

***OPEN SPACE INVENTORY***

Town of New Lebanon

Columbia County, State of New York

May 13, 2014

The Conservation Advisory Council

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## 1. Introduction, Purpose and Background Information

The Town of New Lebanon established a Conservation Advisory Council (CAC) in 2010 in keeping with Article 12-F of the General Municipal Laws of New York State, enacted in 1975. Members of the CAC – 5 citizens and 2 students – are volunteers interviewed by the Town Board and appointed to 2-year terms. The CAC meets once monthly, usually from 6:30 to 8:00 P.M. on the second Monday, and advises the Town Board, Planning Board and Zoning Board of Appeals on development issues and the management and protection of New Lebanon's natural resources. The Town Board charges the CAC as follows:

- Research and delineate land areas, focusing on steep slopes in forested uplands, farmland, wetlands and hydric soils associated with aquifers, ponds and streambeds.
- Cooperate in the area of land use planning with the Planning Board and Zoning Board of Appeals and coordinate with citizen bodies such as Grow the Valley, Forest Legacy Project on Mount Lebanon, Corkscrew Rail Trail Association and the Shaker Swamp Conservancy.
- Prepare, print, distribute and bring to the attention of the public books, maps, charts, plans and pamphlets concerning New Lebanon's natural resources.
- Keep an up-to-date inventory and maps of all open space.
- Keep an inventory and maps of all wetlands, including streams, ponds, marshlands and swamps.
- Keep accurate meeting records and file an annual report.

Accordingly, this council has developed this Open Space Inventory (OSI) as a first publication for the community on land use issues and will maintain it going forward. As well, the CAC will advise on issues related to natural resources planning in the Town of New Lebanon on an ongoing basis. This OSI provides data for developing sound open space planning and for protecting natural and scenic resources in the town.

The Town of New Lebanon acknowledges the expertise and work of the individual members of the CAC:

- Larry Benson, Chair
- Craig Westcott, Secretary
- Cynthia Creech
- David Farren
- Jack Lancto
- Mike Blatt (former)
- David Cullen (former)
- Kevin Fuerst (former)
- Trina Porte (former)
- Damon Steed (former)

The CAC prepared this OSI with the assistance of The Columbia Land Conservancy and Clark Engineering and relied on the *2005 Town of New Lebanon Comprehensive Plan (CP)* as a primary source. We also acknowledge the assistance of others as listed below.

*Town of New Lebanon Town Board, 2012-2013*

Mike Benson, Town Supervisor  
 Doug Clark, Deputy Town Supervisor  
 Bruce Baldwin  
 KB Chittenden  
 Matt Larabee

*Community Residents and Outside Experts*

Ruth Abram  
 John Dax, former chair, Zoning Board of Appeals  
 Ingrid Haeckel, NYS DEC Hudson River Estuary Program  
 Ellen Jouret-Epstein & Christine Vanderlan, Columbia Land Conservancy  
 Karen Ross, Shaker Swamp Conservancy  
 Bruce Shenker, New Lebanon Member, Columbia County  
 Environmental Management Committee  
 Vivian Steinberg  
 Karen Strong, NYS DEC

**Purpose**

This Open Space Inventory (OSI) catalogs and maps the variety of natural and cultural resources in the Town of New Lebanon as well as hazards. Following a months-long public comment period that began on September 23, 2013, and concluded on January 20, 2014, the OSI reflects community concerns. This document recommends actions that will preserve resources and mitigate hazards and addresses undeveloped land and recreational and historic sites. This document can therefore guide elected and appointed officials of the Town of New Lebanon in land-use planning and policy decisions. Since development in the future may impact the resources delineated in this OSI, the CAC will update the document as warranted to maintain its usefulness in land use decision-making.

The *Town of New Lebanon Comprehensive Plan*, published in 2005, recommends repeatedly the importance of preserving open space and the town's rural character. Open space is land not developed intensively for residential, commercial, industrial, or institutional use and can be public or private land. Open space can be farmland, cleared fields, forests, scenic view sheds, wetlands, public parks and preserves and includes water bodies – ponds and streams in the case of New Lebanon – and their surrounding watershed. Open space can also be as narrow as corridors between residences used for walking or bicycling. Our common heritage includes historic and archaeological sites such as Mount Lebanon Shaker Village and the Warm Spring that often sit on or near significant open spaces worthy of conservation.

## 2. **List of Recommendations by Section**

### **Section 3: Community History, Landscape Character, Population Data and Regional Context**

New Lebanon's rich historic heritage, arising from the land, can be justly celebrated and should be recognized and conserved along with its natural resources. While any Open Space Inventory catalogs historic and cultural resources, in New Lebanon these resources are richer than usual and are therefore critical to how the town defines itself.

### **Section 4: Growth and Development Issues and Environmental Problems**

After three decades of negotiations, Columbia County recently agreed to assume most of the costs, more than \$1 million, to mitigate environmental threats in the Town Landfill, which needs to be sealed.

*2005 TNL Comprehensive Plan Action Items:*

- *Develop specific requirements and standards for site plan review.*
- *Include protection of scenic views in site plan and subdivision review.*
- *Authorize and promote use of clustering and conservation subdivisions.*
- *Evaluate junkyard regulations and amend as needed to reduce visibility.*
- *Enforce mining regulations.*
- *Phase out burn barrels.*
- *Reconfigure zoning for hamlets and density.*
- *Adopt density bonuses.*
- *Amend subdivision and site-plan review laws.*
- *Facilitate proper siting of cell towers.*

### **Section 5: Vegetation, Wildlife, and Unique Natural Areas**

Because much of the acreage of the "Knob" and surrounding forest tracts occupies areas of steeper slopes, preservation of the habitat as it is in 2014 furthers multiple conservation goals of the *Comprehensive Plan* and this inventory.

*2005 TNL Comprehensive Plan Action Items:*

- *Protect scenic vistas, open space, and sensitive wildlife habitats.*
- *Encourage preservation of woodlands and promote environmentally sensitive management and use of forest resources.*
- *Encourage restoration, preservation and protection of the Lebanon Warm Mineral Spring.*

- *Identify state and federally designated sensitive wildlife habitats on town map (a task for a Natural Resources Inventory).*
- *Include protection of wildlife resources in site plan review.*

### **Section 6: Geology, Soils, Topography and Water Resources**

Most steep slopes in New Lebanon are best left as forested landscapes since forest cover helps control erosion and protects streams, ponds and wetlands. Forest cover also enhances air quality, watershed management and scenic beauty, all key contributors to New Lebanon's rural appeal. Any disturbance to steep slopes must be undertaken with extreme caution.

The town awaits assistance from FEMA in developing more up-to-date flood hazard maps to include the 100- and 500-year flood zones as well as other data. Developers requiring more detailed knowledge of the flood zones are advised for now to estimate the associated flood zones using independent surveys and local historical records.

Although aquifer overdrafts are not yet a problem in New Lebanon, they would be best addressed before conservation becomes an imperative issue. Likewise, remediating contaminated aquifers would be a slow, difficult and expensive proposition. Once contaminants enter an aquifer they remain for a very long time. Rather than being forced to remediate contaminants, it is much more desirable to avoid them altogether. The town should pursue efforts to conduct a comprehensive groundwater study.

*2005 TNL Comprehensive Plan Action Items:*

- *Preserve existing farms and open farmland and create new, economically viable farms.*
- *Increase participation in agricultural assessment program.*
- *Implement tax and easement programs.*
- *Reduce assessments on land subject to conservation easements.*
- *Require buffers between farms and other uses.*
- *Promote Best Management Practices for controlling farm pollution.*
- *Prevent development of steep slopes that can lead to erosion.*
- *Develop a steep slope overlay.*
- *Create hilltop/ridgeline overlay zone.*
- *Regulate timber harvesting.*
- *Prevent development within the floodplain that can impact upstream properties.*
- *Request an updated floodplain study from FEMA.*
- *Designate CEAs (Critical Environmental Areas) around known aquifers.*
- *Include protection of aquifers in site plan review.*
- *Include wetland protection in subdivision and site plan review process.*

## **Section 7: Inventory of Existing Conservation and Recreation Lands and Cultural Assets**

2005 TNL Comprehensive Plan Action Items:

- *Map existing/potential trails and trail heads.*
- *Expand trail facilities.*
- *Work with NYSDEC and other agencies to improve and expand public fishing access*
- *Identify potential canoe/kayak areas on Kinderhook Creek and develop parking, access and launch points.*

## **Section 8: Current Conservation and Recreation Projects**

To encourage brush hogging to maintain open agricultural land and thus the potential for agriculture, it would be worth considering such approaches as property tax rebates.

A successful process to create the Corkscrew Rail Trail would require that local officeholders work closely with our state legislators.

A source of income for the town could be an entertainment tax – taking a small percentage of the price of each ticket from town entertainment venues such as the Theater Barn, Lebanon Valley Speedway and Tannery Pond Concerts. This revenue stream would help defray costs to the town from the influx of visitors, help overcome losses in property value, and help meet the costs associated with preserving open space assets.

Efforts should be made periodically to re-clear vegetation on the west side of U.S. Route 20 at the Abode of the Message in order to maintain the view of the Lebanon Valley that was opened originally in 2003 thanks to volunteers. The 2014 clearing was accomplished this April thanks to two days of volunteer labor contributed by Tony Murad and his crew.

## **Section 9: Community Goals and Five-Year Action Plan**

This entire Section is comprised of recommendations.

### 3. Community History, Landscape Character, Population Data and Regional Context

#### **Community History** (see Map 1)

2005 TNL Comprehensive Plan Action Items:

- **Evaluate areas for protection via creation of historic districts.**
- **Conduct view shed analysis and create scenic view inventory.**

#### Summary

New Lebanon's history revolves around its physical attributes. European settlers migrating from Connecticut sought fertile farmland along the Wyamonoek Creek in the Lebanon Valley they could claim as their own and built homes higher up on forested slopes. The Shakers established a vibrant, industrious religious community atop Mount Lebanon that farmed extensive surrounding acreage. In its heyday, the Warm Spring drew U.S. presidents and countless others to bathe in its waters and gave rise to the Methodist Camp Meeting that made Lebanon Springs a summer destination for thousands of visitors for more than a half century. The Shaker Swamp and the Shaker community's industry in harvesting herbs and medicinal plants led directly to the Tilden family's pharmaceutical business. **New Lebanon's rich historic heritage, arising from the land, can be justly celebrated and should be recognized and conserved along with its natural resources. While any Open Space Inventory catalogs historic and cultural resources, in New Lebanon these resources are richer than usual and are therefore critical to how the town defines itself.**

#### Origins

The town emerged in 1818 from a loose confederation called The King's District that also included today's Town of Canaan and parts of Chatham and Austerlitz. The King's District attracted emigrants from Lebanon, Connecticut, seeking natural beauty and farmland they could claim for themselves as owners. Elsewhere in the Hudson River Valley, the Dutch patroon system required settlers to pay rent to the landholders, the Van Rensselaers and Livingstons, with no chance for ownership. The Lebanon Valley drew emigrants to its scenic vistas – settlers built homes higher up on the hillsides – and fertile grazing land on the valley floor along the Wyomanock Creek.

#### The Warm Spring

Prior to the arrival of European settlers, the native Mohicans had revered the healing properties of the Warm Spring on what is now called Pool Hill in Lebanon Springs. The spring, known as Montepoole, entered into private hands in 1778 with a proviso that the water be available free of charge to the public in perpetuity. The Warm Spring drew tourists throughout the nineteenth century and famous people took to the waters, staying nearby at Columbia Hall, a resort hotel first occupied in 1794 and expanded thereafter. In 1825, General

Lafayette stayed for an extended period while his coach was repaired. Presidents John Quincy Adams, Martin Van Buren and Ulysses S. Grant all took the cure.

### Mount Lebanon Shaker Society

Dating from the years when the Warm Spring began attracting a steady flow of visitors, the Shaker religious community centered itself on Mount Lebanon and thrived for nearly 170 years. The Shaker founder in America, Sister Ann Lee, converted most of New Lebanon's inhabitants in 1780 during a time of religious revival. The converts included George Darrow, who deeded his extensive land holdings on Mount Lebanon to the Shakers. In 1783, Sister Lee was driven from town, so badly beaten that she died a year later in Watervliet. A successor stepped forward in 1785, however, and Sister Lee's religious community on Mount Lebanon grew and prospered. The last resident departed in 1947 for the Hancock Shaker Village in nearby Massachusetts.

The Shakers forbade conjugal relations and could increase their numbers only through recruitment. Over the decades, the Shakers welcomed curious visitors as guests to distinctive Meeting House services that featured original choral music and dancing. Also impressive to visitors were the communal living arrangements and Shaker industry in furniture and building construction, in seed collection and in processing medicinal plants and herbs from the Shaker Swamp. The community grew to eight families in New Lebanon and Canaan, each family having approximately 70 active members.

The historic buildings that remain today on Mount Lebanon are privately owned. The principal resident is Darrow School, an independent boarding and day school founded in 1932. Others include the Abode of the Message, an intentional community and retreat for the study of Sufism founded in 1974, and Shaker Museum | Mount Lebanon. SM | ML will shortly complete a project to stabilize the monumental stone foundations of the Great Stone Barn that burned to the ground in 1972. The Great Stone Barn and other historic North Family structures undergoing restoration are slated to become the new home for the Museum's extensive collection of Shaker artifacts and furniture.

### New Lebanon Library

In 1804, Dr. Jesse Torrey founded the first free lending library in America. The original building stood on West Street three miles out from the present-day business district. Jesse Torrey later helped found the Library of Congress and became nationally known, but during his youth in New Lebanon he formed the Society for the Acquisition of Knowledge with 147 others under the age of 21. The initial collection had 100 books and with every book being read by every member, the Society codified lending terms – duration, fines, etc. – that are a hallmark of lending libraries to this day. Today's New Lebanon Library occupies the Taconic Valley Bank building in the commercial district. With strong financial support from the community, the building has been expanded with three additions.

### The Tilden Company

Founded in 1824 by Elam Tilden, The Tilden Company operated continuously until 1963 and was the first pharmaceutical company in the nation. Elam's parents had emigrated from Lebanon, Connecticut, to richer farmland along the Wyomanock Creek. As a boy, Elam observed the nearby Shakers creating many beneficial poultices and brews from the herbs and medicinal plants they grew and collected. As a young man he undertook to manufacture and sell these medicines and built a factory and storehouse on land the Shakers deeded to him, now occupied by Jimmy D's Restaurant. Reimbursing the Shakers for collecting herbs and medicinal plants, Elam grew the business to include a factory and an office building on either side of Routes 20/22 in the commercial district. A nearby glass factory manufactured bottles for the medicines. Also in town was Thomas Kendall's thermometer factory, where a teenaged Elam had honed his business acumen. Founded in 1820, the Kendall factory was the first to manufacture thermometers that demarcated degree readings accurately.

Elam Tilden's three sons – Moses, Henry and Samuel – contributed to the town's history in different ways. Moses ran the family farm, Henry helped run the business and eventually took it over, and Samuel became a noted corporate attorney in New York City. Henry's son Colonel Samuel Tilden II later ran the pharmaceutical company, the last in the family to do so. His Victorian mansion became Shuji's Restaurant and is now the renovated home of Jack and Nancy Kyle Fraser overlooking an extensive Japanese garden. In 1898, Colonel Tilden supervised the building of a large warehouse on the site of today's Tilden Shops. The whole community joined the barn raising, completing the warehouse in record time. In gratitude, Colonel Tilden hosted a community celebration on the second floor that was likely the largest party ever held in New Lebanon.

### Methodist Camp Meeting

In 1850, in a towering pine grove at the foot of Pool Hill in Lebanon Springs, the first Methodist Camp Meeting took place in simple surroundings of stars overhead and pine needles beneath. The revival meetings grew over many decades to an annual influx of 3,000 to 4,000 visitors arriving by train and needing services. To feed the growing summer population, the Clark Baking Company invented the first packaged bread in the nation. Rather than see the loaves impaled by flying cinders along the rail bed, the company wrapped them, first in newsprint that unfortunately transferred to the crust and then in waxed paper.

In 1895, the Methodist Conference sold the grove to the Salvation Army and for the next 15 summers Commander Evangeline Booth attracted followers with her powerful sermons. In 1910, the Camp Meetings wound to a halt due to aging leadership and the advent of the automobile – Americans in large numbers could begin spending summers at the seashore. In 1941, a Massachusetts lumber company purchased the abandoned site and harvested the majestic trees, many exceeding three feet in diameter and 130 feet in height over many acres.

### Samuel Jones Tilden

In 1874, New York State elected Elam's son Samuel Jones Tilden as Governor. Tilden had been a State Assemblyman and Chairman of the Democratic Party in Manhattan. His mansion overlooking Gramercy Park is today's National Arts Club. In 1876, as the Democratic candidate for President, Tilden won the popular vote but not the Electoral College and lost to Rutherford B. Hayes by one vote through a contested process in the U.S. House of Representatives.

Revered as a fearless opponent of political greed and corruption, Samuel J. Tilden had dismantled the "Boss" Tweed Ring of Tammany Hall fame in New York City. As Governor, he dismantled the Canal Ring. After his death in 1886, funds were raised to build a massive sarcophagus in the Cemetery of the Evergreens designed by the noted architect Ernest Flagg. Dedicated in 1895 with an epitaph that reads "I still trust the people," the sarcophagus underwent major restoration and a rededication in 1984 thanks to financial support from the State of New York matched by the Town of New Lebanon.

### **Landscape Character**

In the years leading up 1860 and the start of the Civil War, farmland surrounded the business center of New Lebanon and stretched along the Wyomanock and Kinderhook Creeks as far as the eye could see. While a few vestigial forested uplands may have survived the push for agriculture, the Lebanon Valley would have been wide open with scenic vistas of tilled fields and fenced pasture. Today, cleared fields and pasture are the exception and forested slopes again the norm, limiting scenic views. In addition to forested uplands and the valley below with farmland, a commercial center and residences, the town is distinguished by its rural character. Contributing to the rural character are the Shaker Swamp, Warm Spring and Shaker site on Mount Lebanon.

### **Population Data**

The population of the Town of New Lebanon, stable for decades, is approximately 2,500 residing in just under 1,000 households. Growth has been very modest over several decades although the town has avoided the declines in population that have occurred over the same period in neighboring Pittsfield and Chatham. The population is aging, however, with the median age increasing from 28.8 years in 1970 to 39.8 years in 2000. Despite this trend, the school age population in New Lebanon has actually increased over the past two decades in contrast to neighboring towns.

### **Regional Context**

Shaped like a trapezoid, the Town of New Lebanon occupies 20,995 acres in the northeast corner of Columbia County and includes the hamlets of New Lebanon, Lebanon Springs, West Lebanon and New Lebanon Center. To the north lies the Town of Stephentown in Rensselaer County, to the west a sliver of the Town of Nassau in Rensselaer County and the Town of Chatham in Columbia County, to the south the Town of Canaan in Columbia County, and to the east the Commonwealth of Massachusetts and Pittsfield State Forest. A heavily forested ridgeline called the Taconic Ridge forms the eastern boundary, dividing

the Taconic Range from the Berkshire Mountains. In the Lebanon Valley below, the south branch of the Wyamonock Creek flows north from Canaan into the Shaker Swamp, where it joins the north branch flowing south from Stephentown along U.S. Route 22 and then flows into the Kinderhook Creek northwest of the business district and just north of U.S. Route 20. The Kinderhook flows south from Stephentown and once joined by the Wyomanock flows in a northwesterly direction through New Lebanon, paralleled by the abandoned bed of the Rutland Railroad.

#### 4. Growth and Development Issues and Environmental Problems

2005 TNL Comprehensive Plan Action Items (see Map 2):

- **Develop specific requirements and standards for site plan review.**
- **Include protection of scenic views in site plan and subdivision review.**
- **Authorize and promote use of clustering and conservation subdivisions.**
- **Evaluate junkyard regulations and amend as needed to reduce visibility.**
- **Enforce mining regulations.**
- **Phase out burn barrels.**
- **Reconfigure zoning for hamlets and density.**
- **Adopt density bonuses.**
- **Amend subdivision and site-plan review laws.**
- **Facilitate proper siting of cell towers.**

Environmental problems affecting the Town of New Lebanon relate both to historic events and to the absence of modern amenities. The town has neither a municipal water supply nor wastewater treatment and storm water management. Many action items from the *Comprehensive Plan*, cited in the list above, have yet to be met.

The abandoned Town Landfill on Old Post Road and West Lebanon Gravel Mine are two open spaces that present environmental challenges. **After three decades of negotiations, Columbia County recently agreed to assume most of the costs, more than \$1 million, to mitigate environmental threats in the Town Landfill, which needs to be sealed.**

Lebanon Valley Speedway, a popular destination on weekends from April through November on the northwestern edge of town, presents another environmental challenge. The site borders the Kinderhook Creek and for most of the racing season a village of mobile homes assembles in a large open field without a system for wastewater management.

## 5. Vegetation, Wildlife, and Unique Natural Areas

**Land Use and Land Cover** (see Maps 3 and 4)

2005 TNL Comprehensive Plan Action Items:

- **Protect scenic vistas, open space, and sensitive wildlife habitats.**
- **Encourage preservation of woodlands and promote environmentally sensitive management and use of forest resources.**
- **Encourage restoration, preservation and protection of the Lebanon Warm Mineral Spring.**

Land use refers to the built landscape, land that has been altered for agricultural, residential, commercial or industrial use. Land cover refers to unaltered land and its natural vegetation, such as forest, grass or brush, and other natural surfaces such as rock or sand. Up-to-date land use and land cover information enables communities to identify existing land use patterns, which in turn can inform decisions about proposed land uses, suitability analyses for development and comprehensive planning. In providing a static picture of current development patterns, these data may be used as benchmarks when analyzing future patterns of land use and land cover. When data from other timeframes become available in Geographic Information System (GIS) formats, they may also be used for historical analyses.

Land cover data for New Lebanon have been mapped by the U.S. Geological Survey and are available on the New York State GIS Clearing House. The 21 land cover classifications present in the town are as follows:

- Open Water
- Perennial Ice/Snow
- Low intensity residential
- High intensity residential
- Commercial/Industrial/Transportation
- Bare rock/Sand/Clay
- Quarries/Strip mines/Gravel pits
- Transitional
- Deciduous forest
- Evergreen forest
- Mixed forest
- Shrubland
- Orchards/Vineyards
- Grasslands/Herbaceous
- Pasture/Hay
- Row Crops
- Small Grains
- Fallow
- Urban/Recreational Grasses

- Woody Wetlands
- Emergent Herbaceous Wetlands

Land use data for New Lebanon have been mapped by the Real Property Services of Columbia County and are shown on the Town of New Lebanon Tax Maps. The 10 existing land use categories are as follows:

- Unclassified
- Agricultural
- Residential
- Vacant Land
- Commercial
- Recreation/Entertainment
- Community Services
- Industrial
- Public Services
- Forested Lands/Parks

### **Calcium-rich Areas**

Calcium-rich areas, also called calcareous areas, are predominant in areas overlying the Stockbridge Marble bedrock formation along the Taconic Ridge and are also identified in the Columbia County Soil Survey maps. New Lebanon's extensive areas of marble bedrock and calcareous soils are somewhat unusual for the Hudson Valley and support unique plants and plant communities. For example, the base of the hill between Darrow School and the Shaker Swamp has a rich forest marked by limestone outcroppings and a great diversity of spring wildflowers. The source of Stony Kill, a circumneutral bog lake to the east of Canaan Road, has been identified as an uncommon habitat type supporting plants and animals typical of both acidic bogs and calcareous marshes. Other habitats in this area are calcareous wet meadow, fens, carbonate crest ledge and talus, calcareous swamps (e.g. red maple-tamarack), limestone woodland and calcareous talus slope woodland. Further investigation could uncover even more unique habitats.

### **Species of Conservation Concern**

*2005 TNL Comprehensive Plan Action Items:*

- **Identify state and federally designated sensitive wildlife habitats on town map** (a task for a Natural Resources Inventory).
- **Include protection of wildlife resources in site plan review.**

The mix in town of forest, grassland, shrubland and wetland affords high quality breeding sites to a wide variety of bird species. The most recent NYS Breeding Bird Atlas has a possible breeding record for the American Bittern, a species of special concern in New York State that depends for habitat on large wetlands with dense vegetation. The bird was spotted in wetlands in the central part of

town. Reported sightings of spotted salamander, wood frog, and a Jefferson's hybrid salamander, all species of concern in the North American Amphibian Monitoring Program, reveal that woodland pools are located in New Lebanon. The town is also home to plants and animals from more northern areas than are typically found in Columbia County and evidence suggests the presence of otter, fisher, bobcat and porcupine.

### **Unique Natural Areas**

Unique Natural Areas (UNAs) as identified by the CAC are sites deserving special attention for preservation and protection due to their outstanding environmental qualities. Examples of UNAs are streams, cliffs, woodlands and swamps. To qualify, each UNA must meet at least one of six criteria.

- (1) Scarce or rare species that have been recognized at a local, state or national level
- (2) Rare plant or community types for the Town of New Lebanon and/or Columbia County
- (3) Outstanding or rare geological features or processes
- (4) Outstanding natural scenic beauty either viewed from a distance or from within
- (5) Critical migration, reproduction or feeding habitats for rare or scarce animal species
- (6) One of the best examples of a rare plant or animal community or of an ecosystem within the Town of New Lebanon or Columbia County

In New Lebanon, perhaps the best known UNA is the Warm Spring, located half-way up Spring Hill Road in Lebanon Springs. The calcium-rich waters average approximately 72 degrees Fahrenheit with a continuous flow of 500 gallons per minute. Today the Warm Spring is listed as the only hot and/or warm spring in New York State.

The Shaker Swamp, another UNA in New Lebanon, covers 495 acres in the southeast corner of town. NYSDEC rates the swamp a Class 1 wetland complex, the highest rating for a freshwater wetland, and the NYS Open Space Conservation plan lists it as a high priority area for protection. Fed in part by the thermal spring, Shaker Swamp's calcium-rich wetlands host relatively rare herbs and medicinal plants. A few examples are Purple Aven, an anti-inflammatory and antiseptic; Mayapple, containing podophyllin, a tested cancer drug; and Blue Cohosh, which induces labor and eases arthritis pain. A variety of habitats are found in the swamp, including marsh, wet meadow, hardwood and mixed swamp, upland hardwood, mixed and conifer forest, upland meadows, upland shrub and calcareous cliffs/boulders. Shaker Swamp forms part of a system of calcareous valleys nestled between the Taconic Hills and is part of the largest wetland complex in the northeastern corner of Columbia County.

Mount Lebanon, another UNA, was designated as a national landmark on June 23, 1965, and is part of the Taconic Ridge, a system of hills and wetlands straddling Connecticut, Massachusetts, New York and Vermont. Prior to 1760,

native Mohicans inhabited Mount Lebanon. In 1785, it became home to the Shaker Society, continuing until 1947. The Columbia Land Conservancy based in Chatham has worked with NYSDEC, town officials and land owners to secure part of a \$50MM grant from the Forest Legacy Program to protect Mount Lebanon from development. This funding would purchase conservation easements on 1,310 acres in and around Mount Lebanon and protect the land in perpetuity. Once accepted, the funding stipulates that opportunities for public recreation, environmental education and archeological research be made available. The Forest Legacy Program supports several *Comprehensive Plan* goals and also the Strategic Plan of Canaan, to the south.

In a town with extensive forest cover, two large forest areas stand out. In the northern part of town shared with Stephentown, Stephentown Road divides a forest into two patches of 3,584 and 2,176 acres. To the south and east, New Lebanon shares large forests with Canaan and Massachusetts as part of the Taconic Ridge, identified as a significant biodiversity area by the NYSDEC Hudson River Estuary Program.

“The Taconic Ridge encompasses large areas of contiguous, high quality, northern hardwood forest underlain by complex metamorphic bedrock. It serves as a principle watershed and recharge area for numerous rich fens and associated rare plant and animal species. The Taconic Ridge extends nearly 60 miles along the eastern edge of New York State (Rensselaer, Columbia and Dutchess Counties) and is about 12 miles wide at its widest point.” (Penhollow et al., 2006)

In 2001, ecologists reported that these forests were in good condition and would remain so if they stay forested and landowners use sustainable timber management plans with long rotations. “The Knob,” a 1,086-acre beech-maple mesic forest that crosses into Canaan, lies within a 2,700-acre forest patch while another 2,600-acre forest patch sits to the east across NYS Route 22. This combined forest is larger still as it continues into Massachusetts, nearly contiguous with Pittsfield State Forest. The New York Natural Heritage Program has mapped an area of this forest as a high quality example of a significant natural community. As in other Hudson Valley forests, fragmentation into smaller patches would be the most significant threat to this special habitat's health. **Because much of this acreage occupies areas of steeper slopes, preservation of the habitat as it is in 2014 furthers multiple conservation goals of the *Comprehensive Plan* and this inventory.**

## 6. Geology, Soils, Topography and Water Resources

### **Bedrock Classifications** (see Map 5)

Bedrock and surficial geology have a strong influence on topography and the development of particular soil properties and on aspects of groundwater and surface water chemistry that in turn influence biological communities. The Walloomsac Formation, predominant in New Lebanon, occupies a wide swath running from the southwest to the northeast corners of town, well over three

quarters of the land mass. Along the Kinderhook Creek and running north to the Stephentown border, in the town's northwest quadrant, glacial and alluvial deposits predominate. The Elizaville formation is confined to a small area in the northwest corner of town, the Nassau formation to the Shaker Swamp, and Stockbridge Marble to a corridor along Canaan Road and along the Route 22 corridor rising towards the Taconic Ridge. The Taconic Ridge itself and The Knob to the west of Route 22 are underlain by the Austerlitz Phyllite formation (also called Taconic Overthrust). The carbonated Stockbridge Limestone formation is mainly calcitic and dolomitic limestone derived from sediments laid down from 30 to 35 million years ago. Within this formation are many carved out pockets that have created caves and underground caverns. The Taconic Mountains, geologically part of the New England Upland, are mainly metamorphosed schist, phyllite and slate. In this system, the folding and faulting of sedimentary rocks are so extensive that the stratified bedrock is nearly vertical in places, with rock cropping out at the land surface in some places.

<b>Bedrock Formation</b>	<b>Primary derivation</b>	<b>Primary materials</b>
Nassau	sedimentary	greywacke, sandstone, shale
Elizaville	sedimentary to metamorphic	argillite and slates
Stockbridge Marble	metamorphic	greenish-gray marble
Taconic Overthrust	metamorphic	minor quartzite; greenstones and tuffs and/or basalt
Walloomsac	metamorphic	phyllite, schist, metagraywacke
Glacial & Alluvial Deposits	(glacial & alluvial deposits)	unconsolidated sediment

### **Surficial Geology** (see Map 6)

Surficial geology refers to the unconsolidated geologic materials lying on top of the bedrock, and includes sand and gravel, clay and silts, and glacial tills. Mapping the surficial materials of the town is important for land-use planning and development decisions because the nature of these materials affects the suitability of areas for septic systems, the productivity of agriculture, the flow and quality of surface and groundwater, and appropriate locations for roads and buildings.

#### *General Surficial Geology Classifications*

- Kame Deposits -- irregularly shaped hills or mounds composed of sand, gravel and till that accumulates in a depression on a retreating glacier and is then deposited on the land surface with further melting of the glacier. Kames are often associated with kettles, referred to as kame and kettle topography.

- Recent Alluvium -- typically made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel, and shaped by water
- Outwash sand & gravel -- carried by running water from the melting ice of a glacier and laid down in stratified deposits
- Till – a mixture of coarse grains ranging in size from clay to boulders existing in an unstratified matrix of fine material rich in silt and some clay; widely distributed in the uplands and associated with areas of rock outcrop

Glacial till overlying bedrock predominates in the forested uplands of New Lebanon and consists of all the earth debris picked up by glacial ice sheets and deposited as the glaciers advanced or receded.

### **Soil Types**

The majority of soils in New Lebanon are the Nassau-Manlius type. With the exception of the floodplain areas, these soils predominate in the central area of town and extend to Canaan to the south and above the Wyomanock almost to the county line to the north. These soils are found where the land is gently sloping to very steep and are generally well drained to excessively drained. Medium textured, they are shallow and moderately deep to bedrock.

Blasdell-Hoosic-Knickerbocker soils predominate along the Wyomanock valley, extending south along Route 22 and then in an east-west direction. These soils can be very deep, well drained and moderately drained, and are medium textured.

Lanesboro-Monarda soils predominate along the Taconic Ridge to the east. These soils can vary from well drained to poorly drained and are medium textured with a dense substratum. They occur in uplands with an elevation greater than 1,000 feet.

Stockbridge-Georgia soils predominate in the southwest section of town. These soils are deep, well-drained and moderately well-drained, and are medium textured.

Pittstown-Bernardston soils exist in a strip along the northern edge of town. These soils are deep, moderately well drained and well-drained and are medium textured with a dense substratum. They exist in uplands.

### **Restrictive Soil Classifications** (see Map 7)

- Wet Areas – usually hydric soils
- Slow Perc – usually clay deposits and poorly drained
- Steep Slopes – often shallow and easily erodible; somewhat poorly drained
- Bedrock

Areas with slow perc soil and steep slopes are not conducive to development. New Lebanon has extensive areas of both.

***Important Agricultural Soils and Open Lands*** (see Map 8)

2005 TNL Comprehensive Plan Action Items:

- ***Preserve existing farms and open farmland and create new, economically viable farms.***
- ***Increase participation in agricultural assessment program.***
- ***Implement tax and easement programs.***
- ***Reduce assessments on land subject to conservation easements.***
- ***Require buffers between farms and other uses.***
- ***Promote Best Management Practices for controlling farm pollution.***

Agricultural lands are important open space assets. Farmland is not only a vital component of the town's rural character but also contributes significantly to its economic future. If lost to residential, commercial or industrial use exclusively, without proper monitoring, farmland may be lost in perpetuity and the town's economic future hindered.

Since the publication of the *Comprehensive Plan* in 2005, the town has seen progress in farm preservation. With the help of the Columbia Land Conservancy, all of Shaker View Farm, over 200 acres on Cemetery Road, has been preserved as working farmland in perpetuity. Other longstanding farms are Fairweather and Windswept Farms. A more recent arrival is Artemis Farm with its Randall Blues, cattle from Vermont that faced extinction a decade ago. Several new, smaller farms that are successful include Climbing Tree Farm, Raven and Boar, Trusted Roots Farm (a CSA on Hand Hollow Road), West Street Farm (a CSA at the Abode), and the Duhon/Rix farm. A viable Farmer's Market in the Mid-town Mall contributes to the belief that farms in New Lebanon can help grow the town's economy.

The best agricultural soils in town lie west and north of the business center on the floor of the Lebanon Valley along the Wyomanock Creek. Eight soil classes on the town's agricultural land come from the USDA Soil Conservation Service (SCS) classification system

Classes I & II: Prime farmland soils or soils with significant productive capacity. Every effort should be made to protect these areas for present and future agricultural production.

Class III: Farmland with productive capability that requires more aggressive conservation practices to be cultivated for any type of crop production.

Classes IV – VIII: Farmland limited for agricultural use that can nonetheless be carefully managed for grazing livestock, encouraging a land use that preserves open space and adds pastoral scenic quality to the landscape.

### **Agricultural District**

New York State Agricultural District 9 includes a large tract of land in New Lebanon where all the rules and regulations of the Agricultural District Law 25AA apply. Participation is voluntary and Agricultural Districts are reviewed every seven years by the Columbia County Farmland Protection Board. At that time or by special request, acreage may be added or deleted. Owners of land included in the District, as well as land outside, may apply for agricultural land assessment provided the law's requirements are met.

### **Topography** (see Map 9)

New Lebanon's varied topography features heavily forested rugged sections to the east along the Taconic Ridge and high hills elsewhere in town. Level land lies adjacent to the Wyomanock and Kinderhook Creeks in the Lebanon Valley. Elevations range from a low of 520 feet in the northwestern corner of town near Brainard to several high points between 1,400 and 1,800 feet in the central, eastern and southeastern sections of town. The highest elevation is 1,850 feet above sea level in the southeastern corner along the Massachusetts border. Two distinct ridges that run north and south dominate New Lebanon's topography – the Taconic Ridge running the length of the eastern border and another to the west of NYS Rte. 22 which is broken by the river valley and floodplain of the west-flowing Kinderhook.

### **Steep Slopes and Highly Erodable Soils** (see Map 10)

2005 TNL Comprehensive Plan Action Items:

- **Prevent development of steep slopes that can lead to erosion.**
- **Develop a steep slope overlay.**
- **Create hilltop/ridgeline overlay zone.**
- **Regulate timber harvesting.**

### **Acres of Land in New Lebanon by Slope**

<b>Slope</b>	<b>Acres</b>	<b>% of Total Acres</b>	<b>Comments</b>
0 to 10%	8,571	37%	Generally few limitations for building
10 to 15%	5,699	25%	Moderate limitations for building
15 to 25%	6,506	28%	Moderate to severe limitations for building (severe for slopes over 20%)
>25%	2,287	10%	Severe limitations for building

In areas that have 15% slopes and greater, not unusual in New Lebanon's forested uplands, care should be taken in development decisions and agriculture to minimize potential for erosion. **Most steep slopes in New Lebanon are best left as forested landscapes since forest cover helps control erosion and protects streams, ponds and wetlands. Forest cover also enhances air quality, watershed management and scenic beauty, all key contributors to New Lebanon's rural appeal. Any disturbance to steep slopes must be undertaken with extreme caution.**

***Wetlands and Hydric Soils*** (see Map 11)

Wetlands are transitional areas between upland and aquatic areas with standing water the first clue of their presence. Water may be visible only during wet seasons. Wetlands provide critical flood and storm water control by absorbing, storing or slowing down rain and melt water. In this way, they minimize flooding and stabilize the water flow. Wetlands also protect streams, lakes and reservoirs from possible contamination, diluting the viscosity of water and filtering sediments. In this way they cleanse the water by filtering out and immobilizing natural and manmade pollutants. After they are broken down, organic materials are recycled into the environment and support the food chain. It should be noted that wetlands regulated by NYSDEC must have an area greater than 12.4 acres and National Wetland Inventory (NWI) maps tend to underestimate the presence of wetlands.

Hydric soils are found near wetlands, or where wetlands were present historically, and are formed during the growing season when saturated or flooded and also when ponds last long enough to develop anaerobic conditions in the upper layer. Gradations run from wet to dry, with wetlands and their vegetation on the wetter side. Since all wet or potentially wet areas contribute to pollutant removal, flood storage and carbon sequestration, the wetlands map also includes hydric soils. Note that soils classified as poorly draining, such as clay soils, are not included on either NWI or NYSDEC wetland maps.

In New Lebanon, the largest wetland complex and associated hydric soils is located in the southeast quadrant in and around the Shaker Swamp. The Wyomanock Creek has a north branch flowing south from Stephentown along N.Y. Route 22 into the swamp where it joins a south branch flowing north from Canaan before exiting in a northwesterly direction towards the town center. Wetlands continue along this path beyond the town center. Once the Wyomanock joins the Kinderhook Creek further west at Adams Crossing Road north of U.S. Route 20, wetlands continue along the Kinderhook into the northwestern corner of the town.

Smaller wetlands are located due south of the town center near Stone House Road and in the far western part of town, surrounding New Britain and off Old Gale Hill Road. Another western wetland, Weber Pond, can be accessed from Dunrovin Road. In addition, a number of smaller wetlands are in the central part of town off Kelly Road and Salls Road, in the northeast corner of town between

County Route 5A and Route 22, and directly south of the Shaker Swamp just above the Canaan border.

Woodland pools – small wetlands in forests also called vernal pools – hold water for only part of the year and serve as important breeding habitat for a group of forest salamanders. Usually isolated from surface water flows, they are not protected by state or federal programs but can be by local governments. During environmental reviews, woodland pools in New Lebanon should be protected and will be identified in a Natural Resources Inventory (NRI) to follow this OSI.

**Floodplain Areas** (see Map 12)

2005 TNL Comprehensive Plan Action Items:

- **Prevent development within the floodplain that can impact upstream properties.**
- **Request an updated floodplain study from FEMA.**

Flooding, a natural process, occurs when stream water rises over a stream's banks onto the adjacent low-lying area, called the floodplain. Usually, flooding is considered a problem only after water levels encroach on property values. Flooding may vary in severity from year to year and can devastate communities. Floods can be rated based on frequency and intensity and the probability of a given flood event can be estimated for a given area. The 100-year flood has a one-percent chance of occurring in any year and is a common touchstone in the design of bridges and other constructions in and around waterways. In the zone that would be inundated by a 100-year flood, flooding hazards are the most serious. The 500-year flood, an extreme but possible event historically, has a 0.2 percent chance of occurring in a given year.

Flood hazard zone maps authorized by the Federal Emergency Management Association (FEMA), called Flood Insurance Rate Maps (FIRMs), determine flood insurance premiums under the National Flood Insurance Act. FIRMs show the 100- and 500-year flood zones as well as floodways and other data. Floodways are stream channels within the 100-year floodplain that must be kept free of encroachments that would cause flood levels to rise more than one foot. Encroachments include occupied dwellings and major fill.

At present in the Town of New Lebanon, the available 100-year flood boundaries are only approximate, as indicated on the community's FIRM "Zone A" ("Areas of 100-year flood, base flood elevations and flood hazard factors not determined"). Communities participating in the National Flood Insurance Program are required to adopt local laws that regulate building and development within the floodplain. Any development requires approval via a permit from the Town's Flood Plain Administrator. The Zoning Law of the Town of New Lebanon provides for a Flood Overlay Zone that corresponds to the 100-

year floodplain and requires that all permits for new construction or substantial improvement within the Zone be reviewed by the Enforcement Officer.

Map 9 shows the approximate location of the 100-year floodplain in New Lebanon. The flood zones shown are based on the available topography and very basic hydrological data and are thus generalized. **The town awaits assistance from FEMA in developing more up-to-date flood hazard maps to include the 100- and 500-year flood zones as well as other data. Developers requiring more detailed knowledge of the flood zones are advised for now to estimate the associated flood zones using independent surveys and local historical records.**

The 100-year floodplain is located along portions of the Wyomanock and Kinderhook Creeks. Floodplains and the adjacent riparian zones subject to flooding are important open spaces in New Lebanon, in particular the Kinderhook Creek. In their natural state they ameliorate flood pulses and can be areas of groundwater infiltration. They provide unusually rich botanical and faunal composition and offer corridors for walking paths and biking trails and other recreational opportunities such as fishing, canoeing and kayaking. Although floodplains are attractive sites for development, serious flood risk means they should be avoided.

Changes in land use and construction along stream channels change the hydrologic and hydraulic parameters that affect flood zones. For example, the bus garage at Walter B. Howard Elementary School has flooded at least three times since it was built on the floodplain. The stability of the bridge at Adams Crossing Road has been a concern also due to flooding. Development that increases impervious surface areas in the watershed tends to increase the frequency and/or size of flood events.

Intensive investigations are the only means to update flood zone maps. NYSDEC is charged with re-determining flood zones every decade or so and will soon re-map these zones in the Town. For this effort, channel topography will be mapped precisely using aerial radar plus ground surveying at selected sections. The flood hydrology will employ U.S. Geological Survey (USGS) data from gauging stations on the Wyomanock and Kinderhook Creeks.

### **Streams** (See Map 11)

2005 TNL Comprehensive Plan Action Item:

- **Establish a stream buffer to protect streams that do not have a FEMA floodplain designation.**

Water quality in streams and ponds within the Town is important for public health, recreation, and other ecosystem-critical functions. Activities occurring both within and along the bodies of water as well as in the watershed as a whole affect water quality. Various state and federal agencies, primarily the U.S. Army

Corps of Engineers and NYSDEC, regulate activity in and along the banks of the water bodies. NYSDEC has classified most water bodies in the state based on existing or expected "best use." These uses range from AA (good for drinking after chlorination) to D (solely for recreation and usually warm water) and are modified by the classifications "T" or "TS" if the water body can support trout or trout spawning. Water bodies classified as C (T) or higher are collectively referred to as protected streams and require permits for altering the bed or banks of the stream. The Kinderhook and Wyomanock Creeks, among others in New Lebanon, provide quality coldwater habitat for trout. The stream banks are forested since coldwater habitat requires shade (Figure 3 in DEC Habitat Survey).

The Farmscape Ecology Program at Hawthorne Valley Farm has conducted floodplain forest surveys throughout Columbia County. Findings confirm that floodplains continually forested for at least 60 years are home to a unique suite of plants and animals that tolerate occasional flooding. Examples include Sycamore, Bitternut and Cottonweed trees as well as Ostrich Fern and False Mermaid Weed (Knab-Vispo and Vispo, 2009). These forests may have been farm woodlots that were not completely cleared. At the New Lebanon study site, the program recorded typical floodplain species. Research also indicates there may be additional "ancient" forest rich in native species in the floodplain of the Kinderhook and Wyomanock. The exotic Chinese Tree Lilac, a popular garden plant not known to be invasive, has come to dominate a several-mile stretch of the recently reforested floodplain of the Wyomanock upriver from its confluence with the Kinderhook.

### **Groundwater Resources** (see Map 13)

2005 TNL Comprehensive Plan Action Items:

- **Designate CEAs (Critical Environmental Areas) around known aquifers.**
- **Include protection of aquifers in site plan review.**
- **Include wetland protection in subdivision and site plan review process.**

Groundwater is an important resource in New Lebanon. Due to the lack of a municipal water supply, households and businesses throughout the town depend on groundwater as their primary water source. In Lebanon Springs, about 40 households were historically connected to the Warm Spring via underground glass pipes and continue to maintain that excellent source privately. Since groundwater is both the source of drinking water and a major contributor to stream flow during most of the year, it requires monitoring and protection.

In New Lebanon, groundwater is concentrated in aquifers known for especially high yields. Aquifers, defined as geologic units that contain and produce large amounts of extractable water from pores between rock particles, can vary widely in size and nature and are distributed unevenly. Thickness, porosity and permeability determine the amount of water an aquifer supplies. Most high-yielding overburden deposits are found in the valleys. In the uplands, where a

mantle of glacial till reduces permeability, deeper bedrock wells are the general rule. The average yield for bedrock wells in New Lebanon is about 6 gallons per minute (GPM).

The chief aquifers in New Lebanon run in a wide swath from below the Shaker Swamp on the Canaan border northerly to Stephentown, branching in the center of town to run also northwesterly to the Stephentown border and from there along the Kinderhook Creek in a westerly and northwesterly direction. Isolated aquifers exist elsewhere, notably a northerly spike at the junction of Lovers Lane and Royce Hill Road, at the junction of Salls and Hand Hollow Roads, in the Hand Hollow Conservation Area running from C.R. 9 to Gale Hill Road, and in the northwest corner of town along C.R. 13. The chief aquifers are beds of shale that follow valley bottoms and underlie most other rock formations.

Along the valley bottom, water for households and businesses is provided by a mix of bedrock wells, drilled wells that produce from overburden gravel and sand aquifers, and dug wells that tap surface gravel and sand. The greatest difference in water quality is between the Stockbridge marble unit (a carbonate rock) that runs northerly along the Massachusetts border and slate and schist formations elsewhere in New Lebanon. Yields from carbonate rocks can be as high as 50-100 GPM, although hardness from mineral content requires treatment. More modest yields from slate and schist may contain elevated levels of sodium, iron or sulfur.

In the uplands of New Lebanon, glacial till is widely distributed and can be associated with areas of rock outcrop. Glacial till can be found also beneath stratified valley-bottom deposits. Due to low permeability relative to bedrock fractures, till may act as a membrane, hydraulically isolating rock from the shallower water table and creating a confined (artesian) aquifer.

Confined aquifers are overlain by impermeable deposits, typically clay-rich, and have potential surfaces that differ from the water table. Potential surfaces are the heights to which water rises in a well drilled into an aquifer – if this height is above the ground surface, the well is artesian. Although confined aquifers are protected from contamination from above, they can be polluted by contaminated recharge areas that typically lie at the outer fringes.

Unconfined aquifers, generally shallow, can be alluvial (stream) deposits adjacent to major streams and are recharged from rainfall and stream flow. Because they are open to the surface, they can be contaminated by human activities such as fuel-tank leakage, sewage, road salt, oil and gas spills, and agricultural chemicals. In view of these prevalent risks in New Lebanon and to protect groundwater quality, unconfined aquifers and recharge areas for confined aquifers require close monitoring.

Finally, the amount of available groundwater is limited by aquifer recharge, a function of both rainfall and infiltration. Impermeable surfaces such as pavement and buildings reduce infiltration and can severely impede aquifer

recharge in critical recharge areas, although constructed infiltration could compensate. Aquifer overdrafts, where extraction exceeds recharge, can also affect groundwater supply. **Although overdrafts are not yet a problem in New Lebanon, they would be best addressed before conservation becomes an imperative issue. Likewise, remediating contaminated aquifers would be a slow, difficult and expensive proposition. Once contaminants enter an aquifer they remain for a very long time. Rather than being forced to remediate contaminants, it is much more desirable to avoid them altogether.**

### **Ways to minimize contamination of groundwater**

*(source: Town of Rosendale Natural Resources Inventory)*

- Ensure proper operation and maintenance of wells and wastewater treatment systems (septic systems that are not working properly are the biggest source of groundwater contamination);
- Choose environmentally-friendly household cleaning products;
- Employ natural landscaping and other lower-demand vegetation;
- Avoid chemical fertilizer and herbicide applications for lawn and garden;
- Use water-saving devices within the home and consider a rain barrel to collect water for gardens;
- Do not dispose of harsh household chemicals, such as paint thinner, down the drain;
- Recycle products that can be recycled, such as motor oil and some paints;
- Store chemicals in sealed containers in a secure location;
- Use proper waste disposal;
- Take advantage of hazardous waste collection opportunities;
- When planning development or redevelopment, employ Better Site Design practices to ensure effective on-site filtration of stormwater run-off;
- When undertaking clearing, grading, or construction activities, employ Best Management Practices (BMPs) for stormwater management and soil erosion and sedimentation prevention.

## **7. Inventory of Existing Conservation and Recreation Lands and Cultural Assets**

### ***Managed Open Space Assets (see Map 14)***

Managed open space assets are lands that have been set aside for recreation, education, and preservation, as well as watershed and/or flood control. These assets can be public or private and access may vary with each site, even if used for community recreation. Protected properties may contain specialized geological or biological cover.

New Lebanon has numerous managed open spaces. The largest is Hand Hollow Conservation Area, a 433-acre nature preserve with more than two and a half miles of marked hiking trails through wooded uplands and meadows. The preserve includes a lake, two ponds, streams and wetlands. Beaver ponds to the

east along C.R. 9 provide important habitat for nesting great blue heron, otters and waterfowl. The Columbia Land Conservancy (CLC) owns and maintains the preserve, open to the public daily from sunrise until sunset.

The CLC is a nonprofit trust that works with communities to preserve farmland, forests, wildlife habitat and the rural character of Columbia County. More than \$5 million donated to the CLC has been used to protect 4,830 acres of working farmland and 5,452 acres of public lands, including 10 conservation areas throughout Columbia County. The CLC has also helped protect more than 22,000 acres of farms, forests and rural landscapes through conservation easements. These are voluntary legal agreements that seek to permanently protect a property's natural characteristics while landowners continue to live on, utilize and enjoy their land. In New Lebanon, 13 properties and a total of nearly 1,500 acres are currently protected by conservation easements.

A proposed 500-acre State Forest abutting and east of Hand Hollow Conservation Area, with a portion bracketing Schoolhouse Road to the north, is in the final stages of negotiation. CLC is assisting NYSDEC in working with a private landowner who purchased the acreage for conservation purposes and would deed the land to the State of New York. The acreage features forested uplands that rise from C.R.9 to the edge of a 34-acre fishing pond.

Wetlands under both federal and state protection are another managed open space asset in New Lebanon and include marshes, swamps, bogs and wet meadows. It should be noted that many wetlands in town are not protected, especially if they are isolated from permanent streams or large water bodies. Wetlands regulated by NYSDEC must be greater than 12.4 acres.

Schools in New Lebanon, both public and private, are another source of managed open space. New Lebanon's public schools – Walter B. Howard Elementary School on U.S. Route 20 in West Lebanon and New Lebanon Junior/Senior High School on NYS Route 22 in Lebanon Springs – maintain extensive playing fields. Darrow School owns and occupies the Church and Center Family sites within the Mount Lebanon Shaker Village. Its 365-acre campus adjoins the Pittsfield State Forest and includes playing fields, hiking trails, ponds, orchards, pastures, forests and even parts of the Shaker Swamp.

The Abode of the Message on Mount Lebanon, a spiritual community for members of the Sufi Order International with the simple message "to unite humanity in brotherhood and in wisdom," occupies 400 acres of the Shaker South Family site, including historic houses and workshops. A 4-acre organic farm is still in use today.

Finally, Shatford Park in Lebanon Springs provides managed open space for the community. The park hosts various programs, activities and other events on a basketball court, baseball fields, tennis courts and playgrounds. Community members may rent a covered pavilion with rest room facilities for private functions. During winter, an ice skating rink is available.

In the future, several large tracts of land currently in private hands could be made available for public use and added to New Lebanon's open space assets. The George Rickey estate on Hand Hollow Road, currently occupied by a surviving son overseeing the still-active studio, has all of its land under conservation easement. One large tract adjoining C.R. 9, mostly open meadow, has been added to Hand Hollow Conservation Area. In the future, the remaining land could well be part of a museum honoring George Rickey.

### **Cultural Resources**

An Open Space Inventory should acknowledge cultural resources in the Town of New Lebanon. The list that follows highlights the range of the town's cultural resources.

#### *Monuments and Historic Sites*

**Cemetery of the Evergreens** (Cemetery Road) – Famed for the massive Tilden Sarcophagus, dedicated in 1895 and restored and rededicated in 1984. A volunteer Board of Trustees oversees the cemetery but requires financial support from the Town Board to meet expenses for upkeep.

**Indian Head Fountain** (just north of the Town Hall on NYS Rte. 22, Lebanon Springs) – Dedicated in the late 1970s on land donated by Princess Dianna Rockwood Eristavi as the George Otis Rockwood Memorial Park, the fountain supplies a continuous flow of water from Montepoole, the Warm Spring across NYS Rte. 22 and up the hill in Lebanon Springs. The fountain commemorates Mohican traditions – the Mohicans believed that all water was sacred and the healing water of the Warm Spring especially so.

**Masonic Lodge** (junction Rtes. 20/22) – Restored by Nancy Kyle Fraser in 2010, the lodge is privately owned and available for large functions.

**Mount Lebanon Shaker Village** – Registered as a National Historic Landmark in 1965, the village began in 1785. At its height, more than 600 Shakers lived, worked and worshipped in over 100 buildings on 6,000 acres. Still in use on the site are 26 buildings that belonged to 3 of the 8 Shaker families. Darrow School occupies many Center Family buildings, including the Meeting House. Buildings of the Second and South Families are privately owned. The ruins of the Great Stone Barn, which burned to the ground in 1972, have been designated a World Monument Site. The Shaker Museum has stabilized the existing stone foundations and they are a featured attraction in the museum's renovated North Family site, the new home for its extensive collection of Shaker artifacts and furniture.

**George Rickey home, studio and grounds** (Hand Hollow Road/C.R. 34 near intersection with C.R. 9 in New Britain) – George Rickey (1907-2002) made his home in New Lebanon starting in 1960 when he began teaching at RPI in Troy. His kinetic sculptures are famed internationally and many still dot the fields and ponds on the extensive grounds in East Chatham, which remain in the family and can be visited with permission. Rickey sculptures are unique in the art world and irreplaceable.

**Warm Spring and Columbia Hall site** (Pool Hill, Lebanon Springs) – Although both are privately owned, they can be viewed half-way up Spring Hill Road. The Warm Spring produces a continuous flow of healing waters at 500 gallons per

minute and a constant 72 degrees. Across the road is a remaining wing of Columbia Hall, now an apartment house.

*Parks & Public Buildings and Lands*

*2005 TNL Comprehensive Plan Action Items:*

- **Map existing/potential trails and trail heads.**
- **Expand trail facilities.**
- **Work with NYSDEC and other agencies to improve and expand public fishing access.**
- **Identify potential canoe/kayak areas on Kinderhook Creek and develop parking, access and launch points.**

**Hand Hollow Conservation Area** (C.R. 9 at C.R. 34/Hand Hollow Road) – Dedicated by the Columbia Land Conservancy in 2005, the conservation area covers 433 acres with a lake easily accessible from Gale Hill Road, two ponds, streams, fields, and marked hiking trails through forested uplands. The pond nearest C.R. 9 was once the site of a rookery for great blue herons.

**Kinderhook Fishing Easement #1** (off U.S. Rte. 20, West Lebanon, behind the Lebanon Valley Speedway) – Provided by NYSDEC, this access site offers recreational fishing, canoeing, tubing and swimming.

**Kinderhook Fishing Easement #2** (off U.S. Rte. 20, West Lebanon, directly after the intersection with Adams Crossing Road)

**Lebanon Valley Protection Association** (Rtes. 20/22 at Shaker Road) The LVPA plans to build a new fire house on the site of the VFW Hall at Mill Road and U.S. Route 20.

**New Lebanon Library** (Rtes. 20/22) – Founded by Jesse Torrey in 1804 as the first free lending library in the nation, the library now occupies the former Taconic Valley Bank building in the commercial district. Three additions have been built thanks to generous financial support from town citizens. The library relies on annual support from the Town Board for a full-time librarian and community events.

**New Lebanon Post Office** (Routes 20/22, Business District)

**New Lebanon Town Hall** (N.Y. Rte. 22, Lebanon Springs) – The new meeting hall and refurbished main building were dedicated in December 2012.

**Shattford Park** (N.Y. Rte. 22, Lebanon Springs) – Donated by A. H. Shattford in 1949, the park lies between the high school and Town Hall and has a playground, two tennis courts, three baseball fields, a basketball court and the large Weisbuck Pavilion, constructed in 1970, with picnic tables, kitchen facilities and rest rooms.

**West Lebanon Post Office** (U.S. Rte. 20) – Adjoins an original telephone company building, now Fairpoint Communications.

**West Lebanon Protection Association** (U.S. Rte. 20) – The firehouse occupies the original site of Wyomanock Female Seminary, founded by Eveline Hatch in 1858. After relocating to the Tilden Hotel on the site of the current town library, the school closed in 1885.

*Note:* For a fee, New Lebanon residents can use a lifeguarded beach on Queechey Lake in Canaan during the summer and can launch boats from the adjoining NYS Public Boat Launch.

### *Performing Arts*

**Tannery Pond Concerts** (Darrow School, Mount Lebanon) – Founded in 1991 by Christian Steiner, the concerts offer a series of 8 chamber music recitals performed by renowned musicians each summer in the intimate and acoustically lively setting of Darrow School's Tannery building, which also serves as the school's chapel. Seating capacity is 295.

**The Theater Barn** (U.S. Rte. 20, New Lebanon Center) – Founded in 1984 in space at the Village Shops and relocated to a new amphitheater-style building shortly thereafter, the theater seats 134 and offers 6 shows per week from late June through late September with runs of 3 to 4 weeks per show.

### *Churches*

**Congregational Church** (junction Rtes. 20/22), est. 1772 – Known as The White Church, the current building was dedicated in 1955.

**Episcopal Church of our Savior** (N.Y. Rte. 22, Lebanon Springs), est. 1870 – Known as The Little Church, the stained glass windows commemorate historic New Lebanon families.

**First Baptist Church** (Main St., Lebanon Springs), est. 1826

**R. C. Church of the Immaculate Conception** (U.S. Rte. 20, New Lebanon Center), est. 1874 – The original Catholic church, St. Joseph's (est. 1852), stood on Old Mountain Road in Lebanon Springs – the route to Pittsfield in those days – but the building was moved to Stephentown in 1874 where it still stands on N.Y. Rte. 43 and Grange Hall Road. The abandoned site became a Catholic cemetery with most of the plots dating to 1870-1890. The current church adjoins Our Lady of Lourdes Grotto, dedicated in 1929 with 9,000 attendees, and also has a Burying Ground off C.R. 5.

**The Abode of the Message** (Mount Lebanon) – Founded in 1974, the Abode is a Sufi religious retreat on 400 acres offering homes to the community and a conference center. The Abode occupies historic Shaker South Family buildings.

### *Schools*

**Walter B. Howard Elementary School** (U.S. Rte. 20, West Lebanon) – Dedicated in 1971 with a significant addition in 2001, the school has a gymnasium with basketball court. The grounds include three soccer fields.

**New Lebanon Junior/Senior High School** (N.Y. Rte. 22, Lebanon Springs) – Dedicated in 1930, the building has had several additions, including the Shatford Pool, donated in 1959 and refurbished in 2001 and open to the public throughout the year. The school grounds include many playing fields.

**Darrow School** (Mount Lebanon on the grounds of the New Lebanon Shaker Society) – Founded in 1932 as a boys boarding school by the Shakers and the heads of Deerfield Academy in Massachusetts and the Hotchkiss and Taft Schools in Connecticut, Darrow provides hands-on education on a 340-acre campus to 125-135 boys and girls in Grades 9-12. The student-faculty ratio is 4:1. The school became co-educational in 1970 and occupies historic Shaker

buildings belonging to the Church and Center Families, including the Meeting House. Darrow is renowned for its Samson Environmental Center that includes a state-of-the-art wastewater treatment facility using natural ecological processes. Darrow also hosts the Tannery Pond Concerts.

**Mountain Road School** (historic Hand Farm House on C.R. 9, New Lebanon Center, since 2012) – Founded in 1975 by the Abode of the Message, the school offers classes to Grades K-5.

*Other attractions*

2005 TNL Comprehensive Plan Action Item:

- **Adopt noise limits or “entertainment tax” for polluting entities.**

**Lebanon Valley Auto Racing** (U.S. Rte. 20, West Lebanon) – Constructed in 1952 on the site of a former landing strip, the Speedway brings more than a half million visitors to New Lebanon on weekends from April through early November for drag racing.

## 8. Current Conservation and Recreation Projects

Owners of land no longer actively farmed should be encouraged to brush hog annually so that the land remains available for future agricultural use, whether for pasture, crops, Community Supported Agriculture (CSAs), or other niche agricultural operations. **Brush hogging could be encouraged through property tax rebates.**

The Rails to Trails Committee in New Lebanon has joined forces with Stephentown, the adjoining town to the north in Rensselaer County, to form a joint committee called the Corkscrew Rail Trail Association, Inc. The initial conversion of the abandoned Rutland rail bed to a walking trail will start at Old Post Road in New Lebanon and run north approximately three miles to Knapp Road in Stephentown. As part of this process, the Legislature of the State of New York will be asked to designate the Wyomanock Creek, which parallels the abandoned rail bed, as a protected waterway. That designation would enable the committee to apply for grants to help defray the costs of converting and maintaining the rail bed as a walking trail. **A successful process would require that local officeholders work closely with our state legislators.**

The Town Board is currently considering a Noise Ordinance for the town. Since the town's rural character and property values both suffer from unwelcome noise, the ordinance seems a worthy goal. **A source of income for the town could be an entertainment tax – taking a small percentage of the price of each ticket from town entertainment venues such as the Theater Barn, Lebanon Valley Speedway and Tannery Pond Concerts. This revenue stream would help defray**

**costs to the town from the influx of visitors, help overcome losses in property value and help meet the costs associated with preserving open space assets.**

The progress of projects currently underway in New Lebanon promises to help meet conservation goals and broaden educational and recreational opportunities for the public. The Forest Legacy Project on Mount Lebanon, the Corkscrew Rail Trail, the proposed 500-acre State Forest adjoining Hand Hollow Conservation Area, the restoration work by the Shaker Museum | Mount Lebanon at the North Family site on the Mount Lebanon Shaker Village including the Great Stone Barn, together with Darrow School and the Shaker Swamp Conservancy, offer the promise of substantive gains in preserving the town's natural resources and its historic heritage.

Significant efforts have been made to identify areas in the town that would provide enhanced view sheds. In 2003, with permission from the Abode of the Message, vegetation was cleared from the west side of U.S. Route 20 in Hancock, MA, to open a view of the Lebanon Valley. Intervening time brings vigorous re-growth and periodic efforts should be made to maintain this view shed resource.

## **9. Community Goals and Five-Year Action Plan**

Public comment sessions held on September 23 and November 18, 2013, and January 20, 2014, affirmed the following goals concerning open space in the Town of New Lebanon.

- Support the Shaker Swamp Conservancy in preserving the town's foremost area of biodiversity and in creating an attraction for education, recreation and tourism.
- Research and develop a plan to restore and preserve the Warm Spring in Lebanon Springs.
- Protect New Lebanon's rich, interconnected aquifers, preventing the contamination of groundwater through careful monitoring and informed site plan reviews.
- Encourage further agricultural development within the Agricultural District and elsewhere in the town with appropriate buffers.
- Develop the Corkscrew Rail Trail for both its recreational and economic benefits in cooperation with neighboring Stephentown to the north.
- Create and regulate stream buffers to prevent contamination of open water by various sources, including runoff from junkyards.
- Assist the Forest Legacy Project on Mount Lebanon in opening the protected acreage to public access for educational and recreational uses.
- Research woodland pools throughout the town and help guide the Planning Board in preserving these irreplaceable natural resources.

Finally, the CAC plans the following activities over the next five years.

- Research, write and distribute a Natural Resources Inventory for the Town of New Lebanon.
- Research, write and distribute a view shed analysis for the Town of New Lebanon that would inform the Planning Board and Zoning Board of Appeals in preserving the town's rural character and in enhancing scenic views. Note that the Lebanon Valley view shed opened in 2003 on U.S. Route 20 with the cooperation of the Abode of the Message, and re-cleared in April 2014 thanks to the volunteer services of Tony Murad, will require periodic re-clearing.
- Actively advise the Town Board, Planning Board, and Zoning Board of Appeals on matters related to conserving natural resources in the town.

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Sources for Wetlands map

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Floodplain map

Larger-scale versions of the FIRM for the Town of New Lebanon can be viewed at the office of the Columbia County Planning Department or ordered from FEMA at their Map Service Center, P.O. Box 1038, Jessup, MD 20794-1038; telephone: 800-358-9616; fax: 800-358-9620.