

Appendix E. Detailed Inventory of Unique and Critical Resources

Introduction and Purpose

This Comprehensive Plan is established to help the Town of Sharon reach its community goals. These goals were based on community input that established a consensus on what the desired future should be. The goals articulate resident's desire for neighborhood scale building, continuation of agriculture, a mix of residential and small business development, and re-establishment of the area as a tourist destination. Residents feel that there should be appropriate commercial development, but only when located in existing commercial locations and around the Village of Sharon Springs. Sharon residents do not want industrial, heavy industry, large scale manufacturing, high density residential, large business or commercial uses, landfills, and mobile home park land uses¹.

Public input also establishes that long-term protection of vistas and scenic overlooks, water quality and quantity, open spaces, steep slopes, floodplains, wetlands, and the many natural features that contribute to the environment and character of Sharon is desired.

The Town's goals are:

- Goal 1: Protect and maintain the rural character and small town atmosphere of the Town of Sharon while promoting appropriate economic development.
- Goal 2: Improve pedestrian and traffic safety.
- Goal 3: Protect the quality of surface and groundwater supplies, protect the integrity of mapped floodplains, preserve the integrity of unique physical environments and preserve wildlife habitats.
- Goal 4: Secure safety from all hazards in Sharon.

Since the Plan was adopted in 2009, new concerns have arisen over potential industrial and heavy industrial activities that could take place in Sharon that could threaten the vision and ability of the Town to reach its community goals. To address these concerns, the Town reviewed the Comprehensive Plan for guidance and determined that additional information was needed on specific natural and cultural resources of importance in Sharon. The Town Board determined that additional information was needed to more fully document and locate important and sensitive environmental resources.

This Appendix contains an updated, detailed profile and inventory of Sharon's resources. It is intended to augment and be part of the full adopted 2009 Comprehensive Plan. Although pages 9 through 11 of Part I contains generalized descriptions of these resources in the Town, this Appendix provides maps, detailed descriptions, and analysis of environmental resources considered to be essential to the health and welfare of its residents and landowners.

¹ See Part II of the Comprehensive Plan for survey and public input results.

Resources determined to be critical in Sharon include the following:

- A. **Hydrological Resources:** streams and stream corridors, surface water bodies, wetlands and hydric soils, floodplains, unconsolidated aquifers, and the limestone (Karst) bedrock found throughout the Town of Sharon.
- B. **Land Resources:** slope, topography, and soils.
- C. **Ecological Resources:** unique natural areas and natural heritage sites, species and habitats of importance.
- D. **Agricultural, Historical and Scenic Resources:** agricultural areas, scenic areas, and archaeological resources.

Each one of these resources contributes to the Town of Sharon in a unique way, and are described and analyzed below.

A. Hydrological Resources

Summary

Role of Resource: The Town of Sharon recognizes that most ecological and economic systems (such as provision of drinking water, recreation, wildlife habitats, and future economic growth of tourism and small business) are all dependent on adequate sources and quality of water. Agriculture and recreation are also dependent on high quality water sources. Wetland ecosystems and streams (along with associated floodplains and stream corridors) are important habitats, and work to remove and recycle nutrients and sediments, filter impurities, and store water to reduce flood damage and feed groundwater aquifers. In Sharon, groundwater aquifers are the source of drinking water for all residents outside the Village of Sharon Springs. The Village of Sharon Springs depends on surface waters flowing to the Engelville Pond for drinking water. Groundwater's importance cannot be overstated. High quality water sources are critical to achieve goals 1 and 3.

Reference Maps: Streams and Water bodies, Watersheds, Wetlands/Hydric Soils, Floodplain, Unconsolidated Aquifers, Karst

Threats: Certain land use activities can adversely affect the health of water bodies, impairing their current and potential economic and environmental functions. Threats to local surface water include both point source pollution and nonpoint source pollution (originating from construction, agriculture, parking lot and street runoff, stormwater runoff, on-site wastewater systems, and commercial, industrial, and residential activities). Increases in impervious surfaces in watersheds prevent the natural recharge of groundwater. Building in floodplains and removal of stream side vegetation results in loss of habitat and increased risk of erosion and flooding. Groundwater resources can be impaired by surface pollution as well as by water withdrawals. Groundwater resources are especially vulnerable in the limestone (Karst) areas of the Town of Sharon due to the porous nature of the rock. Other threats include

broken connections between wetlands and surrounding uplands, draining and filling wetlands. Water diversions and excessive removal of groundwater disrupts the natural flow of water in streams.

Streams and Watersheds:

A watershed is the land area that contributes water to a given point, such as a stream or lake. Contributing sources of water for a watershed include (but are not limited to) springs, streams, seeps, ditches, culverts, marshes, wetlands, swamps, and ponds. Eventually, all surface water, some groundwater resources, and precipitation falling within a watershed, drain into a single receiving water body such as a stream, river, lake, or wetland. Within a watershed, land uses and water quality and quantity are directly related. Land use is often controlled by the availability of reliable water supplies. Conversely, the single most important determinant of the quality, quantity, and availability of local water resources is land use.

Several significant ponds exist in the Town of Sharon. These are Engleville Pond, Bowmakers Pond and Clausen's Pond. Engleville is significant because it is the source of public water for the Village of Sharon Springs. Bowmakers Pond is not only an important and highly valued recreation location (picnics and fishing, especially), but is also an integral part of the flood control system for the Village of Sharon Springs. Clausen's Pond is privately owned, but it is connected hydrologically to Bowmakers Pond.

Streams in Sharon are all part of headwaters draining to either the Mohawk River (Canajoharie Creek) or Schoharie Creek systems. All streams ultimately drain into and are included in the Upper Hudson River Basin Watershed. The Mohawk River watershed includes the Canajoharie Creek in the northwestern corner of the Town, Brimstone Creek, which is immediately north of the Village of Sharon Springs and Flat Creek flowing north through the hamlet of Sharon. In the Schoharie Watershed, West Creek and its tributaries drain the south western portion of the Town as it runs southward toward Cobleskill. Brimstone Creek is spring fed and is the largest tributary to Canajoharie Creek. The headwaters of Brimstone Creek is at the Old Maids Hole near the intersection of NYS Route 10 and 20.

In Sharon, streams are all regulated by DEC and almost all are classified as "Class C" fresh surface waters. The best usage of Class C waters is fishing. These waters are suitable for fish propagation and survival. The water quality of these streams shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes. Erosion, sedimentation, compaction, introduction of chemicals and excess nutrients, and removal of streamside vegetation are activities that can impair streams. There are two tributaries that are designated as a Class A stream (suitable for drinking water) and these are located near Engleville Pond. As per NYS Title 6, Chapter X, Part 701, the discharge of sewage, industrial waste or other wastes shall not cause impairment of the best usages of the stream.

Portions of West Creek (lower tributaries), Canajoharie Creek, and Flat Creek in Sharon are listed on the NYS DEC List of Impaired Waters as having minor impacts and indicates that "aquatic life is suspected of being stressed" due to excess nutrients and agriculture. West and Flat creeks have minor impacts due to excess nutrients from non-point sources such as agriculture. West Creek has minor impacts due to silt and sedimentation. Parts of the

Canajoharie Creek are also listed as having minor impacts due to silt and sedimentation. Brimstone Creek, and Clausen/Bowmaker Ponds are un-assessed by the DEC. Engleville Pond is also considered a Priority Water Body (See discussion under 'Public Water Supplies').

Wetlands:

According to the New York State Department of Environmental Conservation (DEC), "Freshwater wetlands are those areas of land and water that support a preponderance of characteristic wetlands plants that out-compete upland plants because of the presence of wetlands hydrology (such as prolonged flooding) or hydric (wet) soils. Freshwater wetlands commonly include marshes, swamps, bogs, and fens." Wetlands such as swamps and marshes are often easily recognizable, but some wetlands, such as forested wetlands and wet meadows, are not obvious because they are dry during part of the year.

Wetlands are a critical component of natural ecosystems and provide a variety of benefits such as:

- filtering harmful toxins, nutrients, and sediment from surface and stormwater runoff;
- storing floodwaters and reducing the magnitude of flood events; and
- providing valuable habitat for a diverse array of flora and fauna, including many rare, threatened, or endangered species.

Wetlands are also associated with recreational uses such as bird watching, hunting, and fishing, all of which provide direct economic benefits to the Town.

There are 987.1 acres of regulated wetland in the Town of Sharon. Most of the wetlands are found associated with streams and are part of designated floodplain areas.

Wetlands are found throughout the Town and often associated streams, especially with West Creek, Flat Creek and the Bear Swamp area. There are fewer wetlands associated with the Canajoharie and Brimstone Creeks in the northwestern corner of the Town of Sharon.

Floodplains and Riparian Areas:

Floodplains are areas mapped by the Federal Emergency Management Agency (FEMA) and are those lands vulnerable to flooding. Flood events are part of natural hydrological and seasonal cycles.

In Sharon, designated floodplains can be found along Brimstone Creek in the Village of Sharon Springs and along significant stretches of the West Creek and its tributaries. Few of the other streams in the Town have designated floodplains although the Staleyville area along Brimstone Creek experiences flooding frequently.

Together, floodplains, wetlands, stream banks and lands directly adjoining streams make up the stream corridor, or "riparian area". These are important habitats in Sharon, and are often critical wildlife travel corridors, natural links between different habitat types, and intricately tied to the ecological health of the stream itself. These areas have high species diversity and biological productivity. Most fish and wildlife depend on riparian areas in one way or another for their survival, and loss of riparian habitat has been associated with dramatic declines of fish and wildlife populations.

When Hurricane Irene and Tropical Storm Lee ravished through the area late-August and early-September 2011, the Town of Sharon suffered a lot of damage. Many cellars were flooded and as a result, there was damage to buildings, both water and structural damage. Many roads and bridges were also damaged and closed temporarily due to heavy rainfall and flooding. Streams and creeks were flooded and filled with runoff and debris. The storm raised havoc on both public and private property as well as the environment all through Schoharie County and the surrounding counties.

The majority of roads, culverts, and bridges in the Town of Sharon were damaged and undermined and required fill and gravel brought in for repairs. Road surfaces were all affected. Once water gets under the pavement, the sub-base is soft and it takes a long time to drain and dry. Increased traffic and heavy vehicles on these soft pavements would cause additional damage.

Heavy rain eroded slopes and creek beds. Streams and creeks needed to be cleaned out to avoid future flooding and to avoid additional problems downstream. This was especially true in five locations: Bowmakers Pond dam at north outlet, Brimstone Creek in the lower Village on Route 10 (Main Street), Brimstone Creek in the Staleyville area on Route 10 (north), stream on Short Road off State Route 145 in Sharon Hill and the stream on Mill Pond Road, off Engleville Road.

The result of this devastation is that the environment in the entire town is fragile and will probably remain so for the next several years. Plant life and ground cover along the creek beds and streams need time to recover before the natural surroundings are once again healthy.

Public Water Supplies:

The Village public water supply system relies upon a pair of springs located approximately 3 miles southwest of the Village center. The springs are actually in the adjacent Town of Roseboom in Otsego County. The springs feed a surface reservoir (Engleville Pond), with a reported capacity of 3 MG. Engleville Pond is considered a Class A waterbody (suitable for drinking water) by New York State. Water from the reservoir flows by gravity to the Village's water treatment plant and pumping station located along side of NYS Route 10. The Village uses a deep well located near the water plant as a backup source of water. The well is available for fire protection as well. The water treatment plant, built in 1915, contains three pressure filters and provides chlorination. The Engleville Pond watershed continues out of the Town of Sharon into Roseboom (see map).

The NYS DEC monitors water quality in Engleville Pond, and in its most recent assessment has included the pond on the state list of Impaired Water bodies. Engleville Pond is listed as "an impaired segment" with recreation known to be impaired, aesthetics possibly stressed, and water supply suspected of being threatened by algal/weed growth. Excess nutrients from runoff is considered the likely cause. Some, but not all of the Engleville Pond Watershed is in the OS zoning district.

There are several non-community water systems permitted by the New York State Department of Health. These are water systems associated with individual businesses such as hotels and restaurants. Other than the public water supply serving the Village of Sharon Springs, there are

no other community water supplies in the Town. Some Village residents and all Town residents outside of the Village rely upon groundwater wells for drinking water.

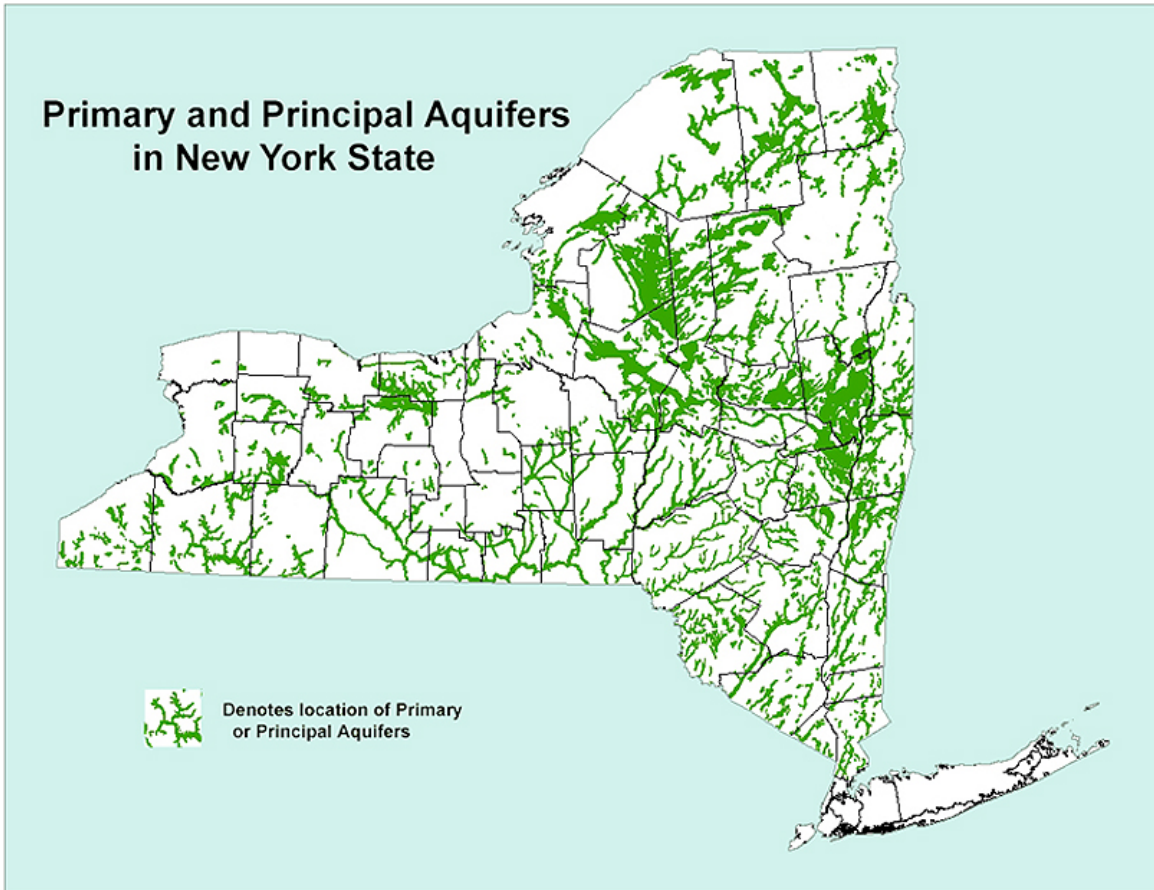
Aquifers:

Aquifers are geologic formations beneath the Earth's surface that store and yield usable amounts of groundwater. Aquifers in Sharon are called 'unconfined'. This means that the water is contained in the tiny spaces of unconsolidated materials such as sand and gravel. All town residents and businesses outside of the Village rely on wells placed in these unconsolidated aquifers for drinking water.

The land area that contributes to this infiltration is called a recharge area. Location, size, capacity, depth, and flow characteristics of an aquifer are directly related to the geology and hydrology of the particular aquifer and its recharge area. Aquifers can be replenished by the infiltration of rain, snowmelt and surface water runoff through the soil. Surface water sources in streams also intermix with groundwater, especially when water levels are low. Aquifers are also a major contributor to the total annual flow of water to local streams and creeks.

Principal Aquifers in Sharon:

New York State has classified and mapped both primary and principal aquifers. New York State defines principal aquifers as "aquifers known to be highly productive or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time". In Sharon, there are no primary aquifers, but there are principal aquifers (see map and box below). The principal aquifer is associated with West Creek.



The difference between a principal and primary aquifer is discussed in the New York State DEC Technical and Operational Guidance Document 2.1.3 of October 23, 1990. In particular, the Technical and Operational Guidance Document states “In regard to the ability to yield water to wells, there is intended to be no difference between a Primary Water Supply Aquifer and a Principal Aquifer. The only difference is that one is used intensively now, and the other is not. The Principal Aquifers are, in effect, the potential Primary Water Supply Aquifers of the future. Water supplies in the principal aquifer in the Town of Sharon could prove to be an important future water source for the Town residents.

The NYS DEC Unconsolidated Aquifer map (at a scale of 1:250,000) shows the general location of known unconsolidated aquifers in Sharon. It is important to note that generally groundwater can be obtained in any location. This map represents general areas, and any well yield must be determined on a site-by-site basis.

The area shown in green on the map above represents unconfined aquifers consisting of coarse, granular materials, and these typically yield 10 to 100 gallons per minute. This area has the highest potential for water and is south of Route 20, in the West Creek watershed. Areas on the map marked as a “G” are sand and gravel areas of unknown thickness and have lower yields. Areas marked as “L” are lacustrine areas associated with streams and have fine to medium sand deposits that probably yield less than 10 gallons per minute. Because of the geology of the area, different places in Sharon have different well yields.

Since January 2000, NYS DEC has required water well logs to be filed. Twelve logs have been filed for the Town of Sharon in that time. Well depths from these 12 records range from 93 feet to 302 feet with an average depth of 187 feet. Rock depth ranges from 6 feet to 222 feet, with an average of 67 feet, and water yields range from 4 gallons per minute to 60 gallons per minute (GPM). The average yield is 15 GPM, but of the 12, six have yields less than 10 GPM. The best yields came from areas along Gilberts Corners Road, Goodrich Road, Parsons Road, Rosenberg Road, and along State Route 10 - all locations near, or within the higher yield area of the principal aquifer shown on the unconsolidated aquifer map.

Karst/Limestone:

Groundwater in unconsolidated aquifers is not the only geological resource of importance in Sharon however. A significant part of the Town is dominated by limestone bedrock. Limestone rock can be easily eroded due to acid conditions and a complex system of cracks, crevices, conduits, tunnels or caves can form. (See also description of the Karst/Limestone in Section B of this Appendix.)

“Karst” is a term used to describe topography that has developed as the result of the dissolving action of water on soluble rocks such as limestone. Common characteristics of karst include pits, sinkholes, sinking streams, springs, caves, and complex subsurface drainage systems.

Different layers of bedrock have different hydrogeologic (water) characteristics. Some rock layers are not important aquifers (Brayman Shale and Cobleskill Limestone). Others are important because springs, so important to the Town of Sharon, form where rock layers contact overlying limestone. The contact between the Brayman Shale and Cobleskill Limestone is critical to the springs in Sharon. The Manlius and Coeymans limestones have many typical karst features such as enlarged conduits, joints, cracks, fissures, and sinkholes. The Becraft Limestone is the layer where major caves form and water is readily transmitted through large joints and channels. The next layers – Schoharie, Carlisle, Esopus and Oriskany Sandstone are not considered important aquifers but can have moderate yields of water averaging about 8 gallons per minute. The Onondaga Limestone contains water in large cracks and has the highest water yields.

Limestone geology means that surface land uses highly influence groundwater supplies and quality. Passageways through the limestone allow surface water to flow rapidly to the aquifer, often unfiltered by soils. Water flowing through a limestone system often has no ability to be filtered and purified by soils and thus surface water can be quickly diverted into underground routes. Risks to both drinking water supplies in the area as well as to the springs in the Village come from a broader, but still undefined, region. Risks include, but are not limited to pollution from road salt, spills, leaking underground tanks, sewage or animal wastes, industrial uses, and agriculture as well as from changes to surface/underground water flows from private or public water usage.

As a result, many serious groundwater contamination problems have developed in karst terrains in the United States due to poor planning. Chemical contamination of a karst aquifer is particularly serious not only because polluted water can easily enter wells used for drinking water, but also because certain chemicals can be absorbed into the limestone and continue to

contaminate water supplies for years. Gas and other fuels that enter karst systems can produce fumes, which have been known to enter homes where they can be a health and fire hazard.

Infiltration of contaminants is more likely to occur where little or no soil exists above the limestone, or where the soil is highly porous. Karst terrains are not suitable for hazardous waste sites, landfills, salt piles, uses with large sewage or waste streams, or for the storage, use, or disposal of other potentially harmful wastes that could be rapidly transported long distances underground. In the Town of Sharon, the karst terrain and rock formations, especially near Leesville on the east side of the hamlet, are a common attraction to students and visitors interested in geological study.

Because Town residents depend on aquifers, Sharon must carefully plan for appropriate land uses that could adversely impact water supplies. Aquifers can be negatively impacted in many ways. Because aquifers are replenished by the infiltration of surface water, impervious surfaces (pavement from roads or parking lots, roofs, building footprints, etc.) decrease recharge areas and threaten aquifers by stopping infiltration of precipitation and surface water through the soil.

Further, any contaminant contained in or near an aquifer, and/or its recharge area may potentially contaminate the aquifer. Potential contaminants include bacteria and pathogens leaching from septic systems; gas, salt and oil washed from parking lots; fertilizers; pesticides; hazardous or toxic waste spills; and petroleum or oil leaking from underground storage tanks.

Other threats to groundwater include water withdrawal at unsustainable rates. When water is withdrawn at a rate faster than it is recharged, the aquifer can be depleted. Generally, this occurs when too many wells withdraw water from an aquifer.

Once degraded, an aquifer can become unusable, and oftentimes remediation is not technologically or economically feasible. Moreover, because of groundwater and surface water interactions, contamination in an aquifer may eventually contaminate surface water as well².

Hydric (Wet) Soils:

Hydric, or wet soils are part of the hydrologic system in Sharon. Some wet areas are not delineated as wetlands. Some of these areas may have been wetlands drained for agricultural use. Others may be small seeps and vernal pools found in woodlands. Many wet soils are associated with streams and floodplain areas in Sharon, as shown on the map. These areas, although often small in area, play large roles in contributing to the ecology and natural functioning of streams. Smaller, isolated pockets of wet soils or partially wet soils can be seen across the Town. Some of

² An example of the surface/underground connection in Sharon is the Old Maids Hole. This is a natural drainage channel that carries water from Bowmaker Pond and Clausen Pond and the area on that side of the Village to a cavern opening in the limestone rock. It is a karst sink hole. This is connected to a large spring that exits on the hill behind the old Village Hall/Library. The sink hole is located just off of Route 20 near the Village boundary. Old Maids Hole is an important drainage area from a 1.42 acre watershed in and around the upper village. Land uses highly influence the water that enters the ground. This is exemplified by the 2001 clean-out of Old Maids Hole that included debris consisting of tires, bottles, logs, and household debris. Another suspected sinkhole is located just north out of the Village on Beechwood Road. On Route 10 there is a spring exiting a vertical face of a cliff. It is covered with tufa, a secondary deposit of calcite. There are huge sinks to the west of the Village near the cemetery in Leesville. The destination of flow from these sinks are unknown, although they may flow to Old Maids Hole.

these areas may be classified as a wetland by the US Army Corps of Engineers and thus regulated under Section 404 of the Clean Water Act. Others may be “seeps”. When located in woodland areas, these seeps are often called “vernal pools” and are critical habitats for breeding amphibians.

Water Sources for the Mineral Springs in the Village of Sharon Springs:

The mineral springs in the Village of Sharon Springs are of critical importance to the history, culture and economy of the Village and entire region. The area’s historic economy was based on tourism associated with the springs. As established in this Comprehensive Plan, the community desires to revitalize the area through promotion of the area as a new tourist destination. Tourism and associated businesses is viewed as a primary economic development activity for the region. This revitalization strategy depends upon the mineral springs as a tourist attraction.

In order to attain that strategy, the spa waters in the Village need to be maintained and protected. Long-term protection will require protecting the hydrologic system that provides water to the springs. This protection must address both water quality and quantity. It is not possible to adequately protect these resources without full knowledge of their recharge locations and how much land use influences quality and quantity of water.

However, in many cases, that system is not fully understood. Because it is felt that some of the recharge areas come from outside the Village and the Town of Sharon, efforts at water protection here will need to be an inter-municipal effort. Although the source of water for the springs is not fully identified, some information is known.

A recent water chemistry study by SUNY Cobleskill³ evaluated potential water sources for the Bluestone (Eyewash) and Sulphur Spring. That study concluded that Brimstone Creek’s main aquifer source runs through a limestone base – thus confirming the importance of the limestone aquifers in and around the Village. Bluestone and Sulphur Springs show signs of magnesium and calcium ion concentrations consistent with exposure of the water to Rondout Dolomite formations. The Sulphur Spring water source shows signs of deeper bedrock penetration, with low dissolved oxygen, sulfur-reducing bacteria and hydrogen sulfide gas – all consistent with percolation of the water through iron-rich shale formations. The study shows that both Bluestone and Sulfur springs have water sources that travel through the Coeymans and Manlius limestones but it is not known whether a diffuse, or specific location is the ultimate source of water.

According to geologist Tom Engle⁴, it is likely that water sources of the Village springs originate from outside the Town. It is also undocumented how land uses influence water quality in the springs, and what hydrological connections there are between the Springs in the Village and elsewhere. Additional studies need to be done to establish connections and identify recharge areas in order to protect the mineral springs long-term.

3 From: Characterizing the Chemistry of Three Water Sources in Sharon Springs, New York: A Look into the Complex Stratigraphy of the Region, a study by SUNY Cobleskill.

4 Interviewed by Town consultant Nan Stolzenburg in October 2011.

B. Land Resources

Role of Resource: The Town recognizes the role soils and topography play in Sharon. Since agriculture is a significant land use and economic activity in the Town, soils that support profitable farming are critical to preserve. Prime soils are those that allow farmers to get the highest yields with the least amount of expense for fertilizers and soil preparation. Protection of prime farmland soils is key to the long-term health of agriculture in Sharon.

Topography and slope are also very important to Sharon because they are a significant part of the landscape and thus important to defining the character of the Town. Land use in areas with limestone bedrock must be carefully planned due to surface risks to groundwater and subsidence of land. Many of the remaining woodlands in Sharon are located in areas having steep slope so these lands are critical to the biodiversity and environmental health of the Town.

Protection of agriculture and steep slopes is critical to achieve goals 1 and 3. Reducing risks related to subsidence is related to protecting health and safety goals of Goal 4.

Reference Maps: Steep Slopes, Soils (Included already in Adopted Comprehensive Plan), Agricultural Uses (Included already in Adopted Comprehensive Plan), Prime Soils

Threats: Loss of prime farmland soils can adversely affect the ability to maintain profitable farming in Sharon. Farming on less suitable soils also means use of additional fertilizers which could lead to water quality issues. Development on steep slopes increases the risk of erosion, and can adversely impact the visual character of the Town. Due to the presence of limestone bedrock there is a risk related to subsidence. Since many of the remaining forest patches in the Town are found in areas with steep slopes, disruption of steep slopes also results in further loss of forest habitats.

Steep Slopes:

Information provided below is offered in addition to the description of topography found on page 9 of Part I. Steep slopes over 15% can be found throughout the town, but are more highly concentrated to the west of State Route 10. The largest concentrations of slopes over 25% are found in the forested areas surrounding Engleville Pond. Many of the remaining forested patches in Sharon are where there are slopes greater than 15%. The majority of the OS zoning district (Open Space) are steep slope/forested areas.

Prime Farmland Soils:

Food is produced on prime farmland more efficiently and with less soil erosion, resulting in less pollution from sediment, nutrients and pesticides. When prime land is lost, it not only takes more non-prime land to produce the same amount of food, but also results in lower returns per unit of production input. This means either higher prices or fewer products to sell. Loss of agricultural land to development, by and large, is irreversible. The inflexibility of developed land uses makes it impractical, if not impossible, to bring farmland back into production again.

Large concentrations of prime farmland soils exist in the Town of Sharon. Most occur in the

northwest corner of Town east of Route 10 and north of Route 20, in the central part of Town north of Route 20 in the Gilberts Corners Road area, and south of Route 20 between Parsons Road and Slate Hill Road. While not all prime farmland soils are currently being farmed, the majority of active farms in the Town have significant areas of prime farmland soils. These farmlands contribute not only to the local and regional food supply, but are also important open spaces and wildlife habitats. Sharon’s farmscape is a critical aesthetic resource and is highly valued as part of the Town’s community character.

Limestone/Karst:

The bedrock geology of the area is illustrated below. A large portion of the Town’s bedrock is dominated by limestone. The rock layers (listed from occurrence at the surface to lower bedrock layers) are: Marcellus Shale formations, Onondaga Limestone formations, Carlisle/Esopus/Oriskany siltstone and sandstones, Becraft/New Scotland/Kalkberg/Coeymans limestones, Rondout formation, Brayman Shale, Frankfort/Schenectady formation sandstones, and Utica Shale, at the lowest layer. Only a relatively small amount of Marcellus Shale can be found in the Town: near Engleville Pond and in the Parsons Road/Beech Road, Slate Hill Road area (see illustration below). The Marcellus Shale is above the Onondaga limestone formations. The Utica Shale lies below the Onondaga limestone formations.

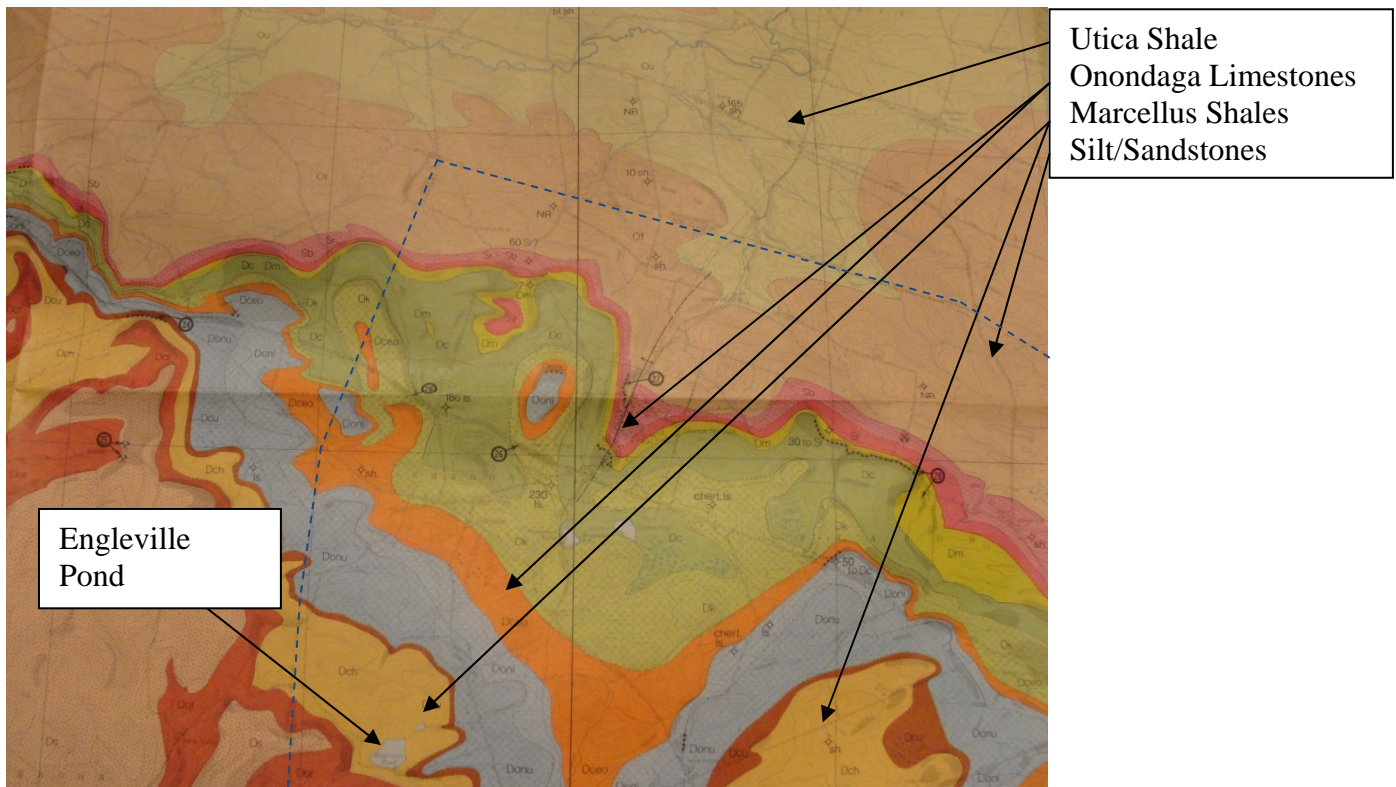


Figure 1: From ‘Bedrock Geology of the Central Mohawk Valley’, 1980 published by NYS Geological Survey

Where the Onondaga limestone is at the surface of the land, it ‘karstifies’. That means that it can become porous and develop cracks, crevices, and caves. Where the Onondaga is below the surface, these features do not develop.

Because of the porous nature of limestone, there is also some risk related to ‘subsidence’ or collapse. The New York State 2008 Hazard Mitigation Plan defines land subsidence as:

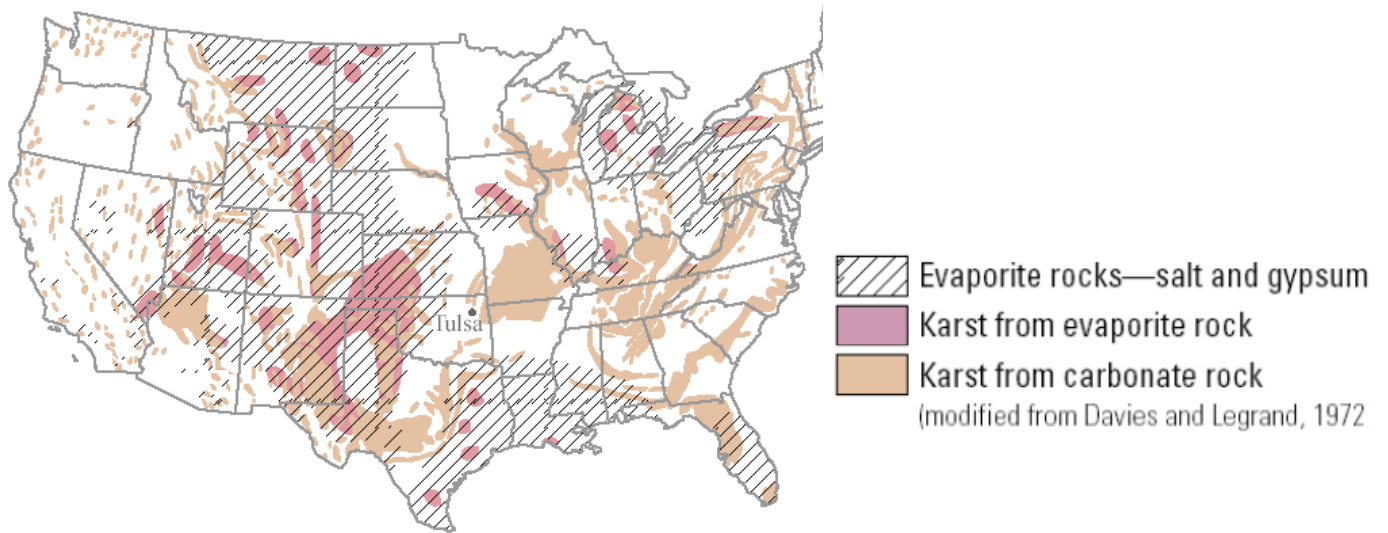
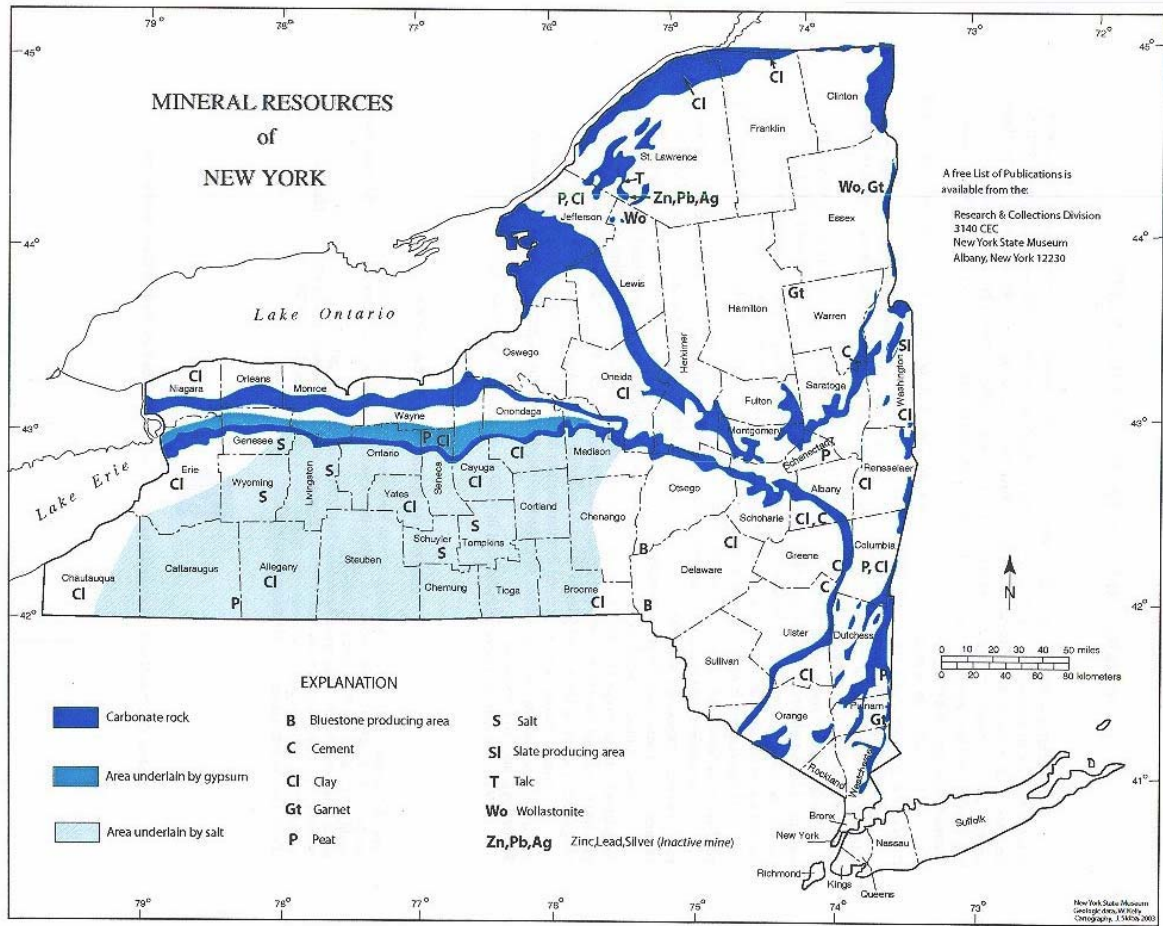
The sudden sinking or gradual downward settling of land with little or no horizontal motion, caused by a loss of subsurface support which may result from a number of natural and human caused occurrences including subsurface mining or the pumping of oil or ground water. Land subsidence events, depending on where they occur, can pose significant risks to health and safety or interruption to transportation and other services.

While it is unclear how much risk, or where this might occur in the Town of Sharon, New York State has recognized this risk in its hazard mitigation plan. The New York Hazard Mitigation Plan, pages 3-394 discusses karst topography in the Sharon area as follows:

“Karst is a distinctive topography in which the landscape is largely shaped by the dissolving action of water on carbonate bedrock (usually limestone, dolomite, or marble). Karst landscape by definition implies the existence of land subsidence. Karst topography includes land subsidence in the form of sink holes which is brought on by sinking soils resulting from caves or simply cavities below. In NY, we have karst topography which is nicely developed in a narrow band along the Helderberg Escarpment in Schoharie and Albany counties. These areas are underlain by highly soluble Silurian and Devonian rocks including the upper part of the Rondout Formation and stratigraphically upward to the Onondaga formation. However, the best expression of karst is in the intervening Coeymans and Manlius formations. The configuration of the geological formations results in a band around the edge of the Escarpment from roughly Clarksville to the Village of Sharon Springs (Schoharie County), or perhaps a little south and west of those towns. These same rocks continue westward and south but the karst is not prevalent. (It is reported by miners and drillers that there are caverns in the Onondaga Formation as far west as Rochester but as this unit is two to three hundred feet below the surface, no karst topography is present.) For instance, the Helderberg mountain formations of Albany and Schoharie Counties are karst landscapes which include typical karst characteristics such as caves and sinkhole lakes.”

“Carbonate rock (limestone and dolomite) is also prone to void formation but is less soluble and therefore takes much more time (centuries to millennia) for cavities to form all things remaining constant. The glacial till also seems to prevent Florida- or Pennsylvania-style sudden collapses in carbonate rock. The till is sufficiently stable to support itself and to subside slowly over carbonate sinks. Collapses, sudden or otherwise, are relatively rare in the regions of karst topography in New York. The last occurred about fifteen years ago in the Cobleskill area. No structural damage has been reported to date. The New York State Geological Survey staff concurs with the USGS information that identifies Evaporative rock and existing Karst topography as a causal factor of land subsidence incidence and the indications of the (USGS) map presenting locations of these underground rock types. In fact, the NYGS has produced a similar higher resolution map titled “Mineral Resources of NY”, which we include below as figure 3-212. This map of NY mineral resources although it does not indicate karst landscape (cavity formation lending to subsidence characteristics), as the USGS map indicates, it does emulate the USGS map showing the location of rock type and minerals (those areas shaded in blue) that are generally susceptible to natural land subsidence. The NY mineral resources map indirectly indicates those areas where the potential exists for human caused land subsidence due

to mining collapse.”



C. Ecological Resources

Role of Resource: Plants and animals play an important role in Sharon as part of the environmental quality of the Town and contribute to the character of the area. Biologic diversity offers citizens an attractive and desirable place to live. Outdoor recreation from hunting and fishing, to bird watching is an important activity to many Town residents. The biodiversity of the area is an indicator of the health of the environment. A diversity of healthy habitats results in a diversity of plant and animal life. Residents highly value open spaces, wetlands and other important habitat areas and desire to have these important features remain. Forest ecosystems protect the quality and quantity of water supplies, clean the air, create new soil, prevent erosion, and can moderate the climate.

Information Provided to Support Goals and Actions 1 and 3 of Part I.

Reference Maps: None included in Plan but see New York State Department of Environmental Conservation website, specifically the Environmental Mapper and/or the Nature Explorer mapping system, and the Comprehensive Wildlife Strategy for New York (Upper Hudson Basin).

Threats: Fragmentation of the remaining forested areas, disruption of vegetation links between streams, wetlands, and upland forested areas, water pollution, loss of habitat due to development, incompatible commercial and residential development, and invasive species.

Ecozones and Ecoregions:

New York State is divided into specific areas having similar ecological systems – called ecozones. The Town is included in two ecozones – the northern half of the Town is in Zone C – the Mohawk Valley ecozone, and the southern half is in Zone A – the Appalachian Plateau ecozone. According to NYS DEC, the Mohawk ecozone is described as a hilly area with moderate slopes, with elevation from 500 to 1700', soils of medium or moderately fine-textured, high lime soils on glacial till. It is dominated by Northern Hardwood natural vegetation.

The Appalachian Plateau is described as a typical plateau structured with horizontal rock formations with elevations greater than 1000'. The soils are medium textured, acid, usually fragipans, developed on glacial till, shallow and moderately well drained or poorly drained. It is dominated by oak/northern hardwood trees. NYS DEC further refines the ecology of the State and classifies areas by both ecoregion and watersheds. The Town is included in the High Allegheny Plateau Ecoregion, and in the Upper Hudson River Watershed⁵.

Habitats in Sharon are dominated by open lands (active agricultural fields, croplands, pastures, old fields and fields that are reverting to shrub land and young forests) and woodland. Because agriculture is a dominant land use in the area, woodlands tend to be smaller and often fragmented (separated from larger unbroken areas of forestland) or isolated patches. One critical aspect to maintain biodiversity in an area is to ensure that wooded habitats are linked together. Further,

⁵ For more information on wildlife species and habitats in the Upper Hudson Basin, see the Comprehensive Wildlife Strategy for New York State developed by the NYS Department of Environmental Conservation.

connection of open lands, especially grasslands is important to maintain animal movement. These links are often the stream corridors, wooded hedgerows, and wooded areas surrounding farm fields. Wooded stream corridors are not only crucial to maintain the ecological health of the stream, but also serve as wildlife travel corridors and allow wildlife to move within and between smaller patches of woodlands.

Woodlands should be considered ‘ecological hubs’ while streams, especially streams with intact wooded stream banks, and hedgerows should be considered ‘ecological links’. Both are vital to maintaining a strong biodiversity of the area. Forest habitats contribute to the replenishment of groundwater sources, trees clean air by using carbon dioxide, are important wildlife habitats, and also contribute to the aesthetics and quality of life in the Town.

Birds:

New York State DEC has completed a statewide bird atlas. This is an inventory of breeding birds. Two have been conducted: in 1980 and then repeated in 2000. The Town of Sharon is included in that census and is included in about 6 breeding bird census blocks. The number of bird species found in the area ranged from 79 to 105 different bird species. Habitats required for these species range from wetlands (required by the wood duck, for example), to larger forested patches (used by the scarlet tanager that requires at least 25 acres of unbroken forest). Some species are common in yards and around farms (house finch, for example), while others require grassland habitats (bobolink and meadowlark, for example).

The Breeding Bird Census lists the legal status of bird species. All songbirds have protected status, but in Sharon, several species are also listed by New York State as threatened and special concern. Three species are listed as threatened species: Northern Harrier, Henslow’s Sparrow, and the Sedge Wren. Four other bird species are listed as species of special concern: Sharp-shinned Hawk, Coopers Hawk, Horned Lark, Golden-winged Warbler⁶ and Vesper Sparrow. Many of these are species inhabiting open lands and grasslands. The Sedge Wren requires wet meadows and marsh edges.

Other information about plant and animals species can be found through the New York Natural Heritage Database. The New York State Natural Heritage Program is a partnership between the New York State Department of Environmental Conservation and the Nature Conservancy. Their role is to facilitate conservation of rare animals, plants and nature ecosystems. They keep a database of New York plants and animals. According to the Natural Heritage Database, the following birds included in the Breeding Bird Atlas are found in the Town of Sharon:

American Bittern (on Watch List⁷)

Northern Harrier (S3 – uncommon with 21 to 100 occurrences or limited acreage)

Sharp-shinned Hawk (on Watch list)

⁶ According to the Comprehensive Wildlife Strategy for New York, the Golden-winged Warbler is a target species for conserving and creating habitat for early successional forest/shrub birds. They need secondary growth, brushy hillsides, old fields, and stream edges. The northwestern corner of Schoharie County is identified as one of the few areas having concentrations of this warbler.

⁷ The Watch List includes those species that become imperiled enough in the future to warrant being actively inventoried, or are ones that which they do not have enough information to determine if they should be ranked.

Northern Saw-whet Owl (On Watch list)
Henslow's Sparrow (S3)
Horned Lark (Watch List)
Sedge Wren (S3)
Vesper Sparrow (Watch List)
Black Duck (S2- Imperiled because of rarity with 6 to 20 occurrences or few remaining acres or miles of stream making it very vulnerable to extirpation in NY)
Short-Eared Owl (S2, non-breeding)

The Natural Heritage Program also monitors rare species and habitats, and has recorded several locations within the Town of Sharon that contain rare species or habitats. Information received from them in December, 2011 indicated they have records for two bird species confirmed in the Town of Sharon. These are the Henslow's sparrow, a threatened bird species considered vulnerable, and the Short-Eared Owl, an endangered bird considered imperiled. At the border near Sharon Springs, the Northern Harrier has been confirmed as breeding. It is a threatened bird species considered vulnerable in New York State.

Other Species:

The New York State Reptile and Herptile Atlas has not thoroughly inventoried all habitats in the Town of Sharon. However, some species are included in that database. As of 2011, there were nine species found in the Town, none of which are listed as threatened, endangered, special concern or critical species by New York State Department of Environmental Conservation:

N. Dusky Salamander, Spring Peeper, Green Frog, N. Leopard Frog, Wood Frog, Snapping Turtle, Milksnake, Painted Turtle, Red-Eared Slider (invasive species).

Mammals: There is no official inventory of mammals in the Town.

Fish, plants, insects and other species: The website atlas.nyflora.org lists 405 native plant species inventoried in Schoharie County. Of those, 171 have a listed status (endangered, threatened, or special concern). It is possible that some of these species are found in Sharon. There is no official inventory of insects in the Town. While there has been no formal inventory of fish species found in Sharon's streams, a study conducted by the State University at New York at Cobleskill⁸ in Brimstone Creek confirmed eight fish species, including rainbow trout. These species were Blacknose Dace, Central Stoneroller, Creek Chub, Fathead Minnow, Longnose Dace, Pumpkinseed, Rainbow Trout, and White Sucker. Future development should include inventories to ensure that no listed species are adversely affected.

⁸ Holdforth, Tim. 2010. Fish Distribution Along a Hydrogen Sulfide Gradient in Brimstone Creek, Sharon Springs, NY. State University of New York, Cobleskill.

D. Agricultural, Historical and Scenic Resources

Role of Resource: Sharon residents highly value the community character of the Town. In addition to the physical natural resources, agricultural land activities along with the many historical and scenic resources throughout the Town predominate the visual community character. Agriculture is the dominant land use in the Town, and is the biggest business in Schoharie County. The 2004 Schoharie County New York Long Range Economic Development Strategy⁹ includes, as one of its five primary objectives the desire to “preserve the natural beauty and historic sites/heritage of the area, the ability to maintain a family farm, and the small town environment.”

Information Provided to Support Goals and Actions 1 and 3 of Part I.

Reference Maps: Mohawk River Highlands Scenic Tours and Viewpoints, Agricultural Districts, Sharon Historic and Archeological Sites (From NYS SHPO), Agricultural Use (From Adopted Plan), Roads.

Threats: Loss of farmland, industrial and commercial development, loss of historic buildings and landscapes.

Agriculture:

Almost the entire Town of Sharon is included in New York State Agricultural District #3. This designation means that agriculture is recognized by the State as a primary land use. Farming operations, as defined by NYS AML 25-aa, are protected by New York’s Right-to-Farm law. Agriculture remains a dominant land use in Sharon. There are 7,704.42 acres of active farmland. Not only does agriculture play an important economic role in the Town, but it contributes to the character and environment of the Town.

The open fields and pastures associated with agriculture support many wildlife species. As noted above, most of the threatened, special concern and critical species are those that require open lands and grasslands. Further, open lands are critical to creating many of the scenic views that are highly valued by Town residents throughout the Town and especially along Route 20.

The Schoharie County Agricultural Development and Farmland Protection Plan¹⁰ captures the critical importance of agriculture in the area with the following 10 facts established in that plan. Farming in the Town of Sharon fulfills all these roles as well and articulates the reason why protecting farming and farmland is a primary goal of the Town of Sharon.

9 Schoharie County Planning and Development Agency. October 2004. Schoharie County New York Long Term Economic Development Strategy, prepared by Moran, Stahl and Boyer, LLC. This Plan lists the key elements of the County’s strategy should be technology-related manufacturing, information technology, traditional manufacturing, financial services, distribution warehousing, and recreational tourism. Large scale industrial uses are not envisioned as part of the economic development strategy.

10 Schoharie County Agricultural and Farmland Protection Plan developed by the Schoharie County Agricultural and Farmland Protection Board, Shepstone Management Company, Schoharie County Planning and Development Agency, and Cornell Cooperative Extension of Schoharie County

1. Farming is a big business to Schoharie County.
2. Income from agriculture goes further than other sectors in helping the economy.
3. Farms lower taxes.
4. Farms create rural character – a precious asset.
5. Successful farming is a defense against urban sprawl.
6. Farming attracts tourists.
7. Farms and forests preserve natural environments.
8. Farmland is a valuable resource for future generations.
9. Farming provides a year-round business base for a wide spectrum of Schoharie County enterprises.
10. Farming is an inseparable part of Schoharie County’s culture.

Scenic Areas:

Residents have identified several scenic areas in the Town of Sharon. These have been identified by the survey included as part of this Comprehensive Plan, a previous planning effort in the Town (SHARE-IT, an acronym for “Saving Historic Assets Renewing Economies by Introducing Tourism”), and through efforts by the Sharon Springs Chamber of Commerce.

The public has identified the following roads as being scenic:

Route 20
Route 10
Chestnut Street
Center Valley Road
Engleville Road
Hanson Crossing Road
Kilts Road
Gilberts Corners Road
Argusville Road
Lynk Road
Beechwood Road
Goodrich Road
Green Road

Route 20 Scenic Byway:

Route 20 has been designated a New York State Scenic Byway. This 123 mile corridor is part of the NYS Department of Transportation approved byway program. The Byway is recognized by New York State, Schoharie County, and the Town as a significant economic development tool. Maintaining the integrity and landscape of the corridor area is seen as an important resource to foster the revitalization of Sharon as a tourist destination. Further, the role of community character has been identified as a critical resource to the community as part of this Plan, the Scenic Byway Strategy, and the SHARE-IT economic development strategy developed for the Town of Sharon.

The 2004 Byway Strategy identifies the primary corridor as Route 20 and its various intersections from Onondaga County to Schenectady County. The entire length of Route 20 as it

passes through the Town of Sharon is included in the Byway. The Primary Route 20 Byway Corridor also includes The Historic Cherry Valley Turnpike (County Route 54), all public right of ways along Route 20, and the adjoining park lands, pedestrian and bike trails and open spaces, including lakes and wetlands along Route 20. Two excursions to the Route 20 Byway are also located in the Town of Sharon along Route 10 and Route 145. The excursion routes are not officially part of the Byway.

Historic Resources:

Numerous historic resources are within the Town of Sharon. The State and National Historic Register includes the following in Sharon:

Village of Sharon Springs Historic District includes 180 buildings, although some are considered non-contributing structures (they have no historical significance but are within the district). These include many residential and commercial structures in the Village, includes the Sulphur Temple, Chalybeate Temple, Magnesia Temple, Lower Bath House, Imperial Baths, Adler Hotel, Stone House, Pavilion Cottage, several churches, American Hotel, Klinkhart Hall, and others. Buildings at Clausen Farm are also included in this historic district. The American Hotel and the Brick House B & B (Peter Hilton House), near Beekman Mansion have separate listings on both the State and National Registers.

Outside the Village of Sharon Springs, the Peter Hilton House (Brick House B & B, NY Route 10) is on the State/National Register (listed 7/11/2004) and the John Lehman House (Kilts Road) has recently been placed on the Register (2011).

The following properties are included on the State Historic Preservation Office list as individual structures eligible for listing on the historic register:

- The Beekman Mansion (NYS Route 10)
- Hanson Crossing Bridge over West Creek
- St. John's Lutheran Church (NYS Route 10)
- Farmhouse and barn east of Sharon Springs Village

In 2004, the Town of Sharon participated in a regional inventory of historic resources¹¹ funded by the Preservation League. This inventory did not establish National Register Determination of Eligibility for listing, but many are almost surely eligible because the project reviewed everything greater than 50 years old that was not yet listed. The data collected roughly correlates to Form A, which identifies resources of the correct age and establishes a baseline of documentation. There are large tracts of land that may be eligible under Criterion C, which covers resources not individually national register eligible, but in the aggregate provides a sense of place that can be delineated and documented. According to Jessie Ravage, the consultant for the project, "these resources are entitled to protection via mitigation by being simply eligible"¹².

11 This study, conducted by Jessie Ravage is the "*Comprehensive Historic Resource Survey Report: Town of Cherry Valley, Otsego County, New York, and Town of Sharon, Schoharie County, New York*. It was made possible through partial funding from the Preservation League of New York State's NYSCA Regrant Program, and Otsego 2000.

12 From 12/13/2011 email from Jessie Ravage to consultant Nan Stolzenburg

The inventory data and photographs are on file with the Town of Sharon. The report is attached to the Comprehensive Plan as Appendix F. The report narrative describes the survey findings and ties these findings with research into historical documents—mainly historic maps, gazetteers, and local and county histories—to develop a sense of the level of historic integrity of the Town’s rural landscape. This survey examined and photographed 362 parcels in Sharon. The survey found considerable variation in historic integrity over this comparatively large number of properties and makes recommendations based on the survey and associated narrative.

The survey identified many potentially eligible individual buildings as well as potential historic districts. There are “groups of agricultural properties that might compose historic districts. The West Creek area, centered on Engleville Road, includes several highly intact properties with virtually no post-1950 intrusion. In the northwest corner of the Town, the area around Buel Road preserves a highly intact rural landscape with early dwellings, mid-to-late nineteenth century outbuildings, and a nearly untouched one-room schoolhouse. Another agricultural district that suggests itself is the area settled by the Kilts family north of Sharon Hill on Argusville Road. Here, even though several of the farmhouses have been subdivided off from their larger properties, the landscape remains visually intact. Sharon’s hamlets might also be considered in light of potential eligibility. All retain historic densities and much of their built environments.”

The historic inventory shows that there are many historic resources in Sharon, spread out throughout the Town and which contribute to the culture, economy and quality of life in the Town.

The Sharon Historical Society’s Cemetery Committee began a nine-year project in 1999 to document the data from all of Sharon’s known cemeteries. The project completed in 2007 documents 41 cemeteries in the Town of Sharon and 26 cemeteries in the towns of Roseboom, Cherry Valley, Canajoharie, Seward, and Carlisle. The purpose of the project was to educate the public about cemeteries – not only are they a great source of information to make it easier for people to search for their ancestors, but the information from the cemetery markers needed to be recorded before it became unreadable. The project also intended to create interest in maintaining these graveyards so they will be here for future generations. The completed project comprises four 8 ½ x 11 spiral-bound books, which are sold by the Sharon Historical Society. The original files and hundreds of photographs are also on file at the Sharon Springs Free Library.

The research generated a lot of attention toward local abandoned cemeteries. Lost and/or forgotten cemeteries have since been found and the information shared through documentation. The Van Schaick Cemetery (Sharon Hill) has been cleared of brush and trees, a fence has been installed, stones are up-righted and repaired, and it is now beautifully maintained. The Old Argusville Cemetery (Argusville) is now cleared of brush and mowed 3 – 4 times each summer; the fence has been painted, a cemetery stone damaged during vandalism has been replaced. The Argusville Wives Cemetery (Argusville) is cleared and the stones are easily visible. Cemetery markers have been repaired and placed upright in a cement base. Bellinger Cemetery (Route 20 near Sharon Hill) was like a jungle of grapevine and brush. The area has been cleared and fallen stones are placed in an upright position; it is maintained each year. At the Stringer/Kling

Cemetery (Staleyville), the stones were broken and gradually disappeared through erosion and a farmer's strip cropping. The original site was no longer visible. The Cemetery Committee placed a marker at the site so the location will be known for future generations. There were missing stones in the Blass Cemetery (Chestnut Street) due to cattle being pastured there for many years. The Committee uncovered some stones. Although the cemetery hasn't been restored, it is now fenced in to prevent future damage. It is felt that the cemetery project has inspired people to clean up several cemeteries and make them once again a place of respect and beauty.

Many veterans are buried in Sharon's cemeteries, including those from the Revolutionary War, Civil War, World War I, World War II, Korean Conflict, up to the present. Every year, the American Legion places flags on every known veteran's grave, even at the so-called abandoned or unused cemeteries. It is important that military personnel who have fought and protected this country through all the years are honored. These cemeteries, both active and abandoned are an important source of information to people tracing their roots as well as a place of pride to the descendants. These cemeteries need to be protected.

New York State Heritage Area:

All of Schoharie County is included in the Mohawk Valley Heritage Area. New York State has designated heritage areas to identify significant natural, historical and cultural resources, as well as the people and programs that keep these resources vital. Eighteen specific areas statewide have been designated as a Heritage Area. The Heritage Area System is a state-local partnership established to preserve and develop areas that have special significance to the State. According to the Heritage Development Resource Guide published by New York State, state recognition as a Heritage Area provides prestige and an official "imprimatur"¹³.

The Mohawk Valley Heritage Area is described by New York State as "the dramatic landscapes of the eight Mohawk Valley counties are layered with centuries of history, from Iroquois encounters with fur traders and missionaries, through European settlement, colonial wars, the Erie Canal, and industrialization."

Archeological Resources:

The New York State Historic Preservation Office maintains a list of archaeologically sensitive sites throughout New York State. This information does not indicate the specific location of an archeological resource, nor does it identify specifically what the resource is. It does, however, show areas of sensitivity. These are areas where the Town should pay particular attention during any SEQRA process to ensure that proposed land uses do not negatively impact these archaeological resources. There are at least 11 areas in Sharon designated as archaeologically sensitive. Specific records of what makes each of those locations sensitive is available from the New York State Historic Preservation Office, but is not available from their online resources.¹⁴

13 Imprimatur means sanctioned or approved.

14 The Archeological Sensitivity Maps used for this Plan are general in nature. They come from the SHPO website and show New York State defined areas where archeological resources are predicted, or that are locations included

E. Important Open Spaces in Sharon

This Appendix identifies, details and discusses the many environmental and cultural resources found in the Town of Sharon. In summary, these resources are:

- Streams and stream corridors, including water quality classifications and stream classifications
- Watersheds
- Wetlands and hydric soils
- Floodplains
- Steep slopes
- Water bodies
- Critical/rare habitats
- Woodlands and wooded linkages between different habitats
- Karst/Limestone bedrock
- Active agricultural areas
- Prime agricultural soils
- Archaeological and historic locations
- Scenic roads
- Engleville Pond watershed and Class A tributaries
- Unconsolidated aquifers

Each of these resources has been discussed individually above. However, natural systems are complex and all of these resources interact to influence the quality of life and environment in the Town of Sharon.

This comprehensive plan update does not attempt rank or prioritize specific locations. The Town is not placing one resource in a position of being more important than other resources. However, the Town recognizes the importance of understanding critical and unique locations.

This Appendix illustrates how there are many important resources covering much of the Town. As the Town moves forward to meet its stated goals, it will need to consider and adequately address each of these resources.

Taken together however, locations that are especially sensitive because they have a concentration of resources provide valuable planning information.

In order to fully identify and analyze environmentally sensitive locations, a composite open space map has been developed (See Composite Open Space Map). To develop this composite,

in the SHPO Archeological files and the New York State Museum Archeological files. The exact locations are not displayed on the SHPO website because they are protected from disclosure by Section 304 (16 USC 4702-3) of the National Historic Preservation Act of 1966 and Section 427.8 of the implementing regulations for the State Historic Preservation Act of 1980. This information can only be accessed directly at the State Historic Preservation Office in accordance with the SHPO's Policy on Access to Files, Data, and Information.

the following categories were used because they have been shown in this Appendix to be important to the Town:

Agriculture Layer: Consists of the Prime Soil and Agricultural Parcel layers

Scenic Roads and Historic Layer: Consists of the Archaeological Site, Historic District, Historic Parcel, and Scenic Road layers

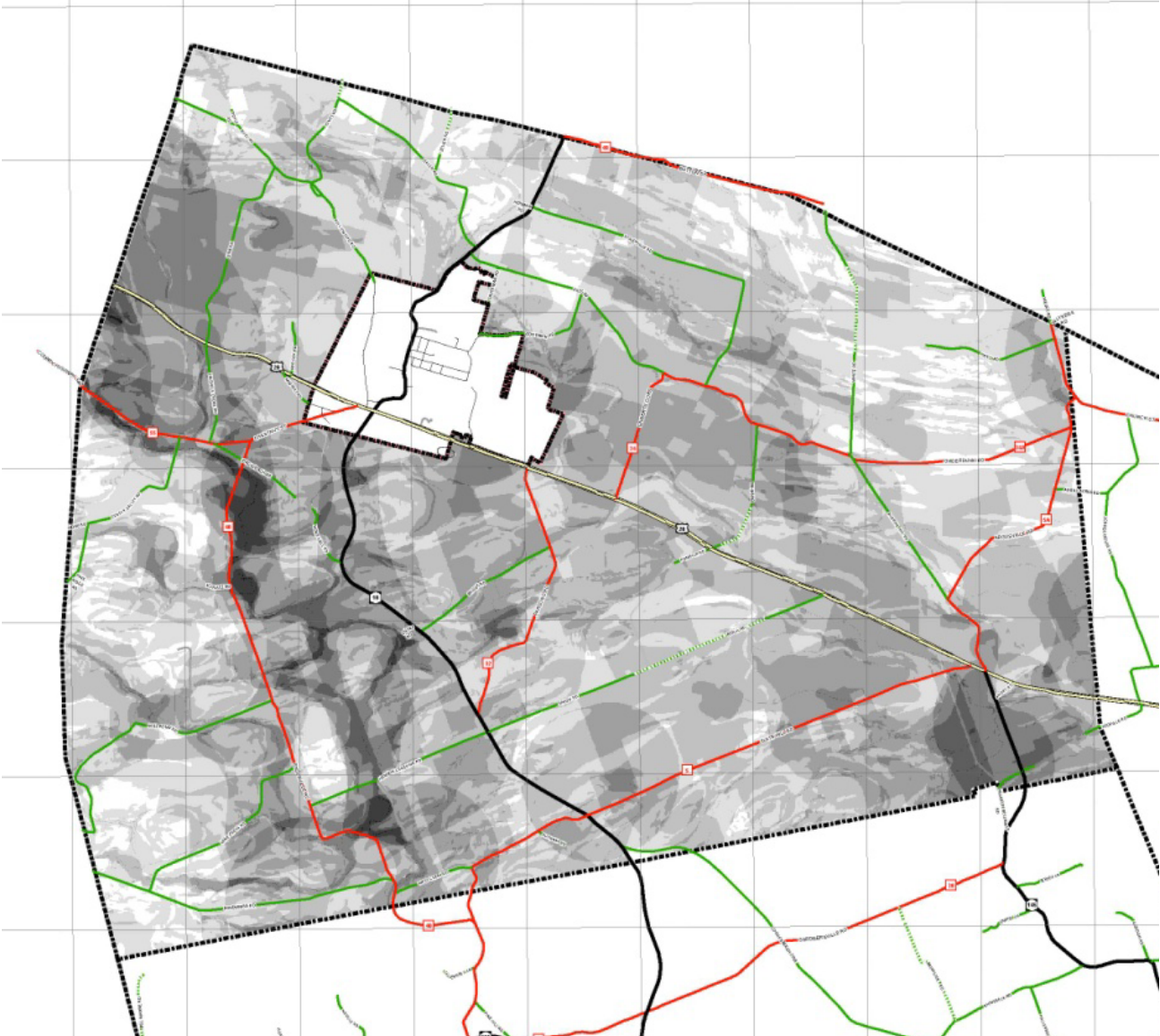
Water Quality and Quantity Layer: Consists of Priority Water Bodies, Engleville Pond Watershed and Class A stream tributaries, and Unconsolidated Aquifer layers

Geology Layer: Karst Layer

Wildlife Habitat/Environmentally Sensitive Locations Layer: Consists of Steep Slopes, Floodplain, Streams and Water Bodies, Wetland and Hydric Soils, and Natural Heritage Critical Site layers.

To create the composite, the Geographic Information System was used. The color of each layer (seen in each of the maps) was removed and replaced by an identical shade of gray. When the layers of all the resources are combined, the shades of gray darken where they overlap. White areas show where no resources are present and the darkest areas show the presence of the multiple resources. The darkest areas are those locations that could be a priority for open space conservation or, at the very least, careful review and application of mitigation methods.

The composite open space map offers a comprehensive picture for the Town. It can be used as an aid by the Town and all other agencies and entities when planning or reviewing activities or projects in Sharon. A small-scale version of the map is shown below. This tool clearly identifies several locations that have multiple resources. The West Creek Valley, the southeastern corner of the Town, and the area west of the Village of Sharon Springs are locations that have concentrations of resources for the Town to pay attention to.



Composite Map of Environmental Resources. The darker the area, the more resources are at that location.

F. Recommended Strategies

The crucial issues of importance to the Town of Sharon revolve around water quality, water quantity, rural aesthetics and character, and human health. These are all closely tied to the natural resources of the Town and biodiversity (plants, animals and their habitats). If natural services are lost, replacing them with human-made substitutes requires enormous costs related to designing, building, maintaining and improving what nature provides already. A biologically diverse landscape is resistant and resilient to both land use and natural changes and provides ecological services to the Town, now and into the future.

The Town Board of the Town of Sharon, in adopting a comprehensive plan in 2009, established town policy guiding future growth and development as follows:

- Goal 1: Protect and maintain the rural character and small town atmosphere of the Town of Sharon while promoting appropriate economic development.
- Goal 2: Improve pedestrian and traffic safety.
- Goal 3: Protect the quality of surface and groundwater supplies, protect the integrity of mapped floodplains, preserve the integrity of unique physical environments and preserve wildlife habitats.
- Goal 4: Secure safety from all hazards in Sharon.

These goals establish the intent of the Town to promote the safety, health, and well-being of the residents of Sharon, and to protect and enhance the Town's natural and visual environment. The Town recognizes the legitimate concerns shared by many of the citizens of the Town about the adverse impacts that could be associated with heavy industry and high intensity uses such as the drilling and operation of natural gas wells, and activities associated with their operation. These activities could adversely impact wetlands, lakes, streams, groundwater resources, public drinking supplies, public roads, historic landscapes, agriculture, Sharon's small town character, and the area's tourism-based economy. The Town of Sharon seeks to avoid contaminated water supplies, air pollution, traffic congestion, deterioration of roads and bridges, noise, introduction of industrial uses into non-industrial areas, human and animal illness, and incompatible changes to the rural character of the Town.

After analysis of Sharon's resources in relation to the vision and goals of the community, the Town of Sharon concludes that heavy industrial land uses, in particular high volume horizontal hydrofracturing, are inconsistent with this Plan.

To ensure that the important resources identified in this Comprehensive Plan are maintained in the future, it is recommended that the Town of Sharon:

1. Discourage intense development within areas having critical or multiple environmental sensitivities.
2. Require the completion of a thorough natural resource, biological inventory and species impact analysis before site design of major developments.
3. Consider designating the core biodiversity and environmental sensitive areas as seen in the

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Town of Sharon Composite Map of Environmental Resources as a Critical Environmental Area under SEQRA. And/or consider designating one or more environmental overlays in the Town Land Use Law that would have specific design and siting standards that will protect the resources.

4. Require that any major development in environmentally significant or sensitive areas are designed so that the project has a minimal impact on the biological resources.
5. Enacts setbacks from streams to prevent bank erosion, destruction of habitat in the stream corridor, and water quality degradation.
6. Amend the Town of Sharon Land Use Law to include development standards, criteria, maps, and review processes designed to protect these resources.