West Street, New Lebanon
(Marc Anthonisen)

ROAD TO SILVER

Annual Report
Climate Smart Communities Task Force
New Lebanon, NY
May 10, 2021

Cornell University

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ACKNOWLEDGEMENT

I would like to thank the people of New Lebanon for welcoming me and my family into their community. I would especially like to thank the Climate Smart Task Force for allowing me to join them on their Road to Bronze, and now on their Road to Silver. I would also like to thank my advisor, Professor Rebecca Morgenstern Brenner for her constant guidance and support throughout this project.

Marc Anthonisen
May 10, 2021

EXECUTIVE SUMMARY

The Town of New Lebanon, NY—a small community on the eastern border of New York State in the Taconic Mountains—joined New York State's Climate Smart Communities program in April 2020 (New York State Climate Smart, n.d.). The program is designed to encourage communities to mitigate and adapt to climate change at the local level, as opposed to top-down regulation. Since joining the program, New Lebanon moved quickly to submit 25 recommended actions to apply for Bronze status, an effort completed in under nine months and despite the pandemic. Notably, these actions were achieved without additional funding and in some cases saved the community money. In March 2021, New Lebanon was awarded Bronze certification, the first town in Columbia County to do so (Vaughn, 2021).

This initial effort has generated significant community engagement, local innovation, and positive momentum. While New Lebanon is a relatively small community, it is now supporting other communities in transitioning to a green economy. This includes Columbia County itself, which registered for the Climate Smart program in December 2020 and has included three representatives from New Lebanon on its Task Force. Moreover, reducing carbon emissions in the Northeast US is particularly important given the outsized carbon footprint of the region (Frumhoff et al., 2007).

As the town locks in this initial effort, the next question becomes what the town can do to ensure continued meaningful adaptation to climate change. New Lebanon is likely to see significant changes in coming decades, not only driven by changing weather patterns, but also rapidly evolving technology, and demographic changes. Anticipating these changes will help the town build its adaptive capacity (Smit & Wandel, 2006), while preserving important aspects of the community.

New Lebanon has some unique strengths that it can leverage as it adapts, particularly its rich history, natural resources, and a committed, volunteer-driven community. It is also better positioned than many other communities in the country to adjust to a warmer world given its location in the US Northeast (Horton et al., 2014). And it benefits from being located amid a cluster of states that are aggressively pursuing climate adaptation.

This report uses the Climate Smart Communities template of actions to map out a roadmap to Silver accreditation. It includes a set of recommended next actions that have been scoped, prioritized, and sequenced for the Task Force to consider. It also includes a summary of actions to date and in progress.

Overall, getting to Silver accreditation will take longer than the initial nine months it took to apply for Bronze. This is not just because more points are required, but because some of the remaining actions are more foundational and transformative. As a result, they will likely require more coordination and planning than it took to achieve Bronze. Nevertheless, pursuing these actions will keep New Lebanon on a path of innovation and engagement demonstrated in the first phase of the program. Doing so will give New Lebanon more say over how it is impacted and responds to climate change.

This project was made possible through a collaboration with Cornell Institute of Public Affairs (CIPA). It is hoped that this will lead to more projects to support New Lebanon and Columbia County in their efforts to adapt to climate change in the future.

Table 1. Contact Information for Cornell Institute of Public Affairs (CIPA).

Organization	Role	Key Contact	Contact info
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INTRODUCTION TO NEW LEBANON

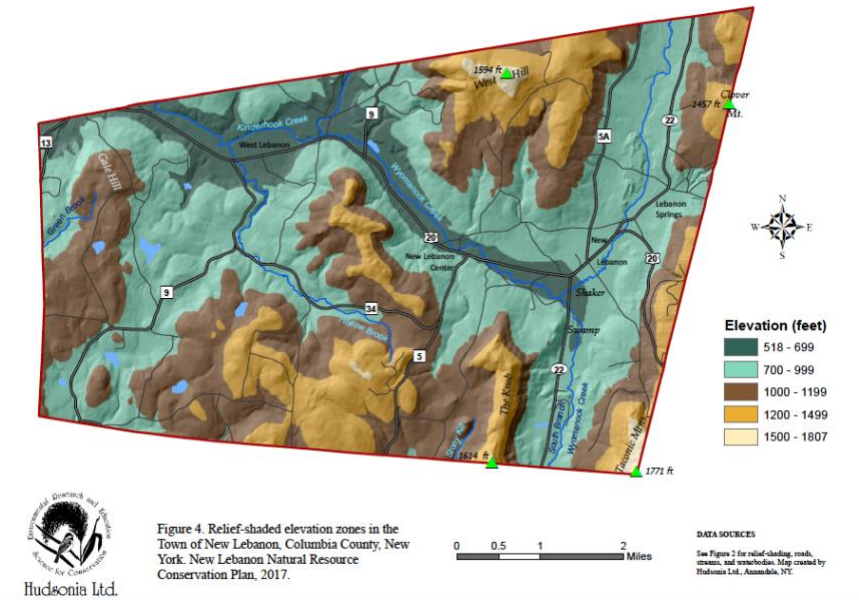
GEOGRAPHY

New Lebanon covers 36 square miles situated in the Taconic Mountains of eastern New York State. The terrain is defined by the valleys carved by the Wyomanock and Kinderhook Creeks (Figure 1. Elevation map of New Lebanon1). The town has significant natural assets, including views of the surrounding ridgelines, Shaker Swamp, and Hand Hollow Conservation Area. The New Lebanon Conservation Advisory Council completed a Natural Resource Conservation Plan in 2017 that outlines the natural assets of the community (Stevens & Graham, 2017). This is an excellent resource for planning as well as understanding potential climate impacts in New Lebanon.

New Lebanon also has important natural assets just outside its borders. Across the Massachusetts state border to the east is the Pittsfield State Forest with an extensive mixed use trail network, including the Taconic Crest Trail, which runs 37 miles along the NY, Massachusetts, and Vermont borders. To the north is the Rensselaer Plateau, a unique highland ecosystem that also accounts for much of New Lebanon's upstream watershed.

An important feature to note when it comes to climate change is that New Lebanon is relatively isolated from other towns by surrounding ridges. The state highways 20 and 22 are major arteries for the town. If any of the four sections of the roads that connect New Lebanon to the outside world were impacted by weather events, it could have an effect on the town for some time.

Figure 1. Elevation map of New Lebanon.



Note. (Stevens & Graham, 2017).

Figure 2. A ridge of the Taconic Mountains in New Lebanon.

Note. (Marc Anthonisen, September 2020).

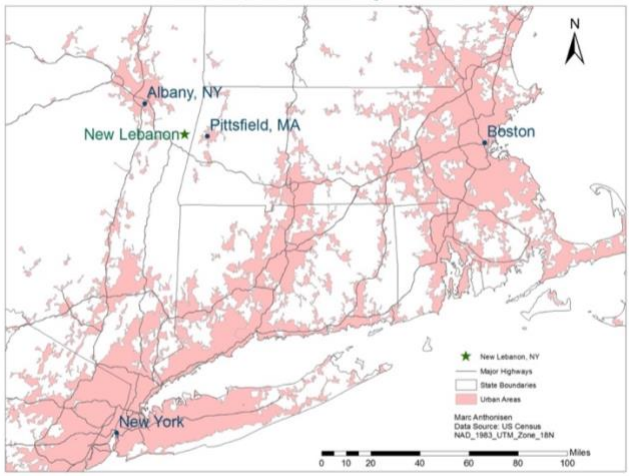
HISTORY

New Lebanon has a rich history that has resulted in many cultural assets. These can be a source of resilience by helping foster a sense of community and bolster the economy. However, they also need to be protected as the climate changes. The town sits on lands originally settled by the Mohican people, who were the first to make use of the warm waters at what is now Lebanon Springs, as well as the medicinal plants of Shaker Swamp (Timreck, 2021). Other assets include the Shaker buildings, the legacy of Samuel Tilden—a former governor of New York—and the site of the first public library in the U.S. More recently, the town has been recognized as part of the Lafayette Trail, celebrating a visit by the Marquis de Lafayette in 1825. (Appendix 2: History of New Lebanon).

DEMOGRAPHICS

New Lebanon had an estimated 2,152 residents in 2019 based on the annual estimates for Minor Civil Divisions by the US Census Bureau (US Census Bureau, 2020). While the community is rural in appearance, it is also positioned among major urban areas in the US Northeast (Figure 3). Located near major highways, including Interstate 90 and the Taconic Parkway, New Lebanon is within the orbit of several urban centers, including Albany, NY, Pittsfield, MA, New York City, and Boston. As a result, the community is home to many second residences as well as retirees. Conversely, many residents work in the surrounding cities. As such, while New Lebanon is rural in appearance, it should also be considered an "edge" or "exurb" community.

Figure 3. Location of New Lebanon, NY and nearby urban areas.

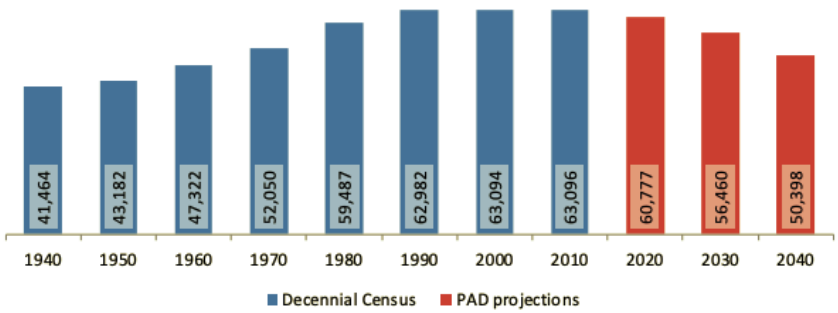


One of the key characteristics of New Lebanon and Columbia County is a significant older population, with nearly a quarter of county residents over 65—at 22% for New Lebanon, (U.S. Census Bureau; n.d.-b) and 24.4% for Columbia County (U.S. Census Bureau; n.d.-a). The average age in the county is projected to continue to get older (Vink, 2017). This is also a potential factor when thinking through the county's vulnerability to climate change.

Another key trend is that the populations of New Lebanon and Columbia County may start to decline rapidly. From 2010-2019 the population of New Lebanon is estimated to have dropped 6.4%, while that of Columbia County was projected to fall 5.6% (US Census Bureau, 2020). The Cornell Program on Applied Demographics projects the population of Columbia County will decline steadily in coming decades (**Error! Reference source not found.**4; Vink, 2017).

However, these figures will have to be compared with the 2020 census figures once they are available at the town and county levels. While New York State's population had been projected to decline through 2019, the actual figures from the 2020 census—which are already available at the state level—showed that the state population still grew 4.8% from 2010 (Gebeloff, 2021). The pandemic may have also reversed potential population declines in New Lebanon and Columbia County as people moved out of cities to exurban areas. Nevertheless, if the longer-term trend of population decline holds, New Lebanon will be entering into an era of increased climate stress with a potentially older and smaller population.

Figure 4. Population projection for Columbia County, NY.



Source: 1940-2010 Decennial Census and projections by Cornell Program on Applied Demographics

New Lebanon is 98.5% white (U.S. Census Bureau. (n.d.-b), which is higher than the 89% average of Columbia County (U.S. Census Bureau. (n.d.-a). About 37% of residents have a bachelor's degree or higher, compared with 32.7% at the county level. Median household income is $69,327 versus $66,787 for the county. New Lebanon's poverty rate was assessed at 7.9% versus 11.6% for the county. Note that this was before the pandemic, which may have impacted both poverty rates.

ECONOMY

New Lebanon's local economy is made up of a mixture of services, tourism, and agriculture. The town hosts a motor speedway that attracts a significant number of tourists in the summer. It is also at the doorstep of the Berkshires in Massachusetts, which have significant cultural attractions, including Mass MOCA, a museum of contemporary art, and Tanglewood, a classical music festival. Jiminy Peak ski resort is also nearby in Hancock Massachusetts. A number of these assets, such as the motor speedway and Jiminy Peak, may be impacted in coming years as climate change progresses. The speedway could be impacted by a shift to electric vehicles, while the ski resort is vulnerable to warming winters (Nearing, 2018).

New Lebanon also has many antique stores, thrifts shops, and flea markets. However, many other retail establishments are now abandoned due to the shift to online shopping that began even before the pandemic. Restaurants are another contributor to New Lebanon's economy, reflecting its position at a crossroads of two state highways. Other businesses include fuel companies and auto repair shops. These businesses could also be impacted as the economy shifts to renewable energy sources. The town also hosts the Darrow School, a private high school housed in buildings of the former Shaker community. The school is another important economic asset for the town.

While the town has been experiencing economic challenges, the transition to a green economy will also create opportunities. The State of New York announced that the Port of Albany will be designated as a manufacturing center for wind turbines (Diana, 2021). Additional transformations to green energy, including setting up solar facilities, heat pumps, and electric vehicle infrastructure, could create jobs for New Lebanon residents. The town is also home to many residents who work in the global economy from their residences. This is a trend that increased during the pandemic and may continue to grow in the future (Rosalsky, 2020).

IMPACT OF THE PANDEMIC

New Lebanon formed its Climate Smart Task Force in April 2020, just as the pandemic was beginning to impact upstate New York. The pandemic limited how often people could meet in person, either as a team or with other stakeholders. It also put significant stress on institutions, including state funding for climate programs. Stress on members of the community also increased, as shown in Figure 5 below with 300-car-long lines for the bi-monthly food bank. Many community members were out of work for extended periods of time and experienced financial difficulty.

Perhaps ironically, the pandemic also freed up resources for the Climate Smart Task Force, as some residents suspended their normal work to shelter at home and could volunteer in the community. A key takeaway from the pandemic is how well the Climate Smart team was able to innovate to deliver on its goals despite the unique challenges of the pandemic. This is a positive sign for a small community that will also need to come together to adapt to climate change.

Figure 5. Residents lining up for food during the pandemic.

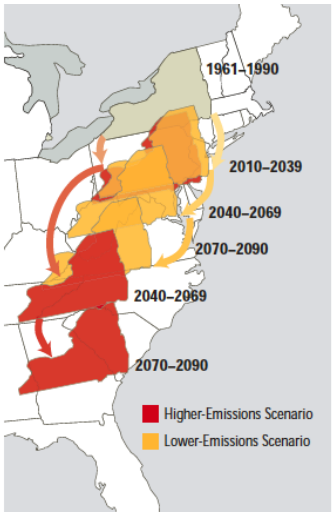
Photo: Marc Anthonisen, November 2020.

LITERATURE REVIEW: WHAT DOES CLIMATE CHANGE MEAN FOR NEW LEBANON?

Understanding what climate change means for a small, rural community is not an easy task. Until the present day, climate change has often been treated in the general public as a belief system as opposed to a scientific reality. However, attitudes are gradually changing, at least at the national level (Goldberg et al., 2020). But even for those open to considering the issue, the monolithic, global nature of climate change makes it hard to visualize on a local level. This section aims to break down climate change to a scale that is relevant for New Lebanon.

While there are many global climate reports, including studies by the United Nations Intergovernmental Panel on Climate Change (IPCC, n.d.), several studies look at the regional scale in the US. These include studies focusing on the Northeast as part of the National Climate Assessment (Horton et al., 2014; Dupigny-Giroux et al., 2018), the Union of Concerned Scientists (Frumhoff et al., 2007), and the Nature Conservancy (Anderson et al., 2016). Overall, the projections are for the Northeast to become warmer and wetter, moving closer to the climate of Virginia or the Carolinas (Figure 6).

Figure 6. Climate migration projected for upstate NY.



Note. (Frumhoff et al., 2007).

At the state level, New York State provides a couple of useful resources to project local climate impacts. The key climate projection is the state's "ClimAID" report (Rosenzweig et al., 2011) which was updated in 2014 with additional projections (Rosenzweig et al., 2014). This study serves as the basis for the state's mitigation plan, (New York State Department of Homeland Security and Emergency Services, n.d.). The analysis breaks out projections by subregion. New Lebanon is assigned to Region 5 for the East Hudson and Mohawk River Valleys. The key projection is for the average annual temperature to increase substantially by the 2050s (Table 2, below). Along with this will come several secondary impacts. Precipitation is expected to increase in the spring and early summer. Specifically, intense rain events are likely to increase (Rosenzweig et al., 2014; p9). Perhaps paradoxically, toward the end of summer and early fall, seasonal drought is also expected to creep up as well (Horton et al. 2014). This risk has been explored in a single-hazard Climate Vulnerability Assessment for New Lebanon as part of the Bronze level certification (Anthonisen, 2020).

Other risks include increasing storms, including hurricanes and other coastal storms, wind events, and ice storms. All of these pose a risk of disruption to New Lebanon's roads, power supplies, and communications.

Table 2. Projected climate changes for the Hudson and Mohawk valleys of New York State.

Region 5 (Saratoga) – Temperature

Baseline (1971-2000) 47.6 °F	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
2020s	+ 1.7 °F	+ 2.3 to 3.2 °F	+ 3.7 °F
2050s	+ 3.5 °F	+ 4.5 to 6.2 °F	+ 7.1 °F
2080s	+ 4.1 °F	+ 5.6 to 9.7 °F	+ 11.4 °F
2100	+ 4.4 °F	+ 6.1 to 11.4 °F	+ 13.6 °F

Region 5 (Saratoga) – Precipitation

Baseline (1971-2000) 38.6 inches	Low Estimate (10th Percentile)	Middle Range (25th to 75th Percentile)	High Estimate (90th Percentile)
2020s	-1 percent	+ 2 to + 7 percent	+ 10 percent
2050s	+ 2 percent	+ 4 to + 12 percent	+ 15 percent
2080s	+ 3 percent	+ 5 to + 15 percent	+ 17 percent
2100	- 1 percent	+ 5 to + 21 percent	+ 26 percent

Note. (Rosenzweig et al., 2014).

Based on a preliminary analysis of the available projections, the following six hazards seem most likely for New Lebanon:

- Increased storms
- Flooding
- Heat Stress
- Seasonal Drought
- Invasive Species
- Wildfire

While these are some of the likely hazards, further study is needed to assess the intensity, progression, and relative risks of each hazard. So far, this has only been done for drought. A multi-hazard analysis is being conducted by a separate team of Cornell University students, with a completion date of May 2021 (Akhtar & Hughes, 2021). This analysis will help inform the town's emergency management planning as well as the county's Hazard Mitigation Plan.

Columbia County prioritizes its vulnerabilities every five years in a county-wide Hazard Mitigation Plan (Columbia County Emergency Management Office, 2018; Table 3 3). This exercise is done in partnership with all the municipalities in the county. This is a prerequisite for certain kinds of FEMA funding. The latest plan, from 2018, acknowledges the growing risk of climate change. When the next analysis is done, around 2022-2023, there will be an opportunity to update the climate projections and vulnerability analysis. New Lebanon will be able to rank its relative hazards and propose mitigation strategies. In 2018, New Lebanon identified flood as its top, albeit low risk. The current proposed mitigation action, dating back to the 2008 county mitigation plan, is to install concrete beds on the Wyomanock and Kinderhook Creeks.

Table 3. Prioritization of hazards in the Columbia County Hazard Mitigation Plan.

Hazard	Score	Rating
Severe Storm	280	Moderately High
Hurricane	254	Moderately High
Tornado	246	Moderately High
Flood	232	Moderately Low
Earthquake	188	Moderately Low
Winter Storm (Severe)	179	Moderately Low
Dam Failure	143	Low
Ice Storm	126	Low
Ice Jams	124	Low
Drought	117	Low
Wildfire	112	Low
Landslide	110	Low
Infestation	108	Low
Extreme Temps	96	Low
Coastal Storm	N/A	N/A
Hailstorm	N/A	N/A
Expansive Soils	N/A	N/A
Windstorm	N/A	N/A

Note. (Columbia County Emergency Management Office, 2018).

BUILDING RESILIENCE

It might be reasonable to ask if it's even worth bothering with climate change in a town that's only eight miles across, especially one that faces other challenges, such as demographic and economic pressures. Given the small size of the town, perhaps climate change would be better handled at the state and federal levels. However, there are several reasons why a small town might still invest the time and resources to mitigate and adapt to climate change.

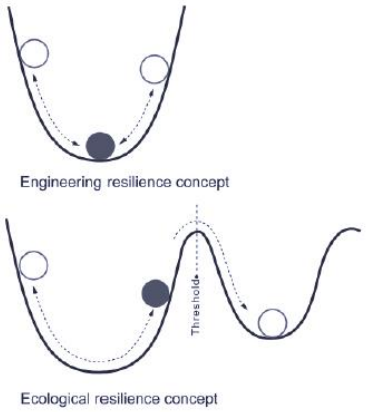
First, climate change is a problem that may be best attacked from many angles and levels simultaneously (Adger et al., 2005; Ostrom, 2009; Keys et al., 2016). A small town like New Lebanon may have a better vantage point on some smaller scale opportunities than a central government agency. Because it is closer to the problem, a small town may also be able to design and implement actions that are more relevant to the problem. This influence can then be further multiplied when a town coordinates with neighboring towns to share innovations. Despite its small size, New Lebanon can have a catalytic impact on surrounding communities. Secondly, towns in the Northeast can play an outsized role because of their much higher emissions compared to other parts of the country and the rest of the world (Frumhoff et al., 2007, p. 107). As a result, reducing energy usage in New Lebanon has a significant impact despite its small population and land area. Finally, adapting to climate change will give the town more say in how it evolves. Anticipating future trends and adapting accordingly may leave the town less vulnerable to future shocks.

ADAPTIVE CAPACITY

Traditional approaches to disaster planning emphasize protecting the current state, often called "engineering resilience" (Holling, 1996). A visual metaphor for this could be building higher and higher floodwalls. This can lead to protective systems eventually failing at a breaking point. A relatively new approach is to be prepared to adapt and evolve to a new normal and not defend prior states in what is called "ecological resilience" (Liao, 2012). A visual model for this is shown in Figure 7 below. A key part of this is building "adaptive capacity," essentially developing a community's ability to stretch and adjust in response to stress (Smit & Wandel, 2006).

Throughout the pandemic, New Lebanon has already demonstrated an ability to adapt, whether it was moving the town government online, expanding food and clothing distribution, or starting a bicycle recycling program. Building the town's adaptive capacity will help prepare it for the coming stresses brought by climate change.

Figure 7. A visual model of engineering resilience vs. ecological resilience.



Note. (Liao, 2012).

STRENGTHS

New Lebanon has many strengths going into an era of accelerating climate change. This includes a strong and growing culture of volunteering and mutual support. The town also has many informal networks, which bolster a community's ability to adapt (Keys et al., 2016). Among these are religious organizations, the food pantry, and the farmers market. Being smaller is also a strength in that it allows the town to make changes faster than a larger municipality. The town's older population also means it has talented retirees who are available to take on town projects.

New Lebanon is also positioned in a relatively good region for adaptation. While the Northeastern states will see changes in their climate, the changes may be less severe than in other parts of the country (Dupigny-Giroux et al., 2018). New Lebanon is also located on the border of two states that are proactively tackling climate change. In particular, the town is receiving expert support from the Capital District Regional Planning Commission as part of its participation in the Climate Smart Program and Clean Energy Communities Program (CEC; NYSERDA, n.d.-b), and from the Cornell Institute of Public Affairs (CIPA). The town is also situated within a strong knowledge economy, being relatively close to the New York Capital District and Western Massachusetts, with their many universities and technology companies. This environment increases the resources available to the town to boost its adaptive capacity.

New Lebanon also has important strengths in its historical and natural assets. Both can help underpin the town's economic viability during times of change. While the population is projected to decline over the coming decades, having a historic town with easy access to recreation can serve as a counterbalance to these demographic trends.

VULNERABILITIES

New Lebanon also has some potential vulnerabilities. A declining population (Vink, 2017) is probably one of the more significant challenges. This could slowly reduce the town's economic resources and ability to implement policies. An aging population also increases vulnerability, for example to heat stress. That said, having many talented older residents has also been a demonstrated strength in terms of volunteering critical skills.

The town is also dependent on a small number of leaders and volunteers. This "key person" risk could result in the town seeing periods of productive capacity building, followed by years of limited development. For this reason, creating a welcoming environment for people to live and contribute will further deepen the town's ability to adapt.

Another challenge is that climate change is not yet well understood by many residents, or it is viewed as a distant, future threat. As a result, it is perceived as a niche issue, which could limit the town's ability to develop adaptive capacity.

Geographically, the town has some vulnerabilities because of its valley layout, leaving it susceptible to flooding, especially if precipitation continues to increase as predicted. Because it is fairly isolated, if the town should lose the use of one of the main state highways, this could disrupt the town for quite some time. The town is also vulnerable to frequent power outages from storms. Limited broadband and cell coverage further increases the town's risks.

Finally, in the wake of the pandemic, even though the town appears to have weathered the situation financially, New York State has fewer financial resources, leaving less support for the town in the event of an emergency.

OPPORTUNITIES

One potential opportunity for New Lebanon in the face of a changing climate is to offset its declining population. If the town can slow its population decline, possibly by promoting its relatively more stable environment, it may be able to build a more resilient community. With abundant natural resources for recreation, and an overall economy moving toward remote work, the town could position itself more firmly in the tourism and knowledge economy.

Another potential opportunity is to boost the general awareness about climate change among the residents in New Lebanon. This will increase overall alignment around future initiatives as well as promote an aware and adaptive mindset. This is not to say many residents are not open to the science of climate change today. The reality is that extrapolating the global trends and messaging to the town level is not easy to do. The upcoming Climate Vulnerability Analysis by fellow Cornell students Waqar Akhtar and Jessie Hughes is a step in this direction (Akhtar & Hughes, 2021).

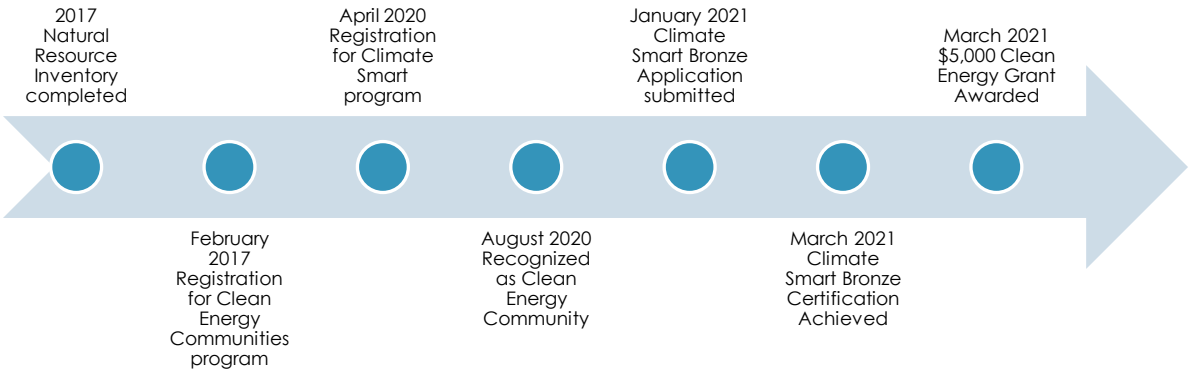
With a committed group of volunteers, another opportunity is to engage in continuous training to acquire the broad range of skills needed to execute a program like Climate Smart Communities. Throughout the pandemic, the Task Force has demonstrated a willingness to innovate, adapt, and learn. Some training lessons on collaboration tools have already started. Ongoing training on climate science, collaboration software, and project management skills will further boost the town's chances of success in adapting to climate.

Overall, New Lebanon can become a showcase for making a smooth transition to a climate aware community. This may attract more residents to the town. At the same time, it can help protect and steward the natural resources necessary to mitigate climate hazards.

THE ROAD TO BRONZE

New Lebanon began down the path to addressing climate change by enrolling in the Clean Energy Communities program (NYSERDA, n.d.-b), a sister to the Climate Smart program, in 2017. Initial actions included creating a unified solar permit, energy code enforcement training, and energy benchmarking for government buildings. A fourth action, the conversion of the town's streetlights to LED bulbs, was completed in March 2020. This allowed the town to be recognized as a Clean Energy Community in August 2020. The town also completed a Natural Resource Conservation Plan in 2017. As a result, the town was already a significant way down the path to Bronze accreditation when it enrolled in the Climate Smart Program.

Figure 8. New Lebanon's climate milestones.



The town voted to register for the Climate Smart Communities program in April 2020, establishing a Task Force of 12 volunteers (New Lebanon; 2020). The Task Force was supported by Jill Henck, an advisor from the Capital District Regional Planning Commission, a state-funded advisory body. As a first step, the Task Force opted to complete a greenhouse gas (GHG) benchmarking exercise for all town operations. This is broader than the energy inventory of government buildings completed for the Clean Energy program and is meant to serve as a baseline for future greenhouse gas reduction strategies.

Looking at potential additional actions, the Task Force intentionally identified strategies that were cost-neutral or would save the town money. These included establishing a community composting program and a bike recycling program. Other actions included setting up a booth at the farmers market to promote Task Force initiatives, a Facebook page, and a community education campaign. In addition, a Climate Vulnerability Assessment for seasonal drought was completed and presented to the town at the end of 2020. Despite the pandemic, the Task Force was able to submit 25 actions, potentially worth 139 points, to meet the requirements of 120 points for Bronze certification in January 2021. The DEC accepted 22 of these actions for 130 points, awarding New Lebanon Climate Smart Bronze Certification in March 2021. The full report of Bronze actions is available on the Climate Smart website (Climate Smart Certification Report, 2021).

Table 4. Actions submitted for Bronze Certification January 2021.

PE	Action	Points	Status
PE1	CSC Task Force	20	Accepted
PE1	CSC Coordinator	10	Accepted
PE1	National / Regional Climate Program	3	Accepted
PE1	Partnership with Other Entities	3	Accepted
PE2	Government Operations GHG inventory	16	Accepted
PE3	Energy Code Enforcement Training	5	Accepted
PE3	LED Street Lights	10	Accepted
PE3	Energy Benchmarking for Government Buildings	4	Accepted
PE3	Town Vehicle Fleet Inventory	4	Accepted
PE5	Resource Recovery Center	6	Accepted
PE5	Organic Waste for Government Buildings	2	Accepted
PE5	Organics Management Plan		Needs revision
PE5	Recycling in Government Buildings		Needs revision
PE5	Residential Organic Waste Program	4	Accepted
PE5	Waste Reduction Education Campaign	2	Accepted
PE6	Unified Solar Permitting	5	Accepted
PE6	Natural Resources Inventory	10	Accepted
PE6	Planning & Infrastructure for Bicycling & Walking	3	Accepted
PE7	Hazard Mitigation Plan	4	Accepted
PE7	Climate Vulnerability Assessment	8	Accepted
PE8	Famers Market	3	Accepted
PE8	Buy Local/Buy Green Campaign	2	Accepted
PE9	Social Media	3	Accepted
PE9	Local Climate Action Website	3	Accepted
PE11	Innovative Approaches to Existing CSC Actions - Bike Program		Not accepted

CRITICAL SUCCESS FACTORS

New Lebanon had several positive factors helping it achieve Bronze accreditation in such a short period of time:

- *Committed volunteers*. The town had a small number of committed volunteers willing to engage in the project. Many of these came from the Conservation Advisory Council.
- *Town board support.* The effort also enjoyed strong support from the town board as well as careful guidance on how to position the projects within the community.
- *Institutional support.* The town received strong support from Jill Henck and the Capital District Regional Planning Commission. The town also received support from the Cornell Institute of Public Affairs (CIPA).
- *Leadership.* The Task Force benefitted from strong leadership by key figures, including the Town Supervisor, the Task Force Chairman, and other members of the Task Force who were able to bridge gaps and push projects forward despite setbacks.
- *Careful project selection.* The Climate Smart Task Force chose projects that fit the needs and desires of the community. This respected the town's strong home rule leanings. For that reason, the Task Force did not pursue Community Choice Aggregation for energy

purchases, which requires residents to "opt out." However, it did pursue Community Solar, which only requires "opting in." By carefully selecting projects, the Task Force was able to avoid raising concerns in the community. The bike program was another example of an effort that helped build trust in the community without imposing costs or rapid changes on community members.

- *Community engagement.* The Task Force engaged with the community frequently, including at the Farmers Market, through the bike program, and through educational initiatives.
- *Team culture.* Another critical success factor was the Task Force's team culture of patience and resilience. Many of the town's residents were under significant stress during the pandemic so the Task Force adopted an operating model of "meeting residents where they were." This meant being patient with program starts and stops and setbacks. However, this approach also helped build trust in the community.
- *Point strategy*. The team intentionally pursued more Climate Smart points than required for accreditation. That way, when some projects fell through, there was enough of a buffer to still achieve certification.
- *Coordination.* New Lebanon's ability to coordinate its volunteers as well as with town and state officials set it apart in its push to Bronze.
- *Project management tools.* The team made full use of online tools to manage the program. This included using Zoom for conference calls and Google Drive to store program documents and track project status. Additional training was provided to team members on collaboration tools.
- *Strong foundation of actions.* New Lebanon began the Climate Smart program having already achieved several Clean Energy actions as well the Natural Resource Conservation Plan. These counted toward the initial 120 points.
- *Small scale.* It should also be acknowledged that many of the recommended actions are easier for a smaller town to implement given the smaller scale. For example, benchmarking government buildings for energy usage is a relatively simple exercise compared to a larger city. New Lebanon only had two government buildings to calculate. Other initiatives such as organic waste at government facilities were also relatively easy to implement given there is only one main town building.

THE ROAD TO SILVER

As mentioned, the Bronze submission captured existing work, worth about 50 points, out of the required 120 points. On the other hand, Silver certification will require 170 more points and may involve more heavy lifting, including Priority items that may need extensive benchmarking, funding, or outside resources. Some actions may also have dependencies on other projects that will take more time, such as the Comprehensive Plan. As an indication of the challenge, out of the 330 communities that have registered for the Climate Smart program, 65 had achieved Bronze certification as of May 2021, but only seven had attained Silver.

On the other hand, New Lebanon's push to Silver will occur as there is more support from the federal government for climate initiatives and as New York State continues to invest in a green transformation, despite the state's weakened finances caused by the pandemic. There may also be increasing local awareness of climate change as a result of continued climate-driven disasters around the country and the world. The year 2020 saw the most disasters on record costing more than $1 billion in the U.S. (Smith, 2021).

Table 5. Criteria for Bronze and Silver certification.

Note. (New York State Climate Smart, n.d.).

As of May 2021, the Task Force had three new projects completed and nine more in progress toward Silver accreditation. These are worth an estimated 76 points. This could bring New Lebanon's working total to around 200, leaving another 100 points to go to Silver. Three of the actions in progress are also Priority actions - the Community GHG inventory, Alternative Fuel Infrastructure, and Community Education and Engagement.

Table 6. Silver actions completed or in progress as of May 10, 2021.

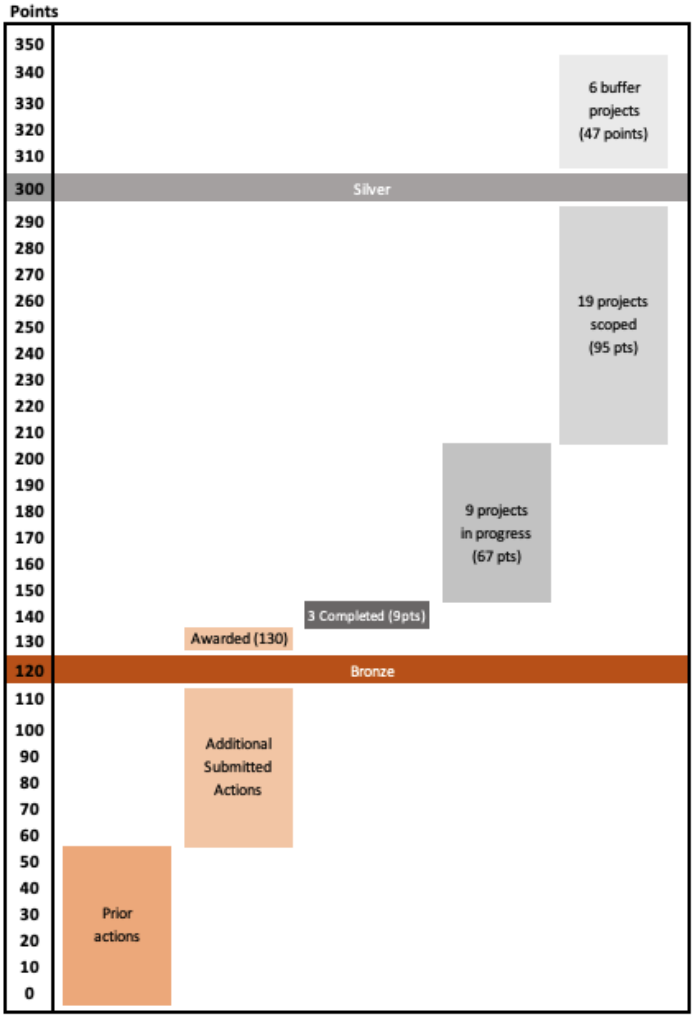
Status	PE	Action	Likely points
Completed	PE7	Conserve Natural Areas	1
Completed	PE3	Interior Lighting Upgrades	4
Completed	PE10	Annual Progress Report	4
In progress	PE9	Climate Change Education & Engagement	4
In progress	PE8	Solarize Campaign	5
In progress	PE7	Climate Vulnerability Assessment	16
In progress	PE7	Source Water Protection	6
In progress	PE7	Riparian Buffers (Trees for Tribs)	2
In progress	PE6	Alternative Fuel Infrastructure (EV charger)	4
In progress	PE5	Community Repair / Cafe	4
In progress	PE3	Clean Energy Upgrades	10
In progress	PE2	Community Green House Gas inventory	16

Looking forward, New Lebanon needs to complete roughly 20-25 more actions to obtain Silver accreditation, out of the 112 actions available (Figure 8). To identify a pathway to Silver, potential actions were reviewed on the Climate Smart Communities website (New York State Climate Smart, n.d.). A prioritization matrix was created based on four factors:

Prioritization Score = Community Impact + Strategic Value + Sequencing - Difficulty

- **Community Impact** is the near-term benefit of reducing GHGs or increasing resilience. This variable was weighted points from 0 to 10.
- **Strategic Value** assesses the longer-term benefit of completing the action to the overall program. This variable was weighted points from 0 to 10.
- **Sequencing** reflects how quickly the project can get started and is free from other dependencies. This variable was weighted points from 0 to 10.
- **Difficulty** reflects the overall complexity of the project, either from technical or political perspective. This was a negative value, award points from 0 to -10.

Figure 8. New Lebanon's Pathway to Silver.



The analysis of all these variables resulted in the below prioritization for the Task Force to consider (Table 7). Detailed descriptions of each action are provided in Appendix 1: Summary of Pledge Element Actions.

Table 7. Prioritized additional actions proposed for Silver certification.

Status	PE	Action	Likely points	Impact	Strategic	Sequencing	Difficulty	Score
Recommended	PE8	Solar for all	5	10	5	8	4	19
Recommended	PE4	Renewable Energy Feasibility Study for Town Hall	4	7	5	10	3	19
Recommended	PE7	Heat emergency plan	6	8	4	10	4	18
Recommended	PE7	Watershed based flood mitigation plan	2	10	10	8	10	18
Recommended	PE7	Cooling centers	1	8	5	7	3	17
Recommended	PE5	Organics Management Plan - Restaurants, Stores, Schools	2	7	5	10	5	17
Recommended	PE7	Evaluate Policies for Climate Resilience (CSRP) (CCE)	6	7	7	10	8	16
Recommended	PE6	Planning & Infrastructure for Bicycling and Walking	3	8	10	8	10	16
Recommended	PE2	Community Climate Action Plan	16	10	10	3	7	16
Recommended	PE8	Green Economic Development plan	4	6	10	5	6	15
Recommended	PE5	Recycling Bins in Government Building	3	3	2	10	0	15
Recommended	PE4	Geothermal	9	5	8	7	5	15
Recommended	PE7	National flood insurance program community rating system	3	10	10	2	8	14
Recommended	PE8	Clean heating and cooling campaign	5	7	7	3	4	13
Recommended	PE7	Climate Adaptation Plan (CCE Resources Available in 2022)	3	5	10	5	7	13
Recommended	PE6	Comprehensive plan with climate components	3	8	8	7	10	13
Recommended	PE7	Design flood elevation & flood maps	2	10	8	4	10	12
Recommended	PE7	Culverts and Dams (CCE Resources Available in 2022)	2	6	5	2	1	12
Buffer	PE12	Performance: Reduce GHGs from government facilities	15	8	5	1	4	10
Buffer	PE12	Performance: Reduce GHGs from government vehicles	15	8	5	1	4	10
Buffer	PE7	Watershed plan for water quality	2	7	7	5	10	9
Buffer	PE4	Solar Energy Installation	9	3	3	5	3	8
Buffer	PE3	Advanced vehicles	4	10	4	0	7	7
Buffer	PE4	Renewable energy certificates	2	5	5	0	4	6

PROGRAM RISKS

Like any program, the New Lebanon Climate Smart initiative faces several risks that will need to be managed as the program moves forward. These might include:

- Key person risk - there are only a small number of volunteers and town officials driving the success of the town's Climate Smart efforts. As a result, there is a risk the program will slow down if key people are not available to contribute or can't be replaced with new volunteers.
- There is a risk that Task Force resources diminish as the pandemic eases, with volunteers returning to full-time jobs or other responsibilities.
- There is a related risk that the team may not be able to attract enough volunteers to keep the effort going long term.
- Bronze fatigue - given that Silver accreditation is 300 points compared to 120 for Bronze there is a risk the town might slow down its effort having achieved Bronze certification.
- Many actions need to be recertified on a regular basis. This will require a significant amount of effort by the Task Force on a regular basis.
- Some of the actions require specific skill sets. Given the small size of the town, there is a risk that the Climate Smart team is not able to acquire the relevant skills, including program management, specific scientific training, or software skills.
- The town may not be able to get funding needed for certain actions, or may require matching grants that it is unable to match.
- There is a risk of loss of political sponsorship from the town board.
- At a high level, there is the risk that the Climate Smart program, even if implemented, will create a false sense of security. While many of the actions are driving meaningful change, the program in no way ensures that the town will be insulated from the dangers of climate change.

PROGRAM OPPORTUNITIES

Following are some ideas for risk mitigation as well as additional opportunities to pursue:

TASK FORCE MEMBERSHIP

The Task Force has an opportunity to broaden its bench strength as membership turns over. The Task Force is still relatively new, so there is likely untapped talent in the community. For example, the team can also look at recruiting youth volunteers at the high school level. At the same time, it may want to consider recruiting members with specific skill sets such as earth science, engineering, emergency management, or geographic information systems (GIS). In addition, management and coordination skills have been a key part of the Task Force's success to date so these skills are also highly valuable in new volunteers.

EDUCATION

Overall, briefing the community on the realities of climate change could be a way to ensure further support for the Climate Smart program in New Lebanon (Keys et al., 2016). While the Task Force has already started educational initiatives, expanding these efforts could help ensure broader support for the program in the future.

RECERTIFICATION

Given there will be an ongoing need to recertify actions and this will create a risk for the program, one recommendation could be to designate one Task Force member to track and manage recertification requirements going forward.

GRANT FUNDING

Despite the pandemic, the state opened up $17 million in grants for community energy initiatives in January 2021. Because New Lebanon achieved Clean Energy Community status in 2020, it is eligible for matchless grant funding, including $5,000 just for achieving CEC status. Many of these initiatives overlap with Climate Smart actions. These grants offer an opportunity for New Lebanon to build further on its initial effort to achieve Bronze.

RESILIENCE PLANNING

The Task Force is still mapping out the town's climate vulnerabilities with assistance from Cornell students. That said, climate change continues to accelerate, with 2020 having the highest level of disasters over $1 billion. As such, it may help the Task Force and the town to continually increase its emphasis on resilience activities to help protect the town from future shocks.

CONCLUSION

There are already many positives that have come out of New Lebanon joining the Climate Smart Program. Firstly, it has helped build a network of volunteers committed to helping the community and solving difficult problems. This network was immediately put into service supporting the community through the pandemic. The program also fostered innovation at a local level that was relevant to the town. The partnership with the Community Garden to start food waste composting was a good example of leveraging local networks to solve problems.

As New Lebanon locks in Bronze certification and looks to next steps, it is doing so as Columbia County has also joined the program. As a result, New Lebanon is in a position to share its experience and help the county scope out its own Road to Bronze. New Lebanon can also start to partner with other towns, especially on initiatives that benefit from economies of scale, like the Community Repair action (see Community Repair). Despite being a small town, New Lebanon can serve as a showcase for what a green transformation looks like on a local level.

Nevertheless, both the town and the county face significant changes in the decades ahead. A declining and aging population will create challenges, but also opportunities. Technology and the pandemic are also changing how people work. Ultimately, places like New Lebanon may become a haven for people looking to move away from areas impacted by climate change, such as coastal areas, or states impacted by wildfire. The more effort the town invests now in anticipating future changes, the more say it will have over how its future evolves. The lesson of "ecological resilience" is to be ready to adapt as opposed to trying to defend a constant state.

APPENDIX 1: SUMMARY OF PLEDGE ELEMENT ACTIONS

This section includes actions that have been submitted for Bronze, are in progress, or can be considered for next steps for Silver. The Climate Smart program offers 112 possible actions, worth a possible 1,077 points, across 12 Pledge Element categories. An initial 22 actions have been accepted for Bronze Certification. That leaves 89 possible actions to pursue as part of New Lebanon's Silver submission, although additional components of the original 22 can also be submitted. The actions that are recommended below were chosen for their relevance to New Lebanon, ability to be achieved, and likely impact.

PE1: BUILD A CLIMATE SMART COMMUNITY

CLIMATE SMART TASK FORCE

Status: Approved for Bronze, March 2021
Mandatory Action
Points: 20

The Task Force has been led and supported by a small group of committed volunteers, allowing it to apply for Bronze certification in under nine months. Importantly, the Task Force was made aware after its application for Bronze that a town official or staff member must also be on the Task Force. This was remedied by Town Board resolution in February 2021.

Looking forward as the team evolves, a number of opportunities comes to mind in terms of membership:

- *Youth representatives.* Youth representatives on the Task Force could help broaden the perspective of the team and give insights into the goals and perspectives of the generations that will take over managing climate change in the future.
- *Emergency management.* Key skills that would be useful to bring into the team are volunteers with experience in emergency management, including retired law enforcement, medical, or fire personnel. This skillset is particularly useful in resilience planning.
- *Earth science background.* Earth sciences is another key skill set that would be useful to add to the team. A high school earth science teacher would provide key domain expertise.
- *Geographic Information Systems (GIS).* A key skill set for Climate Smart is GIS. Recruiting a volunteer with GIS skills could help with future projects.
- *Program management.* General program management skills have been critical to the Task Force's success to date and will be needed to deliver the upcoming 25 or so projects.

CLIMATE SMART COORDINATOR

Status: Approved for Bronze, March 2021
Mandatory Action
10 points

This action was completed by designating Bruce Shenker as the Climate Smart Task Force Coordinator in April 2020.

PARTNERSHIP WITH OTHER ENTITIES

Status: Approved for Bronze, March 2021
3 Points

This action was completed through New Lebanon's partnership with the Columbia County Environmental Management Council, which will be spearheading the county's Climate Smart Task Force.

Adapting to climate change is a long-term process that requires collaboration between many parties. The more engagement with other stakeholders, the more resilient New Lebanon can become. Especially given New Lebanon's relative isolation geographically, building ties will be important in times of stress, when support from other communities could be critical.

Given New Lebanon's status as an early adopter of the Climate Smart program, it can play a leadership role in the county and the surrounding region. Partnership with other entities will help expand the impact of its hard work on the program.

Table 8. Key Partners for New Lebanon's Climate Smart Program.

Organization	Role	Key Contact	Contact info
Capital District Regional Planning Commission (Albany)	Advisor (Climate Smart, Clean Energy programs)	Jill Henck	jill.henck@cdrpc.org
Capital Region HeatSmart Campaign (Albany)	Advisor (Heat pumps, geothermal, building efficiency)	Todd Fabozzi	todd@cdrpc.org
Cornell Institute of Public Affairs (Ithaca, NY)	Academic partner	Rebecca Brenner	rjm478@cornell.edu
Cornell Cooperative Extension (Acra, NY)	Advisor (Resilience planning)	Kelsey Jean West	kjw228@cornell.edu
Hudson River Estuary Program (NY DEC/Cornell) (New Paltz, NY)	Advisor (Land use, Conservation)	Ingrid Haeckel	ingrid.haeckel@dec.ny.gov
New York Rural Water Association (Claverack, NY)	Advisor (Water protection)	Steven Winkley, P.G.	winkley@nyruralwater.org
Columbia County Environmental Management Council	Conservation	Bruce Shenker	bshenker@gmail.com
Columbia County GIS department	Spatial Data	Don Meltz	donald.meltz@columbiacountyny.com
Rensselaer Plateau Alliance	Conservation	David Farren	nlcac.farren@gmail.com
Columbia Land Conservancy	Conservation	Craig Westcott	craig.arthur.westcott@gmail.com
New Lebanon Farmers Market	Partner organization	Josh Young	josh@newlebanonfarmersmarket.com

Columbia County Board of Supervisors	Government	Tistrya Houghtling, Minority Speaker	supervisor@townofnewlebanon.com
Columbia County Emergency Management Office	Government	David Harrison Jr. (Director)	cceoc@columbiacountysheriff.us
Town of Canaan, NY Climate Smart Task Force	Town committee	Craig Westcott (Chair)	craig.arthur.westcott@gmail.com
Town of Richmond, MA	Government	Danielle Fillio (Town Administrator)	Townadmin@richmondma.org

NATIONAL / REGIONAL CLIMATE PROGRAM

Status: Approved for Bronze, March 2021
Points: 3

This action was completed through the town's participation in New York State's Clean Energy Communities program. New Lebanon became a Clean Energy Community in August 2020 after completing four high priority actions. As a result of this, the town is eligible for $5,000 in a match-free grant for future energy projects. It can also pursue additional grants worth $5,000, $10,000, or more, based on energy saving actions or community campaigns.

PE2: INVENTORY EMISSIONS, SET GOALS, AND PLAN FOR CLIMATE ACTION

This section focuses on establishing a baseline of emissions for the town, both from government operations and the broader community. These benchmarking activities require significant time and resources but are key to understanding the overall impact of the town's efforts to reduce its carbon impact. With these baselines in place, the next step is to develop strategies to reduce emissions.

GOVERNMENT OPERATIONS GHG INVENTORY

Status: Approved for Bronze, March 2021
Priority Action
Points: 16

This was one of the first actions pursued by the newly formed Climate Smart Task Force in the summer of 2020. An inventory of all emissions was completed by collecting the utility and heating fuel data for government buildings and streetlights. The footprint of the town's vehicles was also calculated by analyzing the town's diesel bills. The completed inventory was approved by the Town Board and published to the Climate Smart Task Force page on the town website (New Lebanon Climate Smart Communities, n.d.).

The year 2019 was chosen as the benchmark year as it was before the pandemic, which likely skewed energy usage. It was also a year before the LED street light initiative was implemented. The town government produced 185 US tons of greenhouse gas emissions in 2019. The largest contribution, at 65%, was from diesel fuel for the town vehicles, followed by fuel oil for heating the Town Hall and garage. Electricity accounted for 10% of GHG emissions (Figure 9). Overall, the town spent $42,696 on energy in 2019. The largest expense was on diesel for vehicles (Figure 10).

Figure 9. New Lebanon's GHGs by fuel source.

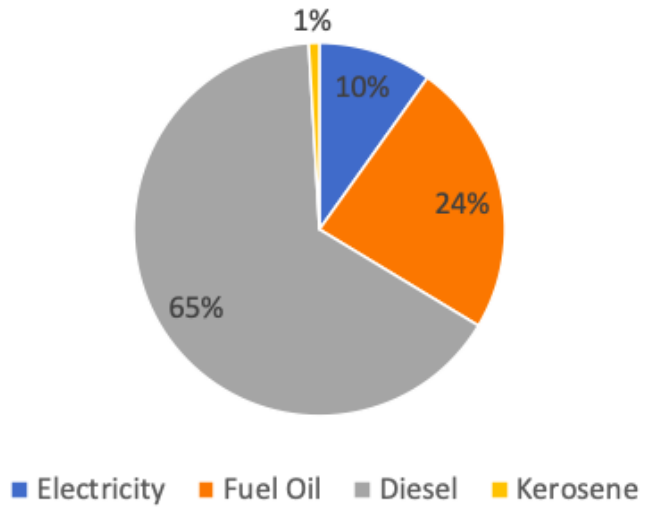
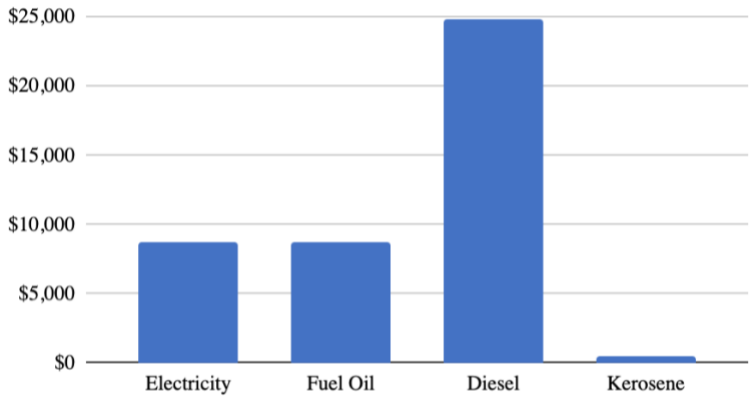


Figure 10. New Lebanon's energy spend from government operations in 2019.



Additional potential GHGs produced by the town but not included in the report are emissions from the closed landfill as well as emissions from town employee vehicles. These can potentially be tracked in future benchmarking reports.

GOVERNMENT OPERATIONS CLIMATE ACTION PLAN

Status: Recommended for Silver
Priority Action
Points 12-16

This action involves creating a strategy to reduce greenhouse gases (GHGs) from government operations, using the GHG inventory as a baseline. Because of the town government's relatively small size, this action may be relatively easy for New Lebanon to pursue. The required deliverable is a roadmap for reducing GHG's from town operations, which is then shared with the community.

There are a few ways the town government can cut emissions. Since the original energy benchmarking for town operations was completed for 2019, the town has already started cutting energy emissions by adopting energy efficient street lighting (LED Street Lights). The interior lighting upgrade completed in March 2021 at the Town Hall will further reduce the town's electricity usage (see Interior Lighting Upgrades). Similarly, adding solar panels, geothermal, or air-source heat pumps may reduce energy use by the town's buildings. Finally, as heavy-duty trucks start to switch to alternative fuel sources, there may be an opportunity in coming years to convert a portion of the town fleet to advanced vehicles. As diesel is currently the largest source of GHG emissions by the town, this will be a significant opportunity.

Note that the Climate Smart program does not count using community solar, which the town government began in March 2021, or purchasing renewable energy credits (RECs), as a reduction in the town's GHGs. This is because of an issue of double counting, as these emission reductions would have already been recognized upstream. An explanation of the assumptions used by the Climate Smart program is provided in the PE12 Performance section (see: Reduce GHGs from Government Facilities).

COMMUNITY GHG INVENTORY

Status: In progress for Silver
Priority Action
Points: 16

This action is being performed for the town by a consultant provided by the Capital District Regional Planning Commission. Completion is expected within 2021. This action will establish a baseline for reducing emissions across the community overall as part of a Community Climate Action Plan (see next section).

COMMUNITY CLIMATE ACTION PLAN

Status: Recommended for Silver
Priority Action
Points: 16

This action will follow on from the Community Greenhouse Gas Inventory, which is still a work in progress. Once that inventory is complete, the goal for this action is to map out a plan to reduce the community's overall emissions. Strategies could include:

- the Solarize campaign (see Solarize: Community Solar);
- a community-wide heat pump campaign;
- encouraging the use of electric vehicles;
- increasing food waste composting;
- working with large energy users such as the school system and businesses to reduce their energy usage; or
- reducing vehicle-miles travelled by creating more opportunities for walking and biking in town.

The Climate Action Plan requires specific strategies to be identified, a proposed timeline, metrics, and a process for community engagement. A nearby community that has completed this action is Redhook (New York State Climate Smart, n.d.). Kingston has also re-initiated this process with a focus on community versus city government operations. Kingston's meetings are open to New Lebanon to participate (Kingston, n.d.).

PE3: DECREASE ENERGY USE

ENERGY BENCHMARKING FOR GOVERNMENT BUILDINGS

Status: Approved for Bronze, March 2021
Points: 4

This action has been completed for the Bronze submission. However, there are ongoing reporting requirements. On an annual basis the town is expected to review billing statements and update a report with GHG emissions to the town website. This is completed using the US EPA's Energy Star Portfolio Manager tool (U.S. Environmental Protection Agency, n.d.). Emissions from the Town Hall complex buildings have been relatively flat over 2016-2019. The LED streetlight conversion won't affect this target as this action is only for buildings. However, the Interior Lighting Upgrades and other energy initiatives, such as solar panels or heat pumps at the Town Hall, will help reduce these emission figures. Note that this action is narrower in scope than the PE2 GHG Inventory for Government Operations, which is not meant to be an annual exercise.

Table 9. New Lebanon Town Hall campus GHG emissions.

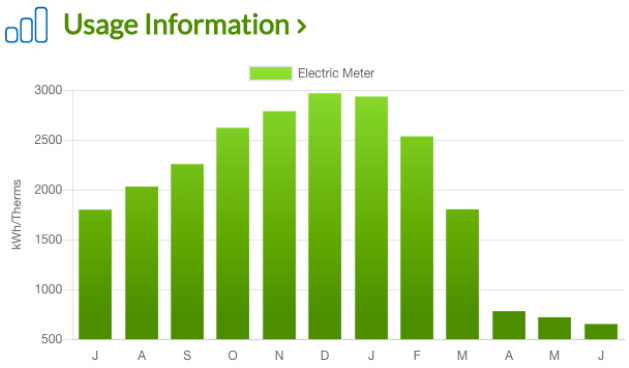
(Metric Tons CO2 equivalent)
2016: 43 metric tons
2017: 41.2 metric tons
2018: 41.8 metric tons
2019: 39.8 metric tons

LED STREET LIGHTS

Status: Approved for Bronze, March 2021
Points: 10

This action was completed in March 2020, with all of the town's streetlights converted to LED bulbs. This led to an estimated savings of $2,500 annually.

Figure 11. Rapid drop in power usage in March 2020 from LED streetlight conversion.



Note. (NYSEG billing statement, July 2020).

INTERIOR LIGHTING UPGRADES

Status: Completed for Silver, March 2021
Expected Points: 4

The interior lighting at the Town Hall has been upgraded to energy efficient fixtures by an independent contractor as of March 2021.

CLEAN ENERGY UPGRADES

Status: In progress for Silver
Expected Points: 10

This action is also a Clean Energy Community action. The goal is to demonstrate a reduction in energy usage by government buildings of at least 10% as result of energy upgrades, like solar panels, geothermal, and interior lighting upgrades. The improvement is measured using a Clean Energy Upgrades Calculator provided on the Clean Energy Communities website (NYSDERDA, n.d.-b). The calculator measures the reduction in GHGs from the baseline established in the Government Building Benchmarking exercise above. Given the town only has two buildings over 1,000 sq. feet that qualify, this could be a relatively easy calculation.

ENERGY CODE ENFORCEMENT TRAINING

Status: Approved for Bronze, March 2021
Points: 5

This action was completed in 2018 as part of the Clean Energy Communities program. However, for the new "Leadership Round" of the Clean Energy program, the training has to be redone in person in order to qualify for Clean Energy points. Nevertheless, for the purposes of the Climate Smart program, this action has been completed.

FLEET INVENTORY

Status: Approved for Bronze, March 2021
Points: 4

New Lebanon currently has the following eight vehicles, all of them trucks (Table 10). This inventory was submitted as part of the January 2021 Bronze Certification application. The intent of this exercise is to help identify opportunities to reduce GHG emissions through fleet rightsizing or moving to advanced vehicles.

Table 10. Town vehicle inventory.

Equipment Type:	Year	Year purchased	Make/Model
Truck	2011	2011	Ford F550
Truck	2011	2011	Navistar International
Truck	2011	2011	Ford F550
Truck	2013	2013	Ford F550 Dump
Truck	2016	2016	Ford F550 Dump
Truck	2018	2018	Navistar International
Truck	2019	2019	Ford F550 Super Duty
Truck	2021	2020	Navistar International

ADVANCED VEHICLES

Status: Opportunity for Silver
Points: 2-10

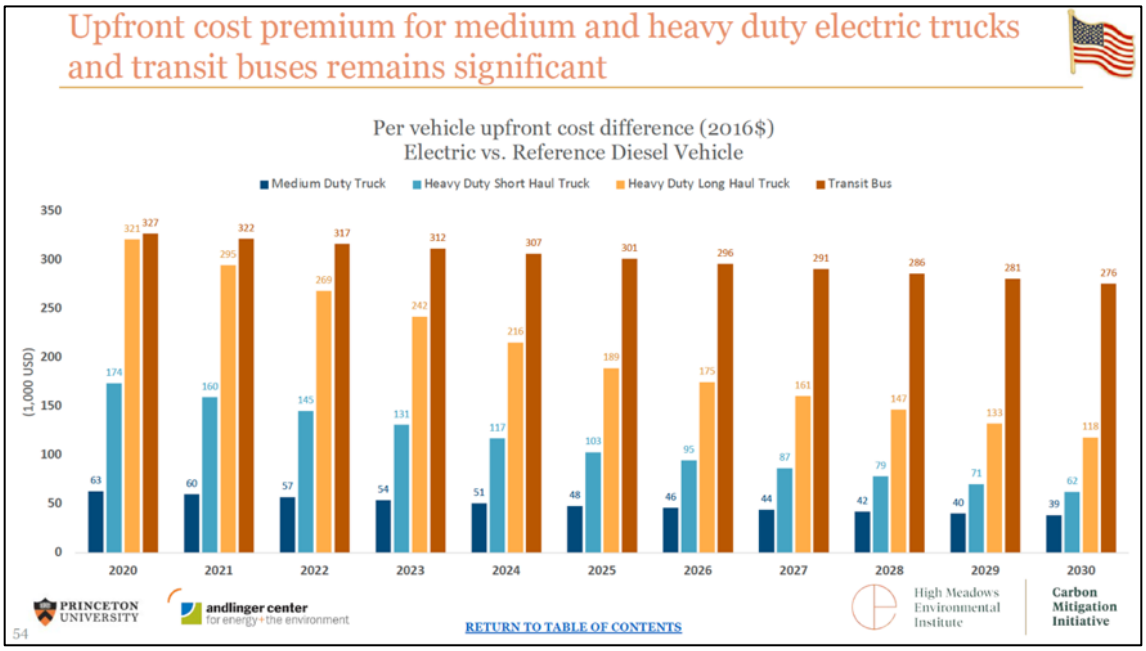
Diesel is the largest contributor to the town government's GHG emissions, at 65%. As such, it is an important opportunity to reduce emissions in the future. Diesel is also the town's highest energy expense. Fueling town trucks with electricity or an alternative fuel could further cut energy costs.

Until now, municipal trucks have often been out of scope for reducing GHGs due to the lack of alternative vehicles. However, in the past few years, heavier duty electric trucks have started coming online (Boudette, 2019; "Lightning Systems Launches All-Electric Ford F-550," 2020). Given New Lebanon's relatively small geographic area at 36 square miles, the shorter range of electric trucks may not be a significant impediment.

That said, costs may still be prohibitive for some time. A study by Princeton's Net-Zero America initiative estimates the up-front cost premium for electric trucks will remain significant for the coming decade, with even medium duty trucks costing $40,000 more than diesel vehicles (Larson et al., 2020; Figure 1212). Nevertheless, costs and incentive programs may change and alternative-fuel trucks may become an opportunity for New Lebanon as some of its vehicles approach the end of their useful lifetime, particularly the smaller Ford F-550s.

Note that while New York State does provide a voucher program to subsidize truck replacements, it only applies to vehicles with a 2009 model year or older ("New York Truck Voucher Incentive Program," n.d.). All of New Lebanon's trucks are 2011 or newer.

Figure 12. Projected cost premium for trucks over coming decade.



Note. (Larsen et al., 2020).

PE4: SHIFT TO CLEAN, RENEWABLE ENERGY

RENEWABLE ENERGY FEASIBILITY STUDY

Status: Opportunity for Silver
Expected Points: 3-5

Given the town is setting up a fund to install solar panels at the Town Hall as part of the Solarize campaign, this step is recommended to map out all renewable energy options for the Town Hall campus. The recommended action is to have a qualified consultant or engineering firm assess options for implementing renewable energy. Options could include efficiency measures, solar panels, air-source heat pumps, or geothermal energy. Grants are available for some of these actions. The town only has two main buildings, so this may be a relatively simple action.

The town may want to choose the alternative energy source that will reduce the greatest amount of greenhouse gases (GHGs). Heating oil accounts for a greater proportion of GHGs compared to electricity. As a result, geothermal or air source heat pumps may have a larger impact than solar. The next step would be to conduct an RFP for vendors to assess the town hall campus for renewable energy options.

SOLAR ENERGY INSTALLATION

Status: Opportunity for Silver
Points: 9-20

This action is based on installing solar panels at the Town Hall or on town land. Points are awarded based on the number of kilowatt-hours installed. This action is being considered in concert with the PE8 Solarize action that started February 2021 (see Solarize: Community Solar). For every residential sign-up to community solar, the solar vendor, Ampion, is contributing $100 to a fund for solar panels for the Town Hall.

RENEWABLE ENERGY CERTIFICATES (RECS)

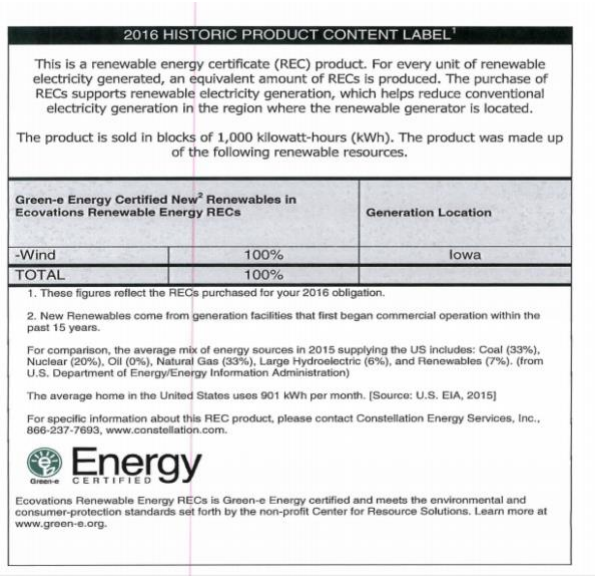
Status: Opportunity for Silver
Points: 2-15

This option involves using the town government's electricity spend to purchase renewable energy from a supplier. This results in the town obtaining "RECs" or renewable energy credits (**Error! Reference source not found.**3). However, these credits do not reduce the town's "Scope 2" GHG emissions and cannot be counted toward PE12 Performance actions. Nevertheless, it is another way for the town to use its spending power to support renewable energy. It also counts for points under the Clean Energy Communities program.

Only six municipalities participating in the Climate Smart program have pursued this option as of May 2021, namely:

- Ulster County
- Suffolk County
- Tompkins County
- Town of Ithaca
- City of Ithaca
- City of Geneva

Figure 13. Example of a REC purchased by City of Ithaca.



2016 HISTORIC PRODUCT CONTENT LABEL[1]

This is a renewable energy certificate (REC) product. For every unit of renewable electricity generated, an equivalent amount of RECs is produced. The purchase of RECs supports renewable electricity generation, which helps reduce conventional electricity generation in the region where the renewable generator is located.

The product is sold in blocks of 1,000 kilowatt-hours (kWh). The product was made up of the following renewable resources.

Green-e Energy Certified New[2] Renewables in Ecovations Renewable Energy RECs		Generation Location
-Wind	100%	Iowa
TOTAL	100%	

1. These figures reflect the RECs purchased for your 2016 obligation.

2. New Renewables come from generation facilities that first began commercial operation within the past 15 years.

For comparison, the average mix of energy sources in 2015 supplying the US includes: Coal (33%), Nuclear (20%), Oil (0%), Natural Gas (33%), Large Hydroelectric (6%), and Renewables (7%). (from U.S. Department of Energy/Energy Information Administration)

The average home in the United States uses 901 kWh per month. [Source: U.S. EIA, 2015]

For specific information about this REC product, please contact Constellation Energy Services, Inc., 866-237-7693, www.constellation.com.

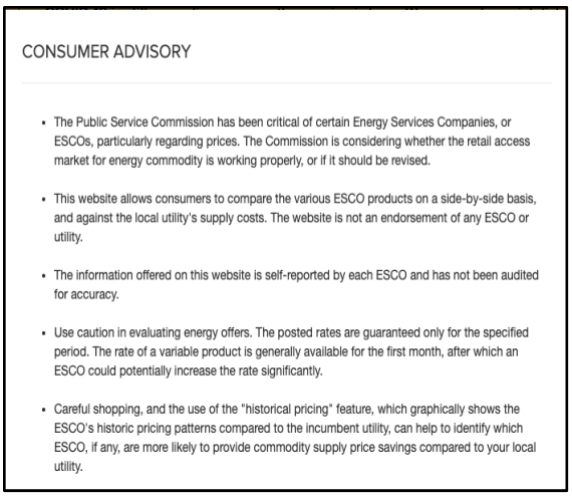
Energy CERTIFIED

Ecovations Renewable Energy RECs is Green-e Energy certified and meets the environmental and consumer-protection standards set forth by the non-profit Center for Resource Solutions. Learn more at www.green-e.org.

Note. (New York State Climate Smart, n.d.).

This action has had limited uptake so far as renewable energy is generally sold at a premium to the standard utility rates. However, as renewable energy prices continue to decline, there may be an opportunity to pursue RECs in the future. That said, at less than 10% of GHGs, electricity is the smallest contributor to the town's emissions. As a result, this action would have lower impact than reducing the town's diesel or heating oil usage. There are also risks related to providers of renewable electricity, known as ESCOs, due to their confusing business practices. The state energy regulator, the Public Service Commission, is currently reviewing the practices of ESCOs and has posted a warning on the NYSERDA site related to this action (Figure 14; Public Service Commission, n.d.). As a result, this should be viewed as a small opportunity but potentially easy to implement if REC prices come down and the ESCO risks can be managed.

Figure 14. Warning posted on NYS "Power to Choose" website.



CONSUMER ADVISORY

- The Public Service Commission has been critical of certain Energy Services Companies, or ESCOs, particularly regarding prices. The Commission is considering whether the retail access market for energy commodity is working properly, or if it should be revised.
- This website allows consumers to compare the various ESCO products on a side-by-side basis, and against the local utility's supply costs. The website is not an endorsement of any ESCO or utility.
- The information offered on this website is self-reported by each ESCO and has not been audited for accuracy.
- Use caution in evaluating energy offers. The posted rates are guaranteed only for the specified period. The rate of a variable product is generally available for the first month, after which an ESCO could potentially increase the rate significantly.
- Careful shopping, and the use of the "historical pricing" feature, which graphically shows the ESCO's historic pricing patterns compared to the incumbent utility, can help to identify which ESCO, if any, are more likely to provide commodity supply price savings compared to your local utility.

Note. (New York Public Service Commission, n.d.).

GEOTHERMAL INSTALLATION

Status: Opportunity for Silver
Points: 9

Depending on the outcome of the Renewable Energy Feasibility Study, geothermal could be one of the options for transitioning the energy used by the Town Hall and town garage. Importantly, this technology could reduce the use of heating oil, which is the town's second largest contributor of GHG's. Another town that has successfully deployed geothermal at its town hall is Caroline, NY (Cornell Cooperative Extension of Tompkins County, n.d.). A key contact for this action is the Capital Region HeatSmart Initiative.

Table 11. Contact for geothermal programs.

Organization	Role	Key Contact	Contact info
Capital Region HeatSmart Campaign (Albany)	Advisor (Heat pumps, building efficiency)	Todd Fabozzi	todd@cdrpc.org

PE5: USE CLIMATE SMART MATERIALS MANAGEMENT

ORGANICS MANAGEMENT PLAN

Status: Submitted from Bronze, not accepted, requires revision
Points: 2-16

In the summer of 2020, the New Lebanon Climate Smart Task Force created a subcommittee to assess options for organics management. This led to the implementation of composting at the Community Gardens on Route 20, which was adopted by the town in August 2020 (see action below for "Residential Organic Waste Program"). This program only handles vegan food scraps, thus not meat or bones, which require a "high heat" composting system.

While the Climate Smart Task Force submitted its initial scan of composting options under "Organics Management Plan," this was not accepted for Bronze as it didn't meet the criteria of a strategic plan. An opportunity exists to upgrade the plan and resubmit.

An additional opportunity exists to implement food waste collection at larger waste producers, such as restaurants. This may help large waste producers meet the upcoming Food Donation and Food Scraps Recycling Law, which goes into effect January 2022 (New York State Department of Environmental Conservation, n.d.-a). This law applies to facilities that produce two tons of food scraps or more per week. Commercial recyclers will offer the high heat composting needed to process restaurant scraps.

The Task Force Compost Subcommittee established contact with Natural Upcycling, a commercial food waste hauler based in Schodack, NY that can support large-scale recycling. This vendor serves the Capital Region and the Berkshires and has many clients that are restaurants and schools in the area. This vendor also manages the commercial composting facility for Tompkins County.

An additional opportunity exists related to breweries, which are a common business in New Lebanon and Columbia County. The New York State Brewery Sustainability Initiative, a partnership between New York State Pollution Prevention Institute (NYSP2I) at the Rochester Institute of Technology and Cornell College of Agriculture and Life Sciences (Cornell CALS), provides guidance on water and energy usage and cleaning procedures. (New York State Pollution Prevention Institute, n.d.).

Finally, there is a potential strategy around leveraging food banks to feed the community. As New Lebanon is already very active in this area, this could be another opportunity to align with a Climate Smart organics plan.

Table 12. Contacts for commercial composting and sustainable breweries.

Organization	Role	Key Contact	Contact info
Natural Upcycling (has a location 20 miles from New Lebanon in Schodack, NY)	Commercial food waster composter Commercial Food Waste Recycler	Elliot Honig, Director of Business Development Linwood, NY	585-584-3122

New York State Brewery Sustainability Initiative	Advisory Partnership (NYSP21 and Cornell College of Agriculture and Life Sciences)		nysp2i@rit.edu https://www.rit.edu/affiliate/nysp2i/contact

RESIDENTIAL ORGANIC WASTE PROGRAM

Status: Approved for Bronze, March 2021
Points: 4

With support from New Lebanon's Community Garden, the Task Force rolled out drop-off vegan food scrap composting for community residents at the Community Gardens. This was particularly useful for residents who live in multifamily housing or have trouble composing at home because of animal visitors. This initiative was promoted during the fall of 2020 at the Farmers Market.

Figure 15. Task Force members promoting community composting at the Farmers Market.

RECYCLING BINS IN GOVERNMENT BUILDINGS

Status: Submitted for Bronze, requires revision
Points: 3

This action captures the existing practice of recycling bottles, cans, and plastic materials at the Town Hall campus. The DEC provided the following guidance to get the action accepted:

"New Lebanon submitted photos to demonstrate that recycling bins are co-located with trash bins in the town hall. This action also requires evidence that the town has a policy requiring placement of recycling bins wherever there is a trash bin; this can take the form of a resolution, executive memorandum, executive order, or it can be part of an employee handbook" (Department of Environmental Conservation, personal communication, March 2021).

As a result, this should be fairly easy to complete for Silver.

ORGANIC WASTE PROGRAM FOR GOVERNMENT BUILDINGS

Status: Approved for Bronze, March 2021
Points: 2

This action was implemented by adding a compost container to the recycling bins available at the Town Hall. The compost is brought to the community compost center at Community Gardens when needed.

RESOURCE RECOVERY CENTER

Status: Approved for Bronze, March 2021
Points: 6

This action captured the existing work of the New Lebanon Free Store, which has collected and distributed clothing at the Town Hall since 2017. This has since been expanded under the leadership of Climate Smart Task Force volunteers. This action also captured the creation of a bike recycling program. Given its unique operations, this bike effort was also written up under section PE11 as an innovation on an existing action (see Innovative Approach to Existing Climate Smart Action: Bike Recycling Program). While the bike program was not accepted separately as an innovative action, it still plays a large role as part of the Free Store and in fostering a recycling culture in New Lebanon.

Figure 16. Media coverage of Free Store clothing drive in November 2020.

NEW LEBANON

Free Store Giveaway Well Attended

The Town of New Lebanon free store, started by now Town Supervisor Tistrya Houghtling 5 years ago when she was Town Clerk, is now being overseen by the Climate Smart Task Force of New Lebanon as one of its climate smart actions (reduce, reuse, recycle). Since COVID started, the Free Store has not been able to be accessed by the public, with donations just sitting untouched at the town hall.

A look at some of the clothing and shoes for the taking at the Free Store Giveaway in New Lebanon this past Sunday. Photo provided.

CSC member Sarah Steadman and volunteer Zineb Lamaani had the idea to have a one day pop up event at the Lebanon Valley Protective Association (LVPA) fire house where there was plenty of room to spread out all donations and safely socially distance. CSC volunteers, Supervisor Houghtling and a crew of community members came together to move everything to the LVPA, set it all up and invite the public in on Sunday, November 22 from 11 am to 3 pm to take anything they could use for free. All visitors were given a health screening, wore masks and sanitized while keeping the numbers of families in the building to 4 at one time to ensure a safe, socially distanced event.

The function drew up to 20 families at one time waiting in the parking lot for their turn. Over 125 people attended and everyone left with bags full of great, new to them, items! It was a successful event that provided much needed clothes, shoes, toys, books and more to so many in our community! Supervisor Houghtling later said "It truly takes a village and it is a wonderful thing to be a part of ours!"

Note. (Bradley, 2020.)

WASTE REDUCTION EDUCATION CAMPAIGN

Status: Approved for Bronze, March 2021
Points: 2

This action captured the community outreach performed by the Climate Smart Task Force to promote its waste reduction initiatives, including the Free Store, community composting, the bike recycling program, and recycling of cans and bottles. The tactics highlighted included the Climate Smart Facebook page (New Lebanon, n.d.), Farmers' market booth, campaign flyers, and press articles.

COMMUNITY REPAIR

Status: In Progress for Silver
Points: 4

This concept, often called a "Repair Cafe," is to repair used items at a once-a-month community event. This action fits well with New Lebanon's Shaker heritage, and also follows on from the bicycle repair program. The idea is to have skilled volunteers available to help community members repair their used items. This is not meant to be a "drop-off" and "pick-up" type service, rather it is more of a four-hour-long joint workshop. New Lebanon could pair this with its farmers market, for example. The legal waiver created for the bike recycling program would also be relevant for this type of program, as the waiver covers "equipment/repairs" (Appendix 3: Equipment/Repair Waiver). The nearby towns of Canaan and Austerlitz have expressed an interest in this action so there may be an opportunity to collaborate between communities.

The Repair Cafe concept appears to have originated locally in the Hudson Valley thanks to the efforts of John Wackman, who had seen the model in the Netherlands (Platt, 2021). Today there are several active organizations listed on the repaircafehv.org website, although none so far in Columbia County. Wackman and Elizabeth Knight recently published a book, "Repair Revolution: How Fixers are Transforming our Throwaway Culture" (Wackman & Knight, 2020).

PE6: IMPLEMENT CLIMATE SMART LAND USE

UNIFIED SOLAR PERMIT

Status: Approved for Bronze, March 2021
Points: 5

This action was completed as part of New Lebanon's prior Clean Energy Communities application. It creates a standardized and streamlined permitting process for installing residential solar panels.

NATURAL RESOURCES INVENTORY

Status: Approved for Bronze, March 2021
Priority Action
Points: 10

New Lebanon completed this action through the creation of its Natural Resource Conservation Plan in 2017 (Stevens & Graham, 2017). The development of this study by nonprofit Hudsonia Ltd., which was overseen by the town's Conservation Advisory Council, is available in print from the Town Hall or on the town website. It is an excellent resource for understanding the town's natural assets.

ALTERNATIVE-FUEL INFRASTRUCTURE

Status: In Progress for Silver
Priority Action
Points: 6

The town is currently implementing an electric-vehicle (EV) charging station on land made available by a property owner along the Corkscrew Rail trail (Figure 18). One additional recommendation around this action could include using the green parking lot standard from action PE6.8: Adopt Green Parking Lot Standards (New York State Climate Smart, n.d.). This could mean using semi-permeable pavers such as bricks, gravel, or turf blocks. This is particularly impactful given the high carbon footprint of concrete and asphalt.

Given New Lebanon is often a weekend destination for shopping and sightseeing, adding EV chargers could help support the economy. EV chargers are easily findable on EV trip planning apps such as PlugShare (PlugShare, n.d.). At the moment, there are no charging stations in New Lebanon (Figure 19). Having an EV charger will attract tourists that are planning out their route or just need to stop to recharge. Breweries, restaurants, and car dealerships are also good locations for EV chargers and are often early adopters of charging stations.

The Clean Energy Communities program has also introduced a new incentive to promote electric vehicles that can result in grant funding of $5,000 (NYSERDA, n.d.-a). The Climate Smart Task Force may consider partnering with businesses in town to promote EV charger installations and EV adoption. There are a number of rebates and tax credits available to businesses to subsidize the cost of installation (NYSERDA, n.d.-b).

Table 13. Types of EV chargers.

	Voltage	Charging time	Range added per hour	Cost per full charge
Level 1:	120v	2 days	5 miles	$7 (home electricity)
Level 2:	220v	9 hours	40 miles	$0-$18 (vendor rate)
Level 3:	200-600v	40 mins	250 miles	$0-$18 (vendor rate)

Note. (Marc Anthonisen, personal experience).

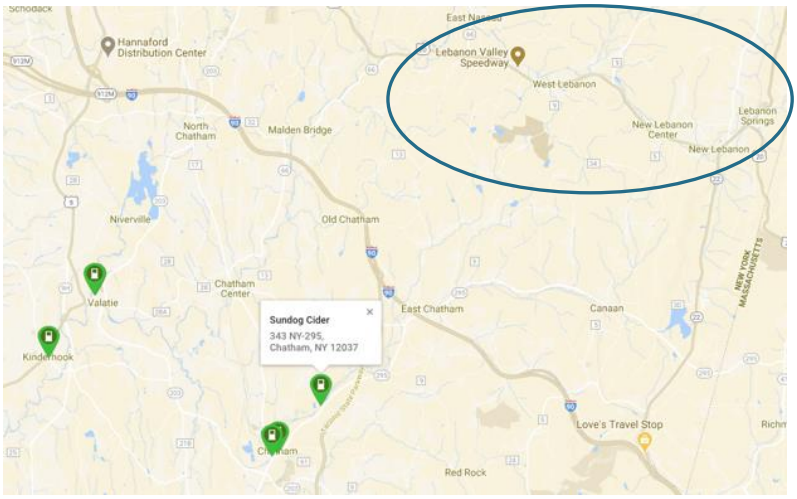
Figure 17. NY DEC funded Level 2 EV charging station in Valatie, NY.

Photo: Marc Anthonisen, January 2021.

Figure 18. New Lebanon volunteers clearing land for an EV parking area.

Photo: Marc Anthonisen, April 2021.

Figure 19. Nearest EV chargers to New Lebanon.



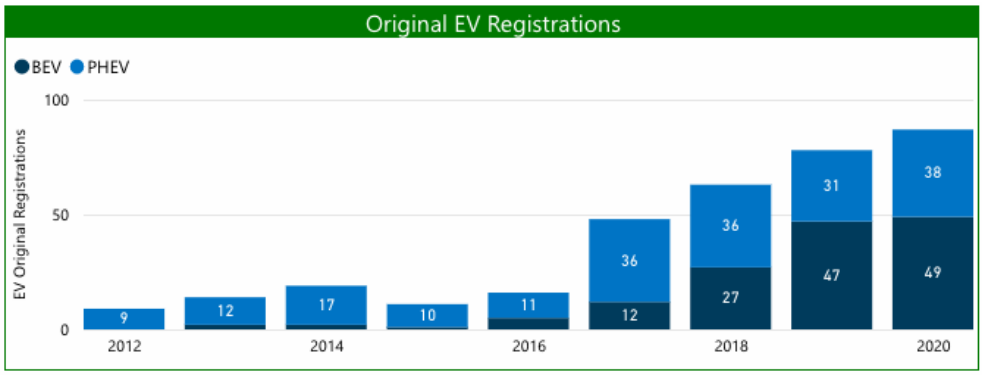
Note. (PlugShare, n.d.)

Turning to local residents, currently the number of electric vehicles is still quite low, with less than one hundred vehicles newly registered in the county every year (NYSERDA, n.d.-c; Figure 20). However, that number is likely to increase over the coming decade as the sticker price of electric vehicles comes closer that of gas vehicles (Larson et al., 2020; Figure 21). The total cost of ownership is already lower for many comparable light vehicles (Penney, 2021). Within a decade, switching to electric vehicles could be another way for New Lebanon residents to save money, along with community solar.

Many New Lebanon residents who purchase EVs in the future are likely to charge their vehicles where they live. However, others may not be able to set up the required charging infrastructure. As such, it may be useful to encourage additional charging stations where New Lebanon residents live and work, such as multifamily housing units, the public schools, the library, or the Town Hall.

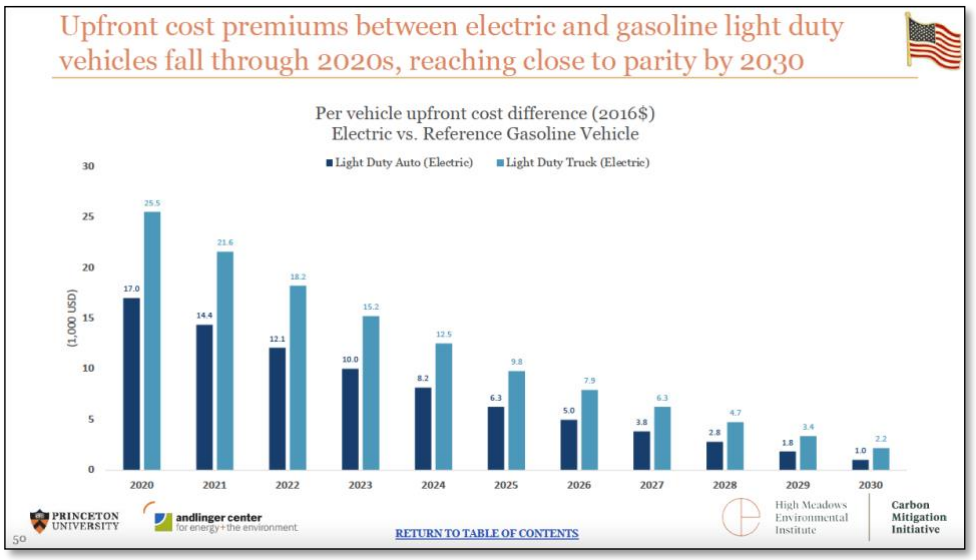
Level 2 chargers, such as the one currently being planned for the Rail Trail, take about nine hours to charge an EV, adding about 40 miles of range every hour (Table 13). The town could also encourage the Marchese Ford dealership and Stewarts Shop to explore installing the faster Level 3 chargers, which can charge a car in about 40 minutes. Many car dealerships are now installing charging stations as they start selling electric vehicles and often make these chargers available to the public. Stewarts had previously looked at installing Level 3 chargers across the state, but that plan fell through due to disputes about energy rates (De Socio, 2019). However, if the town is able to encourage Stewarts to prioritize a level 3 charger, that could greatly help encourage adoption of EVs in the area. Again, the Climate Smart Task Force could help property owners and businesses navigate the funding and installation process to acquire EV chargers, potentially through a Clean Energy Communities campaign.

Figure 20. Electric vehicles newly registered in Columbia County.



Note. (NYSERDA, n.d.-c).

Figure 21. Projected decline in EV car and light truck prices compared to gas vehicles.



Note. (Larson et al., 2020).

COMPREHENSIVE PLAN WITH SUSTAINABILITY ELEMENTS

Status: Opportunity for Silver
Priority Action
Points: 3-21

New Lebanon is in the process of updating its Comprehensive Plan, which sets a long-term vision for the community (New Lebanon, 2004). The Climate Smart program encourages planners to include climate-related elements. The action has five mandatory items, and seven additional items worth three points each (New York State Climate Smart, n.d.).

Required items:

- Support alternative modes of transportation (including strategies for bicycles, pedestrians, public transit, and electric vehicles)
- Promote smart growth principles in land-use policies
- Conserve natural areas (including strategies to designate open space and protect it from development)

- Promote a healthy and safe community
- Foster equity (including strategies for housing, schools, transportation, recreation, food, and environmental exposures)

Additional items (worth 3 points each):

- Foster green economic development
- Decrease dependence on fossil fuels and support energy efficiency and renewable energy production
- Foster the efficient use of natural resources (e.g., water conservation)
- Promote the development of (or the conservation of) local food systems
- Minimize solid waste (including strategies to promote recycling and composting or anaerobic digestion of organic materials)
- Protect drinking water sources from pollution
- Promote adaptation to climate change (including strategies related to land use and public education and engagement)

In 2010, the International City/County Management Association (ICMA) produced a guide to smart growth for rural towns (ICMA, 2010). This study has case studies that may be relevant to New Lebanon. The town also has an excellent guide in its own Natural Resource Conservation Plan (Stevens & Graham, 2017) which can be used to inform the comprehensive planning process. The City of Poughkeepsie is also currently pursuing this action, leveraging a $100,000 Climate Smart grant (New York State Department of Environmental Conservation, n.d.-b).

PLANNING & INFRASTRUCTURE FOR BICYCLING & WALKING

Status: Approved for Bronze, March 2021
3 Points

The New Lebanon Climate Smart Task Force submitted this action for 3 points based on improvements made to the Corkscrew Rail Trail in summer 2020. The town supported this trail clean-up effort financially by providing a dumpster.

Additional Opportunity
15 points

The possible next steps recommended by the Climate Smart program for this action are:

- Develop a bicycle/pedestrian master plan (or similar plan) applicable to the entire jurisdiction (within last 10 years) - **3 points**
- Expand and improve bike/walking paths, bike lanes, and sidewalks - **3 points**
- Improve bike parking - **2 points**
- Improve bike and pedestrian signage - **2 points**
- Develop a bike share program - **5 points**

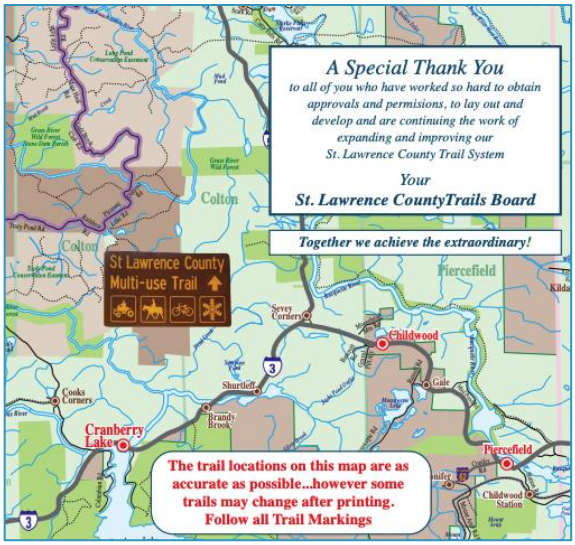
DEVELOPING A RURAL, MULTIUSE TRAIL NETWORK

Developing sidewalks and trails has been a stated goal in New Lebanon's comprehensive plan since 2004 (New Lebanon, 2004). However, recent attempts to acquire land for trails or build sidewalks have been challenging. As New Lebanon's comprehensive plan surveys have indicated, there is a strong preference among residents to maintain the rural character of the town (New Lebanon, 2004). As a result, New Lebanon could potentially aim to create a mixed-use trail network. A trail network can also potentially serve as an economic driver for the community (Basinger & Cummings, 2020). A useful resource is the Federal Highway Administration's "Small Town and Rural Multimodal Networks" guide. (Federal Highway, 2016).

Massachusetts Department of Conservation and Resources also produced a useful trail planning guide (Massachusetts Department of Conservation and Recreation, 2019).

A number of communities have been able to create such networks that create space for multiple types of users. These include St. Lawrence County, NY, the Town of Dryden, NY, and the nearby Pittsfield State Forest in Massachusetts. By accommodating different types of users into a trail network, it may be possible to potentially bolster community support. In the case of St. Lawrence County, the trail system allows all types of users on the trails with guidelines for trail etiquette (Figure 22; St. Lawrence Country Trails, n.d.). In Dryden, NY, a key concession was to allow horses on the trail (Figure 23; Dryden, n.d.). In Pittsfield, the network has different trails for hikers, ATVs, and mountain bikers (Figure 24; Massachusetts Department of Conservation and Recreation, n.d.).

Figure 22. Multiuse Trail Network in St. Lawrence County.



Note. (St. Lawrence Country Trails, n.d.).

Figure 23. Multi-use trail in Dryden, NY.

Note. (Google maps, n.d.).

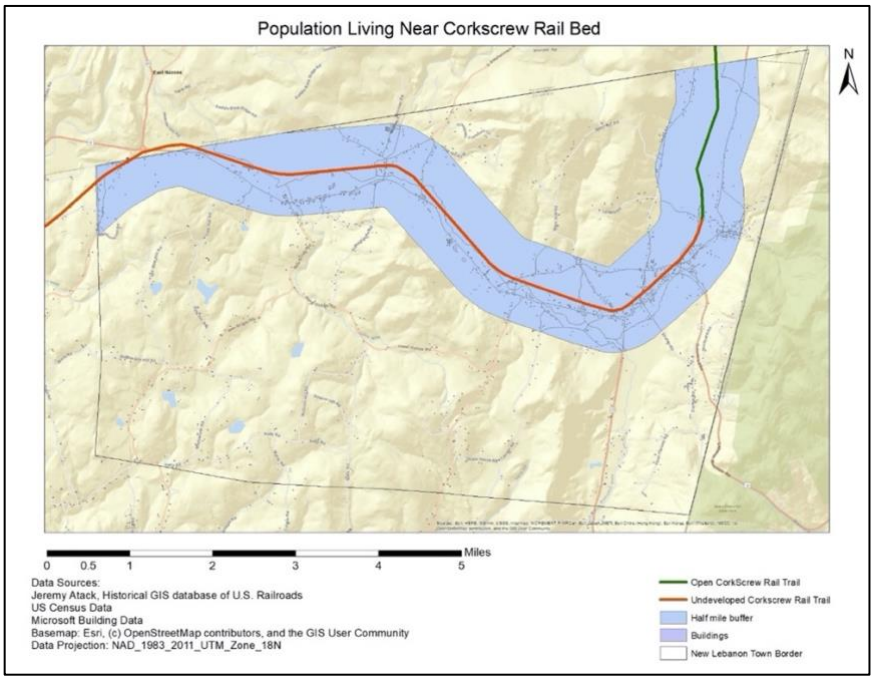
Figure 24. Detail from trail network in Pittsfield State Forest.

(Note. Massachusetts Department of Conservation and Recreation, n.d.).

BEGINNINGS OF A TRAIL NETWORK

New Lebanon has the beginnings of a trail network. The Corkscrew rail bed is one possible artery of a town-wide trail network. Analysis of census data using GIS software shows that 60% of town residents live within a half mile of the Corkscrew railbed (Figure 255). Creating a trail corridor through the main valley of town has the potential to reduce vehicle miles travelled, especially if more shopping and housing is clustered in the Lebanon Center part of town. Additional pieces of a possible trail network include adding trails at the Hand Hollow Conservation area and Shaker Swamp. Town roads could also be considered as part of a future network given their relatively slower speeds. Allowing ATVs use of the town roads, as has been done in St. Lawrence county, could be a way to create a trail network that supports different types of users.

Figure 25. Population living near Corkscrew Rail Bed.



TRAIL CONNECTIVITY

The concept of a town-wide trail network will have more value if it connects to other trails in the surrounding area. The Corkscrew Rail Trail would connect to Stephentown and the Rensselaer Plateau. This includes connectivity to the envisioned trail network for the Capital District (Capital District Transportation Committee, 2019). Meanwhile, the network could also tie into the extensive trail network in the Pittsfield State Forest in Massachusetts, which includes the Taconic Crest Trail and the Taconic Skyline Trail. Envisioning New Lebanon as a trail community could also resonate with the launch of the Empire Trail, 16 miles to the west. The Appalachian Trail is also just 20 miles to the east.

SAFETY

One concern about trails is that they will bring an increase in crime and vandalism. However, a review of available research shows that there is no established link between trails and crime (Tracy & Morriss, 1998).

ADA COMPLIANCE

Mobility for those with disabilities is an important consideration when designing a trail network. As a result, any trail plan should incorporate ADA guidance and ensure equitable access. This is particularly a factor for projects accepting state or federal grant money.

ENVIRONMENTAL IMPACT

Creating trails will have an environmental impact that would have to be measured and managed. The trail guidebook from the Massachusetts Department of Conservation and Recreation provides useful guidance on how to manage the environmental impact of a trail network (Massachusetts Department of Conservation and Recreation, 2019).

Valuable insights for this section were provided by Dan Lamb, Deputy Supervisor of the Town of Dryden as well as a professor in the Cornell Institute of Public Affairs (CIPA). Additional guidance on mixed-use trail planning was provided by Chris Bauer and Carrie Ward, Senior Transportation Planners at the Capital District Transportation Committee, which is implementing trails across the capital region.

Table 14. Contacts for trail planning.

Organization	Role	Key Contact	Contact info
Town of Dryden, NY Cornell Institute of Public Affairs	Deputy Supervisor Professor	Dan Lamb	dll5@cornell.edu
Capital District Transportation Committee	Senior Transportation Planners	Chris Bauer Carrie Ward	cbauer@cdtcmpo.org cward@cdtcmpo.org

PE7: ENHANCE COMMUNITY RESILIENCE TO CLIMATE CHANGE

The actions around climate vulnerability and resilience planning are an important part of adapting to climate change. By preparing early for climate change, towns can potentially save money on future disaster mitigation. One study estimates that $6 is saved in disaster recovery for every $1 invested in mitigation (Porter et al., 2019).

The main workflow for this Pledge Element category is as follows:

- Complete a vulnerability analysis
- Evaluate current policies
- Create a climate adaptation plan
- Update hazard mitigation plan

A number of pieces for this section are already coming together. As a result, the following steps are suggested:

- A Cornell student team is working on a climate vulnerability analysis for all hazards in the Spring 2021 semester (Akhtar & Hughes). This, combined with the seasonal drought assessment, will complete the vulnerability analysis.
- Cornell Cooperative Extension of Columbia and Greene Counties has helped towns on both the evaluation step and the climate adaptation plan. Their team may be available to support New Lebanon from 2022.
- The town can use these assessments to participate in the Columbia County hazard mitigation plan which is expected to be conducted around 2022-2023.

Beyond resilience planning, the PE7 category contains several concrete mitigation actions. Many of these may benefit from partnership with New Lebanon's Conservation Advisory Council (CAC). These include watershed management and water protection activities.

CLIMATE VULNERABILITY ASSESSMENT - SEASONAL DROUGHT

Status: Approved for Bronze, March 2021
Priority Action
Points 8

As an initial step, the Climate Smart Community Task Force completed a climate vulnerability assessment focused on seasonal drought (Anthonisen, 2020). This was done by analyzing existing climate projections provided by New York State, the National Oceanic and Atmospheric Administration (NOAA), and Massachusetts and extrapolating the likely changes for New Lebanon. The research indicated a high likelihood that drought will gradually increase year by year in New Lebanon. The primary impacts could be more dry wells for residents and businesses in the late summer and early fall, an impact on agriculture, and a changing ecosystem. Notably, maple syrup, an important local product, could be impacted (Frumhoff et al, 2007, p. 74). As a secondary risk, drought increases the possibility of wildfire. Possible mitigation actions could include watershed management and having a drought emergency plan.

CLIMATE VULNERABILITY ASSESSMENT - ALL HAZARDS

Status: In Progress for Silver
Points: 16

This action is being completed by a student team of Waqar Akhtar and Jessie Hughes from Cornell University, with the report expected to be published in May 2021 (Akhtar & Hughes, 2021). The action includes conducting a vulnerability analysis. This is done by extrapolating from national and regional-scale climate projections down to the town level. A vulnerability assessment also looks at the potential impact hazards can have on the community. The methodology recommended by the Climate Smart program is to identify key assets and systems in the community that could be impacted. These can include natural resources such as streams, physical infrastructure such as school and houses, and even social assets, such as jobs and markets.

Asset vulnerability is assessed by looking at three key aspects: exposure, sensitivity, and adaptive capacity (New York State Climate Smart, n.d.):

- **Exposure** assesses whether an asset or system is positioned in an area likely to be impacted by a hazard.
- **Sensitivity** assesses the degree to which a hazard could impact the asset.
- **Adaptive capacity** is the extent to which an asset can adjust to a hazard.

Another key part of the vulnerability assessment is to identify the more vulnerable populations in the community for each potential hazard. This can potentially be achieved by having an inclusive and open process. Once all the hazards have been assessed, the final step is to prioritize them.

EVALUATE POLICIES FOR CLIMATE RESILIENCE

Status: Opportunity for Silver
Priority Action
Points: 6

This step establishes a baseline of the community's climate resilience. This is achieved by completing a checklist, known as the Climate Smart Resiliency Plan (New York State Department of Environmental Conservation, 2014). This activity requires someone who has access to various town staff members and departments and is able to collect information. In addition to completing the checklist, the team should provide a summary report identifying key findings and town staff interviewed. This action is an opportunity to engage and educate at the same time as collect information. Given the need to access town staff and records, this activity might be easier to start after the pandemic.

Cornell Cooperative Extension of Columbia and Greene Counties has completed this action for several municipalities, including Athens, NY, and may be available to support New Lebanon on this activity in 2022. They recommended contacting them in the fall of 2021 to get on their schedule.

Table 15. Contacts for Climate Resilience planning at Cornell Cooperative Extension.

Organization	Role	Key Contact	Contact info
Cornell Cooperative Extension (Acra, NY)	Resilience advisory	Kelsey Jean West	kjw228@cornell.edu

CLIMATE ADAPTATION PLAN

Status: Opportunity for Silver
Priority Action
Points (3, 8, 11)

The Climate Adaptation Plan integrates the research of the benchmarking exercises and vulnerability assessments into a community-driven prioritization process. The deliverable is a resilience vison and plan based on significant input from the community. This could also be a significant opportunity to help educate, influence, and discover new vulnerabilities. Fundamentally, it is an exercise in capacity building as well as hazard mitigation. This activity can be led by the Climate Smart Task Force but requires significant community outreach and engagement.

This action has been completed by 13 Climate Smart Communities as of January 2021. Most of these are larger cities or counties. The joint report posted by the town and village of Cazenovia are a good reference (New York State Climate Smart, n.d.).

Cornell Cooperative Extension of Columbia and Greene Counties has helped communities complete this action and may be available to support New Lebanon in this action in 2022. They recommended contacting them in the fall of 2021 to get on their schedule.

Table 16. Contacts for Climate Adaptation Planning at Cornell Cooperative Extension.

Organization	Role	Key Contact	Contact info
Cornell Cooperative Extension (Acra, NY)	Resilience advisory	Kelsey Jean West	kjw228@cornell.edu

HAZARD MITIGATION PLAN

Status: Approved for Bronze, March 2021
4 Points

New Lebanon has already participated in the county hazard mitigation plan (Columbia County Multi-Jurisdictional Hazard Mitigation Plan, 2018). The town should be prepared to participate in the next round around 2022-2023. Based on any vulnerability analyses completed by then, the town should identify unique risks faced by the town.

The nearby town of Richmond, Massachusetts is also developing a Hazard Mitigation Plan (Richmond, n.d.) and has invited New Lebanon to sit in on its planning sessions. Comparing notes between towns will be useful in identifying common hazards as well as building mutual support networks.

Table 17. Contacts for Hazard Mitigation Planning.

Organization	Role	Key Contact	Contact info
Columbia County Emergency Management Office	Government	David Harrison Jr. (Director)	cceoc@columbiacountysheriff.us
Town of Richmond MA	Government	Danielle Fillio (Town Administrator)	Townadmin@richmondma.org

SOURCE WATER PROTECTION PLAN

Status: In Progress for Silver
Points 6, 10

This action can likely be satisfied by the source water protection plan being conducted on the town's behalf by Steven Winkley of the New York Rural Water Association (NYRWA). Work on this project started in 2017 and is expected to be completed in the near future. The New Lebanon Climate Smart Task Force has reached out to Winkley to ensure alignment of goals with the Climate Smart program requirements. Winkley has confirmed that he has completed this action on behalf of other towns in line with Climate Smart requirements.

Table 18. Contacts for Water Source Protection Planning.

Organization	Role	Key Contact	Contact info
New York Rural Water Association (Claverack, NY)	Advisor (Water protection)	Steven Winkley, P.G.	winkley@nyruralwater.org

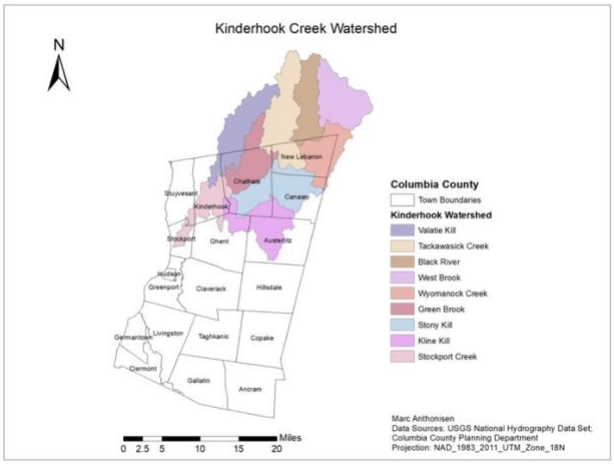
WATERSHED PLAN FOR WATER QUALITY

Status: Opportunity for Silver
Points available (2, 4, 6)

This action looks at protecting the town's water resources from contamination, a topic that is of interest to the town given the concerns about the disused landfill as well as the recent contamination of nearby towns like Hoosick Falls. This action is also important for safeguarding water supplies as climate change accelerates, which will put additional pressures on water quality. Given New Lebanon's steep hillsides and history of flooding, watershed management could help boost the town's resilience to climate change.

The entire town of New Lebanon is in the Kinderhook Creek Watershed (Figure 26), so this activity would just focus on one watershed area. This is potentially a good activity for the Climate Smart Task Force to partner on with the town's Conservation Advisory Council (CAC). This is also an activity where it may make sense to partner with other organizations, including state agencies and other nonprofits involved in watershed protection.

Figure 26. Kinderhook Creek watershed.



WATERSHED CHARACTERIZATION

The first key deliverable in this action is to develop a "watershed characterization." This is an initial report describing the watershed that will provide context for future planning decisions. The components of a watershed characterization are:

- Geographic setting and special features
- Physical characteristics
- Watershed maps
- Review of existing data
- Land use and land cover analysis
- Regulatory status of all water bodies
- Subwatershed summaries
- Technical appendices

There are two ways to meet this objective. One is to follow the NY Department of State Guide for Watershed Planning. Another approach is to use the NYS Department of Environmental Conservation guidance for a "Nine Element Plan" (New York State Climate Smart, n.d.).

WATERSHED PLAN

The next step is to create a "watershed plan" based on the watershed characterization. This step involves prioritizing actions to improve and safeguard the watershed. The team will need to create a detailed plan for implementing watershed protection actions as well as ongoing monitoring.

Points are awarded separately for developing a watershed characterization and then a watershed plan. To date, no communities registered for Climate Smart have submitted this action. However, the Climate Smart site provides many examples of watershed characterizations and plans. This is a challenging, technical action that likely requires funding from external sources. It will also require collaboration across multiple parties within the town and beyond. However, given the primacy of water quality to New Lebanon's future resilience, this is also a significant opportunity.

WATERSHED-BASED FLOOD MITIGATION PLAN

Status: Opportunity
Points: 2, 5

Flooding is already a significant hazard in New Lebanon. The town has the highest level of repetitive federal flood loss claims in Columbia County, with five properties claiming 47 losses (Table 199; Columbia County Multi-Jurisdictional Hazard Mitigation Plan, 2018). A watershed-based approach to limiting flooding aims at slowing water down before it can do damage to homes, roads, and businesses. Given the climate forecasts for increased precipitation, this can also be considered an important mitigation action.

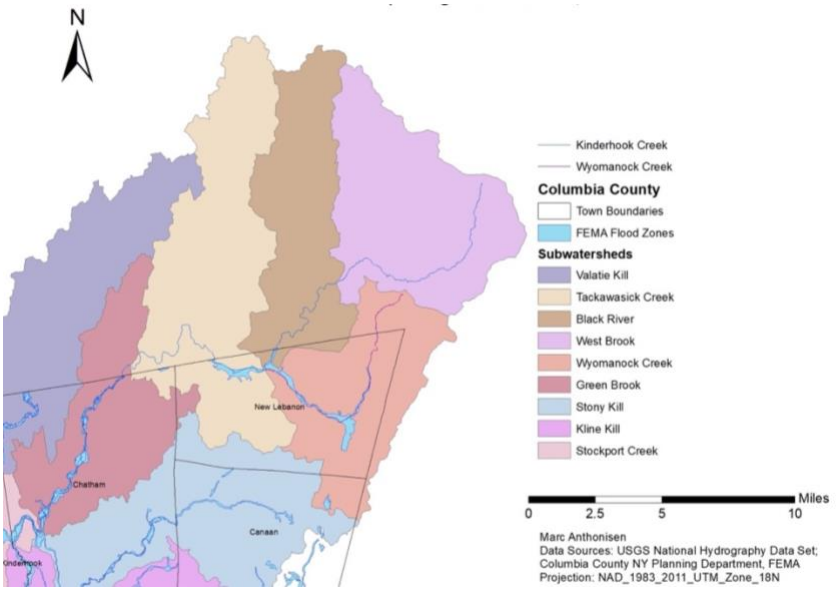
This is another activity that the Conservation Advisory Council can potentially lead on behalf of the town, working with other towns and organizations as appropriate. Mitigation strategies can include land use and zoning, land acquisition, rightsizing culverts, removing dams, riparian buffers (New York State Climate Smart, n.d.). This action is also potentially useful in limiting seasonal drought.

However, one of the challenges New Lebanon faces is that much of the watershed for its flood zones is based outside of the town borders, especially the Black River and West Brook (Figure 277). This further reinforces the need to collaborate with other towns and even states on flood mitigation.

Table 19. Repetitive federal flood loss claims by town in Columbia County.

Community	Properties	Losses	Total Payments
Town of Ancram	1	2	$ 4,057
Town of Copake	3	6	$ 70,879
Town of Hillsdale	1	3	$ 11,259
City of Hudson	3	6	$ 33,172
Town of Kinderhook	2	4	$ 368,286
Town of Livingston	1	2	$ 12,860
Town of New Lebanon	5	47	$ 888,937
Town of Stockport	3	9	$ 149,486
Town of Stuyvesant	4	9	$ 395,986
Village of Valatie	2	4	$ 35,277
Total	**25**	**92**	**$ 1,970,200**

Figure 27. Kinderhook Creek subwatersheds.



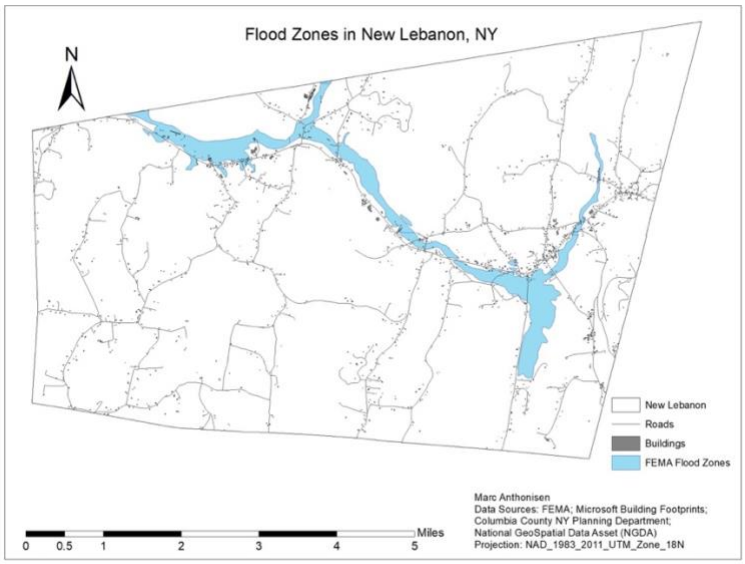
This action has been completed by some nearby communities already. The Rensselaer Plateau Alliance has also completed an excellent watershed flood control plan for the Poestenkill Creek, which flows into Troy (Rensselaer Plateau Alliance, 2019). The town of Red Hook in Dutchess County provides a good comparison, looking at the Saw Kill watershed (New York State Climate Smart, n.d.).

DESIGN FLOOD ELEVATION & FLOOD MAPS

Status: Opportunity
Points: 2-14

This action requires technical expertise and likely outside resources. However, given the high risk of more severe flooding, this would be an important action. As FEMA is currently updating flood maps for Columbia County (Figure 288), this may be an action to pursue once those maps are completed.

Figure 28. Current FEMA flood zones in New Lebanon.



RIPARIAN BUFFERS

Status: In progress for Silver
Points 2-14

Securing stream areas with vegetation will help with both stormwater management and drought prevention. However, even though New Lebanon has begun planting trees along the Wyomanock Creek in Shatford Park as part of the "Trees for Tribs" program (New York State Climate Smart, n.d.), this action requires substantial planning efforts to qualify for points. A replanted buffer must have at least a 50-foot width and a minimum area of 10,000 square area to qualify for two points. The planting must have a maintenance plan. Nine communities have qualified for Riparian Buffers as of January 2021. This action will no longer be eligible as part of the Climate Smart program after July 2021 so documentation will need to be filed shortly.

CULVERTS AND DAMS

Status: Opportunity for Silver
Points: 2-24

This activity involves assessing and upgrading culverts and dams to prevent flooding and ensure connectivity for aquatic and terrestrial wildlife. The Cornell Cooperative Extension (CCE) of Columbia and Greene Counties has specific training on protocols developed by the North Atlantic Aquatic Connectivity Collaborative (NAACC, n.d.). The CCE team may be available to undertake this action in 2022. Their recommended next step is to connect with CCE in October of 2021.

Table 20. Contacts for Culvert and Dam management at Cornell Cooperative Extension.

Organization	Role	Key Contact	Contact info
Cornell Cooperative Extension (Acra, NY)	Resilience advisory	Kelsey Jean West	kjw228@cornell.edu

CONSERVE NATURAL AREAS

Status: Completed for Silver
Points: 4

The initial stage of this action is to complete an Open Space Inventory, which the town completed in 2014 (Benson et al., 2014).

Additional Opportunities
Points: 17

The remaining actions involve developing a financing plan to acquire and protect areas for conservation in the community. Given the town's potential for continued population decline, there is a possibility of more land becoming available over the coming decades.

HEAT EMERGENCY PLAN

Status: Opportunity
Points 6

This action is recommended given the large number of elderly people in New Lebanon and the surrounding area. As temperatures continue to climb as a result of climate change, heat stress is likely to become a greater hazard (James, 2021). Preparing a heat emergency plan to safeguard vulnerable residents can help minimize vulnerability. This plan can include a communication plan, checking on neighbors, and thresholds for activating cooling centers.

COOLING CENTER

Status: Opportunity
Points 1-9

New Lebanon already has a cooling center policy for days with extreme heat. This Climate Smart action focuses on assessing the adequacy of existing cooling centers and expanding or upgrading this capability if needed. Additional points are available for promoting awareness of cooling centers, extending hours, and making centers available to pets.

PE8: SUPPORT A GREEN INNOVATION ECONOMY

FARMERS MARKET

Status: Approved for Bronze, March 2021
Points: 3

The town supported the Farmers Market by providing the Wiesbuch Pavilion in Shatford Park for winter markets. The Farmers Market is an extremely useful asset, not only in terms of supporting the local economy, but also in terms of bringing the community together. The market helps create an informal network that can be key in improving community resilience (Keys et al, 2016).

BUY LOCAL / BUY GREEN CAMPAIGN

Status: Approved for Bronze, March 2021
Points: 2

The Farmers Market also launched a Buy Local / Buy Green marketing campaign to highlight the benefits of using locally sourced products. The Task Force also submitted the town's local business directory, which further raises the profile of local businesses.

SOLARIZE: COMMUNITY SOLAR

Status: In progress for Silver
Points: 5

The Solarize campaign encourages residents to enroll in a community solar program. After a review of potential vendors pre-selected by the Clean Energy Communities program, the Climate Smart Task Force recommended the town partner with Ampion, a company based in Boston that coordinates renewable energy campaigns. The New Lebanon campaign began rolling out in February 2021. By subscribing to community solar, residents and businesses can reduce their electric bills by up to 10%. As of May 10, 2021, enough residents have signed up for New Lebanon to apply for additional grant funding of $5,000 as part of the Clean Energy Communities program.

CLEAN HEATING AND COOLING CAMPAIGN

Status: Opportunity for Silver
Points: 5

This potential action, which was introduced by the Clean Energy Community program in January 2021, is similar to the Solarize campaign, but is targeted at getting local homes and businesses to switch to ground source heat pumps, air source heat pumps (Figure 299), biomass, or solar for heating and cooling their buildings. Separately, the Capital District Regional Planning Commission already provides assistance to guide consumers through funding and rebates as part of a HeatSmart Capital Region Campaign (Capital District Regional Planning Commission, n.d.).

Figure 29. Air source heat pump.

Table 21. Contacts for Heating and Cooling Campaigns.

Organization	Role	Key Contact	Contact info
Capital Region HeatSmart Campaign (Albany)	Advisor (Heat pumps, building efficiency)	Todd Fabozzi	todd@cdrpc.org https://heatsmartcapitalregion.com/

SOLAR FOR ALL CAMPAIGN

Status: Opportunity for Silver
Points: 5

The scope of the current Solarize campaign does not include Solar for All, a program for lower-income residents. Under this program, eligible residents can save up to $180 annually on their electric bills. The New Lebanon Climate Smart team has committed to revisit this option in 2021. This program will allow lower income residents to apply solar credits to reduce their electricity bill (NYSERDA, n.d.-b). Particularly given the economic impact of the pandemic, this is an important action.

PE9: INFORM AND INSPIRE THE PUBLIC

SOCIAL MEDIA

Status: Approved for Bronze, March 2021
Points: 3

The New Lebanon Climate Smart Task Force has established a Facebook page (New Lebanon, NY, n.d.) with legal support from the town attorney. Initial postings are now starting to gather attention. Other towns have also established Instagram accounts, including Rhinebeck and New Paltz. Given the small size of New Lebanon, it is debatable if the Task Force needs multiple social media platforms. That said, with New Lebanon's potential to take a leadership role in the county and beyond on climate, adding additional platforms could help expand its influence assuming the Task Force has the bandwidth to manage them.

LOCAL CLIMATE ACTION WEBSITE

Status: Approved for Bronze, March 2021

Points: 3

This action was satisfied by the creation of a dedicated page for the Climate Smart Communities Task Force (New Lebanon, NY, Town of, n.d.). The page captures all the actions and reports of the Task Force and provides resources for the community to engage in climate change mitigation and adaptation.

CLIMATE CHANGE EDUCATION & ENGAGEMENT

Status: In progress for Silver
Priority Action
Points (4-8)

The Climate Smart Task Force has set up a subcommittee that is pursuing this action. This action requires a communication plan that outlines the goals, target audience, and tactics employed. Four points are awarded separately for campaigns focused on mitigation or adaptation.

Climate change is a technical topic that is often treated as a belief system as opposed to scientific reality. Even among residents who are concerned about climate change, few have a detailed understanding of the science. As a result, education and engagement is one of the most important actions for a town like New Lebanon.

Of the towns that have completed this action, Rhinebeck, NY has a useful strategic plan that can potentially serve as a model for New Lebanon's engagement plan (New York State Climate Smart, n.d.)

PE10: ENGAGE IN AN EVOLVING PROCESS OF CLIMATE ACTION

ANNUAL PROGRESS REPORT

Status: Completed for Silver
Points: 4

The intent of this action is to provide the community with an annual update on progress toward climate goals. Key components are as follows:

- Brief history of the local government's energy and climate work to date, including the following:
  - Local government operations greenhouse gas (GHG) inventory results
  - Community-wide GHG inventory results
  - Local government and community-wide short-, medium-, and long-term GHG reductions
  - Priority GHG reduction actions
- Results (e.g., cost savings, GHG reduction) and implementation status (e.g., not started, in progress, complete) per action
- Challenges encountered
- Next steps
- New funding sources per action

(New York State Climate Smart, n.d.)

The annual report needs to have been completed within the past year to claim points. While it is hoped that this "Road to Silver" report may meet the requirement, if New Lebanon is not able to apply for Silver certification before May 2022, an updated or new version would need to be provided.

PE11: INNOVATION

Innovations can be submitted either as "new innovative actions" or as an "innovation on an existing action." In January 2021, New Lebanon submitted one innovation, the Bike Recycling Program, based on an existing action, the PE5 Resource Recovery Center.

INNOVATIVE APPROACH TO EXISTING CLIMATE SMART ACTION: BIKE RECYCLING PROGRAM

Status: Submitted, not accepted, March 2021
Points: 5

As the pandemic created a shortage of bicycles, the New Lebanon Climate Smart Task Force created a bike repair and recycling program in the summer of 2020. This initiative proved to be very successful, not only in reducing waste and promoting active mobility, but also in helping to promote the Climate Smart mission in general. As a result, the bike program has had an outsized impact in terms of creating visibility for the Climate Smart initiative.

The action was submitted as an innovative approach on an existing action, in this case (PE5) Resource Recovery Center. This reflected the overall alignment of the bike program with resource recovery. It also highlighted the unique attributes of repairing bikes, which required specialized skills as well as legal support and insurance coverage from the town. The New Lebanon program differs from similar programs around the state in that the bikes are provided entirely for free to residents.

There is potential that this initiative can be expanded to other towns or dovetail into a (PE5) Community Repair (Community Repair) program. As of May 2021, the program has refurbished or repaired nearly 100 bikes. While the program was not awarded points as an innovative action, it continues as part of the Free Store and to support the community.

Figure 30. Residents try out bikes at the New Lebanon Farmers Market, November 2020.

REDUCE GHGS FROM GOVERNMENT FACILITIES

Status: Opportunity
Points: 15-45

This task involves reporting on greenhouse gas (GHG) reductions in town operations, excluding vehicles. Given, New Lebanon is on track to reduce emissions from its Town Hall through renewable energy initiatives, this could be an opportunity to report on in one or two years. This requires a detailed accounting of GHGs reduced using defined tools and criteria, similar to those used for the GHG inventory for 2019. As a result, this could be a good future student project. The number of points is based on the percentage of GHGs reduced. Given the small size of New Lebanon's operations, the number of points awarded could be substantial, as the savings from LED streetlights has already demonstrated. While the Clean Energy Upgrades action (see Clean Energy Upgrades) award points for a 10% reduction in GHGs, this action rewards significantly more points for energy savings above 10% (Table 22).

Table 22. Potential points for GHG reductions by government operations.

	POSSIBLE POINTS
Reduce GHG emissions from government facilities by 10-14%	15
Reduce GHG emissions from government facilities by 15-19%	20
Reduce GHG emissions from government facilities by 20-24%	25
Reduce GHG emissions from government facilities by 25-29%	30
Reduce GHG emissions from government facilities by 30-34%	35
Reduce GHG emissions from government facilities by 35-39%	40
Reduce GHG emissions from government facilities by 40% or more	45

REDUCE GHGS FROM GOVERNMENT VEHICLES

Status: Opportunity
Points: 15-45

This action anticipates that New Lebanon will be able to replace some of its trucks with advanced vehicles at some point in the future. Should that happen, this action will report the GHGs reduced. Given the small number of vehicles involved, this could be a fairly easy activity for the team to report on once the vehicles are replaced.

APPENDIX 2: HISTORY OF NEW LEBANON

This section was kindly provided by Elizabeth Sheffer-Winig, Town Historian of New Lebanon

Nestled in the Berkshire Mountains and bordering the Kinderhook Creek lies the Town of New Lebanon. The area was originally settled by the Mohican people and later by Europeans, who arrived about 1756. The town was incorporated in 1818 when it separated from Canaan, NY. New Lebanon is 24 miles southeast of Albany, NY situated in the northeast corner of Columbia County, NY, bordering Rensselaer County, NY on the north, and Berkshire County, MA, on the east.

The Town of New Lebanon consists of several hamlets: Lebanon Springs, northeast of New Lebanon village on Route 22; New Britain, southwest of the town; New Lebanon, eastern part of the town; New Lebanon Center, west of New Lebanon village; and West Lebanon, northwest part of the town on Route. 20. Connecting the Town of New Lebanon to points north, south, east, and west are U.S. Route 20 and NYS Route 22, along with several county and town roads.

New Lebanon was the main spiritual home of the Shakers or the United Society of Believers in Christ's Second Appearance. The Mount Shaker Society set the example for all the Shaker societies that followed both in ideology and architecture. The Shakers were innovators in agriculture and manufacturing. Among inventions credited to the Shakers are the clothes pin, condensed milk, circular saw, flat straw broom, mail-order seed packets, Shaker chairs, wheel-driven washing machine, rotary harrow, threshing machine, metal pens, Shaker tilting chair, Shaker peg, and Shaker Lemon Pie. (Mingus, 2018) The Mount Lebanon Shaker Society's historic structures are now part of the Shaker Museum/Mount Lebanon and the area is on the National Registry of Historic Places.

The Shaker Society is one among many designations on the National Registry of Historic Places. Included in the list are: The Church of Our Saviour (Episcopal), the Donnelly House, Elisha Gilbert House, Lebanon Springs Union Free School, Bigelow-Finch-Fowler Farm, and the Governor Samuel J. Tilden Monument. Recently the New Lebanon District No. 8 School on U.S. Route 20 in New Lebanon was placed on the New York State Registry of Historic Places and has been placed in nomination to be on the National Registry.

The most prominent citizen of New Lebanon was Governor Samuel Jones Tilden. Tilden was born and grew up in Lebanon, surrounded by political figures of the day, including Martin Van Buren, who were friends with his family. He studied law and was in a firm in New York City where he gained a reputation in handling railroad and corporation law with great skill. Samuel Tilden became a leader in the NYS Democratic Party and was elected to the NYS Assembly and helped to reorganize the NYS Democrats from 1865 and 1875 serving as Chairman of the party. (Encyclopedia Britannica, n.d.) He played a major role in bringing down the Tweed Ring during this time. In 1874 Tilden was elected Governor of NYS, running on a reform ticket. During his tenure he helped to bring down the Erie Canal Ring, a group that was defrauding the state. Tilden was the Democratic candidate for President of the United States in 1876. Although he won the popular vote, there was a dispute in the Electoral College. A committee was established to review the votes and along party lines, the election was awarded to Rutherford B. Hayes. Tilden's poor health forced him to leave public life. He died in 1886, leaving the bulk of his estate to fund the formation of the New York City Public Library. On his sarcophagus is his lasting legacy, "I still believe in the people."

The prominence of the Tilden family in New Lebanon did not stop with Samuel Tilden. With the fertile agricultural valley and the Shaker Swamp plants, the Tilden Pharmaceutical Company was founded, the first such company in the United States. The richness of the plants and herbs in the valley allowed the company to produce tinctures and powders that were

shipped around the world. The company supplied the Union Army with powdered coffee during the Civil War. The company closed its doors in 1963 due to dwindling demand for their product.

Among other notable inventions that had their start in New Lebanon by the Kendall family are the first accurate clinical thermometer manufactured in the United States and the first barometer.

In 1804, as a young man of 15, Jesse Torrey, Jr. founded the first public library in the United States in New Lebanon. Jesse believed in free education and free public libraries for all no matter race, creed, sex, or economic condition. He was a staunch abolitionist and crusaded for all manner of social justice, including prison reform, preventative health measures, the use of medicinal herbs, and reform of medicinal practices through the use of science-based healing.

Approximately 75 million years ago in the late Paleozoic Period, seismic events created the Lebanon Warm Springs. The Mohicans who lived in the area called the springs Montepoale and used its waters to bath in as a cure for skin irritations and general well-being. In 1756, the first white man to see the springs was Lt. James Hitchcock of the Yorkshire Regiment stationed in Massachusetts. After the Revolution Hitchcock became one of the first permanent settlers of the town and built a home and, for a fee, would allow others the use of the springs. This land was owned by Charles Goodrich who leased it to Hitchcock. In 1790 Goodrich sold the land to William Nichols and had incorporated into the deed the requirement that the waters would…"be free to the Use of the Good People at Large without any Hindrance or Molestation whatsoever." (Ladies Guild, 1982, p. 18). In 1794, Nichols built a hotel on the hill by the springs thus beginning the reign of Columbia Hall as a premier vacation and visitation site in the country for the taking of the healing waters. From 1820 on prominent people from around the world visited Columbia Hall including Martin Van Buren, Charles Sumner, Daniel Webster, Teddy Roosevelt, and Charles Dickens. During the 50th Anniversary of the American Revolution in 1825, the Marquis de Lafayette and his son visited the Hall. A reception was held and so many people were in attendance that there was fear the floor would collapse. New Lebanon has been designated as an official site of the Lafayette Trail which commemorates the Marquis' successful trip to the United States. With the Civil War and the rise of Saratoga Springs, the dominance of the Warm Springs waned. In 1900 the Columbia Hall closed and in 1926 was torn down because of deteriorating conditions. Today the Warm Springs still pumps out its 72° waters at 500 gallons a minute. (Ladies Guild, 1982, p. 17) During the winter, steam rises from the holding pond and at one time the waters were piped to the houses in the area. Today, if a house uses the water from the springs, it must have a water purification system attached to the water line.

New Lebanon celebrated its bi-centennial in 2018 with festivals, dances, a town-wide dinner, and banners placed on the poles in town. As the town moves into becoming a greener community, the future holds much promise.

Table 23. Contact info for Town Historian.

Organization	Role	Key Contact	Contact info
Town of New Lebanon	Town Historian	Elizabeth Sheffer-Winig	Town of New Lebanon 14755 Route 22 North P.O. Box 328 New Lebanon, NY 12125 (518) 794-8880 historian@townofnewlebanon.com

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APPENDIX 3: EQUIPMENT/REPAIR WAIVER

NL Bike Program Waiver 08/11/20

Assumption of Risk, Waiver & Release

The Town of New Lebanon ("Town") is a municipality. Through a bike recycling program, the Town provides bicycles to, and repairs bicycles for, members of the community.

In consideration of the Town providing the items set forth below, the undersigned hereby agrees on behalf of him/herself, the minor(s) on whose behalf such person signs, and each of their respective assigns and heirs, as follows:

1. **Equipment.** The Town is providing to me the following item(s) and/or repair(s):

   _____ (the "Equipment/Repair").
2. **Condition "As Is".** The Town makes no representations, warranties, or guarantees about the Equipment/Repair, including any implied warranties of merchantability and/or fitness for any purpose. I am accepting the Equipment/Repair "as is." I understand that the Town is not required to provide any instructions or follow-up services, replacement parts, or repairs.
3. **Assumption of Risk.** I understand that there are certain risks of injury that may arise from the possession, use or misuse of the Equipment/Repair, including the risk of injury, disability, or death of the user of the Equipment/Repair or other persons, or damage to property. I assume full responsibility for all risks arising directly or indirectly from the possession, use or misuse of the Equipment/Repair, both known and unknown, regardless of the cause. This Assumption of Risk specifically includes my assumption and acceptance of the risk associated with or arising from, among others, defective design, defective manufacturing, negligent performance, negligent maintenance, and/or negligent repair of the Equipment/Repair.
4. **Waiver and Release.** I waive and release any and all claims against the Town, its officers, agents, employees, and volunteers (collectively, "Town Parties") with respect to any and all injury, disability, death, loss or damage to property resulting from possession, use or misuse of the Equipment/Repair, regardless of the cause and even if caused by negligence, whether passive or active, and regardless of whether such claim(s) arose before, during, or after execution of this document. I agree not to sue any of the Town Parties on the basis of these waived and released claims. I understand that this document releases all claims, whether known or unknown, and whether currently in existence or arising in the future from possession, use or misue of the Equipment/Repair.
5. **Indemnity.** I will defend, indemnify and hold the Town Parties harmless from and against any and all liability, losses, damages, claims and attorney's fees resulting directly or indirectly from the possession, use or misuse of the Equipment/Repair by me or any other person.

I have read and understand the terms of this agreement. I understand that this agreement covers each and every item or repair which I am receiving. I sign it freely and voluntarily and with a full understanding of my rights.

Name _____ **Date** _____ **Signature** _____

Parent's/Guardian's Signature (if under 18) _____ **Date** _____ **Parent's/Guardian's Name (if under 18)** _____

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