

# MADISON COUNTY



2019

## Agriculture and Farmland Protection Plan

Prepared by the Madison County Planning Department with funding and support from New York State Department of Agriculture and Markets

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Cazenovia Preservation Foundation

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And others.

Photographs were provided by Bruce Moseley.



## PART I. INTRODUCTION

### NEED FOR A NEW PLAN

In 2005, Madison County adopted its first Agriculture and Farmland Protection Plan. Since then, the plan has served as a guideline and reference point for the County, local municipalities, and other non-profits working in, with, or adjacent to agricultural issues. The plan identified four goals and seventeen sub-goals intended to protect and foster agriculture within the county. Nearly 15 years after the first plan was approved, we are reassessing agricultural issues facing the County and redirecting Madison County action to address issues that have emerged or persisted since the 2005 Plan.

Agriculture remains a critical component of the County's economy, culture, history, and future. The 2017 Ag Census found 691 farms operating in Madison County, representing a variety of sizes, agricultural products, and backgrounds. Of these farms, 200 are operating with hired labor, totaling 1,261 workers with a payroll estimated at \$19.2 million. The market value of agricultural products sold was approximately \$114 million. But as the plan emphasizes, the impact of agriculture on the Madison County economy exceeds the valuations of salaries and goods.

The prominent presence of the agricultural economy of Madison County is apparent to any newcomer. Our landscape is shaped by an agricultural economy, with agricultural land and buildings spanning two centuries; some still in use, some abandoned, and some recently

returned to productivity. Today, this cultural and economic landscape is threatened by changing markets, loss of farms, climate change, and loss of farmland to competing uses.

While some of these threats increasingly happen at a national and global scale, this plan emphasizes the importance of local agriculture and identifies ways the County can continue to protect agricultural resources and support farmers. The financial struggles facing many farms, combined with a continued trend of residential development and suburbanization in some areas, a population generally removed from farming, and the impact of climate change creates a host of challenges for local farms. While agriculture in Madison County has endured countless changes and challenges throughout its history, increasingly these threats are systemic and endanger the long-term vitality of local agriculture if unanswered. Madison County hopes to protect and preserve agriculture's positive impacts on our community and the resources on which it depends. This plan sets forward goals to do just that, focusing on both the economic situation of agriculture in the county and the long term preservation and health of agricultural resources.

This document does not change existing regulations or policies, but rather provides a guideline going forward and a reference for local towns. Any changes to local laws or policies will require subsequent action. This Plan presents goals and actions that must be actively pursued over the coming years.

## **VISION**

The Vision for Madison County Agriculture is a diverse range of agricultural operations, both in size and enterprise. Madison County Agriculture provides food, agricultural employment, and economic activity, but also a strong cultural identity in Madison County, local market access for residents and visitors, and a beautiful landscape for all to enjoy. New and existing farmers can find land, supportive resources, and a welcoming community to build and run their operation. Local officials recognize the importance of a healthy agricultural community to our area and support policies that enhance farm viability and protect agricultural resources in the long term.



## PART II. HISTORY

Madison County has a rich agricultural history that predates the arrival of European settlers in the late 18th century. The Oneidas had long lived in the area that is now Madison County, cultivating corn and vegetables.

Commercial agriculture in the county has seen three distinct, yet overlapping phases—grain and hop production, dairying, and vegetable crop farming. Various factors such as market demand, competition, transportation networks, government support, and technology have affected the rise and/or decline of each of these three phases.

A sign of agricultural progress and recognition of the important role agriculture played in the county's development was the formation of the Madison County Agricultural Society in 1841. Enacted by state legislation and supported by an annual allocation of \$120, the Society fostered and promoted agriculture in the county via publications and sponsorship of fairs, cattle shows, and various competitions. By 1852, the Society described the county's agrarian state in [A General View and Agricultural Survey of the County of Madison](#). Author Gurdon Evans stated that "with a fertile soil affording abundant means for sustenance and prospective accumulation; it may fairly be claimed for the county, that her sons are prosperous and every improvement of the age is found within her border." In 1851 statistics derived from the same publication show that a total of 251,027 acres (about half of the county's total acreage) were improved, with

the towns of Brookfield and Lenox leading in cultivated area with just over 31,000 acres each. By 1875, more than 301,000 acres would be improved (accounting for approximately 70% of total acreage countywide) and by 1900, more than 90% of the county's land would be cultivated.

In the mid-nineteenth century the average Madison County farmer could learn about developments and current technology through the county agricultural society and publications like the *Genesee Farmer*, *American Agriculturalist* or *Rural New-Yorker*.

Before the advent of the county society, the early county farmers chiefly produced corn, flax, and wheat. Flax virtually disappeared by mid-century and wheat production gradually declined due to superior western competition. Corn continued as a farm staple and an important product for distilleries. Sheep and wool, cheese and butter, barley, and above all, hops, accounted for the main farm products at mid-century.

The first sheep were introduced into the county about 1810 by Curtis Hoppin. By 1852, the towns of Brookfield and Madison led the county in sheep raising and wool production.

At this same time—and although hop production was in its heyday and grain crops were still important—dairying was introduced. Many felt that the soil was better suited to dairying than cultivation. Eaton boasted of the county's first cheese factory and the towns of Brookfield, Eaton, Lebanon, and Nelson led the county in cheese and butter production. Barley was the

principal small grain cash crop and the towns of Lenox and Fenner profited most from this situation. In fact, David Hess of Fenner discovered a new and hardy variety of barley in 1844 which was appropriately called "Hess" barley. Hop production was most successful in the towns of Brookfield, Eaton, and Hamilton.

Hops were first introduced into upstate in 1808 by James W. Cooledge, a Massachusetts native. Securing roots from his neighbors' gardens (New England was the nation's leading hop producer at that time), Cooledge propagated the roots near Madison. He had no idea how explosive an impact his "import" would have, not only on the county's agricultural economy, but also on the state's.

According to *Hop Culture in the United States* (1883) by E. Meeker and W. A. Lawrence, by 1849 the statewide hop production had grown astronomically. New York now was the nation's leading producer, accounting for five-sevenths of the entire U.S. crop. In Madison County, the Agricultural Society released figures in 1852 which revealed the county alone produced 640,000 pounds of hops with the towns of Brookfield, Eaton, and Hamilton collectively accounting for more than half that total. This demonstrated the county's strong leadership in the state and by 1879, Lawrence cited that the county was now officially ranked third in the state, just slightly behind Otsego and Oneida counties. This productivity was of national significance because New York produced more than one-half of the nation's total crop that

year. Madison county was yielding an average of 629 pounds per acre which accounted for a total production of 3,823,963 pounds that year.

The growing and curing of hops involved several procedures, tools, and buildings peculiar to the industry alone. Cultivation, usually from cuttings, began in April or May and the hops gradually wrapped themselves about a simple system of hop poles. When the hops essential oil reached its peak potential, the ripe hops were picked in autumn. Migrant labor was usually "trained" in to the local depots for the harvest. The curing, drying, and sulphuring processes next took place in the barn and kiln before the hops were ready for market.

Many ideas and inventions to increase efficiency and production were conceived of in the county. H. Niles Harrington and Charles Osborne of Peterboro were responsible for a combined hop picker and separator in 1878. H. H. Hathaway of Clockville invented a mechanized hop picker in 1880 and exhibited it at the Lenox Agricultural Fair in Oneida. Later in the century, A.S. Hart of Morrisville invented a new type of hop pole which allowed for "no sticking, no pulling, no vines broken in harvesting; [this hop pole] can raise one hundred pounds to the acre more than with any other way of poling.:" Such was Mr. Hart's own description of the device in an undated booklet he wrote entitled "A.S. Hart, Inventor of the Standard Hop Pole, Low Down Wagon, Horse Railroad, and Heated Omnibus, Morrisville, N.Y."

As might well be expected, any occasion connected with the anticipated processing of hops

for ale or beer was met with jubilation and celebration. In 1878, the Hop Growers' Association was formed which enthusiastically sponsored an annual summer' picnic to mark the coming harvest. Local Stockbridge historian Olive Boylan noted that "a record breaking 100 kegs of lager beer were sold by Sam Frank, of Oneida, for the 1880 hop growers picnic at Sylvan Beach. This was said to be the largest single day sale ever in Madison County".

By the turn of the century there was less cause for celebration. Hop production gradually declined because of blue mould infestation, highly successful western competition, and market fluctuations. By the 1930s the organized hop industry in the county was but a memory.

Silk production was a small but relatively widespread venture during the middle of the hops era. Mulberry trees were grown in the county in the 1830s in Cazenovia, Morrisville, and Perryville and by 1840, cocoons and raw and reeled silk were marketed in the towns of Cazenovia, Eaton, Fenner, Lebanon, Lenox, Madison, Stockbridge, and Sullivan. In 1845, the census shows the total pounds of raw silk produced in the following towns: Eaton, 1; Fenner, 5; Madison, 5; Sullivan, 16. A silk factory was even built in Morrisville in 1853 by F. F. Stevens and Jonathan F. Gurley, but the next decade saw its decline and the demise of the county's silk production.

Growing apples and running cider mills became a very thrifty business for several

Madison county residents. "Ye olde" cider mills sprung up throughout the county and Samuel R. Mott began his mill (1868-1890) in Bouckville. The Mott's brand we know today was launched from these humble beginnings.

Although popular, cider and processed apple products would never achieve the widespread attention and monetary return dairying products would in the county. Gradually dairying began to overshadow and eventually replace hop production and other agricultural industry. Continued infrastructure improvements of new canals, railroads, and roads aided the dairy industry's development in Madison County.

Butter and cheese production were to peak in the 1860s and 1870s, most assuredly due to the Agricultural Society's earlier efforts and recommendations. In 1852, the Society had reported that

*Excellent butter is found at most farmhouses, yet the attention given this necessary of life is far too limited for a county of the area and character of Madison... there is an amount of knowledge and skill in the management of a cheese dairy not very readily attainable, hence it may be that the very inferior cheese produced is caused by unskillfulness and error which a few more years of observation and application will remove. And this inferiority must be admitted by those who have a knowledge of cheese and the prices which we obtained /or the article of this county.*

By 1866 though, the Second Annual Report of the American Dairyman's Association noted the abundance of quality cheese in the county and

the Excelsior factory in Brookfield was the first factory cited. The 1875 Association Report then included 65 flourishing cheese factories in the county, which were to account for production from more than 20,000 cows. Decline came shortly thereafter due to the production of inferior skimmed cheese and market competition from Canada and the mid-west states.

Despite butter and cheese production waning in the 1880's, milk production and the number of cows steadily increased. The first cattle introduced in the county were from stock originating in nearby Whitestown and New Hartford. John Lincklaen made the first attempts to breed cattle in the county in the early 1800s from cattle he had obtained through the Holland Land Company.

Unfortunately his attempts failed miserably. The Devon bull was then introduced into Hamilton from Oneida County in 1830. The Ackley bull was then bred locally, a cross between a native cow and the Holderness. Shorthorns, Herefords, and Ayrshires were also gradually introduced into the county, but it was not until 1869 that Madison would become nationally known for its very own breed of cattle. In that year Gerrit Smith Miller successfully introduced and bred the Holstein-Friesian cow in this country. In fact, the New York Holstein-Friesian Association honored Miller's historical feat in 1928. A commemorative plaque in Peterboro states that Miller's Dowager #7 produced a record

number of 12,681 pounds (8 oz.) milk in the year 1871.

The mechanization of milking greatly improved the production of milk in Madison County. Arthur V. and Ralph L. Hinman invented, developed, and manufactured a very successful milking machine. The Hinman operation was begun in Stockbridge but moved to Oneida in 1909.

Vegetable crop and the associated canning industry make up the third phase of Madison County's agricultural industry. Although alfalfa, grasses, hops, oats, and wheat accounted for more than 50,000 cultivated acres in 1910, the central and southern townships boasted of a blossoming string bean, green and wax bean, and pea production which flourished into the 1940s. Peas were the first canning crop to be grown in the county on a large scale in Earlville, Hamilton, and Morrisville in the 1910s.

West Coast competition and plant lice would quickly destroy this pea productivity, but beans, beets, and corn were planted in Cazenovia, Eaton, Hamilton, and Madison. By 1940, 6,800 acres of beans alone were planted. Migrant laborers were brought up from the South and Jamaica to pick and much of the crop went to local canneries or even New York. The rich alluvial soil in the northern parts of Lenox and Sullivan, referred to as the "mucklands," was once more than 15,000 acres of swampland.

In the early nineteenth century, the state had divided the land up into small parcels and, in 1850, the first attempt was made to drain the area when the Douglas Ditch was dug. The

County Agricultural Society proclaimed just two years later that the mucklands "have received but little attention or examination, being deemed generally worthless ... [but] ultimately can be converted into rich pastures and meadows". It was not until 1867 and 1875, however, that the Ditch was extended sufficiently to drain enough area to cultivate. Clinton Colton and Dewitt Twogood are credited with being the first to extensively drain the area and, by 1887, 200 acres were cleared. The 1893 USGS map shows that the area was almost entirely cleared and roads were visible, along with a few shacks and houses. Celery and onions were planted and several local celery concerns flourished, including the Canastota, Chittenango, Jenks, Jennings Bros., Lenox, Madison County, and Warner Celery Companies.

Onions became an even more important crop. As chronicled by Joseph T. D'Amico in his study of the mucklands, The Italian Farmers of Canastota, the land, although originally cleared and cultivated by Sullivan and Lenox locals, eventually was used by Italian immigrants. Former sharecropper Michael Patterelli was the first immigrant to purchase muck in 1902 (DAmico 42-43). A trend quickly was set and by 1930, 155 immigrants owned more than 1600 acres. Although there were only a few larger farms, the average acreage per owner was less than fifteen. The immigrant's entire family worked the farm—cultivating, planting, weeding and topping.

This close-knit guidance helped account for high productivity; in fact, the area assumed the title "Onion Capital of the U.S." in the '30s. Unfortunately, the industry began to wane in the 40's.

Throughout the past two-hundred years or so there have been peaks and troughs of agricultural production in Madison County. There have been phases where certain crops or practices were dominant before receding. Reviewing the history provides a clear narrative that the agricultural industry here has undergone significant change over time, and often done so as a result of issues beyond the control of local farmers and policy makers.

Still, one thing has remained the same: the access to agricultural resources has always been available in Madison County. Until the past few decades, there was fairly little encroachment into agricultural land by development and competing uses. In short, history of agriculture in Madison County has shown a high degree of adaptability when given the opportunity to do so.

## PART III. STATUS OF AGRICULTURE IN MADISON COUNTY

Over the duration of agriculture's history in Madison County, farming has changed drastically. The repercussions of the industrialization of farming after World War II and the subsequent shift of population away from agriculture toward other forms of work is still being felt today. In 1950, there were 2,360 farms in a county of 46,214 people (19.6 people per farm). In 2017, this figure had changed to 106.3 people per farm. This trend has gone hand in hand with a decades-long phase of suburban development throughout the County. In 1950, an estimated 317,280 acres, or 75% of the county, was part of a farm. As of 2017, that acreage had decreased to 171,865. While some of this may have been marginal quality farmland that was abandoned, losses also include good farmland that has been permanently converted to residential or other uses.

This, combined with new economic and demographic challenges facing agriculture today, mean fewer people than ever are involved with agriculture, either by working in the field themselves or by having a close relationship with someone who does.

Broadly, this trend can lead to a misunderstanding or under appreciation of local agriculture. The public, and by extension public officials or local representatives, are more likely to be unaware of issues facing our agricultural community, and fail to realize the importance of protecting farmers and improving conditions for agriculture, as well as

preserving agricultural resources such as soil. Too often in decision making, agriculture is seen as an afterthought. This means agriculture is often seen as a 'secondary' land use, a placeholder for more 'preferable' development, or even a nuisance for residential communities unaccustomed to farm operations (for instance, the smell of manure, or tractors on roads).

In reality, agriculture is still crucial in economic, social, and geographic matters in Madison County, and agricultural issues and resources should play a prominent role in decision making. And while the decline of on-farm population is a hurdle, it certainly does not make developing a rapport with the public impossible. Rather, extra effort needs to be made to engage people to build understanding, interest in, and appreciation of the farm community.



## THREATS TO AGRICULTURE IN MADISON COUNTY

### External Issues

This is a plan focused on action taken at the County and Town levels of local government. That being said, there are issues facing agriculture that originate far beyond the borders of Madison County. Global competition, international trade agreements, fluctuations in input costs, and state and federal policies all can and do massively impact agriculture in Madison County. The ongoing dairy crisis is an example. Action at the local level can help farms stay in operation, but ultimately these external issues are beyond the control of our local governments. Our goal should be to help Madison County farms be resilient and flexible enough to overcome these external challenges.

### Relationship to Public and Community Awareness

Work on behalf of the County, Cornell Cooperative Extension, Soil and Water, and various other local groups around Madison County as well as great access to local food through farm stands, farmer's markets, and local restaurants and retailers has fostered a positive relationship between the general public and agricultural communities in Madison County. However, effort must be made to maintain this relationship as public perception of agriculture can shift easily. For instance, the attention the agricultural community has received in other counties in relation to cyanobacteria or 'blue-green algae' blooms

has been largely negative. The lack of knowledge of agricultural issues can end up shifting public support for farms, and even result in municipal officials who have a low understanding or appreciation for farm operations.

### Competing Land Uses

Without a doubt, competing land uses consuming agricultural land continues to be a prevalent issue in Madison County and is likely the biggest long-term issue facing agriculture that the County has means of addressing. In some areas of the County in particular, the threat of continued inefficient exurban and suburban residential growth could lead to significant erosion of agricultural resources and eventually impact the local agricultural economy. Conversion of agricultural land to development is effectively a permanent loss of farmland, and as we know, loss of farmland leads to more pressure on remaining farmland. Our local governments have many tools to shape land use, and we can do a much better job protecting and preserving farm land to ensure a healthy farm density. Through local regulations we can ensure farms have flexibility, while at the same time limiting pressure from competing land uses.

### Finding New Farmers

With agriculture facing economic challenges, an aging population, and the start-up costs associated with farming, ensuring that farmland continues to be used by new farmers remains a central issue. Madison County should strive to ensure that farmland stays productive by

connecting interested young people and capable farmers with the guidance and resources they need to pursue farming, while ensuring that farmland remains accessible, affordable, and available. Assistance should be available for new farmer's that addresses issues such as land access and transition planning, as well as educational resources for new and young farmers. Grant opportunities exist and should be pursued when possible by the County and partners.

### **Climate Change**

Madison County farmers will face unprecedented challenges due to climate change, and as those challenges become increasingly difficult to ignore, it is past time to assist our farm community in preparing for adaptation and climate resilience. Farmers will be dealing with rising temperatures, changing precipitation patterns that in particular cause problems for cropping, harvesting, erosion, and irrigation. It should also be mentioned that as the main land stewards in Madison County, farmers are a major partner in increasing our county's general climate resilience going forward.

### **Solar Farms and other land-heavy uses**

As the climate crisis worsens, we will likely see continued growth in solar farms. Already several have been proposed in Madison County. While renewable energy is crucial, local governments should be educated on solar and in particular the impacts solar farms can have on agriculture. The chief concern is the

protection of prime farmland, and at a minimum, solar codes across the county should include some form of protection for soils. For farming purposes, solar farms should really be treated as a permanent use. Solar projects can and should be able to exist in the County without consuming prime farmland.

In addition to solar farms, the Climate Controlled Agriculture, of the likes seen in Oneida, are a threat to existing farmland. While considered agriculture by New York State, these developments result in a permanent transition of farmland and they have impacts that are significantly different than 'traditional' agriculture. These developments should be accounted for in local land use codes and treated in a similar way to solar farms. Towns should make every effort to ensure such projects, if they occur, are located on land that is not prime farmland.



## SURVEY

In spring of 2018, Madison County Planning Department mailed a survey to all owners of agricultural properties in the County based on the County's GIS database. 167 farmers responded from Towns throughout the County, answering 41 questions and providing general comments on Madison County agriculture. See the appendix for the full survey results. Select highlights are listed below:

35% of farmers indicated that 80-100% of their net family income came from the farm last year, showing a high degree of financial dependence on farm success. 36% indicated that 0-20% of their net family income came from the farm last year. This could indicate the importance of part-time farming county wide, as well as farmers depending on spousal or other external income to start operations or ensure their viability.

The survey revealed the longevity of the County's farms, with 67% of farms being in the family for over 20 years, and 39% being in the family for over 50 years. 44% of respondents indicated they have been operating their farm for over 30 years.

Madison County farmers have been investing capital in their operations, with 45% investing between \$10,000 and \$100,000, and 31% investing over \$100,000. Only 19% of farmers were planning not to invest more in the near future.

There were about equal responses for

primarily wholesale (47%) and direct (42%) sales.

48% of respondents indicated a slight or significant decrease in profit trends over last 5 years. However, more farmers anticipated an increase (39%) in profit trends over the next 5 years than did a decrease (30%)

Respondents anticipated selling farmland out of production (4%), selling other real property assets (4%), selling the business (12%), or transferring the business to a family member in the next five years (21%).

Roughly 10% of farmers had been subjected to nuisance complaints based on smells, manure application, or road use in the past five years.

85% of respondents noticed stress or anxiety within their community over the economic outlook of farming or the state of agriculture in general.

52% of respondents had experienced more difficulty completing spring cropping due to water issues.

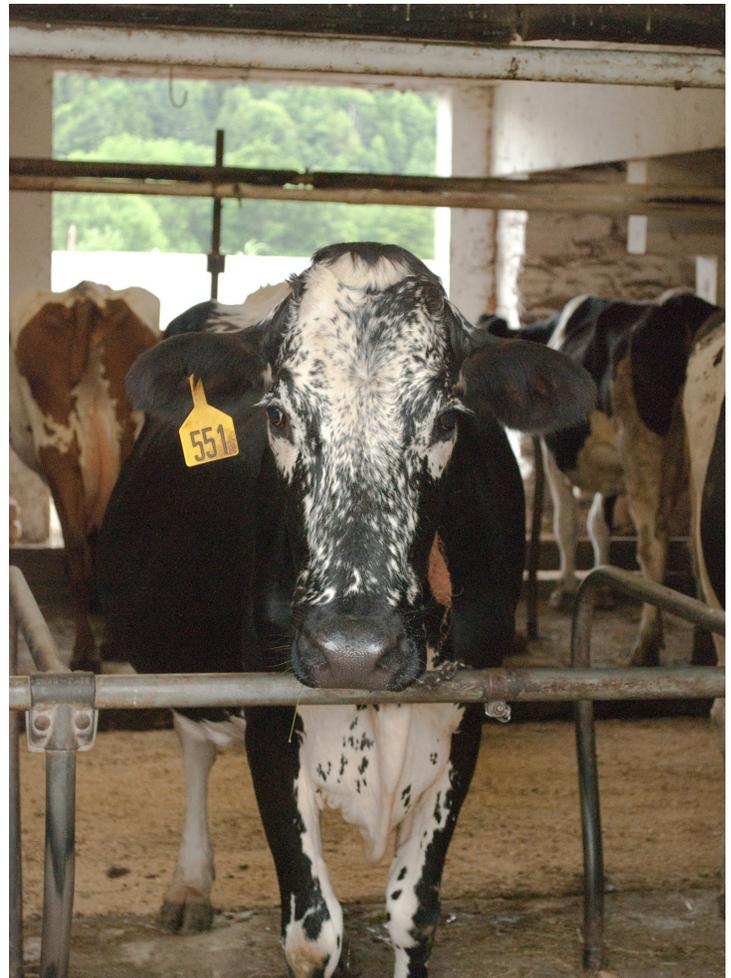
## ECONOMY

The value of Madison County's agricultural community far exceeds economic benefits, but it is worth noting that agriculture's economic contributions to our rural county are significant. The purely economic benefits of the agricultural sector Countywide is difficult to quantify, as there are countless tangential benefits a thriving farm community provide that are difficult or impossible to measure. Yes, farms employ people and they bring dollars into our county. Yes, farms support other businesses such as equipment retailers, veterinarians, non-profits, educational institutions, and other ag industry professionals. But they also provide us with local, healthy food, improve the quality of life of our residents, lure visitors and tourists, provide a foundation for the cultural identity of the County, and more.

A 2016 Cornell study authored by Dr. Todd Schmidt, looking at 2014 economic data in New York State, sought to grasp some of the economic impact that exceeds gross domestic product or employment numbers. Specifically, the study found that "backward-linked supply chain business-to-business transactions (indirect effects) and household spending out of labor income (induced effects)" are significant and, when accounted for, significantly magnify the impact of the agricultural economy.

Specifically, every \$1 of output in agriculture generates an additional \$0.42 in backward linked non-agricultural industries, every job in agriculture generates an additional .073 non-

agricultural jobs, and every additional \$1 in gross domestic product generates an additional \$0.89 in non-agricultural contributions to gross domestic product. For a rural county such as ours, these direct, indirect, and induced impacts play an even more crucial role in our local economy.



The market value of ag products sold in Madison County, according to the 2017 USDA Ag Census was \$113,630,000. Roughly 25% of sales were crops, and 75% were livestock, poultry, and products. There is a wide range in the value of sales per farm, with 185 farms (27%) in Madison County having a sales value of over \$100,000 and a further 69 (10%) with \$50,000 to \$99,000. Farm related income was \$14,877,000. Conversely, this means 437 farms are selling less than \$50,000 worth of product.

According to the 2017 Ag Census, there are 200 farms operating in Madison County with hired labor, totaling 1,261 workers with a payroll estimated at \$19.2 million. 345 farms across the county reported a total of 775 'unpaid' workers, meaning the farm operator, family members, etc. Again, these employment numbers do not include indirect employment, for instance those working in agricultural adjacent industries such as veterinarians, equipment sales, or consulting, or those who are employed due to the economic vibrancy of local agriculture. One example: the third largest employer in the County, according to a 2012 Madison County Economic Analysis, was SUNY Morrisville, with 450 employees. SUNY Morrisville is one of the premier agricultural colleges in the state, and it's continued success is partially reliant on the surrounding healthy agricultural economy.

Madison County's farms are also responsible in part for bringing visitors into Madison County. A 2015 Travel Market report prepared for Madison County Tourism estimated visitors spent \$83.7 million dollars in 2014. Activities visitors reported participating in during their visit to CNY include fine or local culinary (53%), sight-seeing drives (28%) farmer's markets and u-picks (13%) and breweries (12.5%). Participation in these activities was substantially greater when asking current residents what they take visitors to do during their time here, farmer's markets and U-picks in particular rising to 55.1%.

Madison County CCE's Open Farm Day, meanwhile, continues to see increasing numbers of visitors each year. In 2018, 6,432 people attended the event (up from 4,104 visitors in 2016), with 32 farm's participating. Visitors have the opportunities to learn about agriculture, purchase goods, and more. 2019's numbers are expected to again surpass 2018.

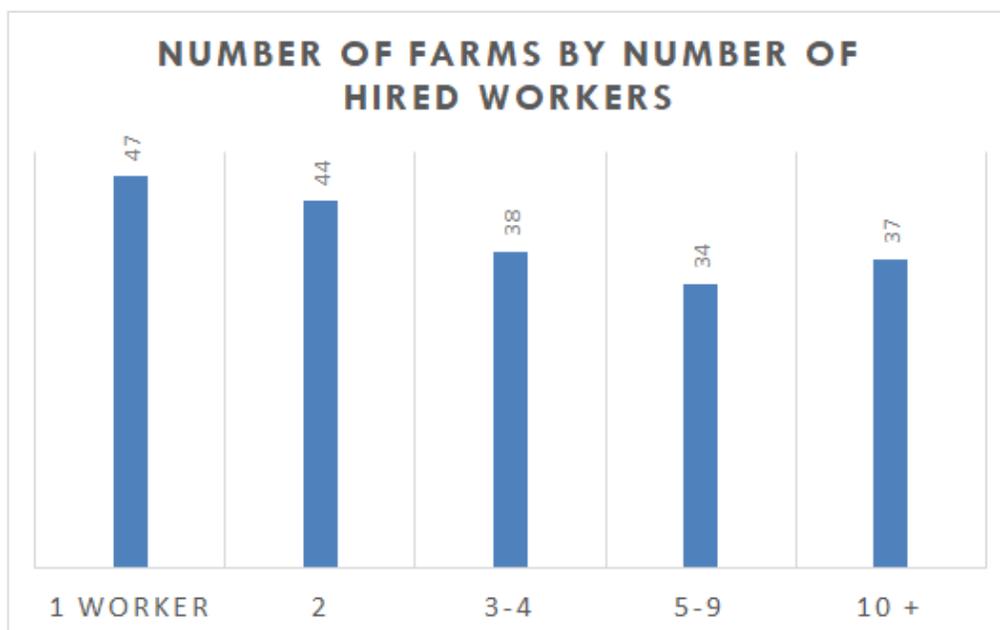
Not only do farms populate local markets and offer U-pick and farm stand access, but they contribute to the overall experience of living or visiting Madison County. The highest rated amenity in the study was 'variety of outdoor experiences', while the most common words used to describe the area included 'farms, rural, picturesque' and other similar imagery that evokes an atmosphere that farms in Madison County significantly contribute to.

A similar effect comes through in discussions and surveys with residents during Comprehensive Planning with Towns throughout the County. Madison County Planning recently assisted in the development of Comprehensive Plans for both Nelson and Eaton. In the Eaton process, the Town's agrarian landscape was consistently discussed as a main resource for the community, with preference for rural life the highest selected response to a survey question asking residents why they choose to live in Eaton.

A microcosm of our local agricultural economy can be seen at any of the county's six farmer's markets. A steady stream of customers purchasing vegetables, meats, cheese, eggs, fruit, flowers, plants, and value added products enjoy impromptu conversations with farmers, neighbors, community members, all while listening to music or seeing new art displays.

Visitors often spend more time in downtowns, and use their trip to stop by other stores, pick up lunch, and run errands. In other words, even our farmer's markets have an outsized impact that goes beyond the sale of agricultural goods, delivering fresh food to our population centers and generating more pedestrian activity.

In summary, the economic impacts of agricultural community in Madison County exceeds GDP or number of jobs. Agriculture sells products, and employs people on farms and ag-related businesses, but the economic impacts do not stop there. Our agricultural community generates economic, social, and cultural activity in our villages. Madison County farms bring in visitors by offering goods and services but also contributing to our beautiful landscape. Thus, it is difficult to accurately measure agriculture's economic impact locally, but suffice to say it is crucial if occasionally overlooked, portion of our County's economy.



The most comprehensive and reliable data available for agriculture at the County level is the USDA Census of Agriculture, most recently completed in 2017, and conducted at five-year intervals since the early 19th century. For the purpose of this report, we will focus mainly on the three most recent census data sets. Please see the following pages for accompanying tables.

### Number of Farms

The number of farms in Madison County increased from 2007 to 2012's 20 year high of 838, but is now below 2007 numbers. Now at 691 farms, 147 (17.5%) were lost since 2012. When looking at the further breakdown, farms with sales under <\$10,000, saw the largest decrease in number, losing 110 operations. While the farms with higher sales had steadier numbers, still all but one (\$50,000-\$99,000) bracket saw a decrease. While some of this could be attributed to estimation errors or differences in methodology, some of the losses are likely attributable to the broader economic challenges facing farming, in particular the dairy industry, which saw a decline of 10% (20 operations) since 2012. Dairy farms have been declining in number since 1997. Growing Plains communities in Madison County brings in new farmers and occasionally brings land back into production, likely offsetting some of the losses experienced.

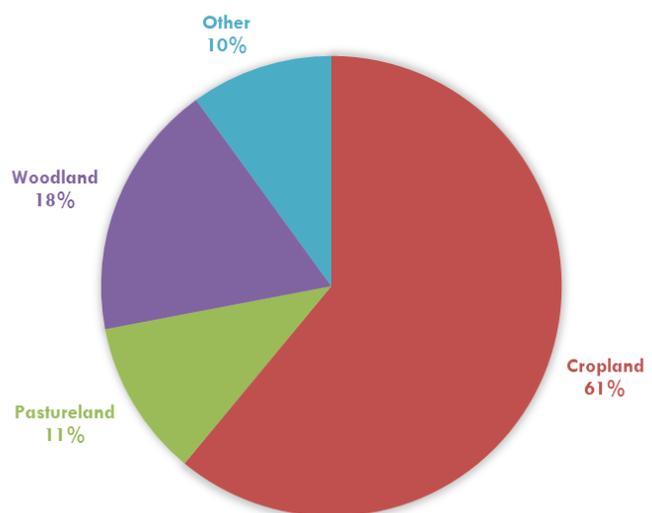
### Land in Farms

As total number of farms has declined, so has total land in farms. While 2007 –2012 saw a minimal loss of 824 acres, 2012-2017 endured a much larger loss of 15,631 acres, leaving the Census determined total at 171,865 acres. Total land in the county is roughly 408,446 acres. Data provided by Madison County Real Property Tax Services show properties claiming the agricultural exemption total 125,548 acres. According to the Census, harvested acreage declined as well, losing 11,546 acres, with a remaining total of 87,665.

### Average Acreage p. Farm

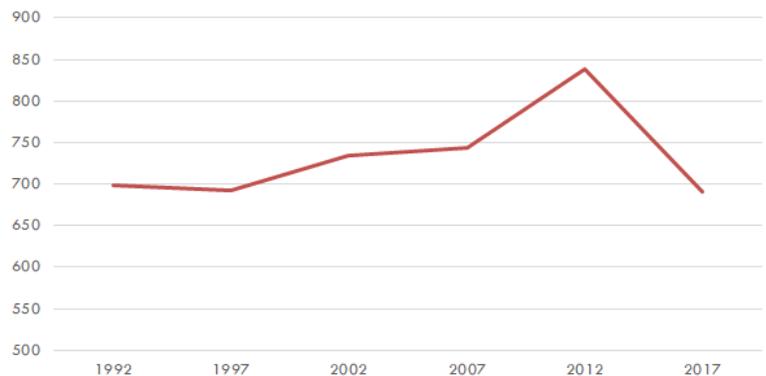
The average farm size by acreage has remained quite steady, declining by only 4 acres to 249 acres between 2007 and 2017.

LANDS IN FARM BY USE (2017)





NUMBER OF FARMS IN MADISON COUNTY



### Farms By Type

Unsurprisingly, there seems to be a significant decline in classified dairy farms. The losses amount to a considerable portion of the net loss in farms since 2012. Meanwhile, vegetable farms in particular have increased in the County.

	2007	2017	%
Oilseed and Grain	25	34	36.0%
Vegetable	28	38	35.7%
Fruit, Tree Nut	9	13	44.4%
Greenhouse, Nursery	28	32	14.3%
Other Crop	221	211	-4.5%
Beef	93	93	0.0%
Cattle feedlots	11	9	-18.2%
Dairy Cattle, Milk	189	160	-15.3%
Hog, Pig	9	2	-77.8%
Poultry, Egg	16	3	-81.3%
Sheep, Goat	22	18	-18.2%
Other Animal	93	78	-16.1%

### Regional Comparison

#### Total Farms

	2007	2017	%
Chenango	960	770	-19.8%
Cortland	587	536	-8.7%
<b>Madison</b>	<b>744</b>	<b>691</b>	<b>-7.1%</b>
Oneida	1,013	967	-4.5%
Onondaga	692	623	-10.0%
Oswego	639	612	-4.2%
Otsego	980	880	-10.2%
Regional	5615	5079	-9.5%
State	36,352	33,438	-8.0%

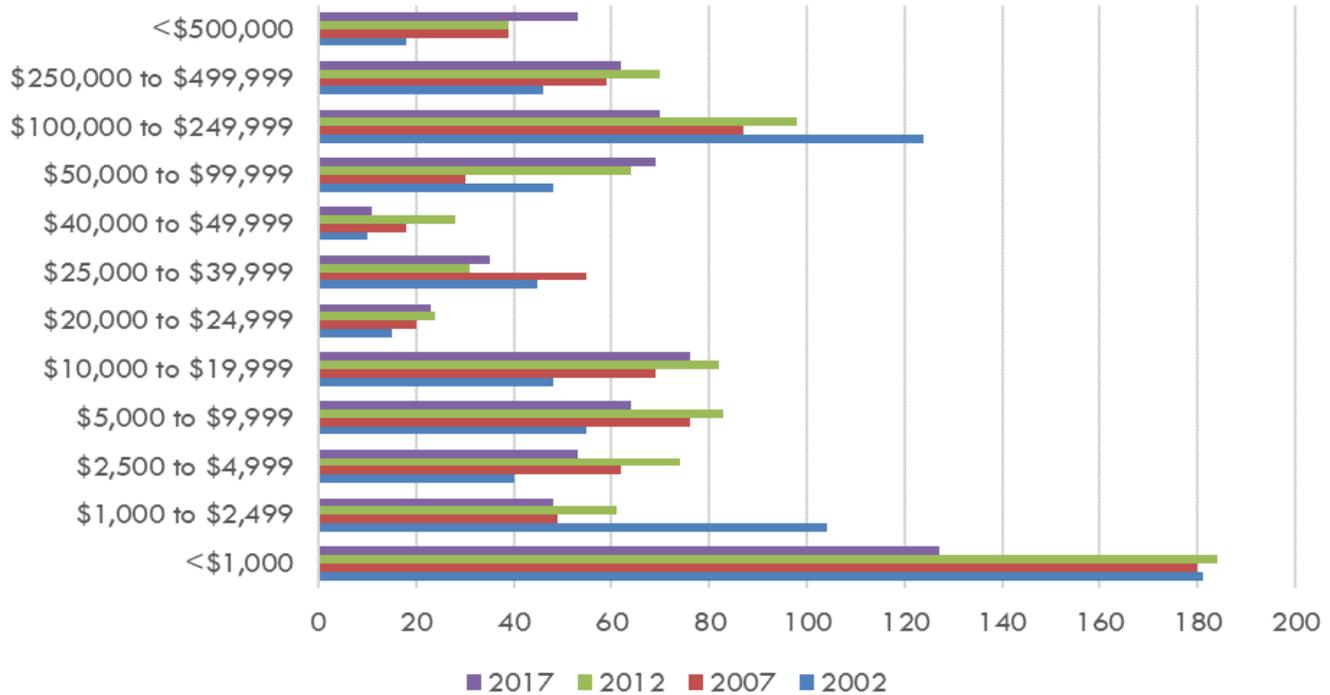
#### Land in Farms

	2007	2017	%
Chenango	177,267	148,982	-16.0%
Cortland	124,824	113,519	-9.1%
<b>Madison</b>	<b>188,320</b>	<b>171,865</b>	<b>-8.7%</b>
Oneida	192,232	192,767	0.3%
Onondaga	150,499	160,717	6.8%
Oswego	100,195	86,167	-14.0%
Otsego	176,481	154,634	-12.4%
Regional	1,109,818	1,028,651	-7.3%
State	7,174,743	6,866,171	-4.3%

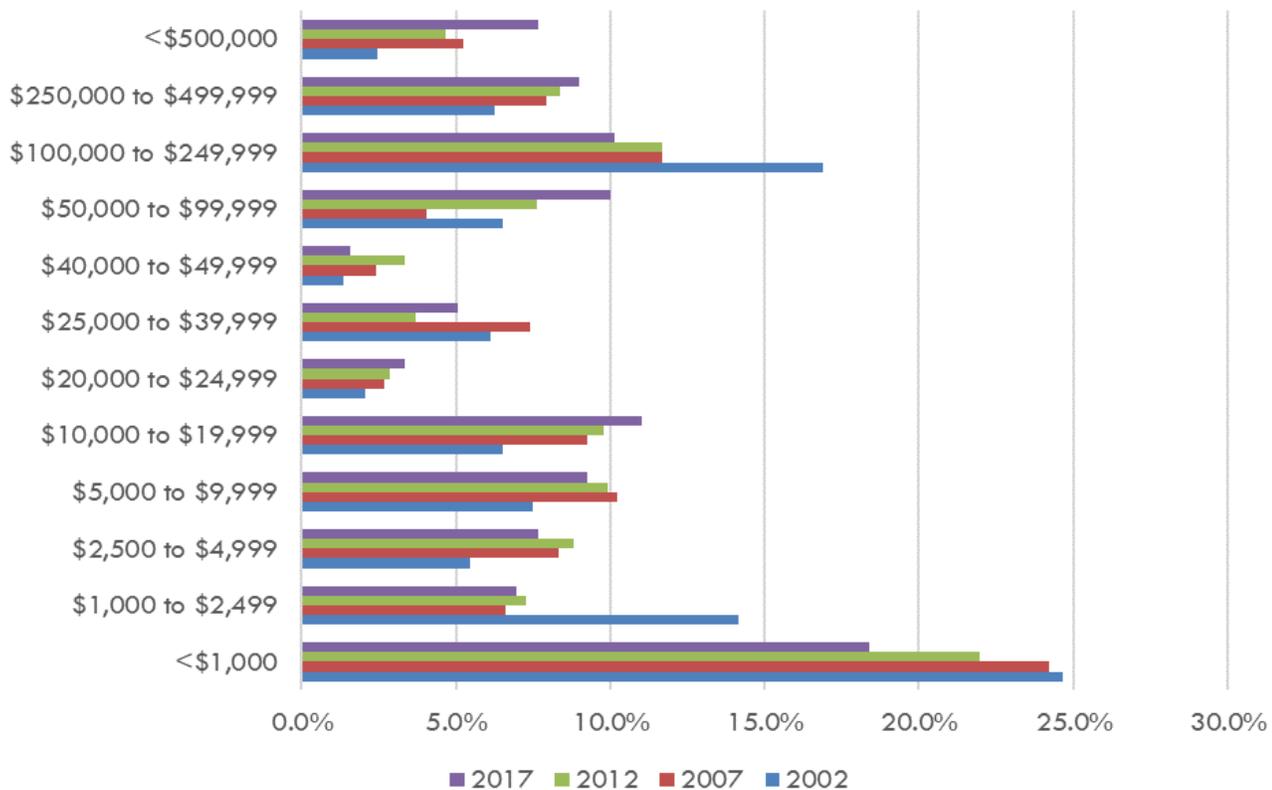
### Farm Size by Sales

Farm size by sales shows increases in farms at the upper sales threshold, mixed results for medium-sized farms, and decreases in the smallest operations. While farms with sales over \$250,000 and between \$50,000 and \$99,999 increased, the number of farms between those two classes dropped substantially.

### Sales Class by Number of Farms



### Sales Class by Percentage of Total Farms



## Demographics

Aging farm operators is a concern due to the difficulty of recruiting and supporting new farmers. The high risk and uncertainty associated with entering the farming industry, among other issues, has caused a nation-wide issue. The primary concern is otherwise usable farmland could fall out of production once an operator retires, posing problems for county-wide health of agricultural economy.

That said, average age of the principal operator has hovered right above 55 years old since 2007. While the Ag Census changed the age bracket classifications for 2017, 2002-2012 did show a shifting population, with the percentage of principal operators over the age of 55 increasing from 41% of all farms to 55% of all farms. The 25-34 and 45-54 age

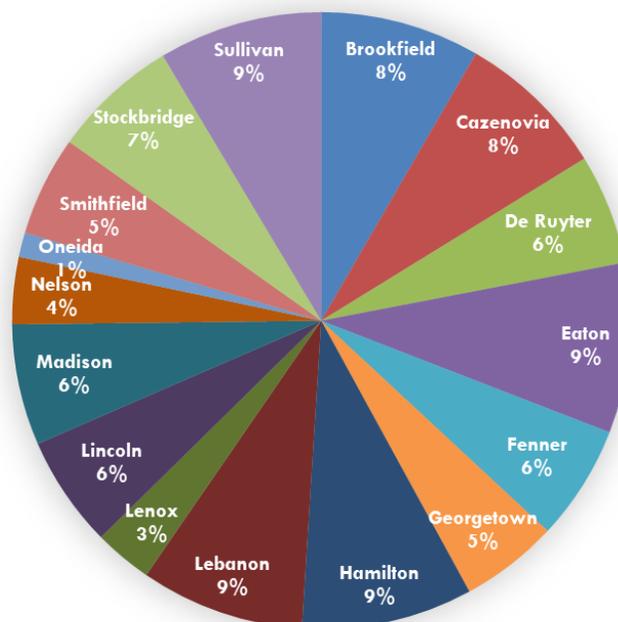
groups both saw a decrease, from 21% to 13% and 33% to 25% respectively. While the 35 and under has increased from 4% in 2002 to 7% in 2012, the general trend does seem to be a shift toward older principal operators, which is in line with national patterns.

62.5% of producers in Madison County are male, 37.5% female (a significant increase since 2012), which is close to the average distribution throughout New York State. The average producer has been 'on the farm' for 22.6 years with 68% having been at their present farm for 10 years or more.

## Distribution of Farms

Farming is well distributed throughout most of the county. While Oneida, Lenox and Nelson have slightly less of the County's ag land, Sullivan, Hamilton, Lebanon, and Eaton have the most.

**DISTRIBUTION OF COUNTY AG LAND (BY AG EXEMPTION)**



## MADISON COUNTY AGRICULTURAL TRENDS

Adjusted by 1.69% p. year to 2017

Adjusted by 1.32% p. year to 2017

	2007	2012	2017
Farms	744	838	691
M.V. Land & Bldgs per farm	\$503,602	\$487,682	\$652,012
M.V. Agri. products sold	\$102,061,000	\$125,691,000	\$113,630,000
M.V. per Farm	\$137,178	\$149,990	\$164,443
Crops (1,000)	\$19,062	\$33,167	\$28,115
Livestock (1,000)	\$82,999	\$92,495	\$85,516
Percent Crops of Total	18.7%	26.4%	24.7%
Percent Live-stock Products of Total	81.3%	73.6%	75.3%
Farms by Value of Sales:			
<\$10,000	367	402	292
\$10k-\$24.9k	89	106	99
\$25k-\$49.9k	73	59	46
\$50k-\$99.9k	30	64	69
>\$100,000	185	207	185

Adjusted by 1.69% p. year to 2017

Adjusted by 1.32% p. year to 2017

	2007	2012	2017
Land in Farms	188,320	187,496	171,865
Total Cropland	115,935	110,970	105,455
Harvested	98,579	99,211	87,665
Average Farm Size	253	224	249
Median Farm Size	120	105	117
Farms by Size			
1-9 acres	37	57	53
10-49 acres	137	172	136
50-179 acres	270	313	249
180-499 acres	195	207	157
500-999 acres	75	61	65
>1,000 acres	30	28	31

## AGRICULTURAL CENSUS SUMMARY

-The declining number of farms, above the New York State and U.S. averages, is a concern. There is some evidence that the losses were composed of mostly smaller operations as well as some dairy farms. Total farmland declined as well by 8.5%, which is likely exposing land in the County to competing uses.

-Despite the mean age for farmers in Madison County staying steady, there is evidence that the population has shifted to older age demographics in the recent past.

-Farm sizes have increased, both in acreage and in sales. A greater portion of Madison County farms are operating at the upper sales classifications, while the smallest sales bracket saw significant decrease, as did some of the middle brackets. The only acreage size classifications that saw numbers increase were farms over 1,000 acres and farms between 500 and 999 acres.

-The market value of products sold is down from 2012. Meanwhile the average income is above the NYS average, at \$49,607.

-185 farms are above the \$100,000 in sales threshold, which is the same number of farms that were operating at this level in 2007. Meanwhile the number of farms with less than \$10,000 in sales has decreased by roughly 25% in the same time period.

-Farming is spread well throughout the County, with all Towns at least having a moderate agriculture presence. Lenox and Oneida have the smallest portion percentages of the County's agricultural land.



## PART IV. NATURAL RESOURCES

### SOILS

The Natural Resources conservation Service's (NRCS) soil capability classification defines the ability of soil to support agronomic uses. Capability classes are determined by the limitation of the soils when they are used for field crops, the risk of damage when they are used, and the manner in which they respond to management. Classes are designated by Roman numeral with Class I soils having the least limitations and Class VIII having the most severe limitations.

The Class I soils in the County are generally found in the Chenango, Oriskany, and Oneida Creek watershed, with the most abundant area located in the Chenango River valley. These soils have few limitations that restrict their use. The Class II soils can be found throughout the County with the largest concentration of those soils found in northern uplands of the County stretching from the city of Oneida in the East to Sullivan and Cazenovia in the west. Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. Class III soils are spread throughout the County. These are soils that have severe limitations that reduce the choice of plants, or that require special conservation practices, or both. Most of the southern half of the County is comprised of these soils. The exceptions are the river valleys.

Soil classes IV to VIII are spread throughout the County. These soils have very severe limitations for plant production. Class VIII includes the

muckland in northern Madison County. The phenomenal agricultural productivity of this area was because of the extensive man-made drainage system employed in the Cowaseleon Creek Watershed. This area is a part of the federally established Cowaseleon Creek Watershed Drainage District, formed in 1950, to eliminate the flooding that occurred seasonally. The mucklands are a special farmland protection case as the threat to their agricultural use comes from the changing nature of agriculture, the loss of soil through erosion, and the introduction of the Federal Wetland Reserve Program.

This plan uses these classes to identify the areas in Madison County with the highest classes of agricultural soils. Understanding the geography of soil capability throughout the County aids agricultural planning efforts, particularly in regard to farmland protection. Soil capabilities maps can assist policymakers and farmland preservation advocates prioritize areas for protection.

## WATER

Madison County has a number of fresh water resources spread throughout the county. Many farms have onsite water sources, such as streams or ponds. The recent increase in cyanobacteria (“blue-green algae”) blooms in New York State and Central New York, including in Madison County, has shone a light on agriculture’s relationship with water. While less of an immediate issue in Madison County, in nearby areas this dynamic has created a conflict between the farm community and the general public, in particular those who live on or near lakes. While agricultural activity can have implications for water quality, other concerns such as continued lake-adjacent development and climate change influenced precipitation events and temperatures have and will continue to play a role.

Well-known practices such as cover cropping, manure storage improvement, reduced or no-till agriculture, and buffer areas around water bodies can reduce nutrient and soil runoff and, crucially, help to maintain a positive relationship between the agricultural community and others.

Assistance in the form of education, funding, and implementation can and should be used to help farmers protect water quality. Indeed, agricultural land can function as a prime mechanism for protecting natural resources, with farmers as key stewards. Madison County should remain aware of the water quality issues arising across the state and how those issues could impact farmers in the future.



## CLIMATE CHANGE

It is increasingly difficult to imagine a future of agriculture in Madison County where climate change does not have a major impact. Since the County's 2005 Ag and Farmland Protection Plan, which did not address climate change, the outlook for climate change has changed significantly, as climate forecasts have taken clearer shape and emissions have continued unabated.

According to Cornell's Climate Smart Farming Program, the direct challenges climate change will bring to farmers include increased flooding, drought, excessive heat, pests, weeds, and freeze risks. Overall, the 2018 NCA forecasts declining yields and large-scale shifts in the availability and prices of many agricultural products across the world, with corresponding impacts on U.S. producers. The 2018 report specifies that 'these changes threaten future gains in commodity crop production and put rural livelihoods at risk'. It also warns that adaptation 'strategies have limits under severe climate change impacts and would require sufficient long- and short-term investment in changing practices.'

New York is expected to see a further increase in the number of extreme participation events (days with greater than 2 inches of precipitation). Both winter and spring precipitation is projected to increase in New York, posing increased challenges for spring cropping and erosion issues (NCEI). The Northeast has already seen a significant

increase in extreme precipitation, more so than any region in the U.S., with a 70% increase in amount of heavy precipitation events from 1958 to 2010.

Excessive heat poses issues for the dairy industry in particular as temperatures over 75F can impact milk production. Between 1895 and 2011, temperatures in the Northeastern United States increased by almost 2F. Even under a scenario with low global greenhouse gas emissions (which at time of writing is not being pursued) warming could reach 6F by 2080 (NCA). Warmer temperatures are increasing risk of frost and freeze damage, particularly for perennial crops.

The agricultural sector in New York is already starting to feel the pressures from climate change, and supporting our farms in making adjustments to prepare and plan for increased impacts is a necessity for Madison County. Adaptation strategies exist and Cornell in particular offers extensive resources to farmers and communities motivated to build resilience.

## PART V. LAND USE

Agriculture remains a dominant land use throughout the County. According to the 2017 Ag Census, agricultural land accounts for 171,865 acres in Madison County. While still significant, the amount of farmland has fallen in the decade since the 2007 Ag Census by 16,455 acres, a nearly 9% decrease. Today, Census-determined farmland accounts for about 41% of the land area in the County. In 2007, that figure was 45%.

Farmland can fall out of production for a variety of reasons. It may be intentionally sold, a farmer can retire and the land can be transferred to or inherited by a non-farm family member. Farms can also go out of business or fail to find establish a succession plan.

Farmland is best protected from competing uses when it is being actively and successfully used in production. When farmland goes out of use or farm profits fall, land becomes susceptible to threats from competing land uses. In Madison County, some land falling out of production stays vacant, which can be a temporary issue, while some land is transitioned to another use (primarily residential), which is often a permanent change. Other competing uses are rising locally, such as solar farms, or commercial corridor sprawl. While some farmland shifting to other uses may be acceptable or even desirable, continued and unplanned loss of farmland erodes the local agricultural economy, contributes to poor

development patterns, and becomes a feedback loop that decreases farm density and increases pressure from competing uses.

Protecting farmland and preventing erosion of the agricultural economy in Madison County requires action. We cannot rely on the agricultural economy alone to function as a protective mechanism for agricultural resources. Improving upon land use regulations to encourage appropriate development and limit farmland consumption by competing uses and taking steps to ensure farmland remains in production and less susceptible to use changes can protect agricultural resources, ensuring agriculture remains as a prominent land use.

Traditional land use is often framed as imagining farmland as something else. Two outdated town Comprehensive Plans (Sullivan and Lenox) effectively frame farmland as development land. Often, the default view of zoning is that farmland *could be used for something else*. Farming is rarely identified as the preferred land use. The result, post WWII in particular, was the spread of low density housing in agricultural areas. In addition to the permanent loss of farmland, the agricultural economic value of farmland adjacent to residential development may decrease, particularly in relation to its value for development.

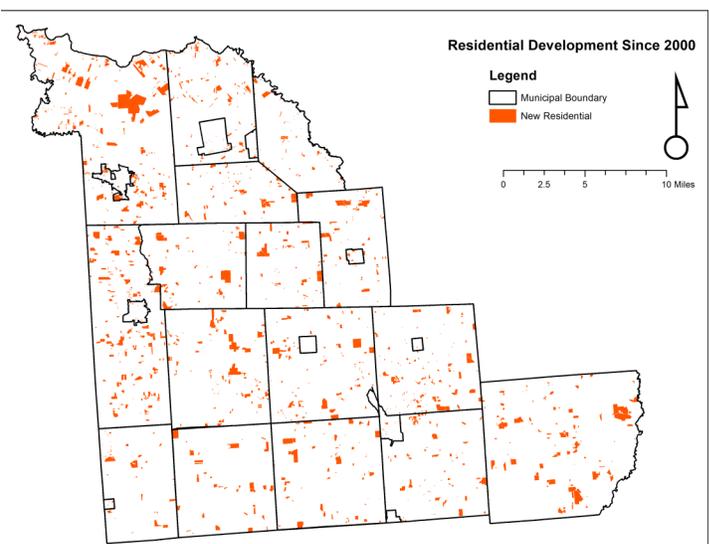
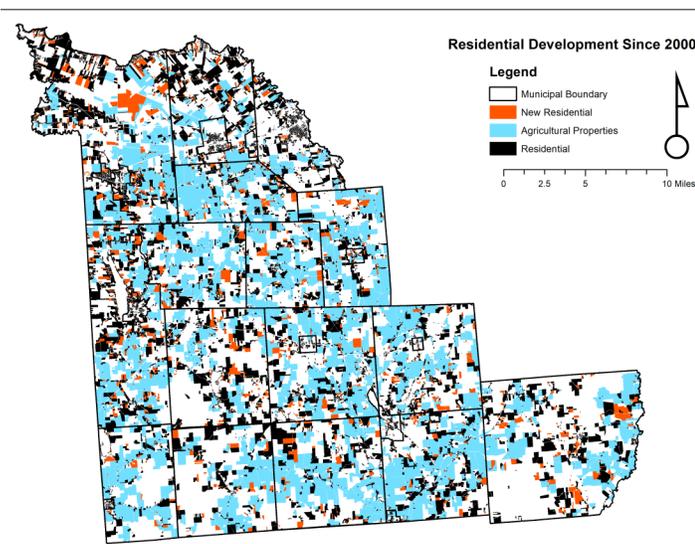
The past two decades have illustrated the need to address this issue. Suburban and exurban residential development has continued throughout

the County. From 2000 to mid 2019, roughly 2,741 residential, non-ag exempt properties have been added in Madison County, and the vast majority of these have occurred outside of villages or existing population centers, with a median lot size of 1.85 acres and an average lot size of over 8 acres. According to our data, in total 22,763 acres host new residential properties since the turn of the century. The map shows that, while there does seem to be some concentration here and there, the spread of housing takes place throughout the county.

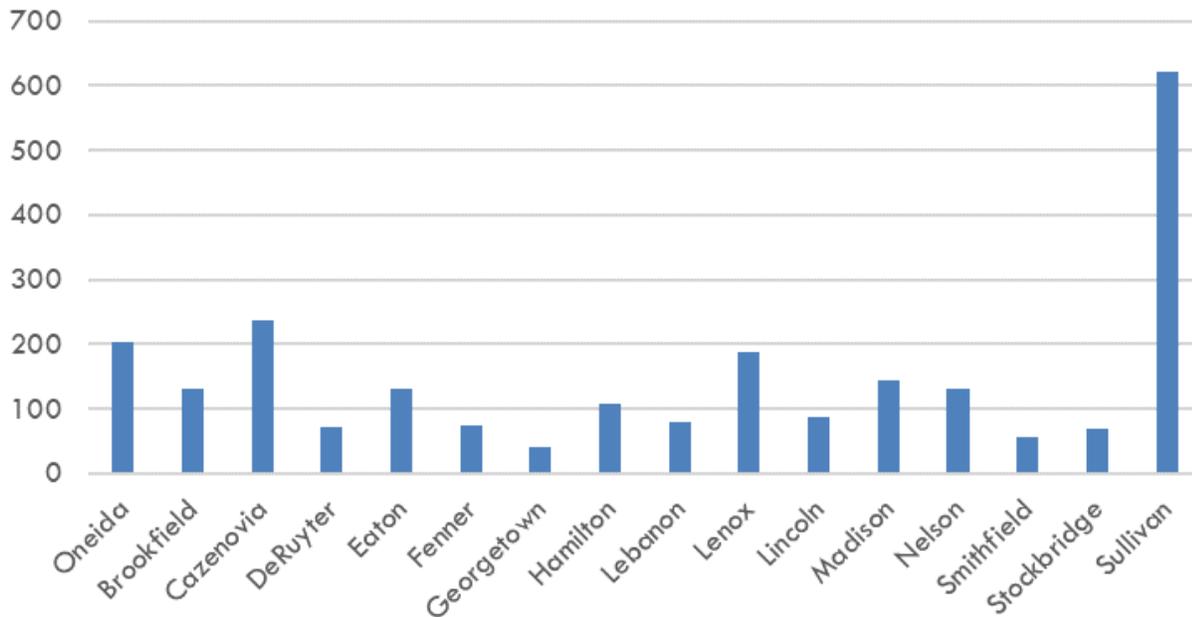
We often think of this type of development happening decades ago; evidently it is still prevalent and continues to occur at a considerable rate in Madison County. Such development can consume otherwise productive agricultural land in an inefficient manner, increasing infrastructure costs on communities and consuming large, unnecessary amounts of farmland at a low residential density. It also

puts low density residential communities in direct confrontation with nearby farms.

While this development is occurring throughout the County, the most at-risk areas are likely Cazenovia, Hamilton, and Sullivan. Cazenovia and Sullivan fall within the Syracuse-centered housing market, while a recent housing study conducted by the Partnership for Community Development estimated Hamilton as having the most market sprawl pressure in Upstate NY outside of Ithaca. The past two decades have shown a need to improve handling of sprawl throughout the County in order to protect not only agricultural land, but the long term sustainability of the agricultural economy. The charts on the following page show residential growth by Town and Village. A total of 365 of 2,741 residential units were constructed in our existing population centers (Villages and Oneida). That means that 87% of new residential growth is happening in primarily rural land throughout the County.



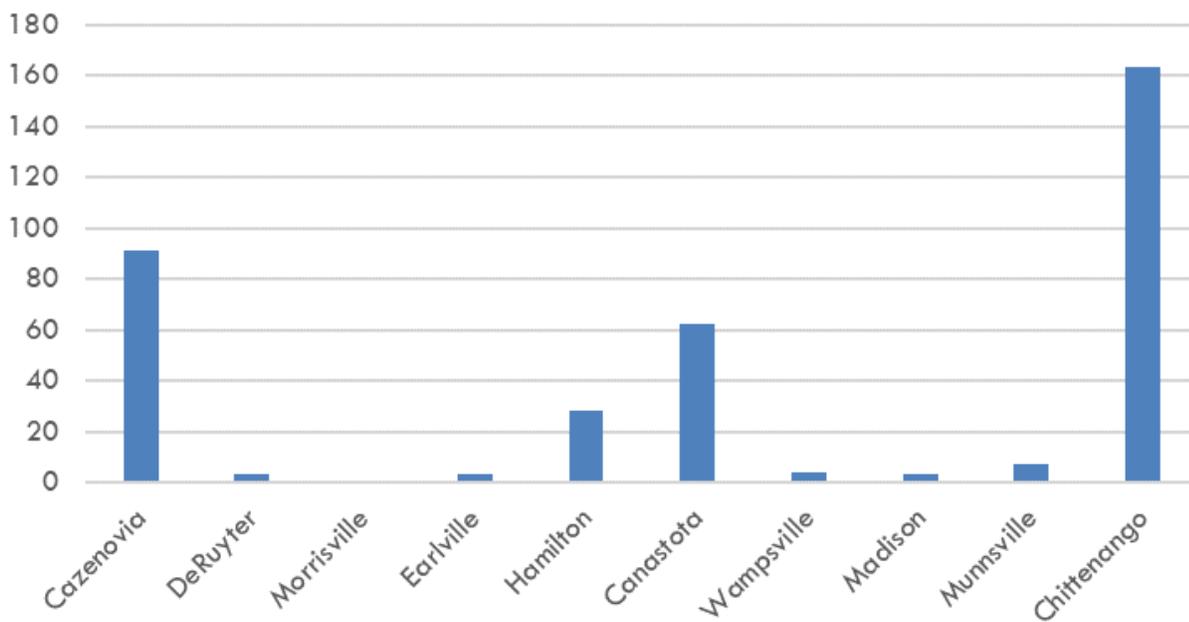
## RESIDENTIAL UNITS ADDED BY TOWN, 2000-2019



Above: Residential Development is spread throughout the County, with Sullivan an outlier. A total of 2,376 units were added in Towns.

Below: Villages added much fewer residential units (365 total) despite being the foremost population centers in the County.

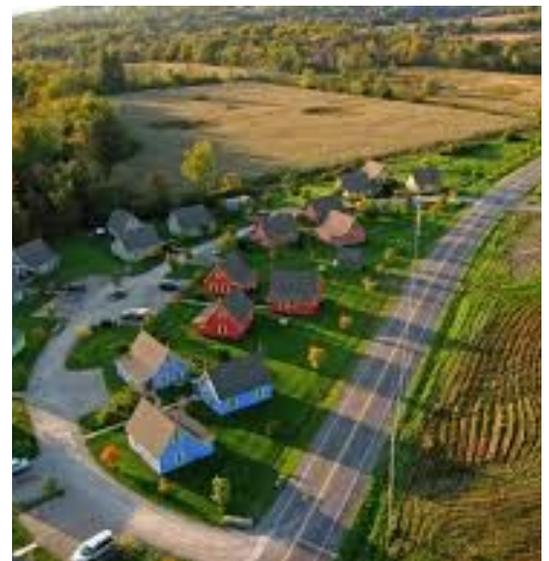
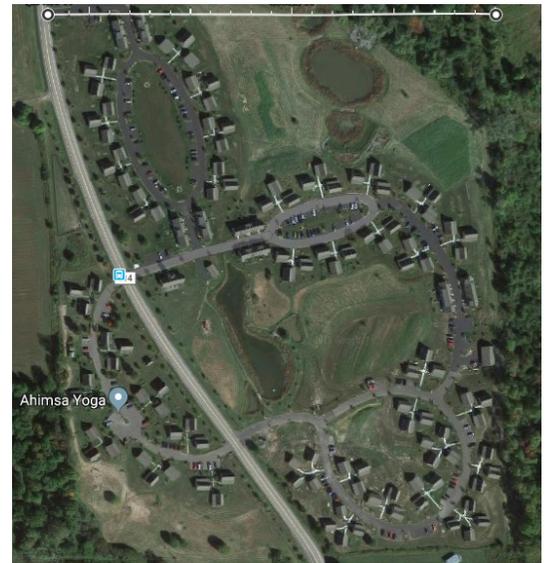
## RESIDENTIAL UNITS ADDED BY VILLAGE, 2000-2019



An example of low density residential development is shown to the right. This subdivision, in Hamilton, will be 16 units at buildout, at a total of 60 acres (3.75 acres/unit). The image below is a development in the Town of Caroline in Tompkins County, and features 140 units of mostly single family homes on 15 acres (.1 acres/unit). Adjusted for size, this development could bring 560 units onto the same amount of land being used for 16 units in Hamilton, just 1.8 miles from the Village center. To meet a market demand for 140 units using the method in Hamilton would require an astounding 525 acres.

This represents an inefficient use of land. Even for farms interested in selling a portion of land for residential development, the Caroline proposal is a clear winner. The assessed value of the development in Hamilton is about \$60,000 per acre, while the assessed value of the Caroline development is approximately \$786,000 per acre. Enabling this sort of density where appropriate isn't just a boon to the seller, but Town finances as well. And this is before factoring in the inefficiencies of the Hamilton development in regards to infrastructure burden, or the financial impact to businesses and sales tax of having 560 units close to downtown versus 16 units.

Lastly, this can be done without sacrificing a rural character. As seen below, the cottage-like appearance can be laid out in a way that blends in with a landscape far more than a 4 acre lawn. For comparison sake, the median home price in Hamilton is \$5,000 higher than the median home price in Caroline.



(Top right: Hamilton, Middle and Bottom Right: Caroline)

As part of this plan, we conducted a thorough land use analysis on every town. The result showed a need to address various issues throughout the county; some towns overlooking definitions related to agriculture, some towns having out of date comprehensive plans. Four towns (Cazenovia, DeRuyter, Fenner, and Lenox) have zoning districts with minimum lots sizes of greater than two acres, which requires land to be subject to inefficient development and forces farmers interesting in subdividing a parcel off for a family member or sale to let go of more land than they need to. This review examined:

1. Existing Agricultural Zoning District

*The first question is whether or not an agriculture-specific district has been designated in the town.*

2. Purpose/Intent in Agricultural Zoning District

*An agricultural district needs a clear policy directive establish the purpose of the zone is to foster and protect agricultural activity.*

3. Use Designation and Competing Uses

*An agricultural zone should be sure to allow all ag-related uses, such as farm stands, to ensure minimum barriers to operation for farms. It should also limit competing uses to provide a framework for limiting competing land uses spreading throughout the district.*

4. Agricultural Definitions

*Providing clear definitions of agriculture and agricultural activities are crucial in providing clear direction to local boards.*

5. Subdivisions

*Large minimum lot sizes and poor subdivision regulations encourage non-agricultural uses to spread throughout the towns, often times resulting in parcels that are not viable for agricultural purposes.*

6. Comprehensive Plan

*With the Comprehensive Plan steering communities forward on land use issues and more, it is important that communities have a recent Comp Plan in place that addresses agriculture and provides resources for Board members to make informed decisions on questions that arise related to agriculture and agricultural land.*

An in depth narrative analysis of several Town's zoning codes is available in the appendix.

	Brookfield	Cazenovia	DeRuyter	Eaton	Fenner	Georgetown	Hamilton	Lebanon	Lenox	Lincoln	Madison	Nelson	Oneida	Smithfield	Stockbridge	Sullivan
<b>AG ZONING DISTRICT</b>																
Designated as Preferred Use	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	No	No	Yes
Ag Uses Only W/out SP	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No
<b>DEFINITIONS</b>																
<b>Town Agriculture Definition Parallels AML</b>																
Agri-Business Defined	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No
Agriculture/Farm Operation Defined	No	No	No	No	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	Yes
Agri-tourism Defined	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	Yes	No	No	No	No
Farm Defined	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No
Farm/Roadside Stand Defined	Yes*	Yes	Yes	Yes	Yes	Yes*	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Home Business Occupations Defined	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No
Junkyard excludes farm scrap piles	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes
<b>USES</b>																
Agri-business Permitted	No	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Agriculture Permitted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commercial Horse Boarding Permitted	Yes	SP	SP	SP	SP	SP	Yes	Yes	SP	SP	Yes	SP	SP	SP	Not spe	SP
Farm Stand Permitted	SP	Yes	Yes	Yes	Yes	Yes	SP	SP	SP	SP	SP	Yes	No	SP	Yes	No
Farm Worker Housing Permitted	Yes	Yes	Yes	Yes	Yes	Yes	SP	SP	SP	SP	SP	SP	No	SP	No	No
Veterinary Office/Hospital Permitted	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Home Business Occupations Permitted	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Brewery, Distillery Permitted	No	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Winery Permitted	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Competing Land Use - Single Family Residential Lot	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Competing Land Use - Multi-Family, Mobile Home Parks	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Competing Land Use - Office Buildings	No	SP	SP	SP	SP	SP	SP	SP	No	No	NA	No	No	SP	SP	SP
Competing Land Use - Commercial Buildings	SP	SP	SP	SP	SP	SP	SP	SP	No	No	NA	SP	No	SP	SP	No
Competing Land Uses - Hospitals, Nursing Homes, other institutions	No	SP	SP	SP	SP	SP	SP	SP	No	SP	NA	SP	No	SP	SP	No
Competing Land Uses - Excavation or Industrial	No	No	SP	SP	SP	SP	SP	SP	SP	SP	NA	No	SP	SP	SP	No
Special Permit Required for Certain Ag Uses	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes	No	Yes
<b>SUBDIVISION</b>																
Minimum Lot Size 2 Ac or Smaller	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Ratio Lot Size 1:10 or Greater	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Cluster Subdivisions Permitted	No	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	No	No	No
Agriculture Infrastructure Protection Mechanism	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
<b>COMPREHENSIVE PLAN</b>																
<b>Year</b>	2014	2008	n/a	2019	2009	n/a	2017	2014	1971	1999	2011	2019	2005	2003		1970
Section on Agriculture	Yes	Yes		Yes	Yes		Yes	Yes	No	Yes	Yes	Yes	Yes	No		
Agriculture (soils, ag districts) mapped	Yes	Yes		Yes	No		Yes	Yes	No	Yes	Yes	Yes	Yes	No		
Vision Statement address agriculture	Yes	Yes		Yes	No		Yes	Yes	No	Yes	Yes	Yes	Yes	No		
Goals address agriculture	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No		
Recommendations to preserve/enhance agriculture	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	No		

Land must continue to be affordable, accessible, and available if a significant amount of farming is to continue long-term in Madison County. This means agricultural land must be protected where possible from competing uses that can undermine the agricultural economy and permanently erode agricultural resources. Land can be protected from development through various mechanisms. In appropriate instances, zoning offers some protection, as does participation in an Agricultural District, or an agricultural tax exemption. Land can be protected from development through ownership by an entity with a mission that involves protection, for example a State forest, a Land Trust, a nature conservancy, or a public park.

Purchase of Development Rights (PDR), is a tool for protection that involves compensation for land owners for permanently protecting their property from development through a conservation easement. Landowners typically retain other rights to their land, and it continues to be taxed, with a value based on the remaining rights. PDR allows farmers to continue to farm their land, while protecting agricultural and water resources and keeping farm land affordable.

In some instances, such as under PDR programs and grant applications, acquisition by a land trust, land bank, or public entity, or even updating zoning, it is useful to consider how land should be prioritized for protection.

## CONSIDERATIONS

### **Development Threat**

Agricultural land has been lost throughout the county to competing uses. That said, some areas are under greater development pressure than others. Cazenovia, Sullivan, and Hamilton have seen recent residential growth or are expected to in the near future. Thus, farms in and around these areas are a high priority, for protection.

Commercial corridors also threaten to spread, bringing with them higher traffic which in turn increases demand for car-centric commercial corridors, so protecting land on or near areas susceptible to commercial use transition should also be considered a priority.

### **Soil Quality**

Presence of prime soils should be a significant consideration for land protection. While much of the County has good soil, prime soils provide a more vivid understanding for prioritization. The maps provided with this plan show that prime soils in particular are located in a select few areas around the county, and some of this land has already been lost to development.

### **Parcel Size**

While all parcels are worth consideration for protection, protecting larger, congruous acreage should be a top priority. The median farm size in Madison County was 117 acres, meaning many farms operate with considerable acreage. Preserving large tracts prevents land fragmentation and has a correspondingly greater influence on the landscape.

### Scenic Value

Agricultural land lends itself to beautiful views, and the terrain of Madison County in particular provides us with an abundance of scenic resources. Protecting land with scenic value preserves this public cultural good that is an important aspect in the quality of life of Madison County residents. Land with scenic value emphasizes the county's commitment toward agriculture by ensuring it remains a visibly iconic part of the landscape, as well as maintains the appeal of our area to visitors and residents alike who appreciate the local scenery.

### Water Resource Protection

Water is a crucial resource that is both used and impacted by agriculture. For this reason, properties that are best left undeveloped for water quality purposes should be prioritized

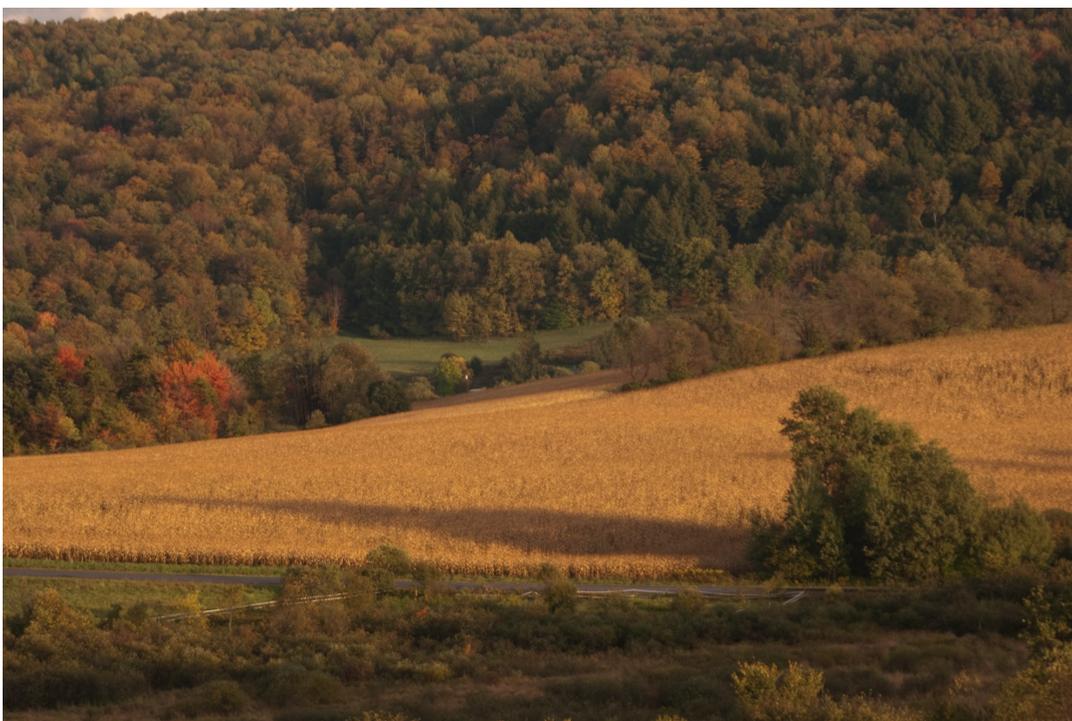
for protection. Properties that contain or border wetlands, rivers, streams, ponds, lakes, or have been identified as important for aquifer protection should be considered.

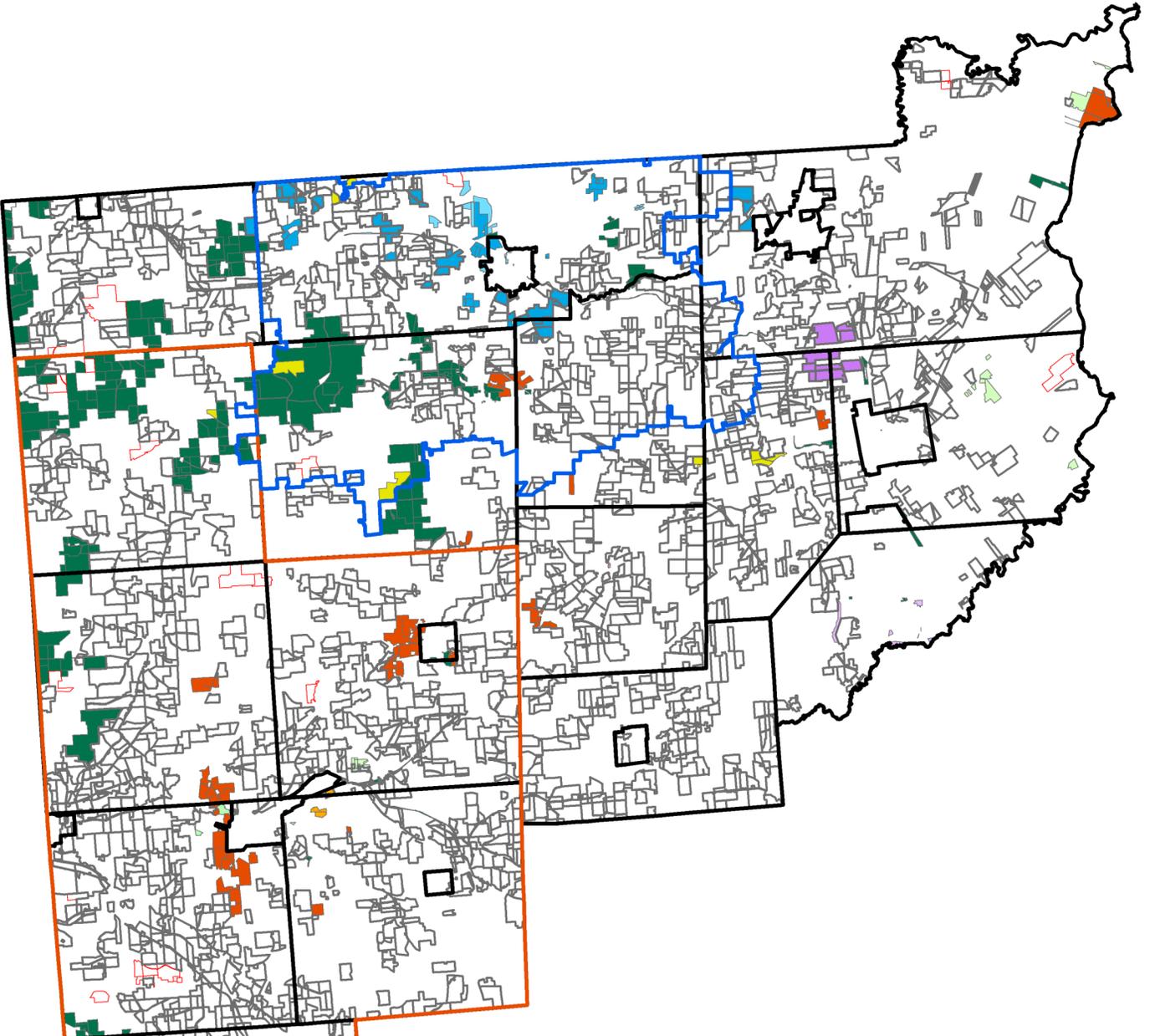
### Connectivity

Lastly, proximity to other protected parcels should be considered a priority characteristic. Assembling larger areas of protected land in areas results in more benefit than small, isolated parcels. Extending or building on nearby protected areas improves the overall effect of protection, creating areas of uninterrupted rural character and farmland.

### Active Agricultural Use

Properties that are currently being used as part of an agricultural operation should be prioritized for protection. Active farmland is worth protecting since it is currently productive, indicating feasibility for long-term use.





# Protected Land

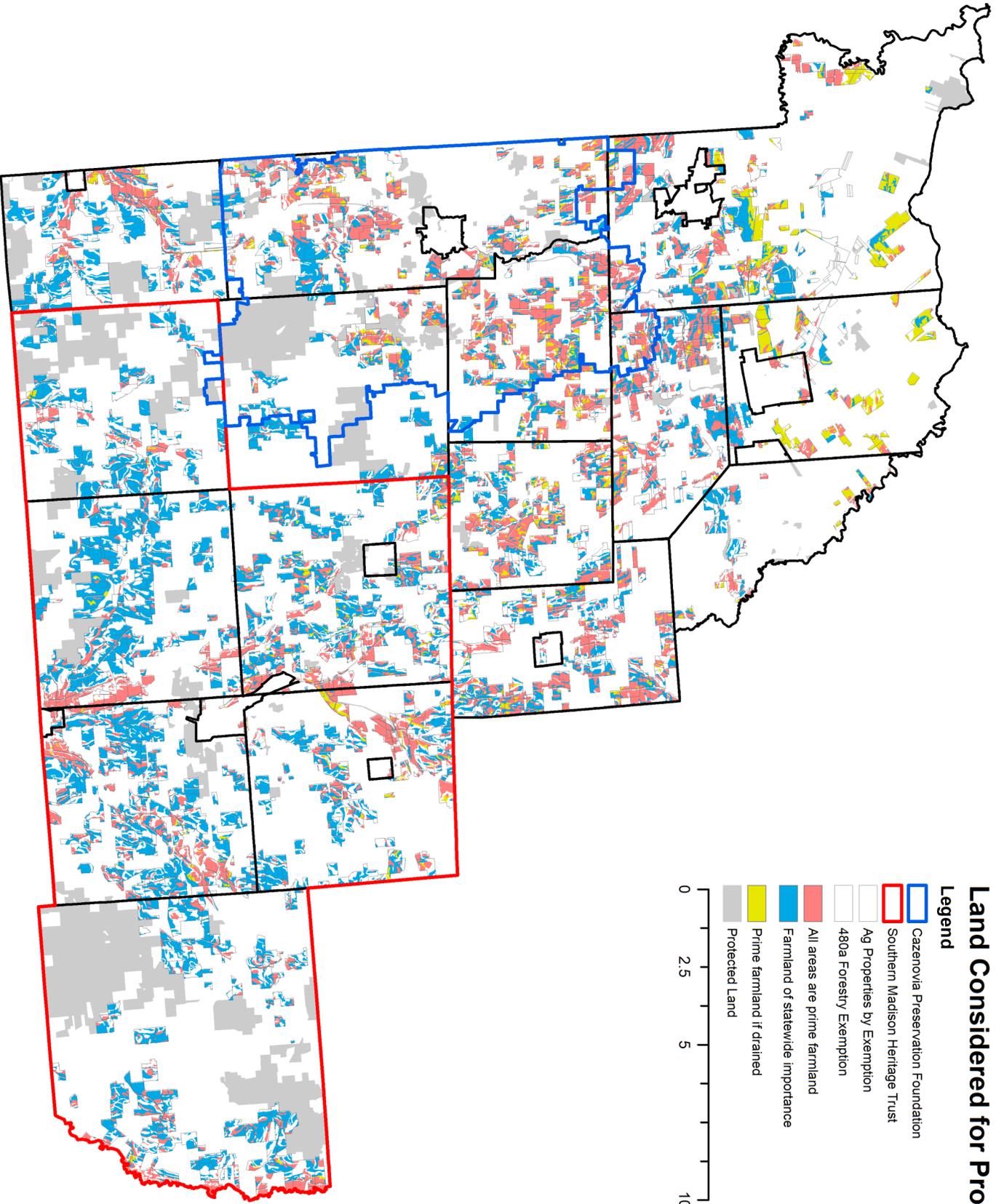


- Legend**
- █ Cazenovia Preservation Foundation
  - █ Southern Madison Heritage Trust
  - █ Agriculture Exemption
  - █ 480a Forestry Exemption

- Protection Category**
- █ AFT Easement
  - █ OPF Easement
  - █ OPF Owned
  - █ County
  - █ Education
  - █ Local
  - █ Nature
  - █ Other
  - █ SMHT Easement
  - █ SMHT Owned
  - █ State



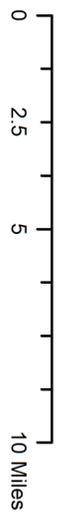
This map DOES not necessarily denote public access. Rather it simply conveys that there is a reasonable reason the land is considered protected from easily undergoing a use change or otherwise being developed.



# Land Considered for Protection

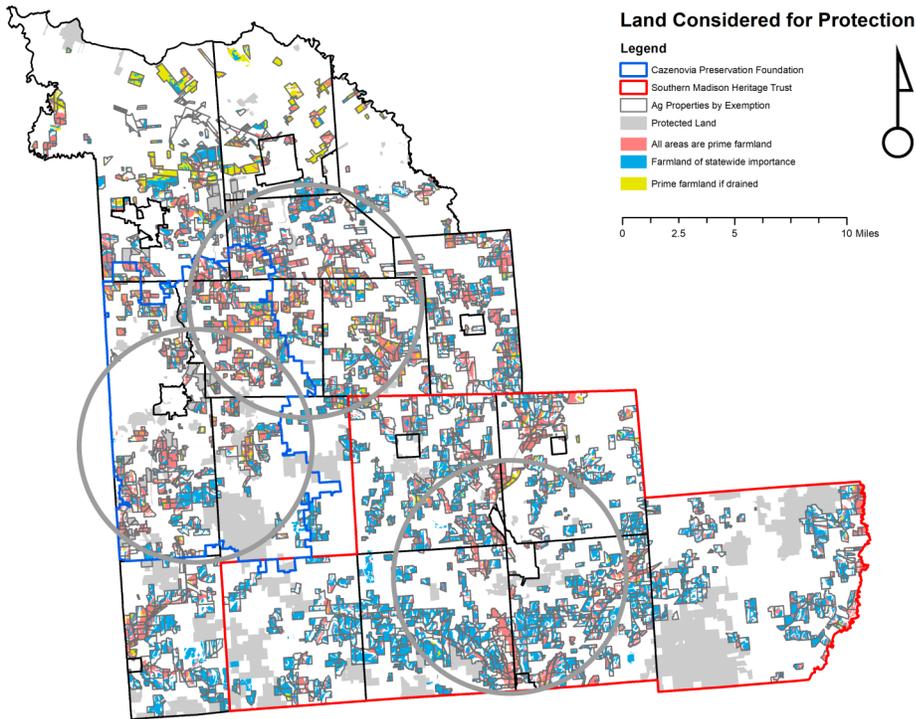
## Legend

-  Cazenovia Preservation Foundation
-  Southern Madison Heritage Trust
-  Ag Properties by Exemption
-  480a Forestry Exemption
-  All areas are prime farmland
-  Farmland of statewide importance
-  Prime farmland if drained
-  Protected Land



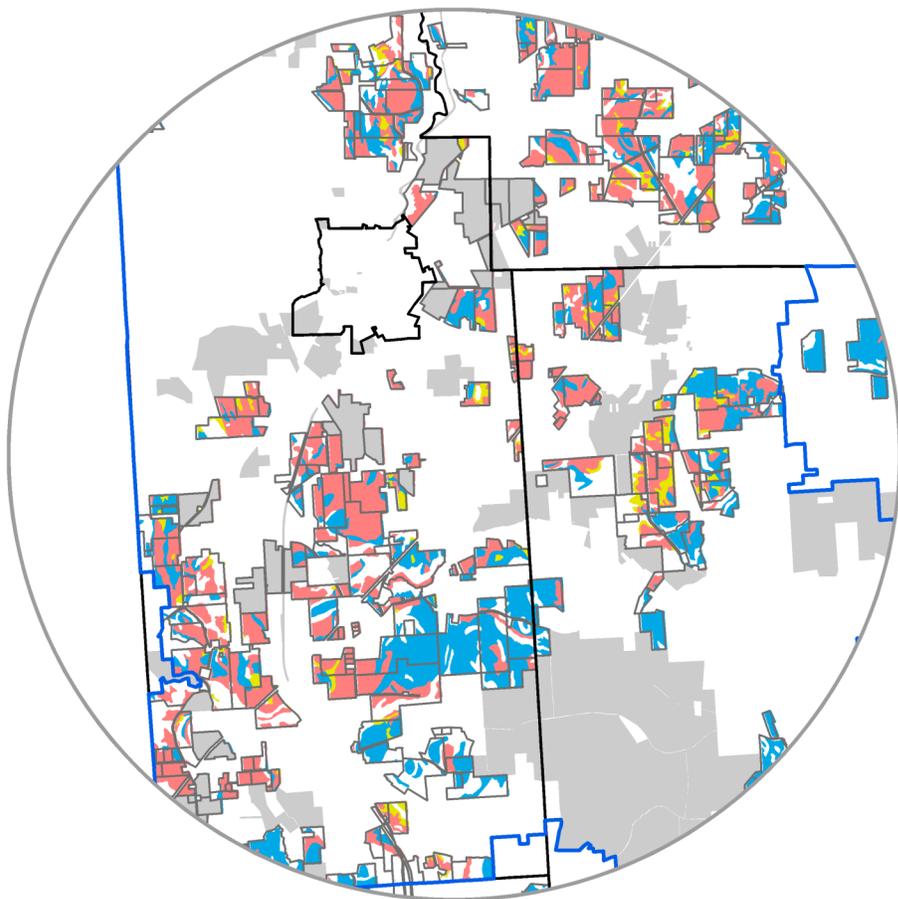
# PRIORITY LANDS FOR PROTECTION

While land throughout the County should be considered for protection, we have highlighted a few areas that should be considered in particular, due to development pressure, land trust presence, existing protected land, amount of existing agriculture, quality soils, amount of existing competing development, and other considerations.



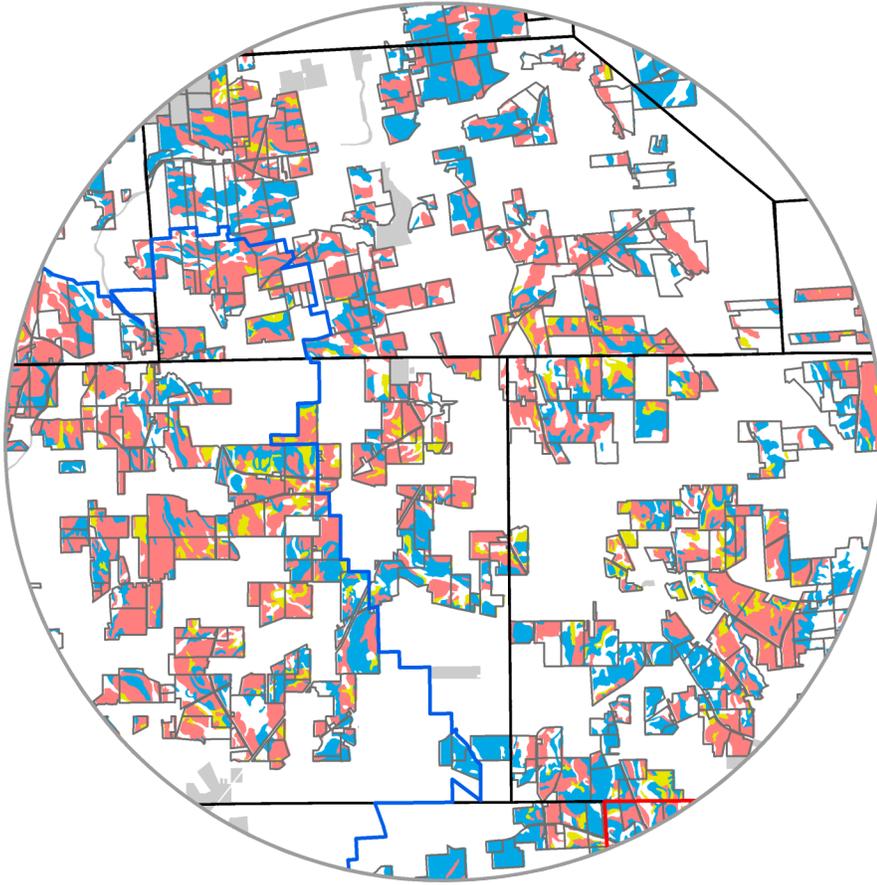
## Cazenovia Focus Area

The Cazenovia area, thanks to the Cazenovia Preservation Foundation, already has a significant amount of protected land. Efforts should continue to protect agricultural land in Cazenovia from development, particularly large-lot residential growth to the North and South of the Village and side-effects of continued commercial sprawl along route 20 into Nelson. Expansion of protected lands in this corridor would create a continuous stretch of protected land in a portion of the County vulnerable to use conversion.



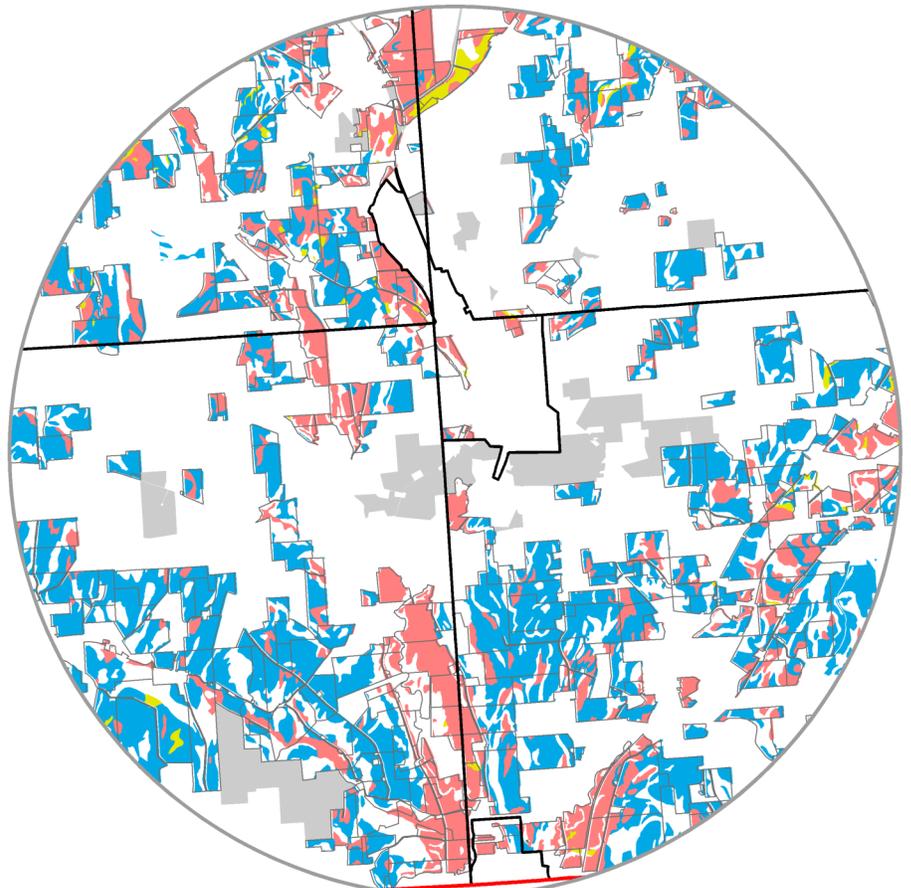
### Fenner/Lincoln/Smithfield

Perhaps lower development pressure than some areas in the County, this area has a significant agricultural presence, low existing protection, and supply of large parcels that may be conducive to conversion to uses such as solar farms. Good soils are present as well. Unfortunately, only a portion of this area is covered by a Cazenovia Preservation Foundation.



### Hamilton Focus Area

Hamilton is under high market pressure for residential construction and currently has a large amount of unprotected agricultural acreage with Class I and II soils. Special attention to the prime soils that continue north from Earlville. The Hamilton area is fully covered by Southern Madison Heritage Trust.



## PART VI. PRIORITY ACTIONS

### **GOAL 1: ATTRACT AND ENABLE NEW FARMERS TO CONTINUE AGRICULTURAL PRODUCTIVITY OF MADISON COUNTY**

#### **Justification:**

The best protection for Madison County agriculture and farmland is to ensure that farming remains a viable, enjoyable enterprise. A long term aspect of that is a ready supply of farmers. With an aging population, of which the farm community is no exception, and economic issues facing farming today, we will need to work hard to ensure that farming in Madison County remains an attractive pursuit to youth, high school, college students, and other new farmers.

In preparing future farmers, we need to ensure that efforts are in place to educate youth about farming, create opportunities for them to engage with existing farms, encourage and support proper training for interested individuals, and strive to maintain access to good, affordable farmland.

- 1.1** Support existing agricultural education programs at local schools that provide students of all ages with an opportunity to learn about agriculture
- 1.2** Support and facilitate connections and opportunities for ag students at local and nearby colleges and universities and ensure they know Madison County is a welcoming place to start farming
- 1.3** Reduce barriers for young, new, and would-be farmers interested in starting in Madison County: financial, knowledge, and support. Ensure that small operations, graduating students, and other prospective farmers are aware of economic development opportunities, Cooperative Extension programming, and other resources available
- 1.4** Facilitate and improve working relationships between existing farmers and educational institutions such as Morrisville State College and Cornell Cooperative Extension to enhance research opportunities and on farm experiences for students
- 1.5** Support development of farm business incubator for value added product development to reduce initial costs, investigate opportunities for agricultural incubators or institutions such as Intervale in Burlington, VT that provides space and equipment to beginning farmers
- 1.6** Support mentorship programs that connect new or interested farmers with other experienced professionals, both in farming and specific business related topics such as accounting and marketing

## **GOAL 2: SUPPORT AND ENHANCE OPPORTUNITIES FOR LOCAL AGRICULTURAL ECONOMY**

### **Justification:**

Agriculture is a crucial economic sector in Madison County and the largest land use county-wide. Agriculture contributes to the quality of life of all Madison County residents, even those who do not earn a living in agriculture. Madison County has been proactive in supporting farmers but must continue to do so given the strains facing the agricultural community today. Meanwhile, Madison County should assist relevant non-profits, Towns, and find ways to concentrate it's own initiatives to enhance opportunities for local farmers in ways that make them more resilient to economic trends in agriculture.

- 2.1** Address gap in small-medium scale local food processing capacity by developing cooperative processing centers
- 2.2** Connect local institutions with local farms to supply fresh, local agricultural products, such as local food in restaurants, dining halls, and public events
- 2.3** Support and coordinate with CCE, NYS Ag and Markets, and other partners to support direct market opportunities and improve market access.
- 2.4** Incorporate agriculture in economic development initiatives to encourage farm participation in existing and new programming meant to help small businesses

### **GOAL 3: UPDATE AND STREAMLINE LOCAL LAND USE REGULATIONS ACROSS MADISON COUNTY**

#### **Justification:**

Local land use regulations are a primary tool in determining whether agricultural land is converted to another use. Madison County does not have control over local land use, but can and should advise Towns where possible to improve their local land use regulations to protect agricultural land. Zoning regulations, including definitions, must take into consideration the needs of farming and be written in a way that does not restrict agricultural activity. Land use regulations should treat farming as a legitimate and primary use, rather than a secondary, consequential use that is deferential to forms of development.

- 3.1** Work with Towns across County to update zoning and foster a supportive environment for agriculture by removing typical and unintentional zoning barriers and inconsistencies, such as poor descriptions of agricultural terms, large minimum lot sizes, lack of Agricultural zone, and others
- 3.2** Enhance and standardize County Review to critically assess and reject projects that erode agricultural resources within the County as a county-wide impact, recognizing that significant decline in farm operations in one area will negatively impact farms in rest of Madison County
- 3.3** Continue to incorporate agricultural issues and farmland preservation into local trainings for planning and zoning boards
- 3.4** Develop educational and informative materials to give to all elected town and village board members and planning board members
- 3.5** Develop and maintain regular newsletter sent to elected town and village board members and planning board members that discusses and educates on agricultural and planning issues
- 3.6** Identify and address inconsistencies across borders and attempt to reduce needless variation in zoning from Town to Town
- 3.7** Work with Towns to ensure up-to-date Comprehensive Plans that address agriculture
- 3.8** Encourage Towns to adopt solar ordinances that include protection mechanisms for prime soils and agricultural land. Encourage them to account for Climate Controlled Agriculture and other potential land-intensive uses and treat them in a similar fashion to solar farms in local land use codes.

**GOAL 4: PROTECT LAND, WATER, AND OTHER RESOURCES THAT ENABLE AGRICULTURE TO REMAIN PREVALENT IN MADISON COUNTY**

**Justification:**

Agriculture depends on land, soil, water, and natural ecosystems for its continued success. Land has been fragmented over time, while good farmland has been lost to development. These issues have not subsided, rather the threat of agricultural land being lost to development has increased in some areas. In addition to land use regulations, Madison County should work with partners to pursue other methods of protecting the resources that make local agriculture possible.

- 4.1** Investigate the establishment of a Land Bank with the chartered mission of protecting agricultural land and redirecting vacant farmland properties to new farmers, in addition to providing affordable housing
- 4.2** Concentrate non-agricultural economic growth and development in areas less suitable for agriculture and where it will have least impact on agricultural resources
- 4.3** Collaborate with SWCD to help farmers adopt best management practices that preserve and improve soil and water quality, continued use of FLOWPA funds to improve water quality and management, as well access to new and existing funding opportunities
- 4.4** Work with land trusts to permanently protect key agricultural lands throughout the county and assist farms in competing for state and federal funding to purchase development rights.
- 4.5** Encourage awareness of and participation in forestry and woodlot management programs, including Cornell's Master Forest Owner program, and state forestry tax exemption 480-A to assist in preservation of woodlots.

## **GOAL 5: FOSTER DIRECT, POSITIVE RELATIONSHIPS BETWEEN FARM AND NON-FARM COMMUNITIES**

### **Justification:**

With a significantly lower number of people directly involved in farming than recent decades, the ties of the general population to agriculture are thinner than ever. In the absence of direct farm interactions, the public, and even elected officials, can have very limited or incorrect understanding of agriculture. More often than not, these leads to a chronic under-valuing of agriculture within communities, shaping local, regional, state, and even national policy decisions that can adversely impact agriculture. Such disconnect can also cause conflict when and if tensions do rise between agricultural activity and the general public. Therefore, keeping the public in Madison County engaged with our farm community is crucial to the long-term protection of agriculture.

- 5.1** Work with partners to raise local profile of agriculture and awareness of larger agricultural community.
- 5.2** Develop and host a forum for discussion of current agriculture related topics, trends, and concerns.
- 5.3** Take advantage of direct market engagement at farmer's markets across the County by providing market by generating factsheets that can build awareness of farming, issues community farmers are facing, and threats to farmland.
- 5.4** Continue support and development of Open Farm Day as an opportunity for general public to see and explore different aspects of farming in Madison County
- 5.5** Promote and offer organizational support for CSA's, farmstands, and other direct-market producers who represent the primary interactions with Madison County consumers

## **GOAL 6: WORK TO PREPARE LOCAL FARMERS FOR IMPACTS OF CLIMATE CHANGE AND REDUCE LOCAL AGRICULTURE-BASED EMISSIONS**

### **Justification:**

'Climate change' has the potential to be the largest existential threat to farming in Madison County. Even under the revised 'best case scenarios', the climate crisis, or 'global heating', will force Madison County farmers to be more resilient, innovative, and determined than ever. Anticipated impacts for Upstate NY include changes in precipitation patterns, changes in freeze/thaw times and cycles, erosion, drought, hotter temperatures, increasing pests and invasive species, and general decline of ecosystem services. We need to ensure that farmers in Madison County have the awareness, tools, and resources they need to rapidly prepare and adapt to global heating scenarios in the next ten, twenty, and thirty years.

- 6.1** Prioritize and support farm participation in climate initiatives and strategies as advocated by Cornell's Climate Smart Farming Program
- 6.2** Assist in grant applications that diversify county-wide and individual farm operations, and increase ability to respond to severe weather, such as drain tile installation, ponds for irrigation, etc.
- 6.3** Work to engage farmers on woodlot management and the Master Forest Owner Program
- 6.4** Coordinate with County Energy and Sustainability Plan and ensure that agriculture is accounted for new Climate Action Plans in Towns going forward.
- 6.5** Remain aware and up to date on changing markets relating to climate change, for instance increased demand of vegetarian options
- 6.6** Support opportunities for farmers to employ alternative energy such as solar or wind to reduce energy costs and increase resilience to input cost fluctuations