base Flood Elevation (BFE) or dry-flood proofing non-residential buildings, along with other requirements.

2. River Corridor

Lands subject to fluvial erosion hazards are as shown on the most recent ANR map of River Corridors. Development that is subject to State rules and procedures – including state facilities, required agricultural and forestry activities per 24 V.S.A. §4413, and projects subject to Act 250 or Section 248 review – will be required to meet standards that promote resilience from future fluvial erosion in these areas.

3. Lands Adjacent to Streams

FEMA special flood hazard areas (SFHA) are designated along only the larger rivers and streams in Andover. However, flooding is possible along all other watercourses. Therefore, Andover’s Zoning Bylaws should consider an undisturbed, vegetated buffer strip of fifty (50) feet from all wetlands, streams and rivers, and public ponds.

As noted above, the water quality and flood resilience benefits of buffers along water courses play an important role. However, equally important is to allow for some exemptions to the buffer standards in order to allow for recreational uses (e.g. water access, multi-use paths), stream crossings (e.g. roads, driveways and utilities), and management activities (e.g. removal of hazardous trees, eradicating exotic invasive species or contaminated soil remediation).

4. Wetlands

Wetlands serve a number of important functions, including flood retention. Maintaining this functionality of wetlands can contribute toward mitigating flooding impacts in Andover, therefore, zoning bylaws should be considered to protect wetland functions.

5. Upland Forests

Maintaining an adequate forest cover in rural upland areas and steep slope areas helps to maximize infiltration of water into the soil and minimize or slow down stormwater runoff in ways that mitigate flooding hazards to downstream locations. Efforts to minimize heavy cutting in forestry activities, limiting the extent and densities of developments, and properly managing stormwater in these uplands areas will help contribute toward community flood resilience. Andover subdivision bylaws should consider stormwater and steep slope provisions that help to achieve this upland forest functionality.

Goals, Policies & Recommendations:

In order to protect the areas identified and designated above in this subchapter and to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments, the following goals, policies and recommendations are established.

Goal

- Encourage a flood resilient community.

Policies

- New development in identified floodways and River Corridors shall be avoided. If new development is to be built in such areas, it shall not exacerbate flooding and/or fluvial erosion.
- Infill development in River Corridors shall be allowed in accordance with the VT Department of Environmental Conservation’s *Flood Hazard Area and River Corridor Protection Procedure*.
- The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion shall be encouraged.
- Where buffers are required for Act 250 projects, provide reasonable flexibility with these buffer standards in order to allow for recreational uses (e.g. water access, multi-use paths), water crossings (e.g. roads, driveways and utilities), and management activities (e.g. removal of hazardous trees, eradicating exotic invasive species or contaminated soil remediation).
- Maximize onsite stormwater infiltration to help promote flood resiliency.
- Preserve the flood retention functionality of wetlands that serve as important components of local flood resilience efforts.
- Andover’s *Local Hazard Mitigation Plan*, as most currently amended, is hereby adopted by reference as a component of this Municipal Plan.

Recommendations

- Consider acquisitions of at risk properties, with assistance from applicable grant funding sources.
- Retrofit/replace existing drainage systems to allow for greater water passage.
- The Town should consider developing adequate emergency preparedness and response planning including, but not limited to:
 - a) Maintenance of an up to date Local Emergency Operations Plan;
 - b) Updating the Local Hazard Mitigation Plan on a five-year timeframe, or as needed;
- Evaluate existing regulations and standards to ensure that the goal and policies of this Subchapter are adequately addressed.
- Maintain enrollment in the National Flood Insurance Program.
- Update the bridge and culvert inventory and condition assessment and maintain an annual culvert upgrade and maintenance program to address the priority needs identified in the inventory.
- Encourage flood resiliency by prioritizing land conservation efforts for those lands that serve important flood retention or attenuation functions.
- Andover should consider updating zoning bylaws to protect river corridors and establish stream setbacks.

Wildlife habitat and endangered species

Wildlife is plentiful throughout the Town of Andover. Whitetail deer, black bear, moose, and wild