

14. To accomplish these actions over the next five years, the Town should consider hiring a part-time economic development coordinator to develop and implement a more specific economic development plan.

## **VII. NATURAL RESOURCES AND FLOOD RESILIENCE**

One of Arlington's greatest assets is its rich and varied natural resource base. The mountains and forests of the Taconic Range, the Batten Kill and its tributaries, valleys, agricultural land, clean air and water, and abundant wildlife all contribute to the Town's appeal. These resources provide recreational opportunities, serve aesthetic values, protect environmental quality and public health, including providing for flood resiliency, and support a host of economic opportunities. This section will identify and briefly describe these resources, and outline strategies to protect their positive values.

### **7.1 Surface Water Resources**

Arlington drains toward the Hudson River, and most of the town drains to the Batten Kill. Small portions in the southwestern part of town drain to Owl Creek and Little White Creek, both of which drain to the Hoosic River. Map 9 shows rivers and streams surface waters and riparian areas and wetlands:

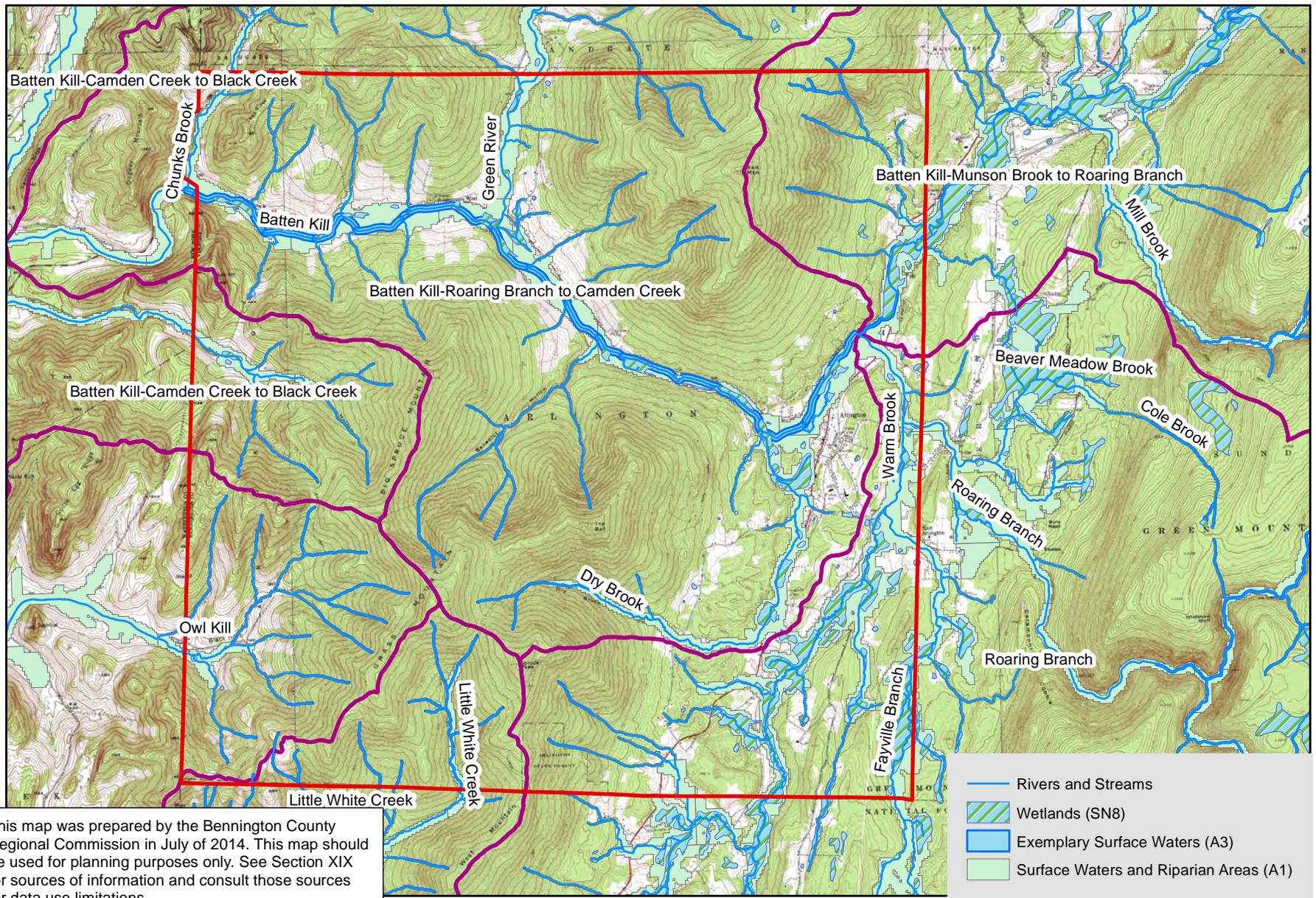
Rivers and streams provide connections between the upland, terrestrial forests and the valley bottoms. Except for the Owl Kill and Little White Creek, the small tributaries from these uplands flow into the Batten Kill.

The Batten Kill, a trout stream of state and national significance, is one of the most prominent and important natural features in the Town. The Vermont Fish and Wildlife Department characterizes the Batten Kill as a "large coldwater stream" and has mapped it as an Exemplary Surface Water, supporting species, such as trout, that require cold water temperatures, high alkalinity and cold baseflow from groundwater. The Batten Kill was designated an outstanding resource water in 1991. Rising in northern Bennington County, the "Kill" bisects the Taconic Range as it flows through the heart of Arlington toward its confluence with the Hudson River in New York State. The river's characteristics in Arlington — a swift current, cool clear water from mountain tributaries, a gravel substrate, and the unspoiled beauty of the surrounding landscape - make it an ideal resource for fishing, swimming, canoeing, "tubing," sightseeing, and other recreational activities. The Green River, Roaring Branch, Fayville Branch, Warm Brook, Dry Brook, and numerous minor streams afford a similar array of opportunities to residents and visitors.

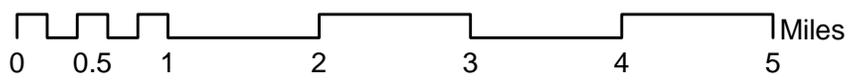
The Batten Kill and its watershed is a regional resource requiring regional cooperation in river planning and management. Continued vigilance is needed in enforcing environmental regulations for new and existing development to protect the quality of this resource. As a regional recreational resource, the problems of potential overuse and conflicts between different users also need to be addressed through regional planning and management.

One major regional issue has been the decline of the wild trout population, which has been attributed to past river channel alterations and encroachments, the

# Map 9. Arlington Surface Water Resources



This map was prepared by the Bennington County Regional Commission in July of 2014. This map should be used for planning purposes only. See Section XIX for sources of information and consult those sources for data use limitations.



reduction in cover due to the loss of forested areas and the removal of woody debris that provides cover. Cover is critical for trout to avoid predation and stresses from flooding events or winter mortality (Cox 2010, 2011). The Vermont Fish & Wildlife Department imposed “catch and release only” rules on the river that will remain in effect through 2017. The local non-profit river group, the Batten Kill Watershed Alliance, has partnered with the state and federal officials to restore habitat for the fishery. The goal is to restore the fishery to a level of productivity that will allow sustainable harvesting. Such a recovery would presumably lead to the return of the seasonal influx of anglers that has been an important revenue source for local businesses.

Restoration has involved adding structures along the stream to provide for cover, primarily by implanting large woody debris in the banks and allowing that to collect materials over time. Thus far, studies (Cox 2011 and annual reports) indicate significant increases in juvenile trout and modest increases in larger (10-19.9”) in areas where cover has been enhanced. The study also indicated that habitat cover along the Batten Kill is well below optimal levels.

Water quality based primarily on macroinvertebrates indicate that water quality is good to excellent, but that impairments from both point and nonpoint sources exist (Nolan 2005, NYSDEC 2004). Many of these occur upstream of Arlington where the Batten Kill goes through more developed areas (Vermont Agency of Natural Resources 2002).

Cooperation among principal users will become increasingly important, as noted in Section XII, Recreation. The Town, in concert with Dorset, Manchester, Sunderland and the New York Towns of Salem and Jackson, must exercise appropriate control over land development near rivers and streams to prevent degradation of recreational and scenic values.

Surface Waters and Riparian Areas are both valley bottoms, containing stream courses and buffers to protect those streams. The continued viability of species that depend on these streams and rivers is directly dependent on the quality of those areas in close proximity, known as riparian areas, as well as the contributing watersheds. Natural vegetation helps in stabilizing banks, moderating temperature fluctuation by providing shading, provision of cover for aquatic species and filtering of sediments and pollutants from water draining from roads and other human uses. Many bird species, such as migrating warblers, mammal species, such as mink and otter, and reptiles, such as wood turtles, use these riparian areas for habitat. They also provide connectivity for these species as they move across the landscape and/or from one stream to another. Finally, they provide an area for the natural meandering of streams, particularly those connected to a floodplain. Streams migrate and meander as the channel shifts with the removal of material from erosion and the consequent deposition of material elsewhere. These areas were mapped as valley bottoms and flood plains using a GIS model and include a 100 foot buffer for higher order streams and 50 foot buffer for lower order streams.

Nearly the entire length of the Batten Kill has been altered by bank armoring, culverts and bridges, encroachment into buffers and erosion (Field 2007). The most significant changes have resulted from straightening that likely occurred 80 years or more ago. Straightened sections create higher velocities and scouring of the streambed. Bridge and culvert constrictions can have similar effects. The

excessive energy and sediment movement that result destabilize the banks removing cover needed by trout and other organisms (Field 207). Erosion rather than inundation has been the primary cause of property damage in previous storms such as Tropical Storm Irene and increased velocity exacerbates erosion. There is a clear need for areas where the Batten Kill can meander to dissipate energy and for flood waters to be retained and allowed to drain.

There are numerous wetlands in Arlington, but the largest are along the Batten Kill and in particular along both the main stem of the Batten Kill and along Warm Brook (Map 9). Wetland mapping is based on both the National Wetland Inventory and mapping by the Vermont Agency of Natural Resources. However, other data suggests more extensive wetlands, again primarily along the rivers. Wetlands are aquatic systems transitional between uplands and lakes and river. They are permanently or periodically flooded, dominated by hydrophytic vegetation that is adapted those conditions and having soils with physical and chemical characteristics of low or no oxygen conditions created by saturation with water. They provide important ecosystem services including flood storage, groundwater discharge and recharge, nutrient absorption and nutrient recycling as well as habitat for numerous flora and fauna.

## 7.2 Flood Hazard Zones and River Corridors

The Federal Emergency Management Agency (FEMA) developed the first flood hazard map for Arlington in 1974. These maps identified properties that could be threatened by flooding. The National Flood Insurance Program provides insurance to those property owners within flood hazard zones to protect owners from financial loss as private insurers will not provide such coverage. Arlington joined the National Flood Insurance Program in 1975. The current map was adopted on July 17, 1986.

FEMA has developed revised flood hazard maps based on a more accurate measure of topography using LIDAR, a method using lasers to determine elevations within a few centimeters. FEMA has produced new flood hazard zone maps that are currently under review (Vermont ANR undated). The Vermont Agency of Natural Resources, the Bennington County Regional Commission and the Bennington County Conservation District have cooperatively completed a series of studies of the Batten Kill resulting in mapping of river corridors, formally known as Fluvial Erosion Hazard (FEH) Areas. Map 10 shows the following flood hazard zones and the FEH areas:

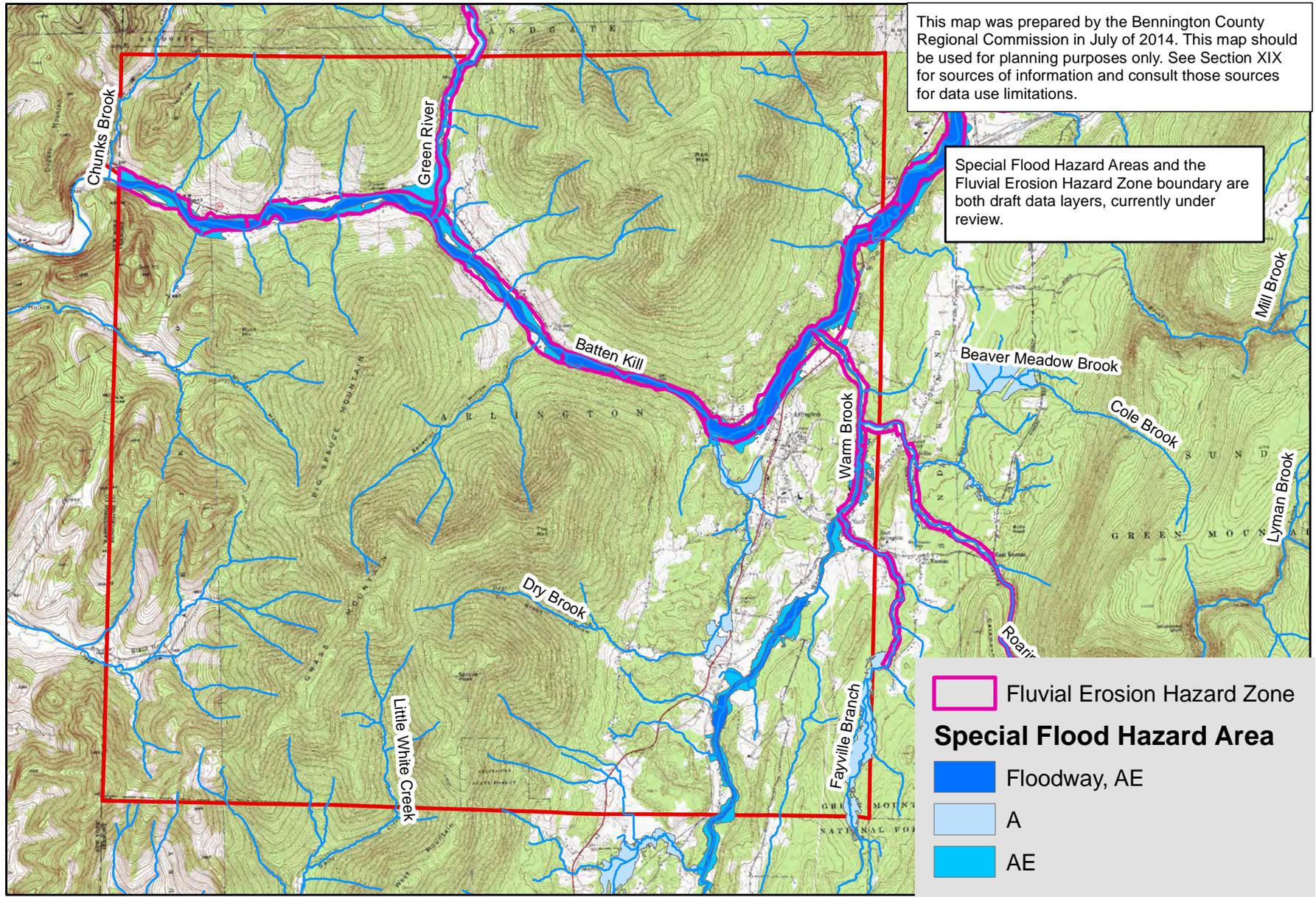
A: areas subject on inundation by a one percent annual chance event. This is also known as the 100-year flood zone as the area could potentially flood once in 100 years or as the “base flood.”

AE: areas as with A but where detailed methods have been used to create base flood elevations, which is used in determining insurance premiums

Floodway: the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than the designated height.

The Floodway and Zones A and AE constitute the Special Flood Hazard Area.

# Map 10. Arlington Flood Hazard Zones and River Corridors



500 Year Floodplain: areas subject to flooding on a 500 year or 0.2% annually. These are for information purposes and insurance is not mandatory under the NFIP program.

River Corridors: this is the area, also known as the Fluvial Erosion Hazard or FEH zone, is where vertical and horizontal adjustments of the stream as it meanders to disperse energy and sediment would occur to maintain stable slope and dimensions over time. Stability is determined at the watershed scale as the amount of water, sediments and woody debris moving in and through the stream cause the stream to alter course to adjust to these materials. These areas are subject to fluvial erosion hazards, from gradual stream bank erosion to catastrophic channel enlargement, bank failure, and change in course, due to naturally occurring stream channel adjustments, have been identified and mapped by Shannon Pytlik of Vermont ANR (personal communication), based on studies completed under contract to the Bennington County Conservation District and the Bennington County Regional Commission (Field 2005; South Mountain Research and Consulting 2009) for the Batten Kill and the Roaring Branch (Map 10) in accordance with accepted state fluvial geomorphic assessment and mapping protocols.

The Floodway, Zones A, and AE address hazards from flooding due to inundations. However, most flood damage in Vermont streams is the result of erosion. Development in the FEH zone will not be sustainable over the long term as the river meanders and will decrease the functions of the corridor for protection of water quality and movement and habitat of organisms.

Table 5 below shows the number of structures by type from E911 data that are in the special flood hazard zone or outside of that zone but within a river corridor. E911 data represent a GIS layer showing the location of structures, including single family homes, commercial businesses, government buildings and other types and is updated by the Enhanced 9-1-1 Board in Montpelier, VT. These numbers are really estimates as the E911 points are not always located exactly where structures are. For the most part, the two boundaries correspond, but there are areas where the river corridor goes beyond the special flood hazard zone, thereby affecting more properties. Several of those structures in the river corridor are also in the 500-year flood zone.

Type	SFHA and Corridor	River Corridor Only
Single family	63	27
Multi-family	1	0
Mobile home	4	4
Commercial	6	3
Lodging	0	3
Fire station	0	1
Other	6	3

Table 6 provides information from the Vermont Agency of Natural Resources on the number of insured properties. As of March of 2011, 18% of properties in the SFHA were insured.

Policies in Force (3/31/2011) 1	18
Property Insured	\$3,078,200
Policies in Zone A or AE	13
Percent structures in SFHA also insured (3/31/2011)	18%
Structures within river corridors (FEH)	

There are properties in either or both the special flood hazard zone or the river corridor that are vulnerable to flooding or to erosion or both and that are not currently protected through the National Flood Insurance Program. Properties that have flood insurance that are damaged due to erosion may or may not be able to collect on a policy depending on whether or not the erosion can be attributed to a flood event.

### 7.3 Surface Water and Flood Resiliency Policies and Actions

Surface Waters Policy: The ecological and hydrological integrity of rivers, streams and wetlands should be maintained to provide key ecosystem services such as water purification, pollutant abatement, nutrient dispersal and cycling and flood water retention. Rivers, streams and wetlands should also be protected to allow for continued recreational use and to provide valuable scenic resources. Development within identified special flood hazard, fluvial erosion and river corridor protection areas should be avoided.

#### Surface Waters Actions:

1. The Town and other partner organizations including the Vermont Agency of Natural Resources, the Batten Kill Alliance, the Bennington County Conservation District and others should work together to maintain and enhance the ecological integrity of the Batten Kill and tributaries.
2. An undisturbed buffer of natural vegetation should be established between rivers, streams and other water bodies to reduce nutrient input and attenuate overland flow. This buffer should be at least 50 feet for streams with minimal potential for lateral or vertical adjustment or 100 feet for streams with significant potential for such adjustment (see Vermont ANR 2005). For wetlands, the buffer should be 100 feet for Class I wetlands and 50 feet for Class II wetlands as determined by Vermont ANR.
3. Developments or activities that would adversely affect the quality of the Town's surface waters shall be prohibited.

Flood Resiliency Policy: To protect the public health, safety and welfare, new development should be avoided in identified flood hazard, fluvial erosion hazard and river corridor protection areas.

Flood Resiliency Actions:

1. The Town has adopted a Flood Hazard Bylaw to regulate development in flood hazard areas. These Bylaws permit residential and non-residential structures in the Special Flood Hazard Area provided a conditional use permit is granted by the Zoning Board of Adjustment. Encroachments that are above grade and less than one foot above the base elevation are prohibited in the floodway unless it can be shown there will be no increase in flood levels during the base flood.

These regulations are designed to protect property and the health and safety of the population against the hazards of flood water inundation, and to protect the community against the costs which may be incurred when unsuitable development occurs in areas prone to flooding. Development in flood hazard areas must be carefully controlled in accordance with the Town's flood hazard regulations.

2. The Planning Commission and the Zoning Board of Adjustment should assure that any new development in either Special Flood Hazard Areas or the Fluvial Erosion Hazard Area is avoided where possible. Any new development that does occur be designed and sited so as to avoid any increase in flooding or erosion.

3. The Town should acquire lands or easements or work with conservation organizations to acquire lands or easements to assure protection of buffers and fluvial erosion hazard zones on the small first, second and third order tributaries.

4. As proposed in the completed river corridor assessments and plans (Field 2005, 2007 references), buffer planting should be implemented from the Arlington town line on the west to the Sunderland town line on the east on the main branch of the Batten Kill. The Town should work with the Batten Kill Alliance, the Bennington County Conservation District and interested landowners to implement buffer planting.

5. As proposed in the completed river corridor assessments and plans (Field, 2005, 2007), buffer planting and corridor protection is needed along both Warm Brook and the Green River where bank armoring, limited natural buffers and other forms of encroachment have occurred. Upgrading culverts following a hydraulic study to determine the necessary size, providing for more lateral adjustment, and removing berms are needed in several segments of these tributaries.

6. Where buffer planting is needed, protect the riparian areas (Map 9) through land acquisition or acquisition of easements to provide flood storage and to allow for the river to adjust laterally within the fluvial erosion hazard area.

7. Arlington has adopted the most recent Town Road and Bridge Standards from the current 2014-2016 VTrans Orange Book: Handbook for Local Officials and should adopt updates as they are developed. Bridge and culvert repairs and replacements should be designed following hydraulic studies to avoid constrictions that would accelerate flow and to allow for passage by aquatic organisms.

8. The Town should work with the Vermont Agency of Transportation to replace the Route 313 bridge to increase the height and length so as to not impede flow, particularly during flooding events such as Tropical Storm Irene.

9. The Town should encourage farm and forest owners along the river as well in upland forested areas to enroll in the Current Use Value program so as to provide for planted buffers and to maintain the forested upland watershed.

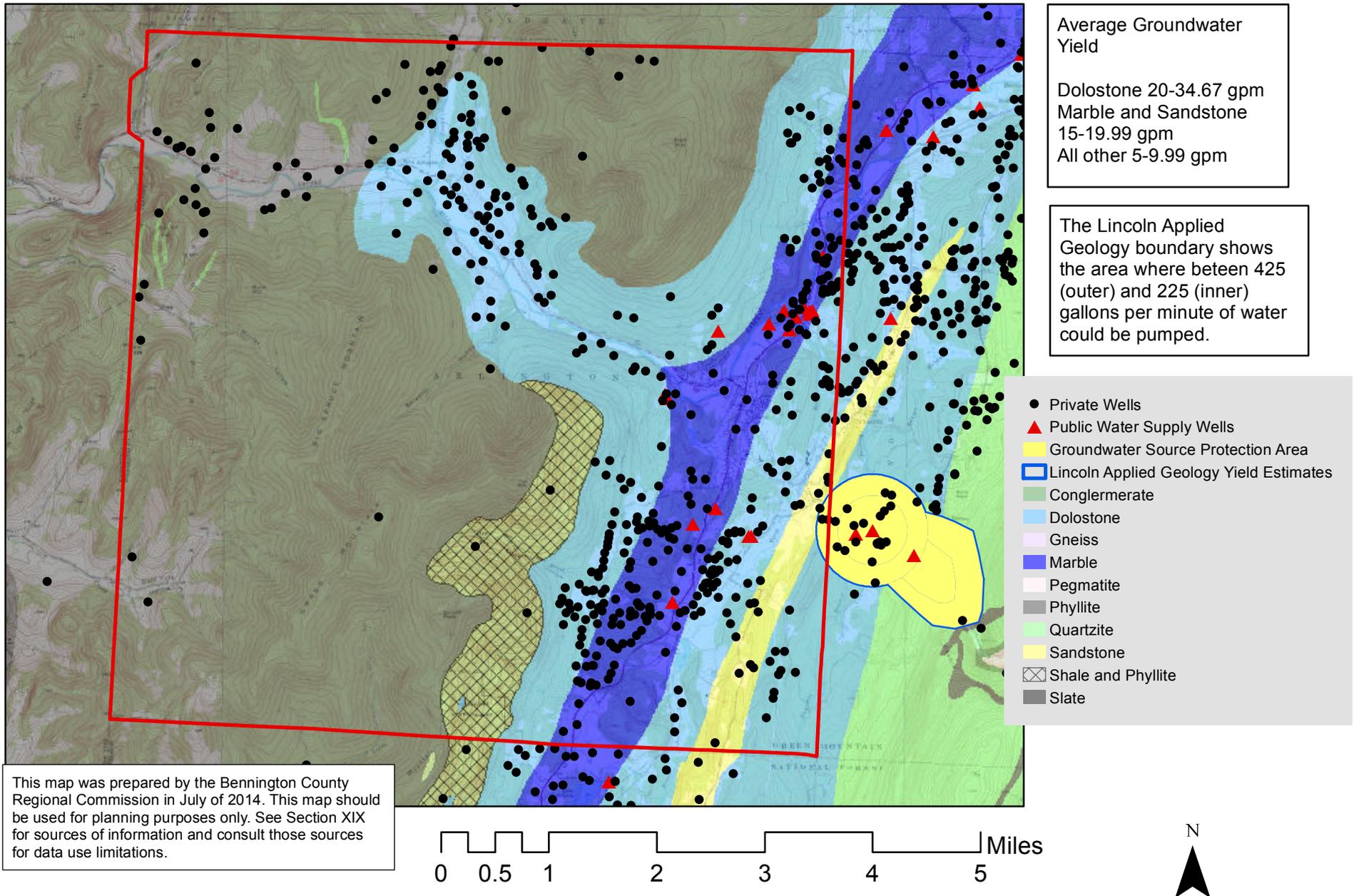
10. Forested lands should be protected to assure that precipitation can be absorbed by forest soils and litter and the peak flow attenuated. Acquisition of land or easements or Current Use assessment should be used to protect these areas, especially along the tributaries.
11. The Town should collaborate other municipalities, the Bennington County Regional Commission, and the States of Vermont and New York in planning for the use and protection of regional water resources such as the Batten Kill. This could involve an intermunicipal agreement between these towns and communities in New York State for the long-term protection of the Batten Kill for both resources and to address flood hazards.
12. The Town and partner organizations should continue to monitor use of the Batten Kill and work with other interested groups to implement actions that will ensure ecological integrity and quality of the river environment and of the aesthetic, recreational and cultural resources of the Batten Kill watershed.
13. The Town should provide outreach to owners within the flood zones to support flood proofing or buy-outs of structures subject to repeated flooding and eligible for funding under the FEMA Hazard Mitigation Grant Program.
14. The Town should participate in the Community Rating System program by implementing projects that would ultimately lead to rate reductions in flood insurance premiums for residents and businesses.
15. The Town should encourage owners in flood hazard zones to secure propane tanks, fire wood, boats and other items that could float away in a flood, thereby creating hazards for those downstream.
16. The Town should adopt a Local Emergency Operations Plan that provides for emergency response and flood preparedness.
17. The Town should maintain an updated hazard mitigation plan that fulfills FEMA requirements.

#### 7.4 Ground Water Resources

The water supply system for Arlington consists of private wells, several public systems, also from well, and a private water company that draws well water. A sufficient supply of clean groundwater is crucial to existing homes and businesses in Arlington, and to any future development in the Town. The Villages of Arlington, East Arlington, and the Chiselsville area of Sunderland are served by the Arlington Water Company

Map 9 shows the locations of wells and bedrock formations with potential yields indicated. Most development is in the valleys and these coincide with formations with higher yields than the uplands. Source protection areas were mapped by the Vermont Agency of Natural Resources and are primarily dependent on topography. In 1989 Lincoln Applied Geology provided a report recommending expansion of the area needed to protect the Arlington Water Company well head (Map 11). Identification and protection of the recharge areas for the Town's public water supplies are of paramount importance. These areas supply the water for a substantial portion of the Town's population and businesses, and will be relied upon for new growth that will occur in and around existing villages. Cooperative planning with the Town of Sunderland and the Arlington Water Company will be necessary to ensure the protection of these irreplaceable resources. There are also

# Map 11. Arlington Groundwater Resources



wells serving Mack Molding and Quadra Tek that have source protection areas. The river valleys and lowlands in Arlington have a relatively high potential for supplying groundwater. New development may occur in these areas, and will rely on these groundwater resources. Strict enforcement of local and State health ordinances, protection of wetlands, and prevention of hazardous waste contamination in these areas will be necessary to ensure a continued supply of clean groundwater for the Town well into the future.

## 7.5 Ground Water Policies and Actions

Ground Water Policy: Aquifers and groundwater recharge areas must be protected from activities or development that would adversely affect the quantity or quality of available groundwater.

### Ground Water Actions:

1. Developments or activities that would adversely affect the quality of the Town's groundwater shall be prohibited.
2. Both the Town land use and health regulations and the Vermont Agency of Natural Resources regulations should be strictly enforced to protect water supplies.
3. The Town bylaws and health regulations, and the regulations of the Vermont Agency of Natural Resources must be strictly enforced to protect individual and public water supplies.
4. The Town should identify, map, and describe important groundwater resource areas including documenting the extent that each area contributes to groundwater supplies, water and environmental quality, public health, recreational opportunities, fish/wildlife habitat, and aesthetic values.
5. Identify situations that could result in reduced resource values or access, and initiate appropriate protection measures (i.e. regulatory action, acquisition of land or easements, pollution abatement, and so on)
6. Prepare amendments to the zoning bylaw for protection of water resources. Specific amendments should include: surface and groundwater protection regulations (including setback requirements), well head protection area regulations, and wetland protection regulations.
7. Actively participate in local and state regulatory proceedings that could potentially impact important water resources.

## 7.6 Air Quality

The quality of the air in Arlington is generally excellent, and the Town should endeavor to ensure that it remains clear and clean. According to the US EPA, no parts of Vermont have been designated as failing to achieve air quality standards under the Clean Air Act, though Rensselaer County in New York and Berkshire County in Massachusetts have both failed to achieve ozone standards at certain times (US EPA 2013). The Air Quality and Climate Division of the Vermont Agency of Natural Resources oversees compliance and monitors air quality in Vermont.

Local threats to air quality may come from illegal burning of trash, wood burning stoves and furnaces, commercial and industrial uses, and vehicles. Air pollutants cross boundaries, and particulates, ozone, acidic deposition and others can come from long distances. Since most development is within the valley in Arlington, inversions may trap pollutants.

### 7.7 Air Quality Policies and Actions

Air Quality Policy: Both state and federal air quality standards should be achieved at all times.

#### Air Quality Actions:

1. Developments or activities that would adversely affect the Town air quality shall not be permitted.
2. The Town supports compliance with the state prohibition on the open burning of trash.
3. Encourage compliance with all state and federal regulations regarding wood-burning stoves and furnaces.

### 7.8 Agricultural Lands

Prime farmland soils have the best physical and chemical characteristics for agricultural production (USDA 2006) and are defined using NRCS criteria for soil temperature, moisture and slope. Soils of Statewide importance are designated by the Vermont Department of Agriculture and Markets and have limitations for slope, erosion, moisture, flooding and root depth. Map 12 shows that most agricultural soils are located along the Batten Kill valley in West Arlington and in the southeastern corner of the Town a substantial percentage of the valley lands were farmed at one time, and many of the marginally productive upland areas were used to pasture sheep, cattle, and other livestock.

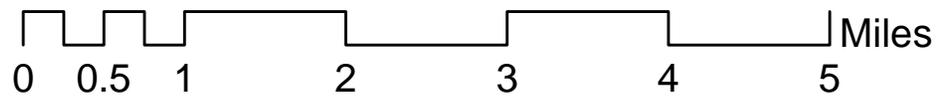
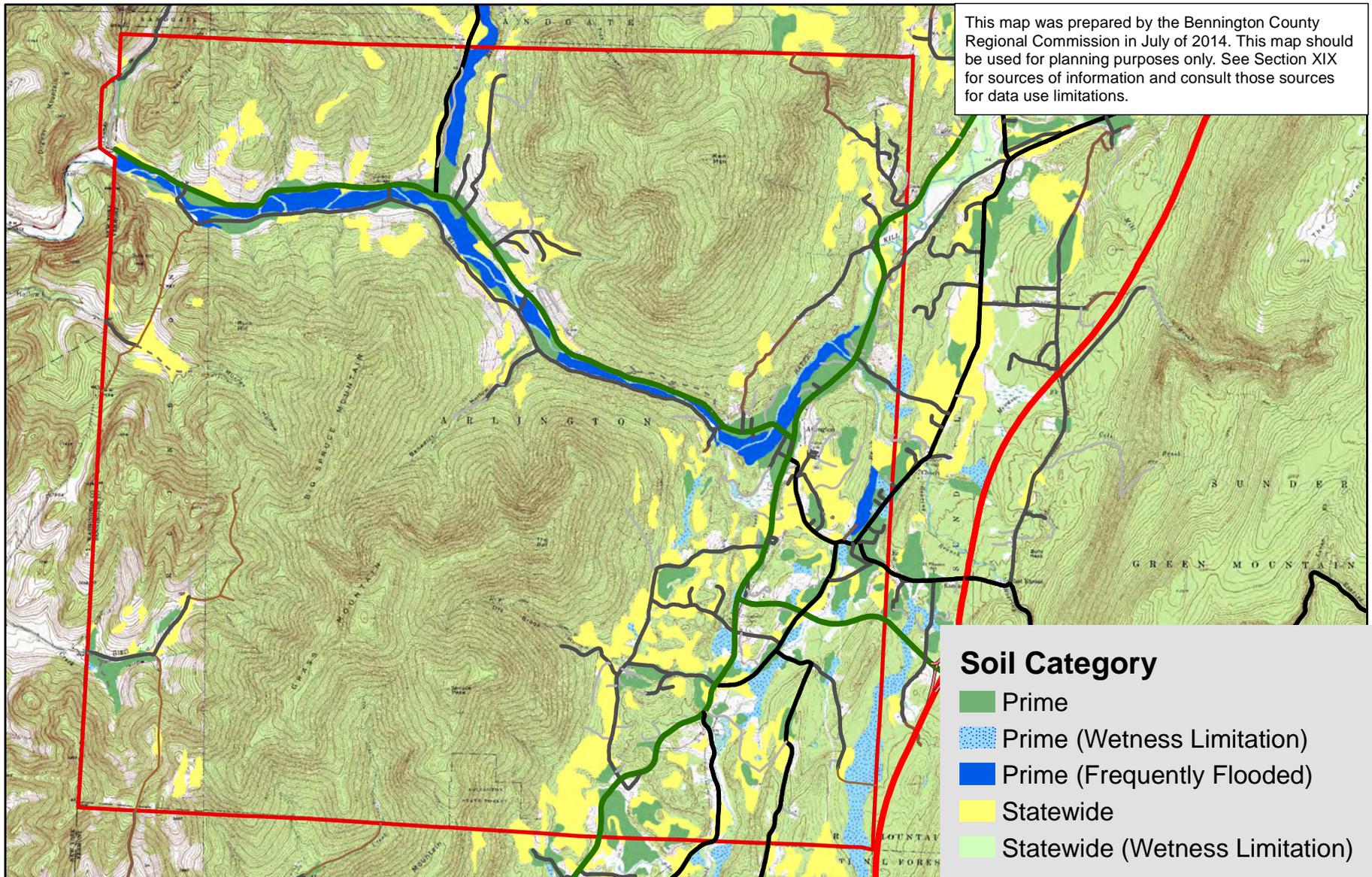
### 7.9 Agricultural Lands Policies and Actions:

Agricultural Land Policy: Agricultural lands and soils should be conserved to allow for continuation of agricultural uses and to protect surface and ground water resources.

#### Agricultural Land Actions:

1. Farms should be identified and a database of their location and products developed.
2. Farmers should be encouraged to use best management practices for managing soils, pesticides, fertilizers and nutrients to protect air and water quality.
3. Small farms that can provide food for residents and local restaurants should be supported.
4. The Town should work with the Vermont Land Trust and other conservation organizations to prioritize and protect lands with agricultural soils,

# Map 12. Arlington Agricultural Soils



- particularly those along the Batten Kill and tributaries and adjacent to wetlands.
5. Landowners should be encouraged to participate in Vermont's Use Value Program which levies taxes based on the property's use for agricultural rather than development purposes.
  6. Landowners should be encouraged to maintain open fields and meadows
  7. The Planning Commission should encourage creative- development techniques such as transferable development rights and cluster subdivision to preserve agricultural land as part of the land development process. Both of these techniques allow developers to build greater densities in appropriate areas provided that important open lands are preserved.
  7. Developments on agricultural lands shall be planned so as to conserve, to the extent possible, the viability, or potential viability, of the site for agricultural use. Development shall be planned so as not to significantly diminish the values afforded by woodlands on or near the site.
  8. The Town should carefully assess public investments in roads and other infrastructure to ensure that they do not promote the deleterious development of important agricultural areas.

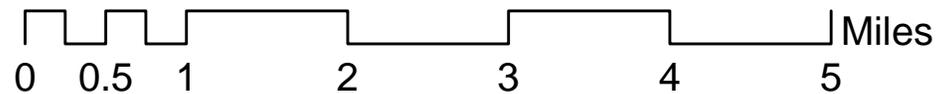
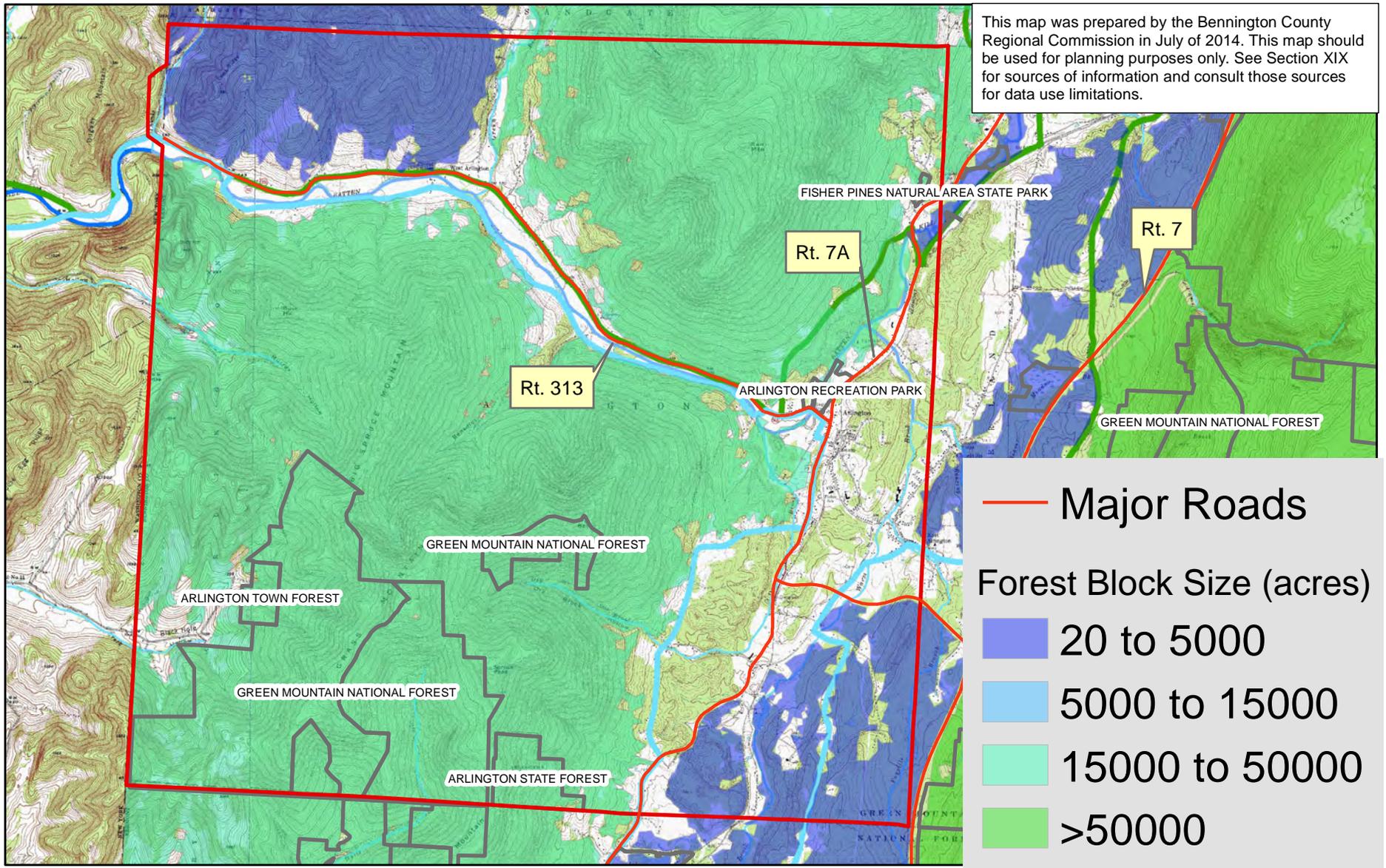
#### 7.10 Forest Lands

Approximately 85% of Arlington is forested (Map 4), particularly in the higher elevations but also throughout the valley. These forests help to prevent soil erosion and flooding, contribute to air and water quality, and provide valuable timber, wildlife, recreational, and aesthetic resources. A number of woodland owners in Town also have active and successful maple sugaring operations. Fortunately, since much of the Town's forest land is located in rugged mountainous areas, relatively little has been lost to development. In fact, with the decline in agricultural land use over the past several decades, the amount of forested land has actually increased. Nonetheless, preservation of this resource, and the public's ability to enjoy its many benefits, is of great importance to the Town. Both the Vermont Agency of Natural Resources (Vermont ANR 2010) and the Bennington County Regional Commission (BCRC 2012) have completed plans for forest conservation. These plans identify the key resources, threats, and strategies to protect forest resources.

The Bennington County Regional Commission worked with Arlington, Glastenbury, Sandgate, Shaftsbury and Sunderland to complete a community wildfire protection plan for those towns. That plan identified actions to help owners protect their properties from wildfire, to work with the Arlington Fire Department and the U.S. Forest Service on fuel reduction projects, and to develop new water sources.

Map 13 shows habitat blocks mapped by the Vermont Agency of Natural Resources and wildlife crossing values. These blocks are primarily forested, but may include wetlands and other natural community types. Many species such as Neotropical migrating warblers, bobcat, and black bear need large, unfragmented habitat. The major barriers to their movement are roads, in particular, Routes 7A, 313 and US 7. In Arlington, Route 313 is the boundary of a forest matrix block identified by

# Map 13. Arlington Forest Resources



the Nature Conservancy as the southern boundary that encompasses Mt. Equinox, a highly diverse forested area due to calcareous bedrock and soils.

#### 7.11 Forest Lands Policies and Actions

Forest Policy: Large unfragmented forests should remain intact to protect habitat for species dependent on that habitat, to slow and retain runoff, to protect water and air quality, to provide sustainable forest uses such as timbering and maple sugaring and to provide recreational and scenic resources.

##### Forest Actions:

1. Landowners should be encouraged to participate in Vermont's Use Value Program which levies taxes based on the property's use for agricultural rather than development purposes. .
2. Landowners should be encouraged to develop management plans for their forest lands to allow for forestry operations while minimizing forest fragmentation.
3. The Planning Commission should encourage creative- development techniques such as transferable development rights and cluster subdivision to preserve agricultural land as part of the land development process. Both of these techniques allow developers to build greater densities in appropriate areas provided that important open lands are preserved.
4. Developments on forested lands shall be planned so as to conserve, to the extent possible, the viability, or potential viability, of the site for forest values, including wildlife and rare and unique natural communities.
5. The Town should carefully assess public investments in roads and other infrastructure to ensure that they do not promote the deleterious development of important agricultural areas.
6. Extractive forestry operations shall take all measures necessary to minimize soil erosion, impacts on streams, and changes to the natural appearance of mountain or ridge tops. Operations should be planned and implemented to foster regeneration of native tree, shrub and herbaceous species and to avoid disturbance to the upper organic soil layers.
7. The Planning Commission should periodically review studies on forest resources (Vermont ANR 2010, BCRC 2012) to identify strategies to conserve and appropriately manage forest resources.
8. The Town should work with property owners, the Arlington Fire Department, the U.S. Forest Service and BCRC to implement fuel reduction and water supply enhancements listed in the community wildfire protection plan.

Many of the preservation strategies for agricultural lands are equally applicable to forest lands. Most of the Town's upland forests are presently zoned to permit only forestry, recreation, and other uses that will preserve the resource; this zoning designation is proper and should be maintained. A regional forest land evaluation and site assessment (FLESA) developed by the BCRC provides some useful information that can be used to help planning for Arlington's forest resources.

### 7.12 Earth Resources

The extraction of earth resources is not presently a major economic activity in Arlington. A number of small gravel mining operations exist. The Zoning Bylaw contains special regulations designed to minimize the environmental impacts of earth products removal, and to assure restoration of the site once work is completed.

Earth Resources Policy: The extraction and processing of earth resources and the disposal of wastes must not have an unduly harmful impact upon the environment or surrounding land uses and development. An extremely high level of scrutiny must be exercised over any operation proposing to extract earth resources from a stream bed.

#### Earth Resources Actions:

1. Upon completion of the extracting or processing operation, the site should be restored, as required by the Zoning Bylaw, and left in a condition suited for an approved alternative use or development.
2. Amend the Zoning Bylaw to require the posting of a surety bond by applicants for earth products extraction permits to ensure proper and timely site restoration.

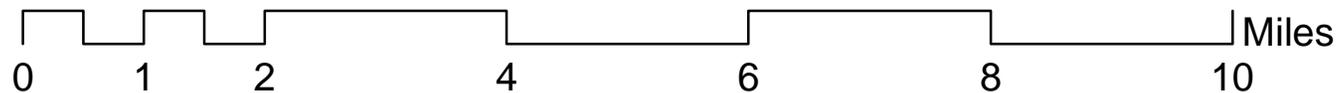
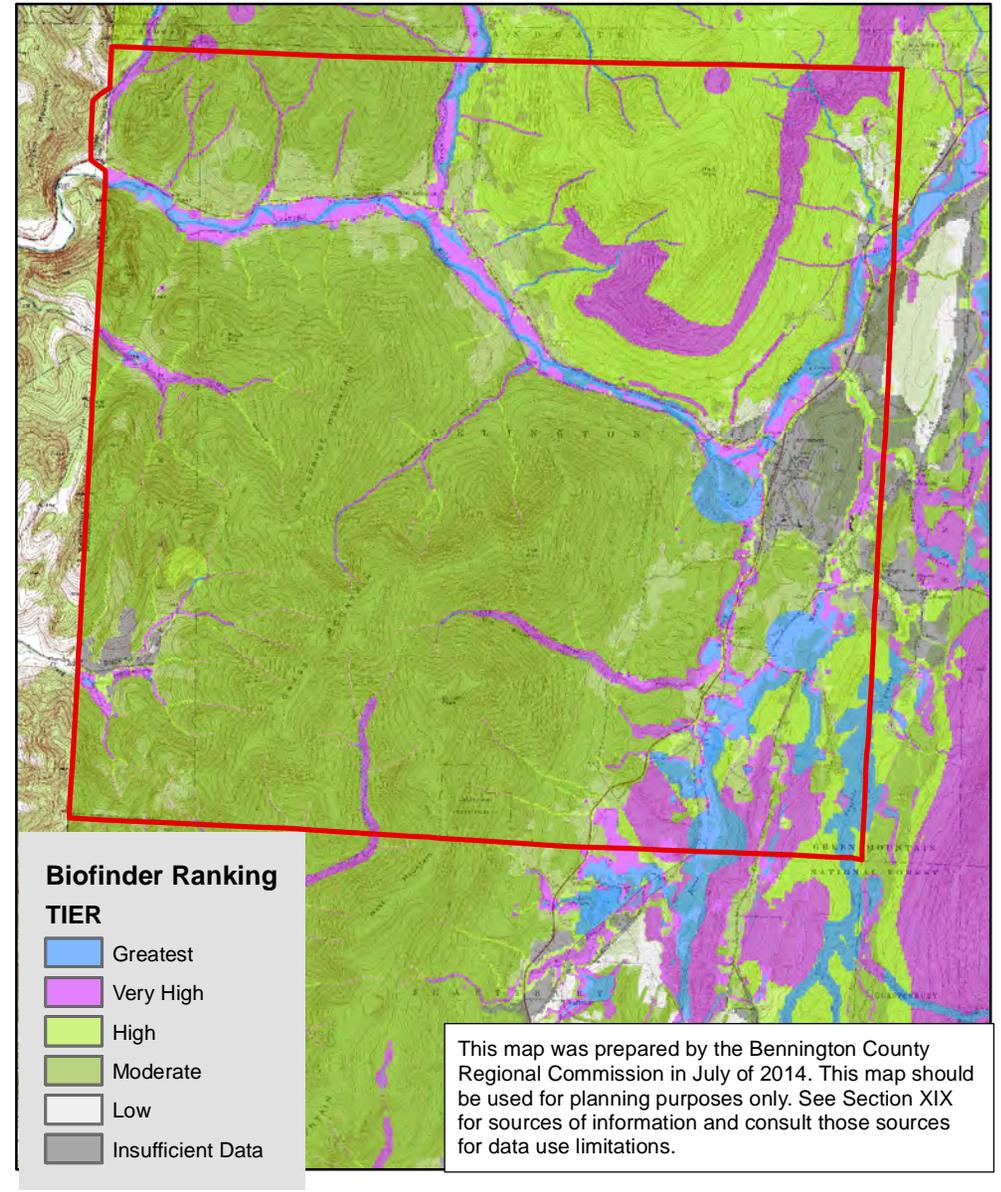
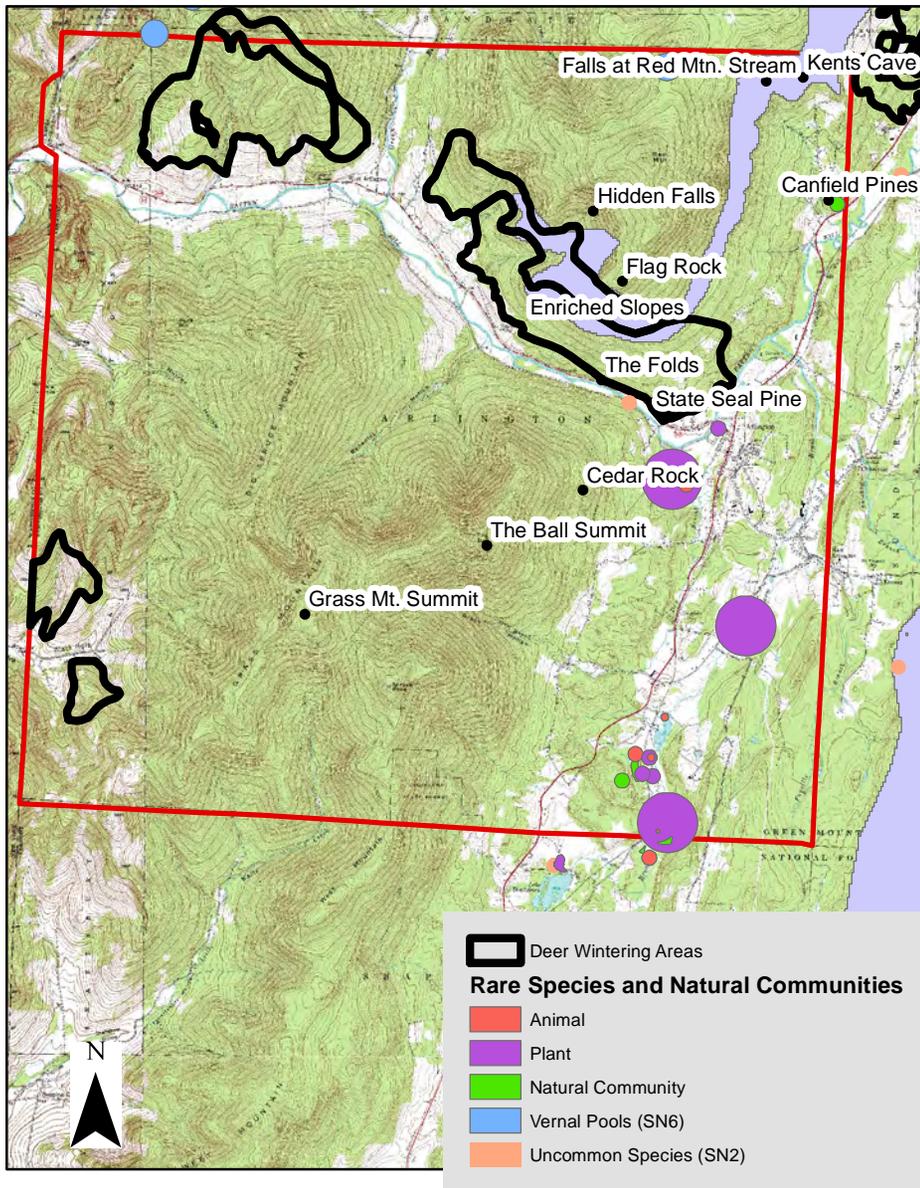
### 7.13 Important Natural Areas

Arlington contains a number of important natural features that warrant special protection. Map 14 shows the various natural features described below. It also shows the “tiers” used by VT ANR to rank areas for biodiversity value. By overlaying natural features with biodiversity value, the more that exist in a given area, the higher the score or tier. In Arlington, the highest tiers occur for streams and wetlands, rare species and natural communities and the enriched slopes north of Route 313.

#### 1. Rare and Uncommon Species and Natural Communities

- a. **Rare Species:** These are plants or animals at the edge of their geographic ranges, that occur in specialized habitats or that have experienced a loss of habitat. There are generally 20 or fewer populations of these species across Vermont.
- b. **Uncommon Species:** Uncommon species are those identified by the Natural Heritage Inventory of the Vermont Fish and Wildlife Department as facing moderate risk of extinction or extirpation due to restricted range, relatively few populations or occurrences or having experienced recent declines. There are generally 20 to 80 populations across Vermont.
- c. **Rare Natural Communities:** A natural community is an assemblage of plants and animals, their physical environment and the natural processes that affect and maintain them. Rare natural communities, like rare species, have restricted ranges due to unique habitat requirements (e.g., geological features) or have been reduced due to habitat loss and fragmentation. There are generally less than 20 occurrences in Vermont of these communities.
- d. **Uncommon Natural Communities** generally occur more frequently than rare natural communities and may contain rare species populations.

# Map 14. Arlington Natural Features



- e. **Rare Physical Landscapes:** These are geophysical features that may support rare or unique natural communities and rare species. They may have soil physical or chemical characteristics different from the surrounding area. In Arlington, the “enriched slopes” north of Route 313 are areas underlain by calcareous bedrock.
2. **Natural Areas:** Arlington has several natural areas including:
    - a. **Canfield Pines:** An exceptional stand of old-growth white pine, even-aged with diameters mostly 30-40 inches diameter at breast height, and average heights of 150 feet. The age of the stand has been estimated at 250 years.
    - b. **Kent's Cave:** A solution cave extending westward approximately 230 feet and averaging eight feet in height and width, but varying to larger rooms and narrower passages. Near the western end of the cave a dome chamber extends upward about 65 feet. A stream flows along and beneath the main passage.
    - c. **Falls on Red Mountain Stream:** Several falls ranging to eight feet in height adjacent to rock cliffs located in an interesting mixed oak-hickory stand.
    - d. **Hidden Falls:** A waterfall nearly 40 feet high within a three-sided cliff on an unnamed brook.
    - e. **Folds in rock strata:** Strong, nearly recumbent folds in the Bascom Beldens formation of marble-dolomite-phyllite exposed on the face of a highway cut.
    - f. **Site of the State Seal Pine:** This tree, destroyed in a violent storm on May 9, 1978, was possibly the largest white pine in the county. The tree supposedly inspired the designer of the Vermont State Seal, which shows a large pine tree in the center. A portion of the tree was made into a large table which sits in the Arlington Town Hall as a commemorative.
    - g. **Cedar Rock:** This exposed ledge is a popular destination for day-hikers and offers outstanding views of the Town of Arlington and the Green Mountains to the east.
    - h. **Flag Rock:** A dramatic rock ledge on the south face of Red Mountain.
  3. **Wildlife Habitat:** Deer wintering areas and black bear habitat are two wildlife habitat areas protected under Act 250.
    - a. **Deer Wintering Areas.** These areas are crucial to the survival of deer herds in the region as they provide shelter and browse for deer during winter months.
    - b. **Bear Travel Corridors:** Black Bears are wide ranging animals and use the habitat blocks shown in Maps 13 and 14.

\* The above list represents an inventory of important natural areas in Arlington, but is not necessarily inclusive of all such areas.

7.14 Important Natural Areas Policies and Actions:

Natural Areas Policy: Natural features and areas should be protected so as to maintain the habitat of the rare species and natural communities, including ecological processes, and to maintain the unique areas or physical features of Arlington.

Natural Areas Actions:

1. An activity or development in the vicinity of an important natural area must be carefully planned so that adverse impacts are avoided.
2. Public access to important natural areas should be maintained whenever possible; however, rare plant habitats and other fragile ecological areas need to be protected from human disturbance.