ONONDAGA COUNTY AGRICULTURE & FARMLAND PROTECTION PLAN

DRAFT

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ONONDAGA COUNTY

AGRICULTURE & FARMLAND PROTECTION PLAN

This Agriculture and Farmland Protection Plan was produced with funding assistance from the New York State Department of Agriculture and Markets' Farmland Protection Planning Program and the Onondaga County Agriculture Council. The plan has been prepared at the direction of the Onondaga County Agriculture & Farmland Protection Board. The project team is comprised of staff of the, Syracuse-Onondaga County Planning Agency, with assistance from the Cornell Cooperative Extension and Soil and Water Conservation District of Onondaga County.

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EXECUTIVE SUMMARY

The Onondaga County Agriculture & Farmland Protection Plan is the culmination of over a year of research, review, and community discussion on the state of local agriculture and what actions can best support local farm operations and agricultural land base. The planning process has been led by the Syracuse-Onondaga County Planning Agency (SOCPA) and overseen by the Onondaga County Agriculture & Farmland Protection Board (AFPB), appointed by the Onondaga County Legislature.

This plan is intended to guide County legislative policy as it relates to agricultural matters, as well as inform the work of the County's Agriculture & Farmland Protection Board and the county's agricultural planning programs. It is also intended as a resource to the 35 municipalities in Onondaga County, each with their own unique relationship with agriculture, and to our important agricultural program partners, and of course, as a resource for the County's 600+ agricultural businesses.

WHAT IS AN AGRICULTURE AND FARMLAND PROTECTION PLAN?

An Agriculture and Farmland Protection Plan is a decision-making tool to help governments focus on the future of agriculture. It includes a report on the state of local agriculture, and a framework for protecting farmland and supporting the viability of agriculture within Onondaga County over the next generation.

*For the purposes of this plan, **agriculture** is defined to encompass a variety of activities on the land, including the production, preparation, and marketing of crops, livestock, and value-added products as a commercial enterprise and other activities defined in Article 25AA of the New York State Agriculture and Markets Law.*

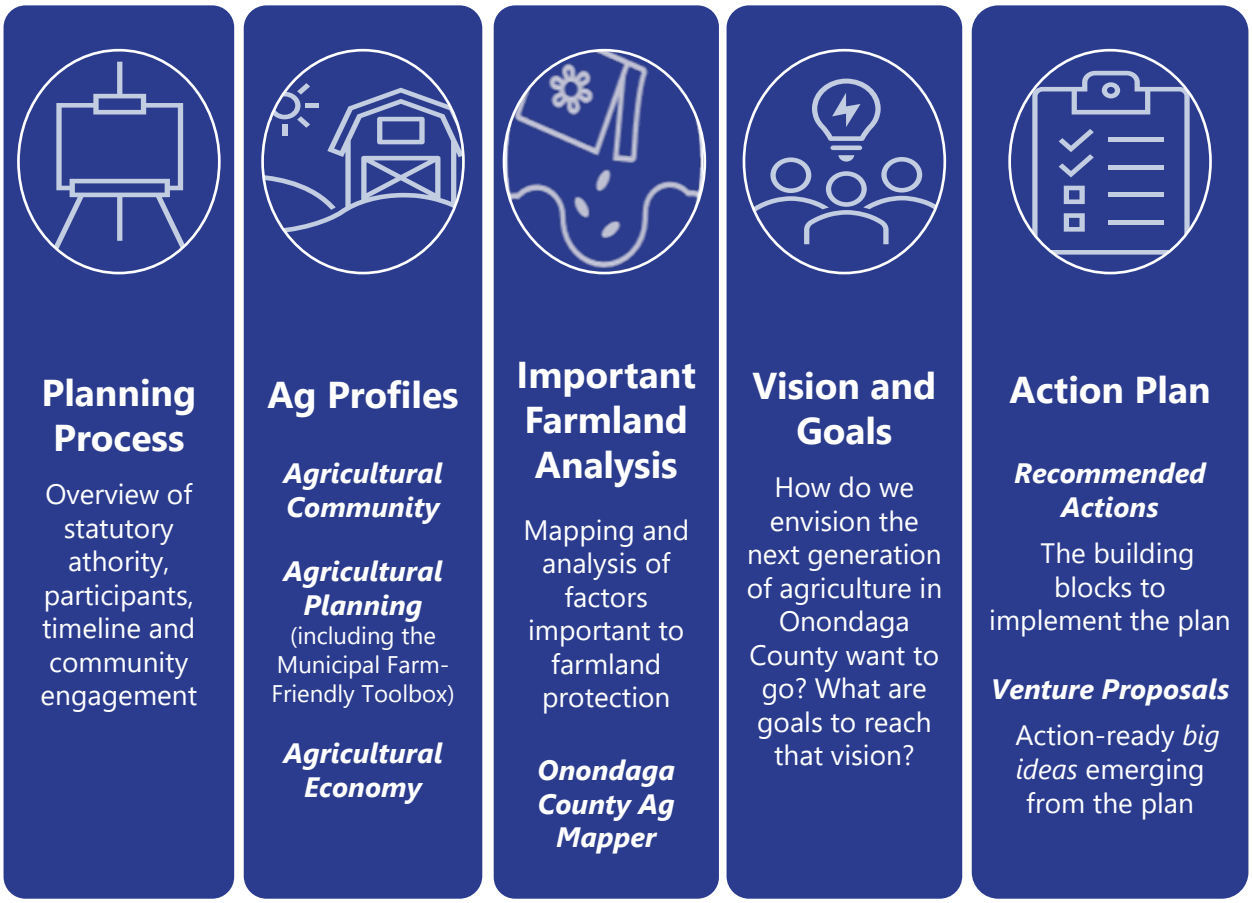
The New York State Department of Agriculture & Markets encourages and funds the creation of countywide and municipal plans, with certain key elements identified for inclusion (1 CRR-NY 390.3). While municipal plans focus primarily on zoning and land use tools to preserve farmland, County plans are intended to also focus on the economic vitality of the local agricultural industry.

Agriculture and farmland protection plans are intended to be flexible and representative of changing needs, conditions, and emerging trends facing agriculture. As a document, this plan will serve as the foundation – the character, values, and priorities – for Onondaga County and its agriculture.

ONONDAGA COUNTY

AGRICULTURE & FARMLAND PROTECTION PLAN

The 2022 Agriculture and Farmland Protection Plan is an entirely new document and major update from 1997. This plan offers an action-oriented and user-friendly approach. The following diagram lays out the main components of the plan:



Of note, Onondaga County's Agriculture & Farmland Protection Plan includes certain elements unique to Onondaga County's planning process, including the *Municipal Farm-Friendly Toolbox*, the *Onondaga County Ag Mapper* application, and the development of *Venture Proposals*. These elements are intended to provide added utility for users of the plan beyond basic analysis and goal setting, with practical tools for implementation by the County and its partners.

UPDATING THE 1997 PLAN

Originally adopted in 1997, the first Onondaga County Agricultural and Farmland Protection Plan promoted three main goals for the local agricultural sector:

1. ***Enhance the viability of agriculture in Onondaga County.***
2. ***Protect farmland resources.***
3. ***Promote the economic and social importance of the agricultural industry in Onondaga County.***

Stemming from these goals, several recommendations were also defined for action at the County and municipal levels and are used as a baseline for the current plan update. The following provides a list of the 1997 Plan recommendations and significant subsequent actions that have been implemented since the adoption of the original Onondaga County Agricultural and Farmland Plan in 1997.

County support for farmland protection

Execution of over 30 state, federal and local projects to protect over 12,000 acres of farmland in Onondaga County.

Strong partnerships in County agencies, partners and the land trust community to execute projects, educate landowners an identify priority lands.

Local funding of agricultural land protection by the County and Town of Skaneateles.

Municipal support for farmland protection

Development and deployment of mapping data to municipalities, agencies and the public to aid in identifying and minimizing impacts to important farmland areas. Enactment of local laws and zoning amendments to ensure ag viability, including solar energy regulations. Established agricultural advisory committees in multiple towns. LaFayette Ag & Farmland Protection Plan approval. Exploration of local conservation easement and development rights transfer programs by multiple towns.

Reduce property taxes on farmland

Increased local adoption of full value land assessment policies.

Provided opportunities for farmer education on the development of estate plans and business plans to offset tax burdens.

Provided municipalities with education on fiscal impacts of land development patterns, including the cost of community service data for residential and agricultural/open spaces.

Promote public awareness of agriculture

Establishment of the Onondaga County Agricultural Council to promote and preserve the County's agricultural economy, promote local food, and connections between urban and rural communities. *Onondaga Grown* buy local campaign and marketing program established to recognize and market the availability and benefits of local food. Establishment of OnFarm Fest, which now attracts over 10,000 visitors yearly at local. Expanded use of traditional and social media to publicize local farms. Agritourism business and entertainment venues growing on agricultural lands, exposing residents to the needs and benefits of local agriculture.

Promote the agricultural industry

Inclusion of agricultural economic development projects and enhancement of agricultural industry as a strategic area within Regional Economic Development Council (REDC) strategic plans. Establishment of Onondaga County Agriculture Council to promote the local ag industry. Economic development efforts to atract and retain agricultural processing facilities.

Provide educational programs

Onondaga County SWCD provides support to urban gardens/farms with educational offerings, including the Brady Farm, Dr. King Elementary School, and the Syracuse Refugee Agriculture Program (SYRAPP), for soil sampling, analysis and interpretation of the laboratory results for raised bed gardens. CCE Onondaga provides educational initiatives, including Ag-in-the-Classroom events such as Agriculture Literacy Week.

Provide technical support for agriculture

The Onondaga County SWCD secures grants annually for farms across Onondaga County and the Skaneateles Lake Watershed; Grow NY Program established as a business competition and collaborative entity to grow and fund agricultural innovation; Creation of the NYS Center of Excellence for Food and Agriculture at Cornell (AgriTech), to catalyze ag business development. Technical training programs through CCE Onondaga. Beginning Farmer Development Program, created in partnership with Refugee and Immigrant Self-Empowerment (RISE).

IMPORTANCE OF AGRICULTURE TO ONONDAGA COUNTY

Agricultural lands are a prominent and proud feature in Onondaga County's landscape. While generally characterized as an urban County, home to Syracuse, the state's 5th largest city in New York State, and over 460,000 residents, Onondaga County is also fortunate to have been able to retain a rich agricultural presence.

Approximately 30% of the land use in the County is actively used for farming, and another 30% consists of related and nearby forested lands. The rolling hills, working and open lands, and emerging agritourism venues along our rural roads and highways across Onondaga County are community, and regional, assets and are key component of the quality of life to County residents both urban and rural. And with over 69% of all lands in Onondaga County classified as important farmland soils, Onondaga County possesses agricultural land qualities that are recognized nationally.

Agriculture is also a significant player in the economy of Onondaga County. The location of Onondaga County at the crossroads of New York enables local agriculture to reach markets both locally and beyond. With $178 million in direct sales, the County's current 623 farming operations occur in nearly all reaches of the County. It is estimated that there is another $178 million in indirect benefits (USDA Agricultural Marketing Service & Colorado State University, 2022), from farmer and farmworker earnings, purchases at feed and supply stores, and all the other ways that agricultural sales contribute indirectly to local economies.

In all, the economic impact of farming in Onondaga County totals over $356 million in quantifiable benefits.

Farming is the primary occupation for half of the County's 1,068 farmers (USDA NASS Census of Agriculture, 2017a).

While data in the following chapters show a stable local agricultural economy, many changes are taking place within the industry, attributed in part to modernization and the evolution of agricultural practices, but also changes that reflect the pressures of agriculture, urban development, and competition for land.

As is occurring across the nation, nearly one-third (32.9%) of agricultural producers are 65 years or older, while only 5% of producers are "new farmers" age 18-35. Farm labor is also a longstanding issue, with shortages in the labor force and changes and challenges in regulation of non-resident labor. While new

small farms are emerging, mid-size farms are in decline, and being absorbed by larger operations or sold for urban development. These dynamics relate to a decline in farm operations overall and more limited diversity of agricultural products, with a larger segment of Onondaga County agriculture now focused on the challenging and land intensive dairy industry. The pressures of urban residential development also continue and are met with new land development dynamics from commercial solar development, who are increasingly seeking to convert agricultural lands in Onondaga County to large-scale solar panel installations.

Onondaga County is committed to focusing on farmers and agriculture and supporting the value that it brings to its residents, economy, landscapes, and natural environment. There are many reasons to celebrate the efforts achieved since the completion of the original 1997 plan., including the protection of over 12,000 acres of important farmland from development, and representing a $25 million investment in the local agricultural economy. However, there is much work ahead to protect farm operations and farmland here in Onondaga County.

NEEDS AND OPPORTUNITIES FACING AGRICULTURE IN ONONDAGA COUNTY

A critical component of the preparation of this plan has been outreach and discussion with the agricultural community, including the Agriculture & Farmland Protection Board, local farmers, farm business representatives and related support agencies in government and not-for-profit sectors.

The following is a synopsis of identified needs and opportunities facing the Onondaga County agricultural community, resulting from this outreach as well as research on current conditions and trends. Information is presented under five broad categories of interest, which naturally evolved throughout the planning process.

AGRICULTURAL ECONOMIC DEVELOPMENT

Agriculture is an important contributor to the economy of Onondaga County, and the legacy of farming resources here in Onondaga County has provided a basis for a stable agricultural industry for generations. Unfortunately, agriculture can be very capital-intensive for individual operations and profit margins can be very tight, impacted by extreme weather patterns and statewide or national policies outside the control of farmers. Farming has been pushed to become highly efficient over the years.

Meanwhile, agriculture is facing changes to its operations, labor force, and markets. Mid-sized farms are decreasing in number throughout the county, with very large farms increasing in size through consolidation. The number of farm operators is decreasing, as operators age towards retirement and the next generation moves towards non-farming careers.

Markets are quickly evolving, with new crops emerging on the market and technology continues to innovate by leaps and bounds. Increasing value-added production opportunities can help existing local farmers offset ever-rising agricultural costs while potentially attracting new farmers to the workforce. Intentional and strategic economic development for agriculture to grow and thrive as a sector is a critical need in Onondaga County.

PROTECTION OF AGRICULTURAL LAND

Protection of farmland is essential to maintaining a viable agricultural economy, as well as enabling the scenic views that characterize Onondaga County. The County has a rich array of agricultural soils, with nearly 70% either federally or statewide important. Over the past 100 years, Onondaga County has lost a

significant portion of its original agriculture that occurred on these soils due to development, although this loss has plateaued in recent years. Once development occurs in areas of farmed prime soil, it is very difficult, if not impossible, to restore the soil to its original state.

Fortunately, there are several programs that can pool resources to incentivize the protection of farmland and make it worthwhile to farmers that would otherwise be tempted to develop their land. The challenges lie in providing enough technical assistance and marketing to ensure that farmers know about these options. An additional emerging development pressure for farmland is commercial solar development. Several tools exist to help strike the right balance when it comes to enabling solar development and other forms of renewable energy to address climate change and provide farmers with additional revenues, while still protecting farmland and the food that it provides.

LINKING LOCAL AGRICULTURE TO THE COMMUNITY

A wonderful characteristic of Onondaga County's agriculture is its centralized location and easy access to local markets, which makes it relatively easy for non-farmers to connect with farmers. People are seeking out these experiences more than ever, with increased interest in agritourism experiences whether it's, picking fruits or vegetables at one of the many fine U-Pick operations across the County, attending On Farm Fest, or enjoying a craft beer, meal, or concert at farm-based venue. Additionally, urban agriculture and community gardening have gained in popularity over the past couple of decades, helping to bridge the gap between the County's established farming community and the traditionally non-farming community.

More work is needed, however, to better link the general public's awareness and understanding of local agriculture, as well as attract new community members to local agriculture. In recent years the Onondaga Grown campaign has been launched to promote and celebrate the importance of local agriculture, as well as link local producers to local consumers.

Farmers' markets have increased in popularity, along with local farm-to-table restaurants and other food-related enterprises that work to re-localize the food system. Continued effort on this topic has the potential to improve public health by providing food access to are several "food deserts" throughout Onondaga County, where residents do not have easy access to fresh, locally grown produce. It also can enhance the quality of life for all residents participating in local agriculture-related experiences.

LABOR AND THE NEXT GENERATION OF FARMING

When it comes to labor, agriculture both in Onondaga County and across New York State is facing some significant challenges. The agricultural workforce is already in short supply due to an aging farmer population and a shortage of young farmers or new and beginning farmers. This labor shortage will likely be exacerbated by the recent statewide requirement to phase into a 40-hour workweek for farmworkers beginning in January 2024. This recent change has caused concerns from farm operators about balancing the increasing labor costs with the slim profit margins of farms, all while attracting and retaining a quality workforce here in New York.

Continued demand for low food prices, technology requirements, and the consequential rising costs of agriculture are attributed to the lack of local labor, low wages for farmworkers, and difficult conditions for farmers and farmworkers. Opportunities lie within regional workforce development in warehouse distribution, drone technology, and other tech industries that may attract new tech-oriented workers to the agricultural sector. Additionally, there are many ways to support and incentivize new and beginning farmers, as well as aging farmers, to ensure that the next generation of farmers have the resources they need.

AGRICULTURE AND THE NATURAL ENVIRONMENT

Onondaga County is gifted with plentiful water and productive soils, and for that reason, the County has a robust history of farming. Farmers are the biggest stewards of natural resources in Onondaga County. Despite this intrinsic connection between agriculture and natural resources, more resources and support are needed to equip farmers to balance agriculture with the natural environment.

Many incentive-based tools exist to help farmers protect water quality, increase climate resiliency, or address pollinator collapse and invasive species. Protecting flood plains and wetlands can provide supplemental income/benefits to farmers as well as provide community value (e.g., recharging soils, habitat, water quality). Finally, because of the amount of land that agricultural operators work with, they have a unique role in helping to capture carbon and implement renewable energy options, whether it is no-till farming, solar energy production, or capturing methane for heating and electricity. The challenge lies in how to do so without placing added burdens on farmers and keeping farmland in production.

VISION FOR AGRICULTURE IN ONONDAGA COUNTY

The Vision Statement, at the heart of the 2022 Agriculture and Farmland Protection Plan, is an articulation of the community's hopes for the future of agriculture and farmland in Onondaga County over the next 20 years. It informs the Agriculture and Farmland Protection Plan and ultimately is a basis for decision-making related to agriculture throughout the County.

The Vision Statement as articulated below by the Agriculture & Farmland Protection Board, results from the contribution of a wide array of community stakeholders, participants engaged through outreach events and surveys, and discussions with focus groups and Onondaga County farmers and residents.

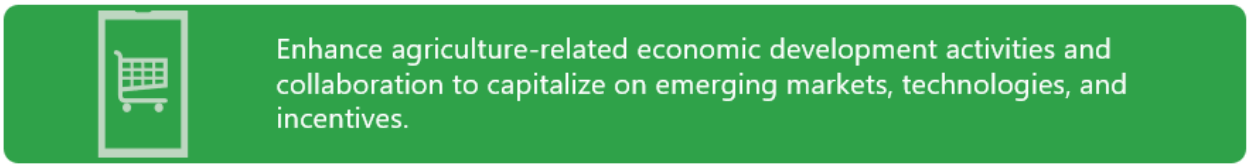
Agriculture in Onondaga County has seen significant changes over the years. Through it all, local agriculture remains a critical part of its economy, food system, and landscape. The County is gifted with highly productive agricultural soils, a legacy of farming operations and know-how, and an environment that supports a highly diverse array of agriculture and opportunities to engage with the local food system. This plan honors the strengths of Onondaga County's agriculture and reflects these strengths in a vision for the future of agriculture throughout the County:

Onondaga County is a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system.

GOALS AND STRATEGIES

Achieving the community's vision requires the development of planning goals, strategies, and tangible actions supported and embraced by public officials and the community. Achieving these goals will require commitment and collaboration between a variety of stakeholders across the County.

The following is a summary of the goals and related recommended strategies which were formulated through the planning process to inspire action and implementation of the vision for agriculture in Onondaga County. Recommendations in bold represent strategic projects which have been identified as ***Venture Proposals***. More detailed preliminary analysis has been prepared for a limited number of actions, as a way to further brainstorm and shape proposals for quick, coordinated action by stakeholder partners. See the Venture Proposals following the Implementation Matrix.



Venture Proposal: Establish an Agriculture Market Coordinator and eventually an Office of Agriculture and Food System Development (Office) to spearhead implementation of agricultural economic development related initiatives identified within this Farmland Protection Plan and beyond, including facilitation of projects, partnerships, funding opportunities and farmland protection.

Venture Proposal: Pursue Value-Added Economic Development Initiatives that elevate the local agricultural economy by expanding the County's agribusiness sector size, technological infrastructure, and accessibility to major markets. Potential projects include a regional food hub, flash freezing facility, commercial kitchen, a produce processing facility, and an agribusiness park.

Action 1: Create full-time staff to Agricultural Economic Development Coordinator position to spearhead and coordinate agriculture related partnerships and initiatives (see related Venture Proposal).

Action 2: Explore the feasibility for developing an agricultural business park and/or food hub (see related Venture Proposal).

Action 3: Develop a re-packing facility to provide cold storage, freezing, packaging, and distribution to institutions.

Action 4: Host periodic trainings to educate existing and prospective producers about resource management (e.g., implementation of BMPs), certifications, value-added production, and market development.

Action 5: Improve broadband in rural communities to support high-tech ag machinery and communication.

Action 6: Train and equip local support agencies to offer agricultural unmanned aerial vehicle (UAV) or drone services to their constituents.

Action 7: Facilitate the development and operation a commercial kitchen to provide operations the ability to create value-added products.

Action 8: Explore the feasibility of developing a USDA certified meat processing facility compared with utilizing regional meat processing facilities.

Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations.

Action 1: Improve capacity and increase funding within the local land trust community to partner on conservation easement project or develop new avenues to execute farmland protection easement programs.

Action 2: Work with municipal boards and staff to understand the land use tools available to incorporate best practices in siting, construction, and monitoring of larger scale commercial solar developments to minimize impacts on farmland resources and agricultural communities.

Action 3: Follow and engage in statewide efforts to update utility-scale solar energy siting regulations, to ensure that local communities farmland protection goals and objectives are considered in site location and mitigation assessment.

Action 4: Utilize the mapping tool developed herein for identification of priority lands for farmland protection, including conservation easement programs, corridor protection, and local planning and zoning.

Action 5: Enable and facilitate Smart Growth development practices which encourage growth in existing built communities and compact subdivision designs, which ultimately serves to preserve agricultural lands, open spaces, and rural road frontages.

Action 6: Conduct an agritourism corridor study along NYS Routes 20 and 80.

Action 7: Promote and maintain the Farm- Friendly Toolbox for Municipalities as a continuing resource for local support for agricultural communities.

Action 8: Work with municipal boards and staff to update and revise their comprehensive plans and land use regulations to better support agricultural uses and accommodate new agritourism related activities

Action 9: Encourage towns to create their own agricultural protection plan that works in coordination with the Onondaga County Agricultural and Farmland Protection Plan.

Action 10: Explore the feasibility of establishing a local farmland protection fund for purchasing conservation easements.

Action 11: Provide training for municipal tax assessors to conduct more accurate assessment of lands and buildings in agricultural use.

Promote the importance of local agriculture and food systems throughout Onondaga County.

Venture Proposal: The Community Greenhouse Initiative will address the need for improved and expanded community greenhouse spaces to generate a range of positive community outcomes, including an extended growing season, indoor demonstration areas to expose youth to agriculture as a career path, workforce development training space, and general promotion of agriculture to the public.

Action 1: Develop an agriculturally oriented year-round community greenhouse to host agritourism events/ educational programming.

Action 2: Increase County support for agriculture-related promotional events and marketing, particularly for agritourism (e.g., startup assistance, social media help, siting, and logistics).

Action 3: Promote public awareness of local agriculture through the Onondaga Agricultural Council and its Onondaga Grown Buy Local Campaign.

Action 4: Continue to grow OnFarm Fest programming to serve as a well-known opportunity to educate residents of Onondaga County's agriculture.

Action 5: Continue to support the CNY Regional Market and local farmer's markets, CSA programs and other similar opportunities for direct sales of farm products to consumers throughout Onondaga County.

Support the next generation of farmers and agricultural entrepreneurs in Onondaga County.

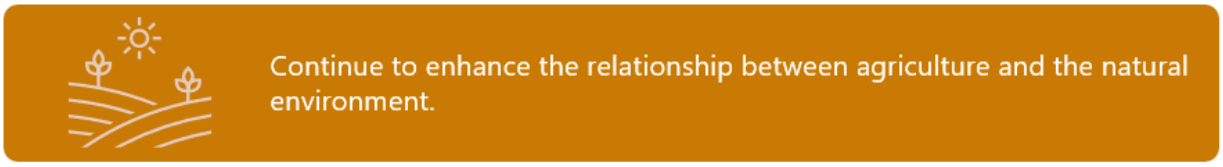
Venture Proposal: Develop an Agritourism Support Program, in which Onondaga County though the Agricultural Council and its agriculture planning programs, will continue to invest in and develop upon planning initiatives and marketing support for agritourism opportunities.

Action 1: Develop and expand upon a New Farmer Program(s) that provides land, landowner connections, management training and other resources to serve the next generation of farmers or newly arrived immigrants familiar with farming.

Action 2: Develop a farm specialty labor pool by creating a program of trainings for high-tech agriculture (or link to existing programs).

Action 3: Provide training for agri-service, land use planning professionals, and farming community to support succession planning and direct farmers to appropriate stress-related support services.

Action 4: Increase programming and partnerships with agriculture-related higher education programs.



Venture Proposal: Create an Agricultural Waste Stream Strategic Plan to address agricultural waste issues in Onondaga County.

Action 1: Develop a strategy to decrease overall waste in the agricultural sector, for example renewable natural gas projects for dairy waste and promoting paper/plastic recycling and reuse working with OCRRA.

Action 2: Increase funding, and flexibility thereof, available to evaluate causal pathways for water quality issues and assist farmers in implementing strategic water quality management practices.

Action 3: Increase technical assistance related to climate resiliency (e.g., flooding and drought), stormwater management, and other environmental management issues, like runoff nutrients, farmyard management, silage nutrient management, fertilizer application calibration, hazard mitigation, etc.

Action 4: Increase funding for marketing and technical assistance to increase farmer participation in programs that protect soil health.

Action 5: Encourage, plan for, and fund stream corridor buffering, wetland and floodplain restoration/enhancement, and bank stabilization efforts.

Action 6: Conduct viewshed analyses to preserve the most scenic and valued agricultural and open space vistas in our rural communities.

ANALYSIS OF IMPORTANT FARMLAND

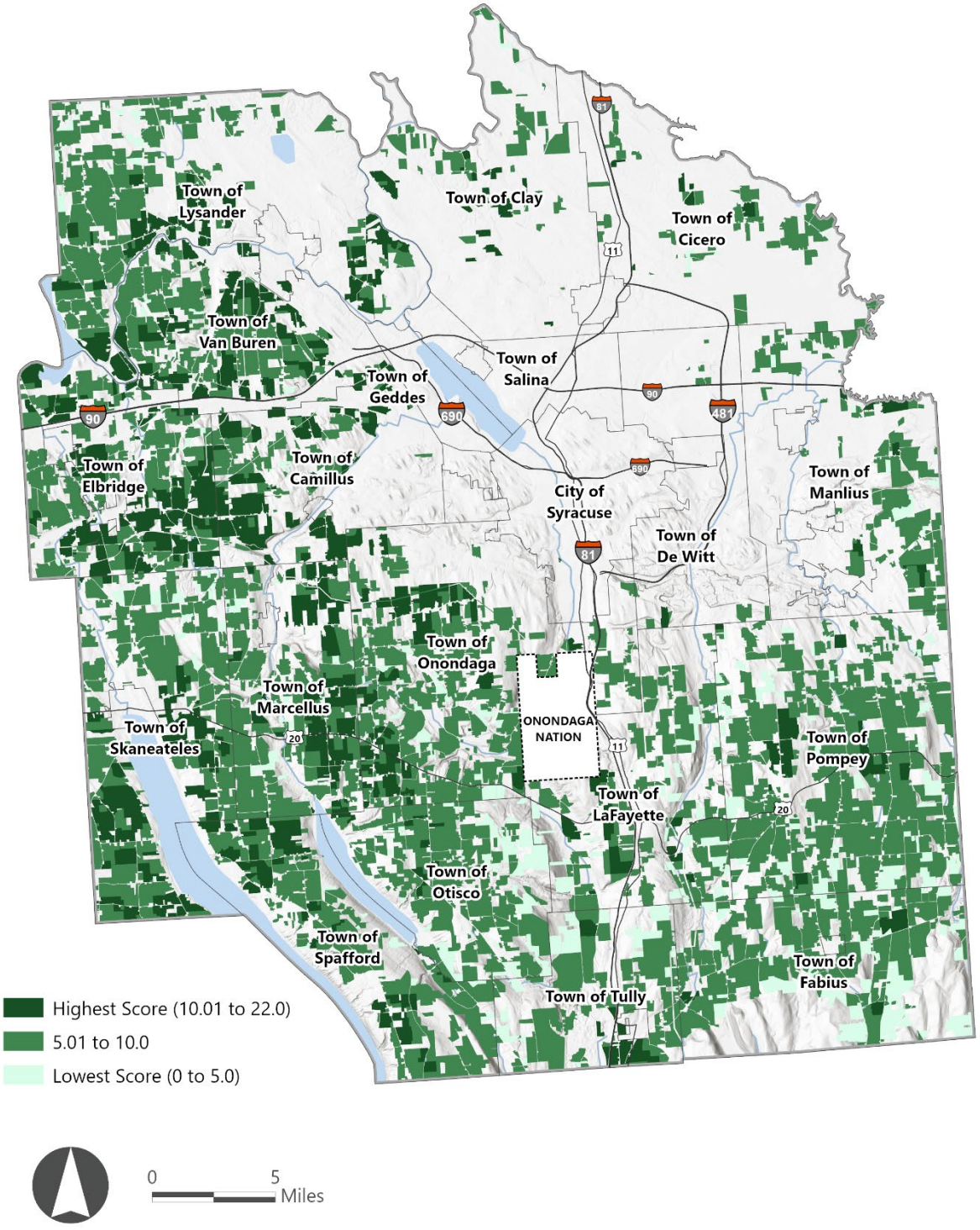
Farmland is at the core of the agricultural community and farming industry, and one of the most threatened components of the industry as well. As such, mapping-based identification of the County's most important farmland was identified as a priority activity for the updated Agriculture & Farmland Protection Plan. Mapping of farmland resources can provide utility in a variety of ways including:

- Scoring and prioritization of projects being considered for endorsement by the AFPB and/or municipalities for state and federal grant programs, such as the NYS Farmland Protection Implementation Grants (FPIG) program.
- Integration of mapping analysis into County and municipal comprehensive plans and/or land use plans, to aid in identifying areas prescribed for future development and supportive infrastructure, or alternately, identification of lands to be protected from encroachment of urban development.
- Use of individual or aggregate data layers to understand land dynamics affecting a particular area or piece of land being proposed for development. Data layers in this analysis are often considered during zoning (zone changes, site plan review, special permits, etc.) and subdivision reviews, in order to assess impacts to land and resources and compatibility with neighboring uses.
- Increased availability and ease of use of data by the general public to understand various land conditions and factors affecting agriculture, to increase understanding of the local ag community, aid in personal decision making and inform residents when projects are being proposed.

To identify the County's most beneficial farmlands and areas of interest related to farmland protection efforts and programs, a GIS-based mapping analysis was conducted that considers data within each of the following four focus areas: **Soil Value, Agricultural Vibrancy, Natural Resources, and Land Development**.

For each focus area, individual datasets were weighted and aggregated into a Focus Area map showing the relative values for all agricultural lands in that category. Each of these analyses have also been combined to result in an overall scoring of important farmland throughout Onondaga County. As shown in the aggregate map below, there are clusters or areas of the agricultural community that stand out as highly important agricultural lands. Some are greatly based on inherent land qualities while others stand out based on high ranking for natural resource qualities, while others may highlight vulnerabilities to development pressure. In all,

The county is also presenting this data in the form of an online **Ag Mapper** application, accessed through the agriculture.ongov.net website, to encourage users to explore and learn about the various data layers and visualize these inputs on a specific area or parcel.



Of note, identification of priority farmland is not a simple task, and the planning team acknowledges the inherent complexities and limitations on available data in this type of data analysis. Despite these limitations, the Agriculture & Farmland Protection Plan team is confident that the display of data layers and analysis of available data is a benefit to the planning process and to our communities. The Syracuse-Onondaga County Planning Agency, with the Agriculture & Farmland Protection Board, will continue to enhance the data and analysis of this mapping as new data and methods become available. Data is to be used as planning-level data and subject to refinement and/or corrections.

MUNICIPAL FARM-FRIENDLY TOOLBOX

In New York State, land use is controlled primarily at a local municipal level, and thus, towns/villages/cities have a critical role in effective protection of agricultural lands. Through partnerships with local farmers, municipal governments can work to plan for the long-term viability of their agricultural sectors and create local land use regulations that are up to date, farm-friendly, and meet the needs of the greater community. As a resource to municipalities to keep pace with the evolving needs of the agricultural community, the planning team created what has been deemed a ***Farm-Friendly Toolbox***, as part of the Plan development.

The process began with a survey of municipal representatives regarding their interests, needs and challenges in supporting and regulating agricultural uses. The team then solicited the volunteer participation by 4 a small number of municipalities – thanks to the Towns of Onondaga, Manlius, Cicero and LaFayette - to open their local plans and regulations and undertake an interview, as a way to understand what elements might best fill a "toolbox".

In addition to individual guidance in the form of a memo provided back to municipalities, the team developed the Toolbox guidance. There are several tools available to assist communities that desire to protect the agricultural land resources and enhance the long-term viability of agriculture. Tools are organized into planning level tools (e.g., comprehensive plans, open space plans, and economic development plans), regulatory tools (e.g., Right-to-Farm laws, zoning regulations, farm friendly solar ordinances, and subdivision and other land use tools), and farmland preservation tools (e.g., purchase of development rights and lease of development rights).

The Toolbox can be found in the **Appendices** and is posted on the County's agriculture.ongov.net website, and includes a recorded webinar held for municipal representatives as part of the project.

Well-crafted regulatory tools protect the health and welfare of the community and provide for efficient allocation of land and other municipal resources while providing the flexibility needed to prosper economically in an evolving global economy. Municipalities are encouraged to use this toolbox to self-assess the ways and the degree to which their own local land use tools support farmland.

LOOKING FORWARD

The following chapters outline the planning process, community engagement, profiles the agricultural community, identifies the needs and challenges facing agriculture today, and presents a vision and

framework for advancing and supporting the agricultural community to the extent practicable over the course of the next generation.

The plan includes data and tools for use by the farming community, municipal and agency partners and sets the stage for continued planning, partnerships and leadership by the Agriculture & Farmland Protection Board, Onondaga County government, and numerous agricultural community partners. The Agriculture & Farmland Protection Board thanks those involved and encourages exploration of the following Onondaga County Agriculture & Farmland Protection Plan. Additional resources can also be found and will continue to be posted at agriculture.ongov.net.

PLANNING PROCESS AND COMMUNITY ENGAGEMENT

STATUTORY AUTHORITY AND PLAN ADOPTION

By the provisions of Article 25AA of the NYS Agriculture and Markets Law, the Onondaga County Agriculture and Farmland Protection Board (AFPB) was established by the County Legislature in 1971. The AFPB is charged by statute with a variety of duties intended to protect farmland and agricultural activity in the County. Among these duties is the development, review, and monitoring of an Agriculture and Farmland Protection Plan for Onondaga County.

Per Section 390.3 of NYS Agriculture and Markets Law regarding County Agriculture & Farmland Protection Plans, plans are to include:

- A statement of the county's goal(s) with respect to agriculture and farmland protection;
- An identification and analysis of the general location of any lands or areas that are proposed to be protected;
- Strategies to be used by the county to promote the maintenance of land in active agricultural use; and
- Identification of other county and municipal programs which may be show to complement or conflict with the plan.

Upon completion, the Board reviews, approves and formally submits the plan to the Onondaga County Legislature for public hearing and adoption. The County Legislature approved plan is then forwarded to the New York State Department of Agriculture & Markets for final approval**.**

PLANNING TEAM AND OVERSIGHT COMMITTEE

This Agriculture and Farmland Protection Plan has been created at the request of and with oversight by the Onondaga County Agriculture & Farmland Protection Board. The planning project was managed by the Syracuse-Onondaga County Planning Agency (SOCPA) on behalf of the Board, who often provides staff services and support to the AFPB.

Grant funding for the development of this plan was provided by the NYS Department of Agriculture and Markets (Farmland Protection Planning Grants Program), and through a local grant from the Onondaga County Agricultural Council. In kind services were also provided as match to grant funds, by members of the planning team, comprised of staff of SOCPA, Cornell Cooperative Extension of Onondaga County, and the Onondaga County Soil & Water Conservation District. A local planning consulting firm, EDR, along with subconsultants George Frantz, AICP, and Karen Karp & Associates, were hired by SOCPA to prepare the plan documents and facilitate the planning process.

The Onondaga County Agriculture and Farmland Protection Board (AFPB) served as the formal oversight committee for the plan, providing invaluable insight into the agricultural conditions, needs and challenges. The Board met several times throughout the development of the plan to provide guidance and feedback on the planning process. The Board is composed of farmers, agri-business representatives, and local representatives from the Onondaga County Legislature, Onondaga County Soil and Water Conservation District, Cornell Cooperative Extension, Syracuse-Onondaga County Planning Agency, Onondaga County Real Property Services, and natural resource protection.

PLANNING PROCESS

The planning process began in earnest in the Spring of 2021, and culminated in the Summer of 2022, comprising a one-year planning process.

MUNICIPAL ENGAGEMENT

initial steps of the community engagement were first conducted with municipalities, due to the project commencing during the agricultural growing season. A municipal survey was distributed, and a number of towns participated in the Farm-Friendly Toolbox creation process, and a webinar was help for municipal planning and zoning officials for the release of the Toolbox.

POP-UP EVENTS

As time progressed and farmers became more available, and Covid-19 concerns subsided, the project team held in-person pop-up events at various Fall events including the Empire Farm Days, On Farm Fest, the Regional Farmers Market and the LaFayette Apple Festival, to spread awareness about the project and solicit input from the public and members of the farming community.

STAKEHOLDER ENGAGEMENT

Specific stakeholder groups were invited to participate in a targeted series of focus groups and individual interviews over the Fall and Winter months. Meetings were targeted to various topic areas including economic development, agritourism, food systems, natural resources, and farmland protection. These stakeholder gatherings provided an opportunity for dialogue among attendees regarding the challenges and opportunities facing Onondaga County agriculture and farmland, and to establish important context and perspective around future alternatives. Several individual meetings and discussions were also held with select stakeholders throughout the planning process

PUBLIC MEETINGS

Due to concerns related to public gatherings related to the Covid-19 pandemic, an early public meeting was forgone in favor of smaller scale in-person engagement opportunities, and use of surveys, webinars, and social media described above. The team was fortunate to be able to conduct a full-scale in-person public meeting to present preliminary plan recommendations and strategies in the Spring of 2022. As part of the County Legislature's review of the final plan, and formal public hearing is also to be held.

PLAN ONONDAGA

Also of note, Onondaga County is currently in the process of updating is countywide comprehensive plan. **Plan On**ondaga is focused on five themes as guiding principles in the development of the plan, one of which is Agriculture. As a critical component of this plan, engagement activities for Plan On project throughout the course of the past year may also be considered relevant outreach. Of note, the Agriculture & Farmland Protection Plan was presented at a recent seminar for the Onondaga County Planning Federation Conference held in March 2022. Local Planning and Zoning Board representatives that participated in the seminar engaged in lively discussion about agricultural issues and initiatives that they saw occurring in their communities.

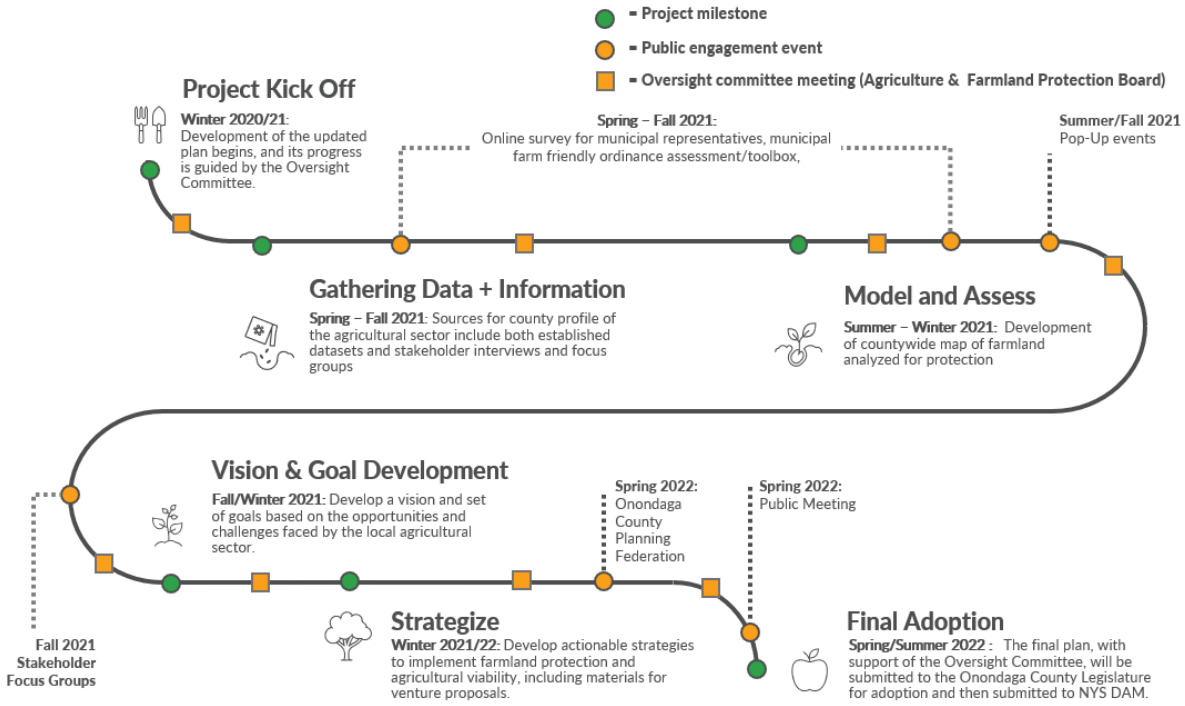
WEBSITE AND SOCIAL MEDIA

In addition to in-person engagement, the planning team created project website (agriculture.ongov.net) at the onset of the project, where updates, plan sections, background, and materials were posted throughout the planning project. The website also offered an online sign-up for an email list to stay informed about Onondaga County agriculture programs and events. Social media was also used to spread the word of events and to direct traffic to the website. Municipalities and partners organizations shared social media postings and posted flyers about the plan and related events.

PROJECT TIMELINE

The timeline below is a graphic representation of the Community Engagement Plan (CEP) prepared for the project, to ensure an inclusive, and robust community engagement process. More details about the community engagement can be found in the full plan document and appendices.

Figure 1. Planning Process and Project Timeline



AGRICULTURAL COMMUNITY PROFILE

This section identifies existing conditions and trends facing the farming community, including those related to demographics, the natural environment, Onondaga County's food system, land use, and land-use change, related planning efforts, policies, and programs, and climate change.

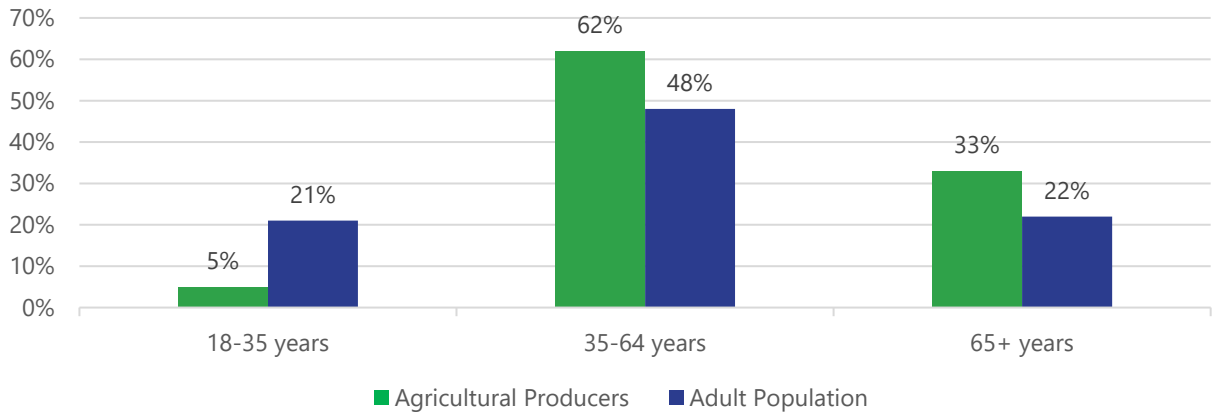
DEMOGRAPHIC OVERVIEW

Farmers are a small but fundamental portion of Onondaga County's population. According to the 2017 USDA Census of Agriculture, Onondaga County has a total of 1,068 agricultural producers or people involved in making decisions for a farm. Of these producers, USDA estimates there are 533 producers in the County whose primary occupation is farming (USDA NASS, 2017a). These producers operate 623 farming operations, averaging 258 acres per operation (USDA NASS, 2017a). See the Economic Profile for more information on operations. This section compares the age, gender, and race/ethnicity of agricultural producers against the general population in Onondaga County.

AGE

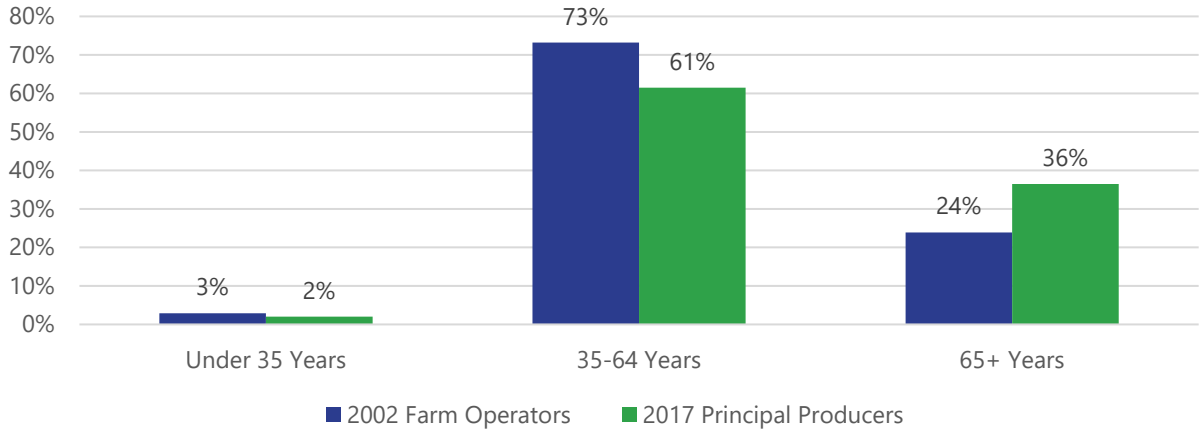
Agricultural producers in Onondaga County tend to be older than the adult population of Onondaga County. Nearly one-third (32.9%) of agricultural producers are 65 years or older, which is higher than the adult population of Onondaga County, where 22% of the population is 65 years or older (USDA NASS, 2017a; US Census, 2019). Additionally, the low percentage of agricultural producers under the age of 35 indicates a potential future shortage in the agricultural workforce as older producers age out of the workforce. This raises concerns for farm succession and the future leadership of farms; an issue facing farmers in Onondaga County that follows statewide, national, and even international trends (USDA Census of Agriculture 2017a; Henriques 2019). Young people are increasingly seeking work in urban areas and non-agricultural sectors. Without a new generation to take on the job, food production becomes uncertain.

Figure 2. Age distribution of agricultural producers and adult population in Onondaga County



Source: USDA NASS, 2017a and ACS 1-Year Estimates (U.S. Census Bureau, 2019). Table S0101.Note: For comparison, US Census data represents ages 18-35. The 2017 Census of Agriculture defines a producer as someone involved in making decisions for the farm, and young producers as those ages 35 or younger. It is assumed that these young producers are primarily adults over the age of 18.

Figure 3. Age distribution change of operators & principal producers in Onondaga County



Source: USDA NASS, Agricultural Census from 2002 and 2017. Note the change in terminology between 2002 and 2017; these two terms are comparing the same demographic groups. Before 2017, operator was used to refer to the person who runs the farm. The 2017 Agricultural Census expanded the metric of farmers (i.e., "operators") to become "producers," which included all those involved in farm decision making. This could include up to 4 producers per operation). Principal producers, however, are the primary person involved in decision making. Therefore, they are comparable to prior Ag Census metrics.

Following national trends, the average age of operators continues to increase as fewer young people enter the occupation. Over recent years, there are larger numbers of older operators, while the share of young

farmers in the agricultural workforce has remained relatively unchanged since 2002 when it was already a very small portion of the farming community (see Figure 3). Young producers are defined as 35 years or younger by the US Department of Agriculture. Young producers are less likely to be operators/principal producers; farms with young producers represent just 8% of all farms in the County and less than half of those farms have a young producer as the principal producer. This is consistent with state and national trends, which have 11.5% and 9% of their producer population being under the age of 35 as illustrated in Figure 4.

Figure 4. Farms with young producers

	Producers	Farms	Land in farms (acres)
Onondaga County	1,068	623	160,717
All farms with a young producer	63	50	27,409
Farms with a young principal producer	20	18	12,329
New York State	58,870	33,438	6,866,171
All farms with a young producer	6,718	4,853	1,202,099
Farms with a young principal producer	3,925	3,307	627,350
United States	3,399,834	2,042,220	900,217,576
All farms with a young producer	321,261	240,121	114,588,706
Farms with a young principal producer	208,462	174,944	25,844,296

Source: 2017 USDA NASS Census of Agriculture Young Producers in US and NYS, 2017 USDA NASS Census of Agriculture County Profile: Onondaga County. Notes: Per the USDA NASS Census of Agriculture, a farm is any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year.

NEW AND BEGINNING FARMERS

New and beginning farmers are those who have spent 10 years or less on any farm. Typically, new and beginning farmers are younger than the average farmer and, like young producers, have smaller farm sizes with lower values of production (USDA NASS2019). However, it is important to note that they are not exclusively young people and may include people of any age who decide to enter into farming. The average age nationally for new and beginning farmers is 46 years old (USDA NASS, 2017a).

See Figure 5 for an overview of how Onondaga County compares to New York State and the United States when it comes to new and beginning farmers. The percentage of new and beginning farmers in Onondaga County (24%) is slightly lower than in New York State (26%) and the US as a whole (27%). Farms with new and beginning producers represent just one-quarter of all farms in Onondaga County. The average size of a farm with new and beginning producers is 120 acres smaller than the national average of 441 acres (Abbott, 2019).

Figure 5. Farms with new and beginning producers

	Producers	Farms	Land in farms (acres)
Onondaga County	1,068	623	160,717
All Farms with a new and beginning producer	252	175	43,240
Farms with a new and beginning principal producer	162	129	19,525
New York State	58,870	33,438	6,866,171
All Farms with a new and beginning producer	15,602	10,089	1,605,239
Farms with a new and beginning principal producer	10,970	8,406	1,080,501
United States	3,399,834	2,042,220	900,217,576
All Farms with a new and beginning producer	908,274	597,337	193,405,614
Farms with a new and beginning principal producer	674,940	516,235	140,687,442

Sources: 2017 USDA NASS Census of Agriculture New and Beginning Producers in US and NYS, 2017 USDA NASS Census of Agriculture County Profile: Onondaga County.

GENDER

In Onondaga County, like across the US, females are underrepresented as agricultural producers, with just over one third (36%) of all producers being female (USDA NASS 2017b). These county rates mirror the national rates of female producers. The United States had 1.2 million female producers in 2017, which also accounted for 36% of the total producers. Female producers tend to be slightly younger on average than male producers (57.1 years versus 57.7 years in 2017) and are more likely to be new and beginning farmers (USDA NASS, 2017b).

Figure 6. Farms with female producers

	Farms	Number of Producers	Land in farms (acres)
Onondaga County	623	1,068	160,717
All farms with a female producer	357	395	51,254
Farms with a female principal producer	247	258	23,477
United States	2,042,220	3,399,834	900,217,576
All farms with a female producer	1,139,675	1,227,461	387,892,663
Farms with a female principal producer	766,474	798,500	238,157,861

Source: 2017 USDA NASS Census of Agriculture Female Producers in US and Onondaga County. Note: The 2017 Census of Agriculture revised the demographic data collected to better capture the contributions of all persons involved in agricultural production. In response to detailed questions about farm decision making, more farms reported multiple individuals involved in farm operations. As a result of the new approach to counting producers, the total number of U.S. female producers increased by 27%. The number of farms with female producers increased by 23%. Caution should be used when working with comparisons until more consistently measured data is released (Pilgeram, et al., 2020).

RACE/ETHNICITY

The majority of farmworkers in Onondaga County are people of color, while the majority of farm owners are white. Specifically, approximately 80% of farmworkers in Onondaga County are Hispanic or Caribbean migrant workers, as reflected anecdotally by representatives of the Agricultural and Farmland Protection Board. Meanwhile, 99.8% of Onondaga County's agricultural producers are white (USDA NASS 2017). As farmers age out of there farming operations there should be opportunities for current farmworkers to take over the operations. The current lack of racial and ethnic diversity in farming is likely due to the historic and continuing tradition of farms staying within families from generations prior, starting from when Onondaga County property owners were not as diverse as they are today.

NATURAL RESOURCES

Abundant natural resources are the foundation for productive agriculture in Onondaga County. Plentiful precipitation, surface water, and groundwaters complement the County's excellent soil base. Nearby Lake Ontario and the Finger Lakes provide a buffer to seasonal temperature extremes and extend the growing season for local farmers. Despite the abundance of natural resources in the area, there are strains on natural resources from both agriculture as well as other types of development. Strains on natural resources can in turn harm agricultural operations. For example, decreasing prime soil availability or declines in pollinator populations weaken overall agricultural productivity. Fortunately, there are several avenues to practice agriculture and promote development in a way that is balanced with the protection of natural resources. In fact, many farms in the region operate in this manner.

IMPORTANT FARMLAND SOILS

Soil characteristics directly influence the distribution of farmland across the County's landscape. Map 1 shows the distribution of important soils, including prime farmland, within Onondaga County. The County has many soil types considered to be agriculturally important, including limestone soils on glacial till over undulating to rolling terrain, limestone soils on glacial lake sediments over level to undulating terrain in the northernmost regions, alluvial soils in valley bottoms through much of the southern and central regions, and some deep acid soils on glacial till over hilly terrain in the south-central border region.

Map 1. Important Farmland Soils in Onondaga County

Source: 2021 Soil Survey Geographic (SSURGO) Database, USDA Natural Resources Conservation Service

Young, acidic soils are found throughout much of the County. Prime soils are generally deeper, well-drained (but not dry) and feature a combination of biophysical and chemical properties (e.g., acidity, alkalinity, sodium content, permeability) that are most conducive to the production of food, feed, forage, and fiber. Many upland soils are considered "soils of statewide importance", indicating that they can be farmed economically with proper care and management. However, these soils are generally shallower and more prone to drying than their counterparts (i.e., prime soils); meaning that they are riskier and more expensive for farmers to work with and profit from when compared to prime farmland and unique farmland.

Nearly seventy percent of the County's total land area has been classified by the USDA Soil Conservation Service as Important Farmland Soil. Three farmland categories are included in this classification. They are Prime Farmland, Farmland of Statewide Importance, and Prime Farmland if Drained. Maps contained in the Analysis of Important Farmland show the countywide distribution of Important Farmland Soils. The countywide categorical soil breakdown is outlined in Figure 7.

- **Prime soils:** These soils are generally deeper, well-drained (but not dry) and feature a combination of biophysical and chemical properties (e.g., acidity, alkalinity, sodium content, permeability) that are most conducive to the production of food, feed, forage, and fiber. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops. In general, the characteristics of prime farmland soils include adequate moisture and drainage, adequate soil depth and texture, are not susceptible to erosion or flooding, and sustain high yield production with minimal fertilizer and energy requirements.
- **Farmland of Statewide Importance:** Many upland soils are considered "soils of statewide importance", indicating that they can be farmed economically with proper care and management. These soils produce fair to good yields of crops when treated and managed according to sound agricultural practices. These farmlands are important to the state to produce food, feed, fiber, forage, and oilseed crops. Under favorable conditions, these lands can produce yields as high as those of prime farmland. However, these soils are generally shallower and more prone to drying than their counterparts (i.e., prime soils); meaning that they are riskier and more expensive for farmers to work with and profit from when compared to prime farmland and unique farmland
- **Prime Farmland if Drained:** These soils have the same characteristics as prime farmland, apart from the depth to water table. This can result in limitations to their use unless properly drained.

Figure 7. Important Farmland Soil Types

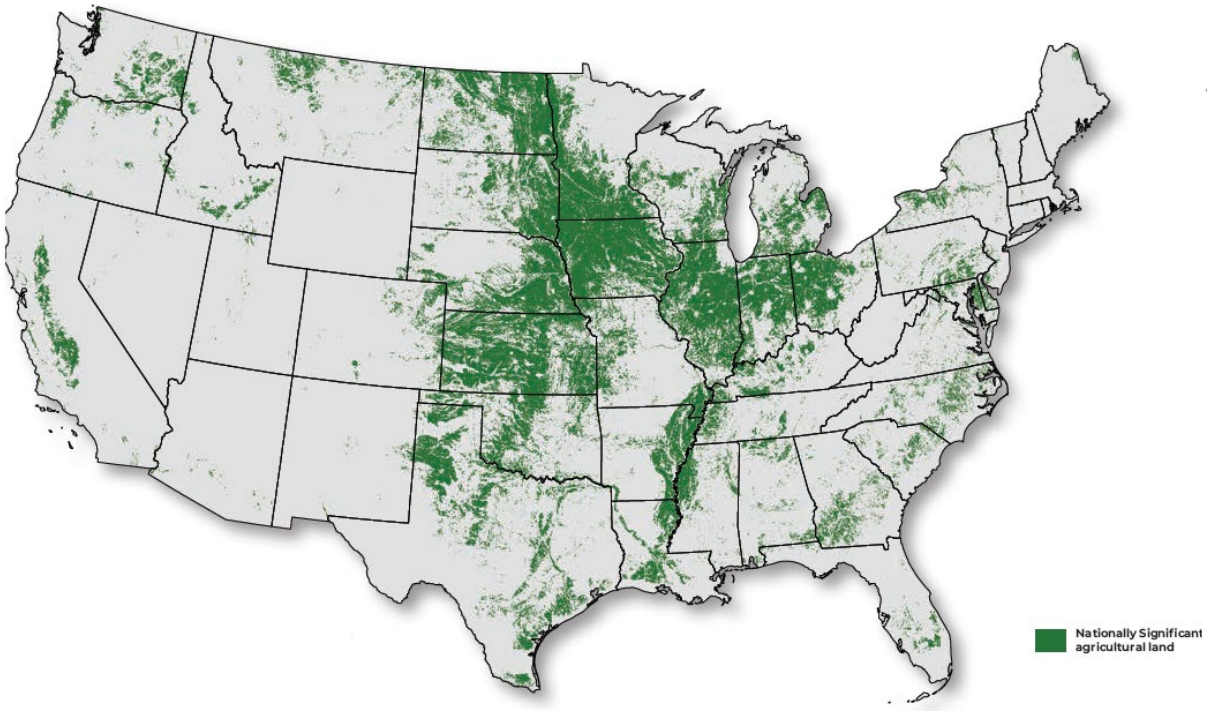
Important Farmland Soil Types	% of Onondaga County Land Area	
Onondaga County	**515,161**	**100%**
Prime Farmland	186,529	36%
Farmland of Statewide Importance	106,412	21%
Prime Farmland if Drained	61,664	12%
Total Important Soils	**354,606**	**69%**

Source: NRCS SSURGO Soil Data, 2020

Protection of prime soils is critical due to the recent increase in development demand from commercial-scale solar as well as the continued pressure from other residential and commercial development. Once

development occurs on areas of farmed prime soil, it is very difficult to restore the soil to its original state. The United States is home to 10% of the planet's arable soils, more than any other country on Earth (American Farmland Trust, 2020a). Despite this relative wealth, only 18% of the continental US is Nationally Significant farmland, meaning that it is in the top 39% of the most productive, versatile, and resilient farmland in the US (American Farmland Trust, 2020a). Onondaga County is fortunate to have some of these rich soil types (see Figure 8). It is vitally important to protect land that is best suited for intensive food and crop production as global demands for food production are colliding with the environmental impacts of eroding soils, declining aquifers, and extreme weather events (American Farmland Trust, 2020a). Large-scale solar development is also competing with these lands, both locally in Onondaga County, and across the nation.

Figure 8. Nationally Significant Agricultural Land



Source: American Farmland Trust, 2020a (used with permission). Note: Nationally Significant agricultural land, which has excellent productivity, versatility, and resiliency, is best suited to intensive food and other crop production, with few environmental limitations.

WATERSHEDS

Onondaga County is composed of six main watersheds: Onondaga Lake, Oneida Lake/River, Tioughnioga River, Seneca River, Skaneateles Lake, and Otisco Lake. Of these watersheds, Skaneateles Lake and Otisco Lake are used as a public drinking water supply. More detailed information about the specific locations of these watersheds is found in the Analysis of Important Farmland chapter. These watersheds include many important natural resources that provide ecological services for both the agricultural and non-agricultural communities (e.g., private residences and recreationalists), including irrigation water, drinking water,

recreational opportunities, and scenic vistas. It is important to acknowledge the interconnectedness between these ecological services and the quality of the natural resources.

One of the critical ecological services provided by these watersheds is clean potable water sources. Agriculture is the predominant land use in the Onondaga County drinking water source watersheds. As such, agriculture tends to come under suspicion when there are water quality concerns (e.g., harmful algal blooms or HABs). However, agriculture is just one of the several factors that contribute to water quality, and other activities such as septic systems and eroding streambanks in the watershed need to be considered. It is worth noting that HABs also occur in lakes with no agriculture (e.g., Lake Placid in the Adirondacks), as well as forested lakes with no development along the lakeshore (Hemlock Lake, a small Finger Lake surrounded by state forest).

Onondaga County agriculture, like in many counties throughout the state, needs to keep a constant focus on the implementation of best practices to protect water quality in these irreplaceable watersheds. The removal in hedgerows, for example, without the use of BMPs (e.g., water and sediment control basins, diversion waterways) can contribute to soil erosion and water quality issues. As new farming techniques and programs become available, it is important they are assessed for their suitability to protect and enhance the watershed health of specific waterbodies.

WETLANDS

The presence of wetland areas within agricultural parcels benefits countywide resiliency due to the increased absorption of runoff, maintenance and protection of water quality, and diminished soil erosion in flat wetland areas. Preserving wetlands also can provide advantages for farms. While wetlands themselves are not used for agricultural production, they can greatly benefit farmers by improving water quality for livestock and irrigation and by providing insect-eating bird and pollinator habitats that benefit cropland.

Wetlands can also provide important supplemental income for farmers through wetland protection incentive programs, like the Conservation Reserve Program (CRP) through the United States Department of Agriculture National Resources Conservation Service (USDA NRCS), one of the largest private-land conservation programs in the United States. More detailed information about the specific locations of wetlands and their occurrence on farmland is found in the Farmland Analysis section.

FLOODPLAINS

Floodplains are land areas susceptible to being inundated by floodwaters from any sourced. The use of floodplains in agriculture allows the land to continue providing beneficial functions to society, including diminished flood velocities, runoff filtration, and habitat protection for diverse plant and animal species. Floodplains also help to "recharge" productive soils in the County; some of the productive lands have benefited from periodic flooding spanning millennia.

These productive areas occur in or adjacent to floodplains and include places like the Seneca River corridor in Lysander and Van Buren, in the Tully Valley, and along Butternut Creek in Fabius and LaFayette. More detailed information about the specific locations of floodplains, as well as the locations of productive soils is found in the Farmland Analysis. section

STEEP SLOPES

Steep slopes are areas with significant topographic changes of a 15% gradient or more. They occur throughout the southern half of Onondaga County, forming majestic vistas such as Morgan Hill in the Town

of Fabius, Bare Mountain and Mason Hill in the Town of LaFayette, Bennett Hollow in the Towns of Tully and Spafford, and the Onondaga Creek/Ninemile Creek corridors in the towns of Marcellus and Onondaga. Proper management of steeply sloped areas can protect against runoff pollution, soil loss/sedimentation of waterways, and other erosion issues that decrease resiliency. Steep slopes can also be important in defining scenic landscapes, and thereby important for agritourism development as well. Detailed information about the specific locations of steep slopes is found in the Farmland Analysis section. Additionally, there are BMPs for the protection of agricultural soils on steep slope. More information about that is available through the Soil and Water Conservation District.

ORGANIC FARMING

Organic farming is a growing sector of agriculture, with numerous benefits, particularly in relation to natural resource protection. In addition to the potential for increased profitability, natural resource benefits of organic farming can include reduced use of pesticides and herbicides, higher biodiversity and soil quality, and lower rates of antibiotic-resistant infections in livestock and poultry. A global meta-analysis including 60 crops published in the Proceedings of the National Academy of Sciences (PNAS) in 2020 found that organic farms had 18% lower yields than conventional sites; however, organic sites had 50% greater profits and 34% greater biodiversity than conventional sites (Smith et al., 2020). Another meta-analysis from 2015 found that organic agriculture was significantly more profitable, 22-35%, than conventional agriculture, even with the lower yields of organic agriculture (Crowder and Reganold, 2015). Organic farming may also reduce antibiotic resistance, which are used on conventional farms in livestock and poultry to treat disease, prevent and manage disease events, and/or promote animal growth. (Sapkota et al, 2011).

Organic farming is growing as the demand for organic food increases. The 2019 Organic Survey, a 2017 Census of Agriculture special study, showed that the number of certified organic farms grew in the U.S. by 17% between 2016 and 1019. According to the survey, there were 10,903 certified organic farms in 2008, and this number increased to 16,585 farms in 2019 (USDA, Organic Survey Data Release, 2020).

New York was the third highest state on the list of organic farms in 2019, with 1,321 farms, and the fourth highest state in organic land with 323,081 acres. The market value of certified organic products sold grew 31% in just 3 years (2016-2019), and New York was seventh on the list in terms of organic products sold, with $298 million in organic sales in 2019. (USDA, Organic Survey Data Release, 2020). With organic milk in high demand with annual sales of over $1.5 billion, and over half of annual processing sales in Onondaga County in the dairy industry, this may be an opportunity for local dairy farms that may be considering going organic.

While the benefits of organic farming can be significant, the costs of transitioning to organic farming, however, can be challenging and future markets unpredictable. Transitioning to organic requires a three-year window when organic practices must be followed but farms are not able to realize the higher profitability of selling as a certified organic farm. Costs include more expensive organic seeds, higher labor costs, and certification costs. Some farmers on smaller family farms choose to use organic practices without going through the process and associated costs of becoming certified.

IMPACTS OF CLIMATE CHANGE

Climate change is impacting New York State's agricultural sector. With increased temperatures and fluctuations in extreme wet and dry seasons and events, agriculture across the state faces a range of vulnerabilities (see Figure 9).

Figure 9. Impacts of climate change to agriculture in New York State

Climate Impact	Anticipated Vulnerabilities to Agriculture in New York State
Temperature Changes	• Apple trees may not receive the number of winter chilling hours required to produce fruit • Maple sap flow may shift to earlier in the year, even starting in December • Increasing heat stress days (above 90°F) may stress livestock and some crops • More pest pressure from insects, diseases, and weeds may harm crops and cause farms to increase pesticide use • New crops could become more viable, but crop transitions may be costly
Precipitation Changes	• Increased river flooding, due to increased precipitation, is likely to cause soil erosion, soil loss, and crop damage • Wetter springs may delay planting for crops and reduce yields • Drier summers and intermittent droughts may strain irrigation water supplies, stress crops, and delay harvests
Extreme Weather	• Extreme storms may cause catastrophic damage to crop and fields, farm buildings, equipment, and drainage systems • Floodwaters may spread invasive plants • Heavy rainfall is likely to wash away fertile soils and damage water resources

Source: New York Climate Change Science Clearinghouse, 2021

There are several on-farm adaptation strategies that local farmers may consider as climate impacts are felt locally, including livestock diet and feeding management, use of fans, sprinklers, and other cooling systems for dairy barns, shifting planting dates, diversification of crop varieties, and freeze and frost protection for perennial fruit crops. Other support tools for farm operations to implement climate adaptation and resiliency strategies include:

- Locally available design and planning assistance
- Disaster-risk management and insurance
- Financial assistance
- Policy and regulatory decisions

Although climate change is a significant concern for agriculture, it may also bring new opportunities for agriculture, including new crop varieties and new markets to producer renewable energy options, such as biomass fuel crops or other forms of agriculturally friendly renewable energy, like small scale solar or wind for on-farm use (New York Climate Change Science Clearinghouse, 2021). There are several types of biomass energy for agricultural operations to consider, including agricultural crop or animal wastes (such as dairy

manure), dedicated energy crops and trees, and other types of crops. One example of dedicated energy crops is willow.[1]

Because agriculture and food production are responsible for approximately a third of global greenhouse gas emissions, the agricultural sector is critically important in addressing climate change (United Nations Food and Agriculture Organization, 2021). It is notable, however, that this is a share that is gradually declining - it was 44 percent in 1990 - even as food systems emissions kept increasing in absolute amounts. There are several agricultural technologies that have been utilized locally and across the world that are known to reduce the current output of greenhouse gas emissions, while increasing efficiency of farming operations. These strategies to further reduce greenhouse gas emissions caused by agriculture include:

- Precision farming (e.g., digital technology to apply lime and nutrients fertilizer more efficiently)
- No-till farming
- Renewable energy in place of fossil fuels for on-farm activities, including an array of options, ranging from small-scale solar and wind, methane biodigesters, and geothermal heat pumps that offset the costs of heating and cooling.
- Pairing cattle grazing and crop rotations to reduce reliance on synthetic nitrogen fertilizers (Northrup et al., 2021).
- There have also been significant developments in technology to use single-cell proteins as a more climate-friendly alternative to meat (Northrup et al., 2021).

Climate change will bring with it increases and changes in precipitation patterns, which have already been noticeable by local farm operators. Meanwhile, technology or other strategies used to mitigate or adapt to climate impacts (for instance renewable energy development or precision technologies) can provide new opportunities for maximizing agricultural viability. Although it does require investment and change, appropriate climate adaption and mitigation actions have the potential to benefit future agriculture and its resiliency across Onondaga County. Land Use and Land Use Change

Given its rich agricultural soils, there is a long history of agriculture as a land use in Onondaga County. Agriculture includes a variety of markets, ranging from orchards, cornfields, open fields, dairy operations, fruit or vegetable crops, or other specialty crops. Agriculture provides most of the scenic landscapes throughout the County, as viewed along rural scenic corridors like Route 20 or 80. Anywhere from 20-30% of the County in recent years has been cultivated or has been used for cropland, grassland, or other types of agricultural activities (USDA NASS CropScape Data Layer; USDA NASS Census of Agriculture, 2017a).

There are three primary ways to categorize, understand, and map farmland and farmland uses. These categorizations can help to understand the changes that are occurring in the agricultural community.

1. The first is through pixel-based satellite imagery, which can be collected for all areas across the US to compare between states in a consistent manner (USDA NASS CropScape Data Layer, 2021b).
2. The second is through the parcel-based New York State Real Property Classification system, which uses property class codes assigned to individual parcels to evaluate specific uses of agricultural lands based on reported property assessments (New York State Department of Taxation and Finance, 2022).

[1] SUNY ESF and Cornell University have been working for two decades to facilitate the commercialization of willow biomass (see www.esf.edu/willow for a financial analysis tool to see its potential viability for specific areas). More information about biomass and agriculture in New York State are found at https://www.nyserda.ny.gov/Researchers-and-Policymakers/Biomass.

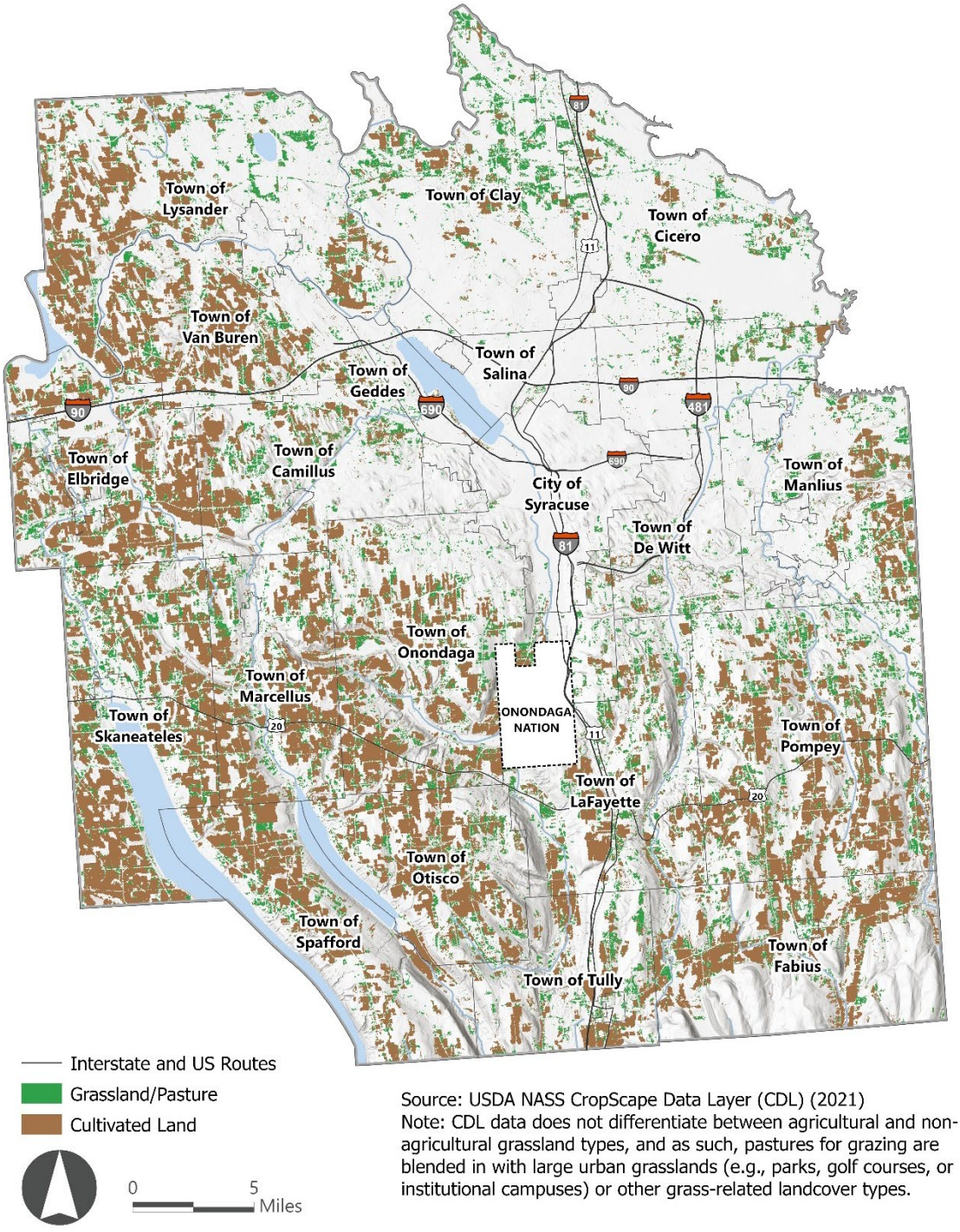
3. The third source is operation-specific information that is collected through the USDA NASS Census of Agriculture administered to individual farm operators (USDA NASS, 2022). Precise acreage estimates vary depending on the specific sources.

Map 2 demonstrates agricultural land cover using satellite imagery. A large portion of the total land in Onondaga County has agricultural land cover, meaning that it has been cultivated or used for grassland or pasture at least once in the past five years (USDA NASS CropScape Data Layer, 2021a).

Map 3 shows the variety of land uses related to agriculture throughout Onondaga County by parcel data. Agricultural land uses occur in properties throughout Onondaga County in nearly all towns (none in the Town of Geddes) surrounding the City of Syracuse and even some of the villages (e.g., Village of Tully). Farmland is primarily concentrated in the western and southern portion of the County, although there is a diverse array of smaller agricultural properties occurring in the northern reaches of Clay and Cicero, as well as the eastern portion of Manlius.

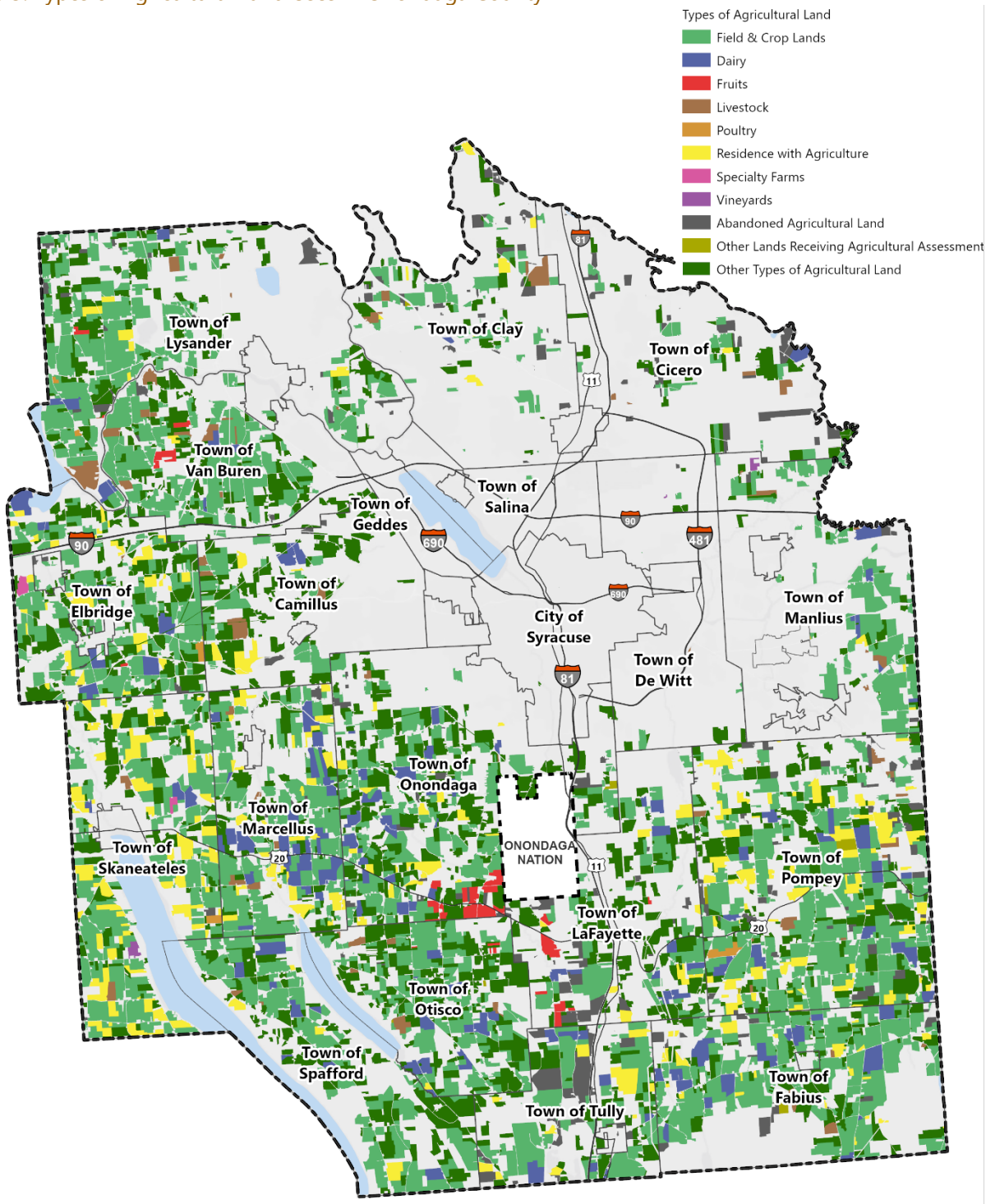
Dairy is a predominant agricultural land use across the County, primarily occurring throughout the southern and western portions of the County. Agricultural activities associated with dairy farming include fields used for grazing and cropland for growing feed (e.g., corn and soy). There are also nodes of other crops, including vegetable and berries in the northern part of the County and apples in the south-central portion of the County. Notably, there are also areas used for urban agriculture not shown on the map, including community gardens and the Brady Farm in Syracuse. For more discussion on the types of agricultural operations in the County, see the Economic Profile).

Map 2: Agricultural land cover in Onondaga County



Source: USDA NASS CropScape Data Layer (CDL) (2021)
Note: CDL data does not differentiate between agricultural and non-agricultural grassland types, and as such, pastures for grazing are blended in with large urban grasslands (e.g., parks, golf courses, or institutional campuses) or other grass-related landcover types.

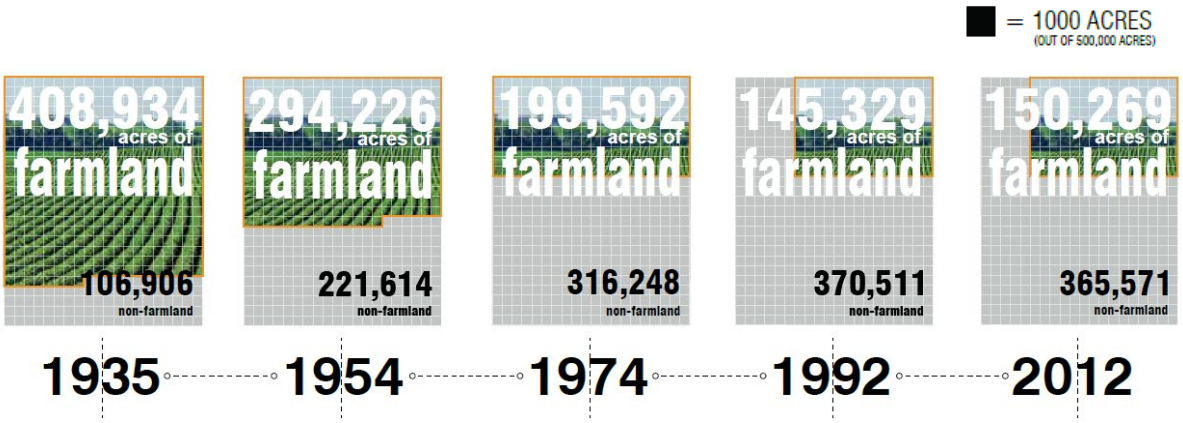
Map 3: Types of Agricultural Land Uses in Onondaga County



Source: Onondaga County Parcels (2021)
Note: "Other" refers to agricultural parcels identified from Onondaga County GIS Department.

Onondaga County, like many areas in New York State and across the U.S., has experienced an overall decline in the land used for farming as well as the number of active farms over the past century, particularly after the post-WWII population boom and the popularity of single-family housing in suburban communities. Currently, mirroring what is occurring across the nation, the proportion of land in agriculture is around one-third of the total land in the County, a steep decline from four-fifths in 1935 (Food Plan CNY, 2021).

Figure 10. Farmland changes in Onondaga County since 1935



Sources: USDA NASS Agricultural Census; SOCPA; Food Plan CNY. Note: Graphic adapted from Food Plan CNY. Percentage of farmland loss based on acres of farmland from the USDA NASS Census of Agriculture, 1935 and 2012. These figures were divided by the total of 515,840 acres in Onondaga County to estimate percentage of agricultural land use in the County.

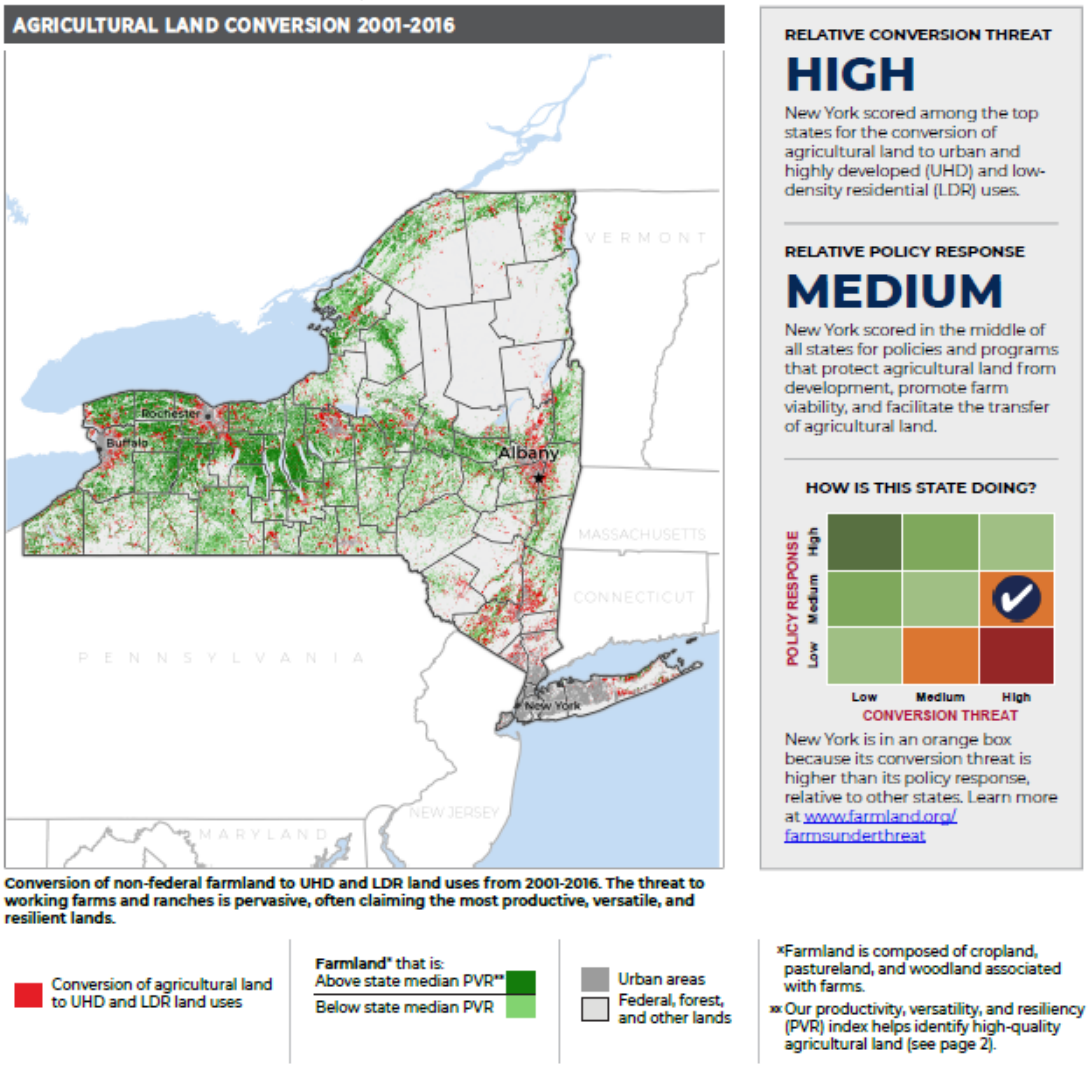
In recent years, the County has experienced a slight increase in farmland, up slightly from the low of 29% farmland in 1992 to approximately 30% in 2017. During this plateau the number of farm operations has declined, indicating a trend toward larger farms via consolidation. Although the number of farming operations have been decreasing, there has been an increase in the total acreage of land operated since 2002 (+4,433 acres according to the USDA Census of Agriculture of 2002 and 2017). The increase in the total acreage of active agricultural land can be attributed to consolidation whereby the previously inactive agricultural land is reactivated.

From another perspective, from 2002 to 2012, there was a 50% loss in farm sales for medium sized farms (Food Plan CNY, 2021) while larger farms had either the same or experienced an increase in sales (+24% according to the USDA Census of Agriculture of 2002 and 2017). Medium sized farms (those with $100K through $500K in sales) face increasing pressures to compete with larger commodity production operations (Food Plan CNY, 2021). For more discussion about how the number of larger farms has increased in number, see the Economic Profile.

Despite the recent increase of active agricultural land in Onondaga County through consolidation, there has also been a loss of farmland converted to commercial and residential development. Once developed to these other uses, farmland is essentially impossible to convert back to its original state. In recent years in Onondaga County, this has primarily occurred in suburban communities like Cicero, Clay, and Lysander (see Figure 10). The American Farmland Trust mapped agricultural land conversion throughout the US between 2002 and 2016 (see Figure 11). The spatial analysis identified the extent, diversity, and quality of each state's

agricultural land—and where this land has been converted to both urban and highly developed (UHD) and low-density residential (LDR) land uses. The report also evaluated state policy responses and scored the states based on their relative conversion threat.

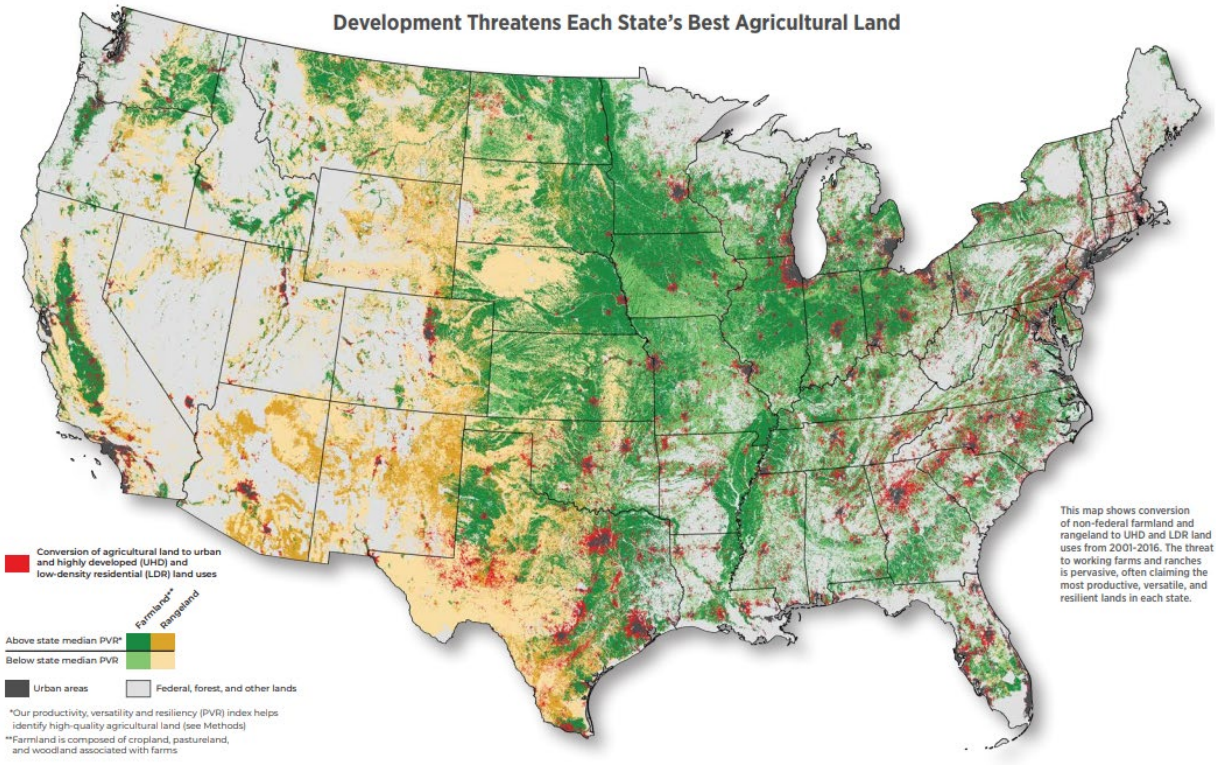
Figure 11. Conversion of Agricultural Lands in New York State



Source: American Farmland Trust. 2020b. Farms Under Threat. New York State Spatial Summary and Policy Scorecard. Available at: https://farmlandinfo.org/publications/farms-under-threat-the-state-of-the-states/ (Accessed March 2022).

The trend of farmland loss occurred in every state in the continental US (see Figure 12). Between 2001 and 2016, 11 million acres of farmland and ranchland were converted to urban and highly developed land use (4.1 million acres) or low-density residential land use (nearly 7 million acres). That's equal to all the US farmland devoted to fruit, nut, and vegetable production in 2017—or 2,000 acres a day paved over, built up, and converted to uses that threaten the future of agriculture (American Farmland Trust, 2020a).

Figure 12. Conversion of Agricultural Lands in the United States

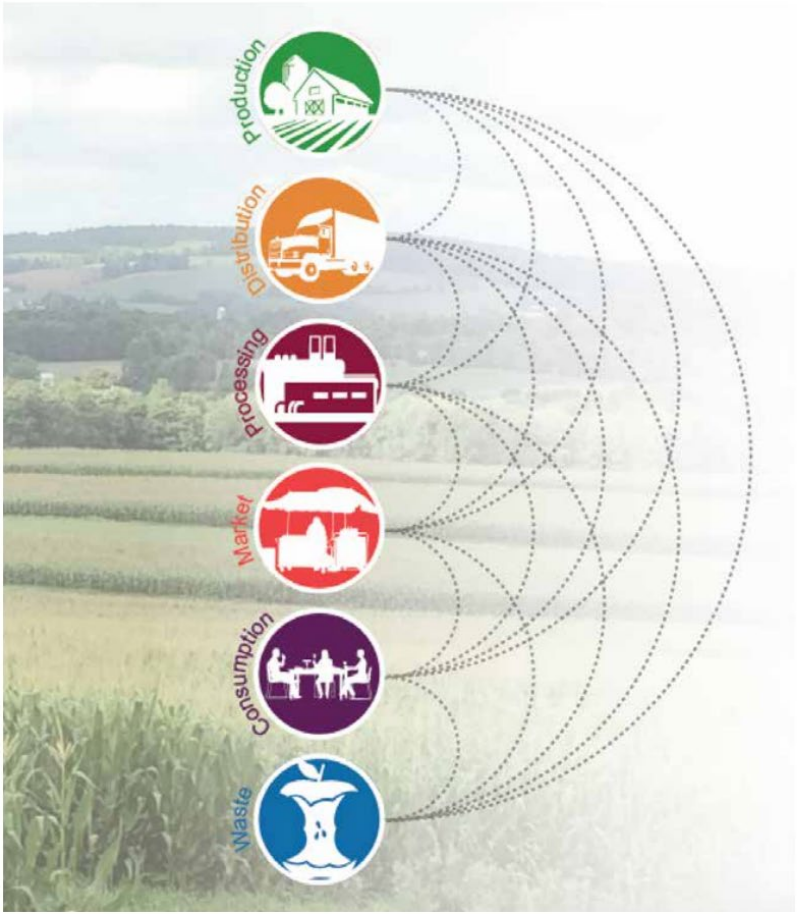


Source: American Farmland Trust. 2021. Farms Under Threat: The State of the States. Available at https://farmlandinfo.org/publications/farms-under-threat-the-state-of-the-states/ (Accessed March 2022).

ONONDAGA COUNTY FOOD SYSTEM

Agriculture is inseparable from the broader context of the food system. The food system includes all people and processes involved from producing to consuming food, including waste disposal and recycling. In Onondaga County, the food system operates at multiple scales with agricultural products being sold in local, regional, and global markets. The food system can be examined through the following components: production, distribution, processing, markets, consumption, and waste & recycling. The following sub-sections describe each of these components of the food system within Onondaga County as supported by research conducted by Syracuse University and the SUNY College of Environmental Science and Forestry (SUNY ESF) and published in the Food Plan CNY (Potteiger & Weissman, 2021). The Food Plan was recognized by the Onondaga County Legislature and funded through the Onondaga County Agriculture Council.

Figure 13. Food System Components



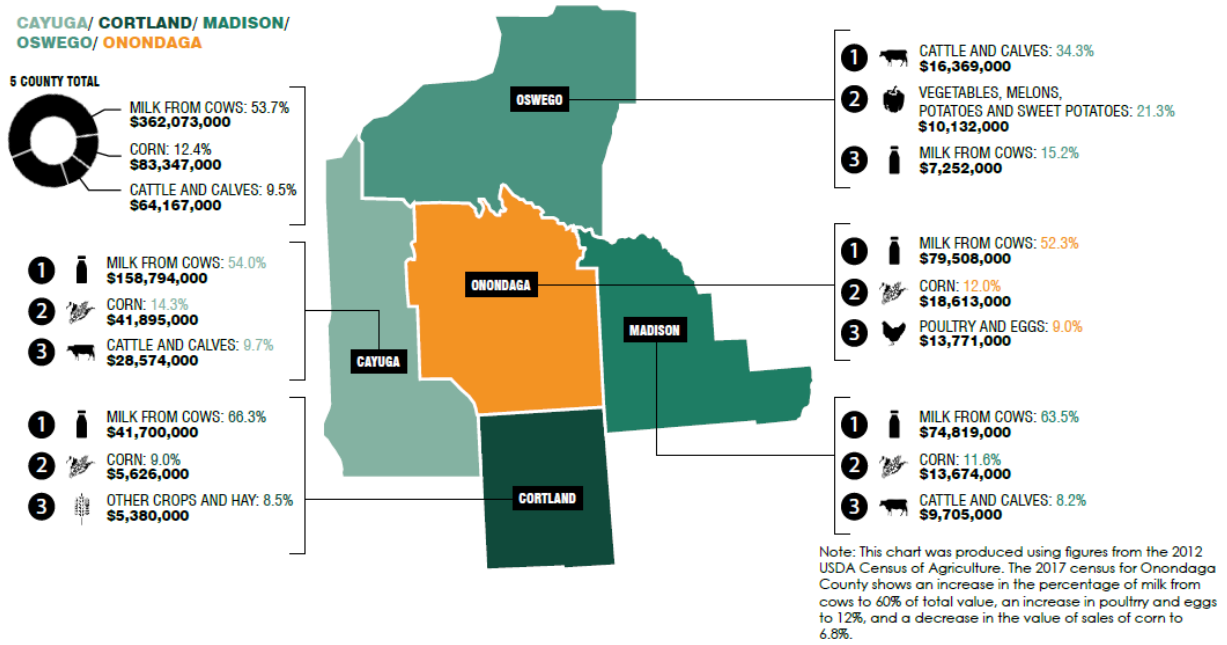
Source: Potteiger, M. & Weissman, E. 2021. Food Plan CNY. Available at: https://agriculture.ongov.net/wp-content/uploads/2021/03/Food-Plan-CNY.pdf

PRODUCTION

Producers growing for the local food system require supportive processes and infrastructure that differ accordingly to scale and commodity. For food producers of all types and scales to thrive in the future, they must be connected to consumers whether locally or elsewhere through appropriate processing, distribution, and markets that meet the needs of their operations. Given the abundance of natural resources, the potential exists for agricultural production within Onondaga County to feed the entire population of Onondaga County (Peters et al., 2008). However, today's markets reach far beyond the County.

As reflected in other sections of this document, Onondaga County's agriculture is a primary economic industry, producing $178 million in annual sales from a total of 623 farms (USDA NASS, 2017a). These farms make the County one of the most productive in the state. Onondaga County ranks first in the state for eggs and poultry production and ninth in dairy production for New York counties. It is in the top 5% of US counties for milk production. Milk accounts for over half of the County's agriculture sales, with corn (12% of sales), and poultry (9% of sales) rounding out Onondaga County's top three agricultural products (see Figure 14).

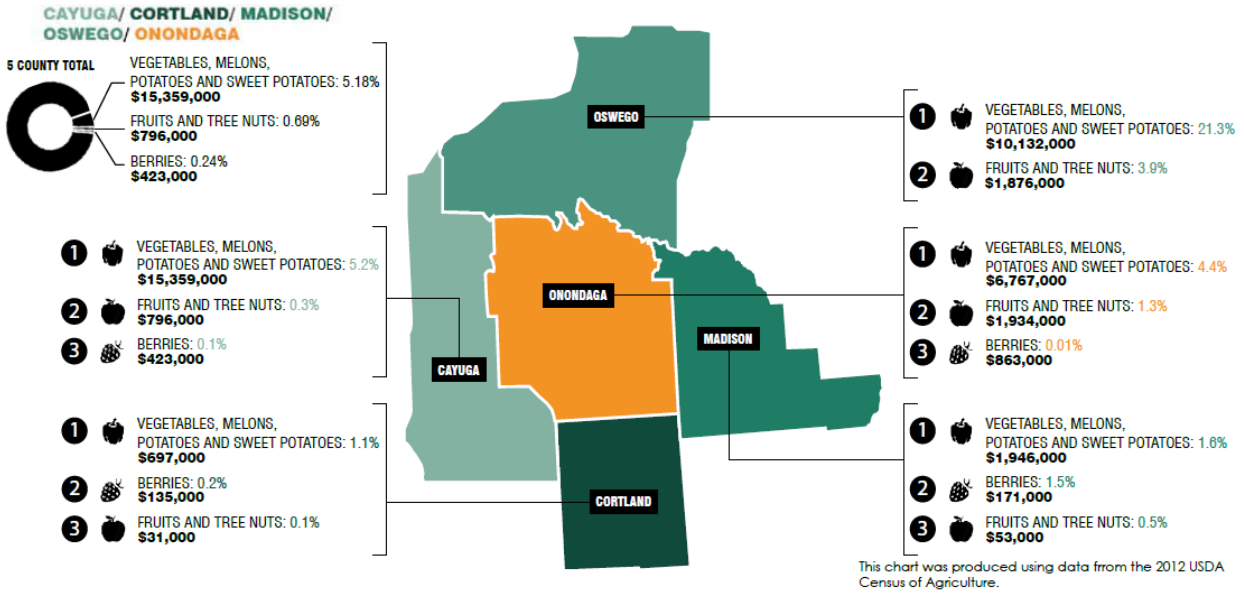
Figure 14. Top Three Agricultural Products per County in Central New York



Source: Potteiger, M. & Weissman, E. 2021. Food Plan CNY. Available at: https://agriculture.ongov.net/wp-content/uploads/2021/03/Food-Plan-CNY.pdf

Proximity to markets and natural landscape diversity supports the production of specialty crops such as vegetables (4% of sales), fruits and nuts (1% of sales), and berries (<1% of sales) (see Figure 14). Notably, urban agriculture and community gardening in Syracuse has expanded over the past decade providing food to residents and creating jobs in agriculture. More information about the types of crops that Onondaga County provides is detailed in the Agricultural Economic Profile.

Figure 15. Crop Diversity per County in Central New York



Source: Potteiger, M. & Weissman, E. 2021. Food Plan CNY. Available at: https://agriculture.ongov.net/wp-content/uploads/2021/03/Food-Plan-CNY.pdf

Onondaga County's agriculture also faces several challenges that have led to declines in the total number of farms, and a trend toward larger farms and consolidation. Onondaga County farms face a series of pressures that threaten farm viability. Challenges include development pressure, an aging farm population, and global competition. Fluctuating commodity prices combined with increasing production costs make it challenging for producers to stay afloat competing within a globalized food system. Increased regulation has added additional cost to operating farms. More information about these challenges is found in the Natural Resources section and the Land Use Change section.

DISTRIBUTION

The Syracuse metropolitan area is a major distribution hub due to accessibility to the NY State Thruway and Interstate 81. These corridors connect Onondaga County within a few hours' drive to major markets and population centers such as New York City, Philadelphia, Boston, Toronto, and Montreal. The County's distribution sector employs over 1,800 people and is home to 39 wholesale distribution establishments that operate at international, national, and regional scales (Food Plan CNY, 2021). Distributors' networks operating at the local and regional scales include the Central New York Regional Market Authority (CNYRMA), emergency and institutional food distribution, and independent businesses. The CNYRMA, established in 1938, owns warehouses that offer distribution space for private businesses and direct retail opportunities for farmers twice each week at their public market.

Local and regional distribution networks support local producers by facilitating local and regional food sales. Syracuse is home to extensive distribution infrastructure, but this infrastructure generally serves national grocery and food service corporations which most commonly exclude regional producers.

Prior to the large-scale privatization and consolidation across the food sector occurring in the 1960's, the Central New York Regional Market Authority held distribution infrastructure that enabled the operation of

several independent regional distributors who served diverse markets and retained a higher proportion of economic activity within the region (Food Plan CNY, 2021). Barriers to rebuilding regional infrastructure include market competition, institutional barriers, and food safety requirements. Workforce shortages essential for distribution have recently been identified related to logistics and off-hour shifts (Food Plan CNY, 2021).

PROCESSING

The food processing sector is critical to supporting Onondaga County's agricultural producers to ensure that local food reaches local markets. The processing sector employs 1,500 people at over 150 food processors and manufacturers in the County. Onondaga County food processors and manufacturers have annual sales of over $438 million, nearly 2.5 times the County's annual agricultural sales (Food Plan CNY, 2021).

Over half of annual processing sales are in the dairy industry, which has major processing facilities in the region for Greek-style yogurt. This type of yogurt requires three times the amount of milk used in traditional yogurt production, sharply increasing the market for locally produced milk as well as the jobs it provides. Beyond the dairy sector, most food processing companies are small and include bakeries, breweries, distilleries, and ice cream stands with fewer than five employees (Food Plan CNY, 2021).

Onondaga County breweries and distilleries are supporting a resurgence of hops and barley production in the region, such as Clark Hollow Hops in Fabius, NY. Recent growth in the breweries and associated tourism has been aided by the 2012 passage of the NY State Farm Brewery Law, which reduces the regulatory burden for breweries who source ingredients from the state of New York.

Despite the recent renewal of small-scale processors, Onondaga County has lost much of its local food processing infrastructure over time. The loss in processing facilities has been attributed to growth of multi-national corporations that have dominated retail space and are able to have full control over processing plant locations (compared to smaller local processors that are limited in capacity). In particular, the closure of mills, vegetable processing, and meat packing facilities are barriers to many producers seeking access to local markets. Food Plan CNY found that lack of slaughter capacity is considered a bottleneck for Onondaga County meat producers despite an increasing demand for local meats.

Figure 16. Shelf space for multinational potato chips compared to local potato chips

Source: Survey of local supermarket aisles for FritoLay Products (multinational processor) compared to Terrell's Potato Chips (local processor) conducted through Food Plan CNY, 2021.

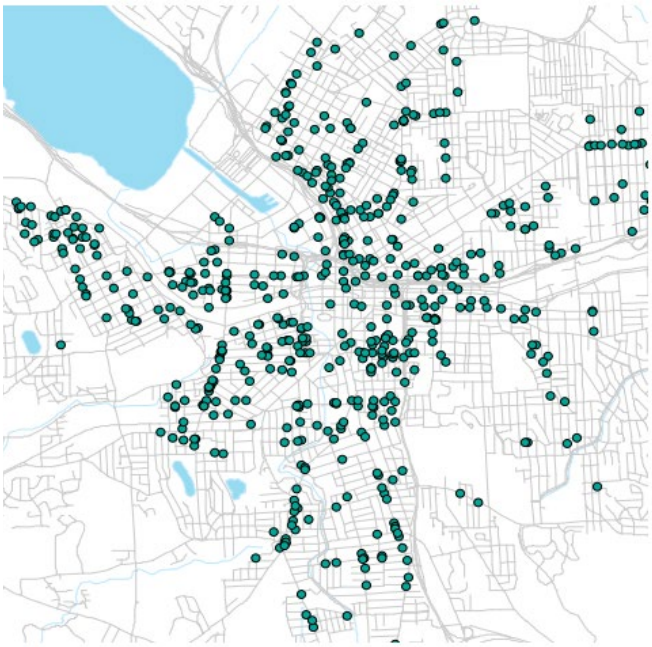
MARKETS

Onondaga County is home to 370 retail food markets (grocery stores, supermarkets, gas stations, convenience stores, and corner stores) accounting for over $1.3 billion in annual sales (Food Plan CNY 2021). Syracuse, the urban center in Onondaga County, is centrally located in an important access point for markets

that consume local agriculture. Furthermore, Syracuse is an access point for goods to reach regional and even global markets as it is within just a few hours' drive from major markets across the Northeast from Boston to Philadelphia. The Central New York Regional Market Authority (CNYRMA) is a critical asset as it serves thousands of local consumers through direct retail and warehouse distribution. Until relatively recently, this facility helped distribute and market the majority of food consumed within the County (Food Plan CNY 2021). Today, however, most food in Onondaga County is distributed through private channels such as supermarket chains and food service corporations who utilize their own respective distribution centers. Recently, small scale food markets have been and continue to be promoted to increase local food access (e.g., the Syracuse Salt City Market and the recently opened Brady Market).

Despite Onondaga County being a major food production hub, thousands of its residents live without consistent access to healthy, affordable, and culturally appropriate food (see Figure 14). Over the past five decades, grocery stores have increased in size and decreased in number, while small markets with fresh food have primarily closed or been converted to convenience stores. This has left both urban and rural residents without sufficient access to full-service grocery stores that have healthy food (Food Plan CNY 2021). Just as many residents face barriers to accessing food, challenges exist for farmers to get their products to local markets, such as a lack of intermediate infrastructure, burdensome food safety requirements, retail consolidation, and competitive markets (Food Plan CNY 2021).

Figure 17. Historic food market infrastructure in the City of Syracuse



Food Store locations, 1938. Syracuse

Market on Oswego Ave. Syracuse, 1930's
(Photo courtesy of Onondaga Historical Association)

Source: Food Plan CNY and the Onondaga Historical Association

CONSUMPTION

Food consumption is a significant economic driver in Onondaga County and eating locally sourced foods has become an important economic trend. Census data shows a significant increase in farms with direct sales in the County, consistent with national trends (Food Plan CNY 2021). The Onondaga Grown campaign, developed by the Onondaga County Agriculture Council, promotes the consumption of local foods at local markets, restaurants, and other venues. Various organizations, individuals, and government agencies are also partnering to address persistent food insecurity challenges. Institutional food service programs at schools, hospitals, and government agencies serve thousands of County residents each day and represent an opportunity for purchasing local foods.

Connecting food producers and consumers in Onondaga County offers the potential to address food insecurity and associated public health issues while supporting local agricultural production. Just to meet the recommended daily servings of fruits and vegetables for Onondaga County residents would require a significant increase in the production, distribution, and processing of local fruit and vegetables (Food Plan CNY 2021).

WASTE & RECYCLING

Over 40% of food produced in the US is wasted, and food waste is the single largest category of waste in landfills (Food Plan CNY, 2021). Food waste occurs in all sectors of the food system, with the majority of food waste in the US coming from consumption (43%), market (40%), and production (16%). At the consumer level, key drivers of waste stem from cooking waste and uneaten leftover waste, as well as spoilage. At the market level, overstocking, extending past the sell-by date, consumer demand for unblemished food, and packaging requirements can lead to waste. Finally, at the farm production-level, waste is generated by crop loss, pests, mechanical failures, contamination, changes in market demands, or labor shortages.

Onondaga County is a regional leader in composting of food waste, with Onondaga County Resource Recovery Agency (OCRRA) being the largest composting facility in New York State. This is important when it comes to understanding the possibilities of scaling the composted food waste in Onondaga County. Recently, according to Food Plan CNY, there has been a growth in the agriculture-related industry using OCCRA's compost (e.g., hops growers).

Reduction of food waste is also led by food rescue through emergency food distribution networks, including the Food Bank of Central New York and Interreligious Food Consortium. These networks redistribute millions of pounds of food that may have otherwise gone to waste (Food Plan CNY 2021). Despite the County's successes, opportunities exist to improve food recovery and increase residential composting.

Since the time of publishing the Food Plan CNY, it is also notable that the NYS Food Donation and Food Scraps Recycling Law was enacted in January 2022. This law requires that businesses and institutions that generate an annual average of two or more tons of wasted food per week must donate excess edible food and recycle all remaining food scraps if they are within 25 miles of an organics recycler (composting facility, anaerobic digester, etc.). See https://www.dec.ny.gov/chemical/114499.html#DFSG for more information. This applies to several large institutions, hotels, and restaurants in the Syracuse area.

It is also notable that in addition to the food waste considered by the Food Plan CNY, there are also non-food agricultural waste produced because of agricultural activities, including manure, oil, silage plastics, fertilizer, pesticides, and herbicides. US farmers generate 816 million pounds of plastic waste annually, with much of this waste occurring from plastic mulch and plastic containers (Mancl, 2020). Recycling of this

plastic is complicated because it is wet, covered with dirt, and can be contaminated with herbicides and pesticides.

AGRICULTURAL PLANNING PROFILE

Onondaga County, the broader Central NY region, and local municipalities within Onondaga County, are utilizing formal planning mechanisms to advance farmland protection and promote agricultural viability. The County, local governments and other decision-making entities are generally supportive of agriculture; however, the ways in which this support is manifested varies based on the size of a municipality, location, planning resources, and regulatory authority. This section briefly summarizes policies, planning efforts, and agencies/organizations related to agriculture in the region. This section also presents the Farm Friendly Toolbox, which developed from this planning process as a set of land use tools municipalities can use to protect farmland and support agriculture at the local level.

AGRICULTURAL DISTRICTS

New York's Agricultural Districts Law, Article 25-AA of the NYS Agriculture and Markets Law was enacted in 1971 to help keep farmland in agricultural production. Agricultural districts define areas within local jurisdictions that rely on farming as the primary economic activity and primarily benefit owners of land that is farmed. In doing so, agricultural districts protect agriculture through a combination of landowner incentives and protections that discourage the conversion of farmland to non-agricultural uses, including:

- providing the framework to limit unreasonable local regulation on farm practices
- providing Right to Farm provisions that protect agriculture from private nuisance suits
- modifying state agency administrative regulations and procedures to encourage the continuation of farm businesses
- modifying the ability to advance public funds to construct facilities that encourage development
- preventing benefit assessments, special ad valorem levies, or other rates and fees on agricultural lands for the finance of improvements such as water, sewer or nonfarm drainage
- modifying the ability of public agencies to acquire farmland through eminent domain

Agricultural Districts primarily benefit owners of land that is farmed. Of note, being part of an Agricultural District does not:

- directly limit or affect the use of enrolled land beyond existing requirements sucnh as zoning; or
- directly reduce or increase tax assessments—agricultural landowners can, however, apply to the local tax assessor for an annual agricultural assessment.

Every eight years agricultural districts are reviewed by the Agriculture and Farmland Protection Board and parcels recommended for inclusion are sent to the Onondaga County Legislature for approval. Once approved the districts are recertified by the NYS Department of Agriculture and Markets Commissioner. During the review, landowners or municipalities can request that property remain in the district, be removed, or added. Property may also be requested for addition annually during a month-long request period January 1-30, as part of the annual additions process. Land may only be removed during the eight-year review.

Map 4 shows the geography of Onondaga County's Agricultural Districts, which are certified per Section 300 of Article 25-AA of the New York State Agriculture and Markets Law. These districts are summarized in Figure 18 based on their most recent eight-year recertification reports. It is important to note that not all farmland is in an agricultural district and not all land in agricultural districts is necessarily farmland. As districts were previously required to encompass a contiguous area, some non-agricultural lands are still enrolled in agricultural districts. This dynamic is slowly correcting itself through the district renewal process.

Awareness is increasing regarding the benefits of participating in the agricultural districts program. While the pressures to develop farmland continue to increase, enrollment of farmland in the agricultural district program has increased as well, with a net increase of almost 5,000 acres of land since 2016. It is notable that this is despite properties removing themselves from Agricultural Districts at the same time. The reasons for the additional lands vary, and range from large farms consolidating large parcels, existing farmers adding land that should have been enrolled previously, and smaller lots (5-20 acres).

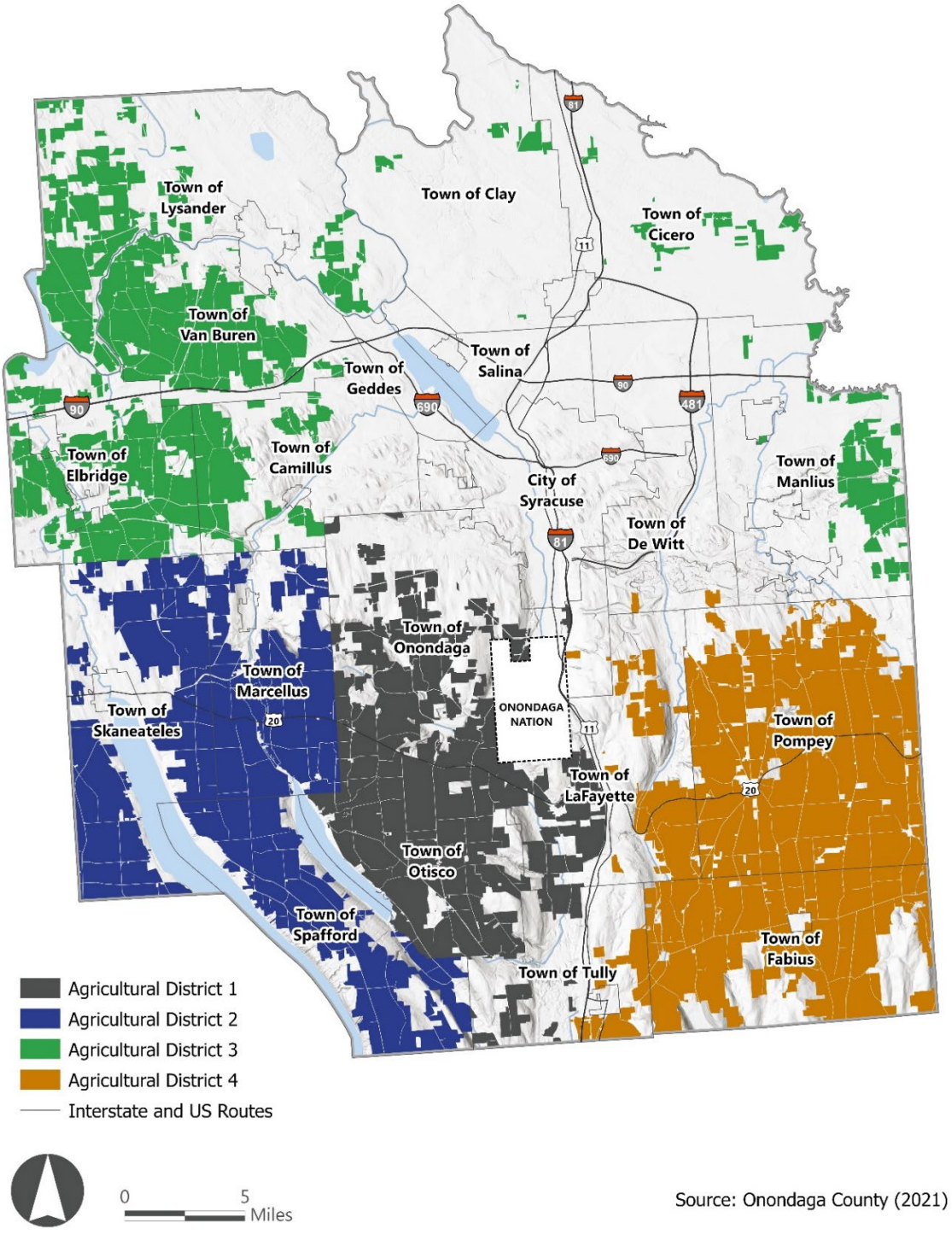
Figure 18. Summary of Onondaga County Agricultural Districts

Agricultural District	Most Recent Renewal Date	Most Recent Renewal # of Parcels	Most Recent Renewal Acreage	Prior Renewal Date	Prior Renewal Acreage	Change In Acres Since Prior Renewal
District 1: West of I-81 in the Towns of LaFayette, Onondaga, Otisco, and Tully	2018	2,313	38,580	2010	37,539	+1,041
District 2: Towns of Marcellus, Skaneateles, and Spafford	2020	2,600	47,733	2012	47,230	+503
District 3: Towns of Camillus, Cicero, Clay, Elbridge, Lysander, Manlius, and Van Buren	2022*	2,631	49,677	2014	47,325	+2,352
District 4: Towns of DeWitt, Fabius, Pompey and East of I-81 in the Towns of LaFayette, Onondaga, and Tully	2016	3,441	62,893	2008	61,950	+943
Totals		**10,985**	**198,883**		**194,044**	**+4,839**

**Anticipated.*

More information about the individual districts, including detailed maps and review and recertification reports, is available at http://www.ongov.net/planning/review.html.

Map 4: Onondaga County Agricultural Districts



Source: Onondaga County (2021)

COUNTY AND REGIONAL PLANNING RELATED TO AGRICULTURE

ONONDAGA COUNTY AGRICULTURAL AND FARMLAND PROTECTION PLAN

Adopted in 1997, the original Onondaga County Agricultural and Farmland Protection Plan promoted three main goals for the local agricultural sector: 1) enhance the viability of agriculture in Onondaga County, 2) protect farmland resources, and 3) promote the economic and social importance of the agricultural industry in Onondaga County. The plan was created to be used by individual farmers, farmer groups, and all levels of elected officials as a guide for the development of local planning and land use decisions to support the viability of the agricultural industry in Onondaga County. Seven recommendations were defined at the County and municipal levels accompanied by a range of actions:

- Reduction of property and estate taxes on farmland
- Exploration and implementation of land use mechanisms to protect existing areas of important farmland resources at the municipal level
- Recognition and promotion of the agricultural industry as separate and equal to other industrial sectors in Onondaga County
- Support of public and private land protection initiatives at the county level
- Increase of technical support provided to agriculture
- Expansion of agricultural education in the classroom throughout the County through public and private initiatives
- Promotion of agriculture throughout the County through public education and community awareness

There has been significant progress on the goals since 1997, and specific implementation measures of these actions is found in Appendix A. See the Executive Summary for an infographic on accomplishments on the above recommendations since the 1997 plan.

CNY RISING UPSTATE REVITALIZATION INITIATIVE

CNY Rising is the regional plan and investment prospectus submitted in 2015 for New York State's Upstate Revitalization Initiative, ultimately awarded $500 million in competitive economic development funding. This plan sets forward the following vision for the region: "*Transform our communities by retooling for a modern economy and the intentional pursuit of collective prosperity. This prosperity must be built by including all regional residents in opportunities for economic and social empowerment through processes that are transparent and equitable.*"

One of the important focuses for this revitalization initiative is agribusiness development. CNY Rising includes a strategic proposal for agribusiness with the following four strategies:

1. Establish the region as a center of innovation, research and manufacturing expertise for the production of a variety of extended shelf life (ESL) food products (aseptic, UHT) that respond to growing global demand in key markets;
2. Make investments in physical infrastructure with primary focus on improvements to rail freight and ports to gain access to metropolitan New York and international market;
3. Establish the Central New York region as the East Coast Center for Controlled Environment Agriculture (CEA) production in the United States;
4. Develop technologies and support services to manage organic wastes. More information is available through https://esd.ny.gov/central-ny-rising-uri.

CNY REGIONAL ECONOMIC DEVELOPMENT COUNCIL 2021 PROGRESS REPORT

The 2021 CNY Regional Economic Development Council's Progress Report was created to assess economic development across the region, as well as to suggest strategies for continued progress. The report highlighted recent economic investments being made to increase agricultural viability in the region. These projects include the Grow NY Competition to promote technological innovation in agriculture, Heritage Hill Brewery improvements, and expansion of Cayuga Milk Ingredients facilities for dried milk production, along with other smaller projects to assist local agricultural producers.

Like many places across New York, impacts of the COVID-19 pandemic were heavily felt within the agricultural industry. Particularly impacted were producers of dairy and vegetables who distributed to school systems and restaurants. The Nourish NY program helped stabilize producers affected by the pandemic by providing $25 million in funding to New York's food banks to purchase produce and dairy products.

Two regional priorities were recommended for the agricultural sector, the first being the diversification of revenue streams. This means providing opportunity for farms in the region to participate in and benefit from value-added agriculture as a way to stabilize their own businesses and regional farming in general. A second priority was the expansion of local processing and supply chains to increase local food system resiliency by linking farmers to institutions via distributors. Investment in local processing and technological improvements to the local food system such as extending shelf life through aseptic packaging are important takeaways from the COVID-19 experiences in Central New York.

FOOD PLAN CNY

Food Plan CNY, commissioned by the Onondaga County Agriculture Council and prepared through a partnership between Syracuse University and SUNY College of Environmental Science and Forestry, is a collaborative project to assess, coordinate, educate and make recommendations to improve the food system of Central New York. Based on a robust baseline assessment supported by data, the Food Plan CNY identified three main opportunity areas for improving the economic, public health, and environmental outcomes in the food system of Onondaga County and surrounding counties: resilience, access, and coordination. Food Plan CNY offers five core recommendations to strengthen the County's food system:

1) Strengthen the "middle" of the food system: build processing and distribution infrastructure and strengthen community capacity and connections.
2) Grow community-based, healthy food environments: support community-based processes for creating diverse and resilient food environments, promote diverse food cultures, and increase community demand for healthy foods.
3) Create healthy, resilient environmental systems: connect the environmental outcomes to economic advantages including reducing greenhouse gas emissions from food system practices and integrating them into climate action plans, promoting the value of ecological services in agriculture, diversifying agricultural production, developing market-based strategies for sustainable agriculture, re-integrating waste as a resource in all food system sectors, and integrating farmland protection with food system planning.
4) Expand public space and participation in the food system: improve access to locally grown fresh food and farmers markets and equitably promote business development and economic opportunities.
5) Coordinate food system projects, planning, and policy: support the newly formed Syracuse Onondaga Food System Alliance and build inclusive processes for identifying food council

partners, integrating food systems into City and County policies, and monitoring food system developments through collaborative studies.

PLAN ONONDAGA: ONONDAGA COUNTY COMPREHENSIVE PLAN

The *Plan On*ondaga County Comprehensive Plan is being developed to define a vision and goals for community success that incorporates the shared needs, goals, and challenges of each municipality in Onondaga County. The plan focuses on the importance of and linkages between community engagement, quality of life, and economic development, and will explore five thematic areas as a framework for community-based planning and developing impactful projects. Agriculture is one of the thematic areas to be addressed by the countywide comprehensive plan, along with strong centers, housing and neighborhoods, greenways and blueways, and community mobility. Supporting local agriculture is recognized by the plan to be vital to the future success of Onondaga County's economy, landscape, and food system. Visit *plan.ongov.net* for more information on Plan Onondaga.

ONONDAGA COUNTY PLANNING BOARD

Although land use is not regulated directly by Onondaga County, the Onondaga County Planning Board play a role in influencing agricultural land use decisions at the local level through reviews of proposed local comprehensive plans, zoning laws, special use permits, site plans, variances, and subdivisions pursuant to General Municipal Law §239.

MUNICIPAL PLANNING RELATED TO AGRICULTURE

In New York State, land use is controlled primarily at a local level, and thus, municipalities have a critical role in effective protection of agricultural lands. Meanwhile, agriculture has evolved in multiple ways over the past several decades and will continue to evolve into the future. Throughout, it has remained a very diverse and robust economic sector in Onondaga County. Through partnerships with local farmers, municipal governments can work to plan for the long-term viability of their agricultural sectors and create local land use regulations that are up to date, farm-friendly, and meet the needs of the community as well.

Onondaga County's town and village governments, on the other hand, have a more direct role in land use planning and land use regulation. Most of the towns within Onondaga County have adopted regulatory tools such as zoning laws, subdivision ordinances, and Right to Farm laws. The majority of towns and villages in Onondaga County also have comprehensive plans, and some (e.g., the Town of LaFayette) have their own Farmland Protection Plan.

There are several tools available to assist communities that desire to protect the agricultural land resources and enhance the long-term viability of agriculture.

MUNICIPAL SURVEY

As part of this Onondaga County Agriculture & Farmland Protection Plan update, municipal representatives were engaged over the Summer of 2021 through an online survey. The municipal survey was created to provide an opportunity through which representatives of Onondaga County municipalities could provide specific input regarding the state of agriculture in their municipalities, issues or opportunities, and topics of local interest related to agriculture.

Survey respondents reported several noticeable changes to agriculture in recent years, with the most noticeable changes resulting in a decrease in smaller/mid-sized farms that are getting purchased by larger farms. There was also a noticeable increase in agritourism over recent years.

The top benefits of agriculture for municipalities, as reported by survey respondents, included low demands on municipal services and open space and views that increased adjacent land values. The top challenges facing agriculture include residential encroachment, labor shortages, and retirement/succession planning. Survey respondents reported manure application/storage/transportation as the number one conflict between farmers and non-farmers, followed by urban sprawl and acreage requirements for animals.

FARM-FRIENDLY MUNICIPAL TOOLBOX

To assist municipalities in implementing the Ag & Farmland Protection Plan recommendations, and to provide best practices in local regulation and planning support for agriculture, the project team has created a "Farm-Friendly Toolbox" for municipal use. The Toolbox is intended to help municipalities integrate and update its land use plans and regulations as it relates to best practices in support of agricultural land uses, address new and changing dynamics in agriculture, and ensure consistency with NYS Agriculture & Markets law.

To aid in the process, four Towns in Onondaga County – Cicero, LaFayette, Manlius and Onondaga – volunteered to have their current planning documents and codebooks reviewed by the project team. An individual assessment, or "audit", was performed for each, which included an interview with municipal and farmer representatives, and development and presentation of an individualized written assessment for each participating Town.

Pulling from the individual town assessments, the team has also compiled a general Farm-Friendly Municipal Toolbox for use by any town, village or the City of Syracuse. An open webinar was also held for municipal planning and zoning board members in Onondaga County to present the toolbox of recommendations. Tools are organized into planning level tools (e.g., comprehensive plans, open space plans, and economic development plans), regulatory tools (e.g., Right-to-Farm laws, zoning regulations, farm friendly solar ordinances, and subdivision and other land use tools), and farmland preservation tools (e.g., purchase of development rights and lease of development rights).

It is envisioned that local governments will use this toolbox:

- In reviewing zoning and other land use regulations to ensure they are up to date as they apply to agriculture
- As a resource to consult when creating or updating the community's comprehensive plan, or a farmland protection plan, or other local planning efforts
- As a resource to consult when creating or updating the community's zoning, subdivision, and other land use regulations
- In reviewing proposed new development for consistency with the ag community's goals and needs.

See Appendix B for the municipal assessments and the Farm Friend Toolbox. The Toolbox and recorded webinar are also posted on the County's ***agriculture.ongov.net*** website. It is envisioned that the toolbox will be maintained and updated to serve as a continuing source of information on best practices in local support and regulation of agricultural lands in Onondaga County.

AGENCIES AND ORGANIZATIONS RELATED TO AGRICULTURE

The involvement of agricultural support agencies helps to protect farmland as well as to make Onondaga County an attractive place for agricultural businesses. The agencies and organizations below provide programs and services that are critically important to the viability of the agricultural sector in Onondaga County and to the regional economy.

ONONDAGA COUNTY AGRICULTURE AND FARMLAND PROTECTION BOARD

The Onondaga County Agriculture and Farmland Protection Board (AFPB) was created by the Onondaga County Legislature and is composed of farmers from areas throughout Onondaga County, as well as representatives from agribusiness community, natural resources organizations, the Onondaga County Legislature, Syracuse-Onondaga County Planning Agency, Onondaga County Real Property Tax Services, and Cornell Cooperative Extension. The mission of the AFPB is to protect and value agriculture and farmland to enhance its vibrancy, resiliency, and viability throughout the County. Tasks overseen by the board include:

- The County Agriculture and Farmland Protection Plan
- Review of local Agriculture and Farmland Protection Plans
- Agricultural Districts program administration
- State grant program solicitations, coordination, and project execution
- Guidance to the Onondaga County Legislature on agricultural matters
- Other farmland protection activities

ONONDAGA COUNTY AGRICULTURE COUNCIL

The Onondaga County Agricultural Council supports the agricultural community through education, promotion, and advocacy programs with the vision for a strong agricultural economy, secure and healthy food supply, abundant farmland in agricultural production, and stewardship of the environment. Specific initiatives include:

- Executing an annual "Buy Local. Buy Onondaga Grown" media campaign, which seeks to:
  - educate the public on the importance of farming to the local community and on the size and scope of agriculture in the County
  - increase demand for locally grown food by making the public aware of what Onondaga County farms can produce
  - let people know when seasonal items are available
  - generate support for protecting farmland
  - encourage the community to purchase food products grown or produced in the County by looking for the Onondaga Grown logo at local grocers, convenience stores, farm stands, farmers markets, and restaurants
- Sponsoring the annual ON Farm Fest "day on the farm" event that helps to build a relationship between the food producers and consumers. The event encourages the community to visit, tour, and support local farms, discover the latest advances in agriculture, explore what life is like on a farm, meet the farmers who grow their food, and have fun on the farm.
- Support for urban agriculture initiatives such as the Brady Farm, the Dr. King Urban Garden, the RISE SyRAP Agricultural Program, and the Jubilee Homes' Southwest Community Learning Farm.

- Funding for the creation of Food Plan CNY to assess the regional food system and identify strategies for improving food access, environmental and economic viability, and coordination of the local and regional food system.
- Funding for the development of agricultural programming in local school districts and support for educational programs such as Agriculture in the Classroom.
- Permanently protecting valuable farmland by supporting NYSDAM Farmland Protection Implementation Grant (FPIG) applications and creating a local donation of development rights program.
- Maintains the Onondaga Grown website that connects visitors to local producers, farmers markets, and farm-to-table restaurants.

SYRACUSE-ONONDAGA COUNTY PLANNING AGENCY

The Syracuse-Onondaga County Planning Agency (SOCPA) provides a variety of planning services for Onondaga County and the City of Syracuse. Their mission is to provide and promote effective planning by Onondaga County, its 19 towns, 15 villages, and the City of Syracuse. Specific services as it relates to agriculture include:

- Representation and staff support to the Agriculture and Farmland Protection Board
- NYS Agricultural District Reviews and boundary revisions under NYS Agriculture and Markets Law §25-AA for the AFPB
- Staff support to facilitate farm owner access to the NYS Farmland Protection and Implementation Grants Program, commonly known as the "Purchase of Development Rights" (PDR) program, and/or related programs
- Representation and staff support to the Onondaga County Agriculture Council, created to promote and preserve the local agricultural community
- Municipal technical assistance for land use and comprehensive planning
- Trainings for local government officials
- Staff to the Onondaga County Planning Board to conduct reviews under NYS General Municipal Law §239
- Grant assistance and administration for municipalities
- Preparation of the County's comprehensive (**Plan On**ondaga)
- Infrastructure coordination with local and regional entities
- Partnership and coordination with community organizations and agencies related to agriculture and farmland protection

CORNELL COOPERATIVE EXTENSION OF ONONDAGA COUNTY

The mission of Cornell Cooperative Extension (CCE) is to enable people to improve their lives and communities through partnerships that put experience and research knowledge to work. Extension staff and trained volunteers deliver education programs, conduct applied research, and encourage community collaborations. Educators connect people with the information they need on topics such as commercial and consumer agriculture; nutrition and health; youth and families; finances; energy efficiency; economic and community development; and sustainable natural resources. CCE's ability to match university resources with community needs helps play a vital role in the lives of individuals, families, businesses, and communities throughout Onondaga County. Specific programming includes:

- Educational and technical assistance/trainings on agricultural topics (e.g., marketing, production, processing, and waste management of various types of agriculture)
- Operation of young farmers programming (e.g., 4-H, Cornell Beginning Farmers Program)
- Coordination/support of local promotional and educational initiatives (e.g., Empire Farm Days, Onondaga Grown, Agriculture in the Classroom)
- Urban agricultural education in partnership with the Refugee and Immigrant Self-Empowerment (RISE) program
- Natural resource education (e.g., invasive species management, forest management)
- Gardening programming (e.g., site improvement, plant selection and care, composting)
- Nutrition and health programming with workshops, applied research projects, and other information

ONONDAGA COUNTY SOIL & WATER CONSERVATION DISTRICT

The Onondaga County Soil & Water Conservation District (SWCD) offers natural resources programs and services, including technical assistance to farmers and landowners, training programs, and environmental education programs. Specific programs include:

- Technical assistance to landowners (e.g., farm pond design/maintenance, sediment and erosion control, drainage, flooding prevention/mitigation)
- Author grants to obtain farmer cost-share for implementation of Best Management Practices to protect water quality & environment
- Critical area seeding/revegetation
- Watershed assessment
- Nutrient management planning
- Agricultural use value assessment
- Annual tree and shrub sale
- Administration of the Agricultural Environmental Management program
- Equipment rental (e.g., no-till drill, hydro seeder, soil meter)
- Invasive species management (terrestrial and aquatic)
- Soil sampling, analysis, and interpretation of results for urban and rural agricultural producers
- Agricultural emergency response

LOCAL LAND TRUSTS

Local land trusts play an increasingly important role as it relates to farmland protection. These local non-profit organizations are asked to and provide the resources to to work as partners with farmers to execute farmland conservation easement projects via the NYS Farmland Protection Implementation Grants program and other national and local programs. Land trusts also purchase land for conservation, either farmland or related open spaces, which enhance and maintain rural communities, protect natural resources, and act as buffers for agricultural operations. Onondaga County is fortunate to have local land trust organizations such as the New York Agricultural Land Trust and Finger Lakes Land Trust as valued partners. However, capacity within these organizations is limited, impacting the ability to reach local farmland protection goals.

ONONDAGA COUNTY FARM BUREAU

The Onondaga County Farm Bureau gives farmers and non-farmers alike the opportunity to be part of an organization dedicated to supporting and enriching agriculture. The Farm Bureau is active on a broad range of issues relating to agriculture, ranging from taxation, conservation, and local food availability. Specifically, the Farm Bureau provides the following:

- Public policy advocacy at local, regional, state, and federal levels
- Administration of Workers' Compensation Insurance
- Coordination of educational and technical assistance/trainings
- Higher education scholarships for children of farm families

SYRACUSE-ONONDAGA FOOD SYSTEMS ALLIANCE (SOFSA)

Established in 2019, the Syracuse-Onondaga Food Systems Alliance (SOFSA) is an independent food council in Central New York serving the city of Syracuse and surrounding Onondaga County. SOFSA's mission is to strengthen the local food system so that it works for all people in Syracuse and Onondaga County, particularly as it relates to food justice and food sovereignty. SOFSA brings communities together to foster relationships, develop projects, align resources, and advocate for policies to improve the health of local neighbors and environment. Specific highlights from recent work include:

- Speaker series and meet-up events to build connection and deepen relationships with those working on food system issues
- Publications in the media and academic research related to the local food system
- Co-hosting events and site visits to players in the local food system, ranging from Hudson Egg Farm to the Salt City Commercial Kitchen and the Brady Market

CENTRAL NEW YORK ENTERPRISE DEVELOPMENT CORPORATION

Operated by the CNY Regional Planning and Development Board as a non-profit, the CNYEDC administers the following funds and loan programs:

- CNY Enterprise Development Fund to support the growth and development of small businesses in Central New York, including Cayuga, Cortland, Madison, Onondaga, and Oswego Counties. These grants are available for small businesses with 10 or fewer employees
- CNY Quasi-Equity Loan Programs to provide funds tailored to support challenging projects, including start-ups and small businesses with limited or specialized collateral
- Rural Micro-Entrepreneur Assistance Loan Program, which is available to small businesses with 10 or fewer employees located in a USDA designated rural area
- Energy Efficiency Loan Program is a revolving loan fund geared toward financing eligible energy efficiency projects, including feasibility studies, machinery, or equipment replacements
- NYS Grown and Certified Ag Producers Grant Program which provides funds to assist NYS ag producers in meeting food safety standards necessary for participation in the NYS Grown & Certified Program
- NYS Job Development Authority Small Business Agriculture Loan Program, which provides loans to small agribusinesses (100 or fewer employees)

NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS (NYSDAM)

The New York State Department of Agriculture and Markets is the department of the New York state government that enforces laws relating to agriculture, weights and measures, and the production,

processing, transportation, storage, marketing and distributing of food. Specific programs and services related to farmland protection include:

- Administers many programs to protect these resources, from environmental planning to invasive species eradication, integrated pest management, seed, and fertilizer regulation. Planning activities include the following:
    - Farmland Protection Planning Grants
    - Farmland Protection Implementation Grants
    - Land Trust Grants
    - Agricultural Districts Program
    - The Advisory Council on Agriculture, which advises the Commissioner of Agriculture and Markets and other state leaders on matters affecting agricultural districts and farmland protection.
    - The Farmland Protection Working Group, which recommends strategies to the State on the siting process of major renewable energy facilities and to minimize the impact of siting on productive agricultural soils on working farms.
- Supports the state's network of farmers' markets through programs that expand sales, promote improved nutrition, and help increase consumption of locally grown fresh fruits and vegetables
- From marketing programs such as the Taste NY and NYS Grown & Certified® programs, to assistance with exporting products or starting a new farm operation, the Department works with the agricultural community to connect farms to new markets, increase sales and exposure of New York products, and help protect and grow businesses across the state.

USDA REGIONAL SERVICE CENTER

USDA Service Centers are designed to be a single location where customers can access the services provided by the federal Farm Service Agency, Natural Resources Conservation Service (NRCS), and the Rural Development[2] agencies. The USDA Regional Service Center in Onondaga County provides the following services:

- Administration of local NRCS programs
    - Environmental Quality Incentives Program
    - Conservation Stewardship Program
    - Conservation Reserve Program
    - Watershed Rehabilitation
    - Conservation Innovation Grants
    - Others
- Administration of local Farm Service Agency programs
    - Dairy Margin Protection Program
    - Loan programs (e.g., Direct Operating, Micro, Direct Farm Ownership, Guaranteed, Minority & Women Farmers, Beginning Farmers & Ranchers, and Emergency loans)

[2] Rural Development programs are offered by the USDA Service Center in Marcy, NY.

AGRICULTURAL ECONOMIC PROFILE

This section identifies existing economic conditions, and trends facing farming operations, including those related to specific types of agricultural products, labor and support resources, market trends, technology, land value dynamics, and land ownership.

FARM OPERATIONS

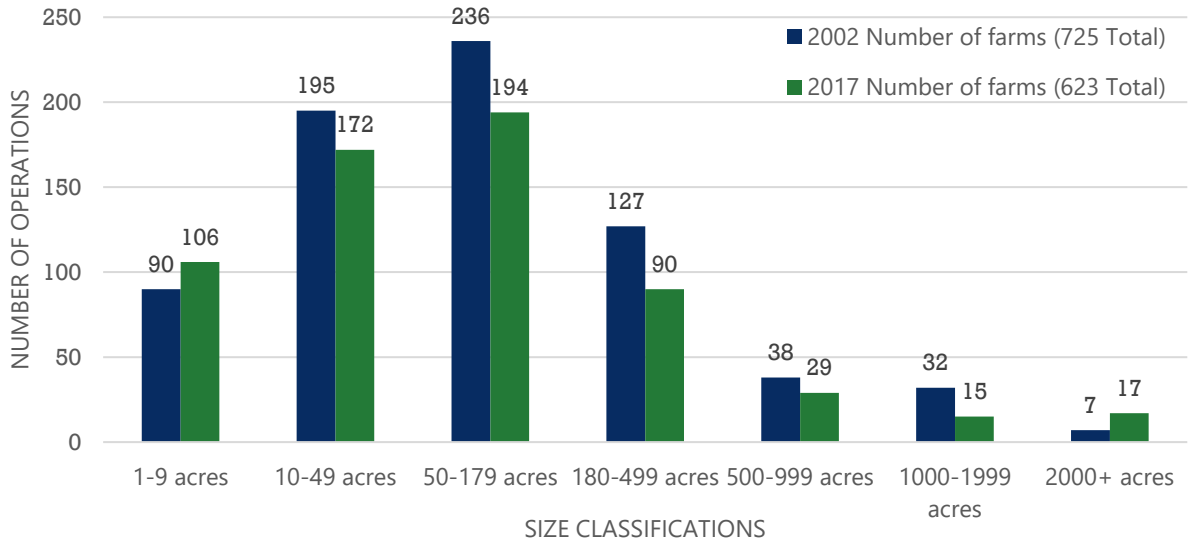
According to the most recent USDA NASS Census of Agriculture (USDA NASS, 2017a), there are 623 farms (i.e., operations) within Onondaga County. These farms are defined as any operation from which $1,000 or more of agricultural products were produced and sold or would normally sell each year (USDA Economic Research Service, 2022)[3]. Of these 623 operations, 428 were fully owned by the primary producer, 175 were partly owned by the primary producer, and 20 were leased by the primary producer (USDA NASS, 2017a).

The overall number of farm operations in Onondaga County decreased by 102 farms since 2002, yet the total acres of farmland operated has increased by 4,433 acres. As of 2017, Onondaga County is experiencing more acres being farmed through fewer farming operations. Essentially, there has been a notable consolidation of farms, with a growth in the size of the largest farms (USDA NASS, 2002 and 2017).

Figure 19 displays the changes in the size of farm operations across Onondaga County between 2002 and 2017. Essentially, the County lost 46% of its mid-sized farming operations (50 – 499 acres) yet experienced an increase in very small farms (an increase in 16 operations) and an increase in the number of very large farms (an increase of 10 operations) (USDA NASS, 2017a). Another way to view this change is that although the median farm size has decreased from 80 acres in 2002 to 65 acres in 2017 (USDA NASS, 2017a), the average farm size has increased from 216 acres/operation to 258 acres/operation. Meanwhile, there has been an increase in the total acreage of land operated since 2002 (+4,433 acres according to the USDA NASS, 2002 and 2017a). This reflects the trend towards consolidation of farm operations (see Land Use and Land Use Change sub-section in the Community Profile).

[3] Note that the USDA definition of farm operations, used in the USDA Agricultural Census, is different from the definition used in the NYS Agricultural Assessment program. USDA defines a farm as any place that produced and sold at least $1,000 of agricultural products during a given year. To quality as a farm operation in the NYS Ag Assessment program, annual gross sales of agricultural products per operation generally must average $10,000 or more for the preceding two years, however there are some nuances. For more information, see www.tax.ny.gov/research/property/assess.

Figure 19. Changes in farm operations by size



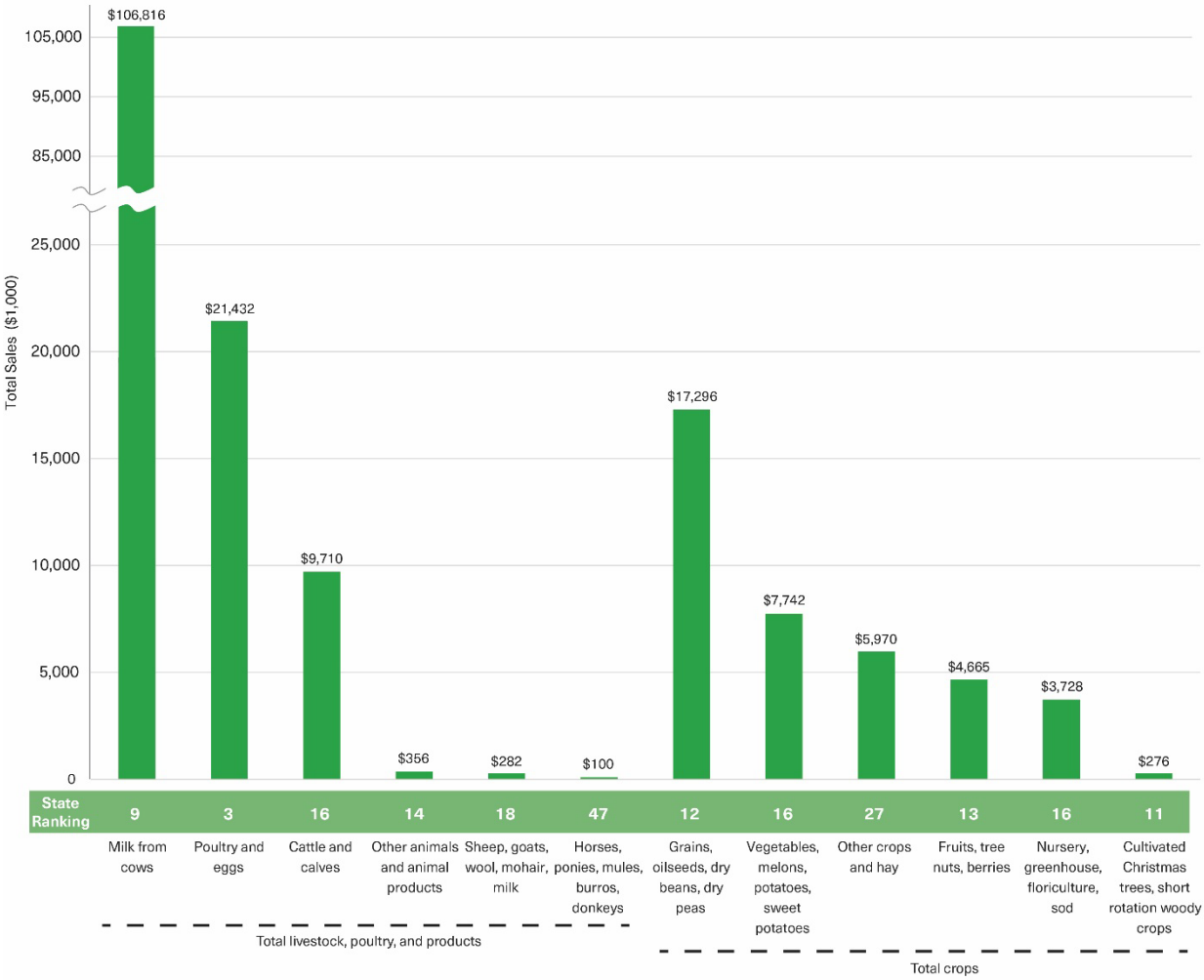
Sources: USDA NASS, 2002 and USDA NASS, 2017a.

From another perspective, from 2002 to 2012, there was a 50% loss in farm sales for medium sized farms while larger farms experienced a 24% gain over the same duration (Food Plan CNY, 2021; USDA NASS, 2022 and 2017a). Medium sized farms (those with $100K through $500K in sales) face increasing pressures to compete with larger commodity production operations (Food Plan CNY, 2021).

FARM PRODUCTS

Onondaga County is in the top ten counties for all agricultural sales in New York State (Office of the New York State Comptroller, 2019). Onondaga County's farm operations offer a diverse array of agricultural products, particularly in the types of crops grown. The total sales of agricultural products typically rank high in comparison to other counties across New York State, most notably in dairy and poultry. Figure 20 shows a breakdown of the market value of agricultural products sold in Onondaga County for 2017, and their state rankings.

Figure 20. Market value and statewide rank of agricultural products sold in Onondaga County



Source: USDA NASS 2017a. Note: Value of sales for Hogs and Pigs and Aquaculture operations has been withheld to avoid disclosing data for individual operations. Sales value is measured in 2017 dollars. State ranking is based on New York State's 62 counties.

Onondaga County farm operations are the enterprises behind one of the most productive agricultural regions in the state. Dairy is by far the highest commodity in the County by sales, making up over half of all agricultural sales in the County. Onondaga County ranks 9th in dairy production for New York counties, and in the top 5% of U.S. counties for milk production (USDA NASS, 2017a). Dairy sales are followed by poultry (12% of sales and ranked 3rd of NYS counties) and grains/oilseeds/dry beans/dry peas (10% of sales and 12th in NYS) rounding out Onondaga County's top three agricultural products. Proximity to markets coupled with its diverse natural landscape supports the production of specialty crops such as vegetables (4% of sales) and fruits/nuts/berries (3% of sales).

There are also products that are not measured by sales in the USDA Agricultural Census. One such specialty crop is, maple syrup, which is a significant product of Onondaga County and New York State. In 2021, NYS was the second top producer of maple syrup of all 50 states (USDA NASS, 2021). Onondaga County's maple

syrup garnered $750,000 in sales according to the NYS Maple Producers Association based on the USDA NASS 2017 maple syrup production levels.

An additional up-and-coming crop to note is cannabis (both industrial hemp and adult-use cannabis). In February 2022 New York State passed a law creating a new Conditional Adult-Use Cannabis Cultivator license that will allow existing hemp producers with grower authorization to obtain temporary conditional licenses to cultivate and process adult use cannabis (New York State Office of the Governor, 2022). As of 2018, the Central New York region had only seen a handful of authorized research partners for hemp production, however that number will likely increase as people become more familiar with the crop and the policies related to its production (Syracuse Post Standard, 2018).

Figure 21. Animal and crop sales

	Sales value[4]	% of total
Total market value	$178,409,000	100%
Crop sales	$39,678,000	22%
Livestock sales	$138,731,000	78%

Source: USDA NASS, 2017a.

As reflected in Figures 20 and 21, a substantial share of the market value of Onondaga County's agricultural sector comes from livestock, and more specifically dairy. Livestock sales account for a greater proportion of total sales, since many field crops are not sold on the market but instead used to feed livestock. Livestock sales have been increasing as dairies consolidate. In 2017, Onondaga County had 25,553 dairy cows across 76 operations, with approximately 336 cows per operation (USDA NASS, 2017a).

The concentration of dairy operations has increased since the 2007 and 2012 agricultural census, which found 196 cows per farm and 280 cows per farm respectively. Of the total acreage of cropland harvested in 2017 (91,655 acres), the USDA estimates that more than one-third of the acreage was used for forage land (i.e., hay, haylage, grass silage, and green chop). Figure 22 shows the USDA's estimate for the top five crops by harvested acreage in Onondaga County in 2017.

Figure 22. Changes in harvested acreage of top crops between 2012 and 2017

Crop/cover	Acres		% change
	2012	2017	
Total harvested cropland in Onondaga County	94,478	91,655	-3%
Forage-land (i.e., hay, haylage, grass silage, green chop)	34,370	34,950	2%
Corn for silage or green chop	15,453	18,422	19%
Corn for grain	21,879	18,107	-17%
Soybeans for beans	11,674	8,908	-24%
Wheat for grain, all	4,216	5,290	25%

[4] Measured in 2017 dollars

Source: USDA NASS, 2012 and 2017a.

The farm average value of sales in Onondaga County is $286,371 (USDA NASS, 2017). However, this average sales per farm is likely inflated by a relatively small proportion of more profitable farm operations, as the net income per farm in Onondaga County was reported to be much lower (see Figure 23). Approximately 36% of all operations reported farm sales of less than $2,500, and an additional 31% reported sales of between $2,500 and $24,999. As a result, many farm businesses are reliant on farm-related income that is not generated by the direct sale of crops and livestock, but instead through avenues such as custom work, government programs, forest products, and building rentals. In 2017, Onondaga County farmers with such sources of income received an average of $33,512 (USDA NASS, 2017a).

Relatively low sales and increasing expenses result in most farm operations experiencing net losses of farm income. USDA's estimated net incomes, gains, and losses for both 2012 and 2017 are shown in Figure 23. While the overall income of farm operations is higher than what it was in 2012, the overall trend of more operations enduring losses than gains remained unchanged between the two agricultural census years. This underscores the risk and tight profit margins for agricultural operations and the need for affordable, innovative products, processes, or market development to increase profit margins (see also the Value-Added Economic Development Initiative Venture Proposal).

Figure 23. Farm operation income

Net cash farm income	2012	2017
Net income of operations	$27,136,000	$46,610,000
Average net income per operation	$39,847	$74,816
Operations with gains	279	262
Average gains per operation	$149,224	$223,074
Operations with losses	402	361
Average loss per operation	$33,788	$32,784

Source: USDA NASS, 2012 and 2017a. Note: dollar values shown here do not account for inflation.

One of several reasons for the low profit margins of farming is the continuously increasing cost of doing business. Figure 24 reflects farm production expenses in 2017, with an average value of expenditures per operation of $228,293. This average expense per operation has increased 181% since 1997, outpacing national averages of farm expenses which increased 124% during the same duration (USDA NASS 1997 and 2017a). The largest expense categories are feed and hired labor, both averaging more than $100,000 per farm with expenses in these categories.

Figure 24. Farm production expenses

Expense Category	Farms	Total Expenses	Average per farm
Feed	362	$39,280,000	$108,508
Labor	-	$22,245,000	-
Hired	181	$21,261,000	$117,464
Contract	33	$984,000	$29,818
Ag services	-	$17,976,000	-
Custom work and custom hauling	123	$1,745,000	$14,187
Machinery and equipment rental and leases	53	$1,085,000	$20,472
Other	308	$11,761,000	$38,185
Utilities	474	$3,385,000	$7,141
Supplies & repairs (excl. lubricants)	538	$13,714,000	$25,491
Depreciation	324	$13,703,000	$42,293
Fuels (incl. lubricants)	595	$8,705,000	$14,630
Seeds & plants totals	282	$7,315,000	$25,940
Property taxes	601	$6,523,000	$10,854
Fertilizer totals, incl. lime & soil conditioners	307	$6,587,000	$21,456
Interest	200	$5,678,000	$28,390
Non-real estate	137	$3,146,000	$22,964
Real estate	137	$2,532,000	$18,482
Livestock and poultry purchased or leased	149	$3,947,000	$26,490
Other livestock and poultry	104	$3,229,000	$31,048
Breeding livestock	69	$718,000	$10,406
Chemical totals	276	$3,809,000	$13,801
Rent, cash, land & buildings	148	$2,869,000	$19,385

Source: USDA NASS, 2017a. Note: Values represent 2017 dollars.

LABOR AND SUPPORT RESOURCES

In 2017, 1,399 workers were hired to work either seasonally or year-round on farm operations, with approximately 47% of these workers working more than 150 days of the year (USDA NASS, 2017a). Of these hired workers, 301 migrant workers worked on 32 farms in Onondaga County. These hired migrant workers likely were hired through the H-2A Temporary Agricultural Workers program, which exists to bring in labor when there are not enough US workers who are able, willing, qualified, and available to do temporary work (USDA NASS, 2017a; US Citizenship and Immigration Services, 2022). Furthermore, many sole proprietorships on smaller farms do not have hired labor. In 2017, 313 farms reported having 670 unpaid

workers (USDA NASS, 2017a). Note that these figures are likely undercounted total farm employment due to under-reporting among USDA Agricultural Census survey respondents.

Most hired farmworkers work full time, and some work more than 40 hours per week (US Department of Labor Bureau of Labor Statistics, 2020a). In May 2020, Central New York region farmworkers on livestock operations had an annual mean wage ranging from $34,210 to $48,160, while farmworkers on cultivated operations had an annual mean wage ranging from $32,680 to $44,680 (US Department of Labor Bureau of Labor Statistics, 2020a). Regarding staff size, most Onondaga County farm operations with hired staff employ between one and four hired farmworkers (Figure 25).

Figure 25. Farm operations by size (hired staff)

Farm size	Number of Farms	% of Total Farms with Hired Staff
Total farms with hired labor	181	-
Farms with 1 worker	40	22%
Farms with 2 workers	38	21%
Farms with 3 to 4 workers	46	25%
Farms with 5 to 9 workers	24	13%
Farms with 10 or more workers	33	18%

Source: USDA NASS, 2017a.

Agriculture was a growing sector from 2015 to 2020 in Onondaga County according to a recent analysis conducted in the development of the Onondaga County Comprehensive Plan, with an increase of roughly 50 jobs (EMSI, 2020). Specifically, the following agricultural and food-related sectors employed more individuals as a share of the overall County employment than national employment rates, as indicated by their employment location quotients greater than one[5]

- specialty food stores (1.81)
- grocery and related product wholesalers (1.78)
- dairy product manufacturing (1.71)
- cattle ranching and farming (1.53)
- grocery stores (1.36)
- alcoholic beverage retailers (1.30)
- support activities for animal production (1.06).

The agricultural labor sector in Onondaga County faces many challenges. Overall, there is a labor shortage. Due to the low income and financial risks of farming, fewer young people within farming families are

[5] Beverage manufacturing and fruit & vegetable preserving also employed more individuals as a share of the overall County employment than national employment rates, however, due to the small number of establishments, total employment data is not disclosed due to confidentiality concerns (US Department of Labor Bureau of Labor Statistics, 2020b).

remaining in the family businesses (see the Demographic Overview section in the Agricultural Community Profile and the Farm Succession section in this profile for more discussion). Agricultural workers face low wages, long workdays, and difficult working conditions across the country.

Many farms require the use of the federal H-2A program to bring in able, willing, qualified, and available migrant or immigrant farmworkers. While some larger farm operations have sought to accommodate the unique challenges faced by migrant farmworkers (e.g., shuttle services to transport workers to facilities), migrant farmworkers often face complications from language barriers, lack of adequate transportation, isolation from the broader community (in the case of those living in on-farm housing), and immigration policy (Fox et al., 2017).

To address these difficult working conditions, the Farm Labor Wage Board, as part of their authority under the 2019 New York State Farm Laborers Practices Act, made a resolution to phase in a 40-hour work week for farmworkers by 2032, lowering the threshold by four hours per week every two years beginning January 2024 (anything over 40 hours will require overtime pay) (New York State Department of Labor, 2022). This recent change has sparked concerns from farm operators, who already faced labor shortages while balancing the increasing labor costs with the slim profit margins of farms, all while retaining a quality workforce here in NY (workers may easily choose to work for higher earnings in other states that participate in the federal H-2A program for immigrant and migrant farmworkers but do not require a 40-hour work week). In addition, federal policies relating to visas and other immigration programs have increased restrictions on migrant workers.

As labor and related technology needs continue to evolve, many of the needed workforce skillsets in agriculture will likely evolve as well. This may help to expand the potential workforce. For example, increased job opportunities in warehouse distribution and drone technology may spill over into the agricultural sector as well and help attract people who would have otherwise not considered a career in agriculture. Moving forward, a resilient agricultural workforce will be contingent on reaching all potential workers, the ability of farms to pay workers competitive wages while providing adequate support resources, including job and safety trainings, quality housing/transportation, and safe and healthy working conditions. Much of this is contingent on federal immigration and farmworker policies as well as the price of food.

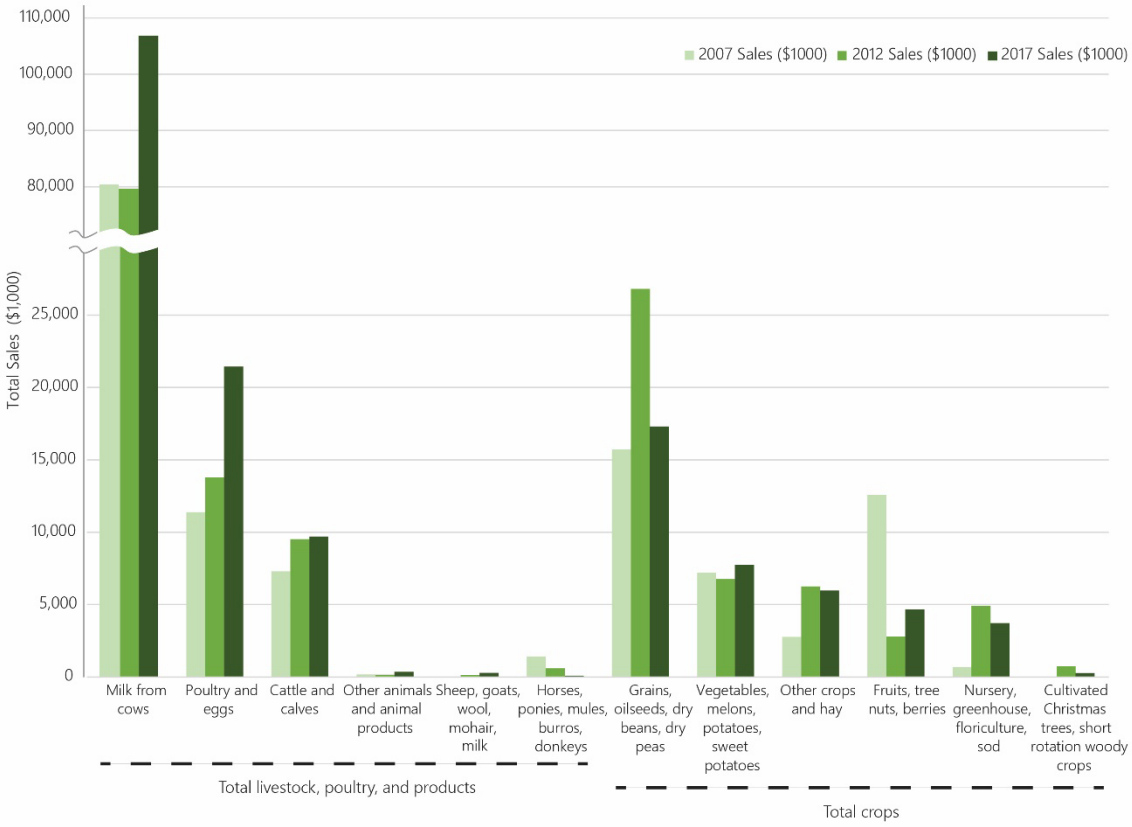
LOCAL AGRICULTURE MARKET TRENDS

Unlike most industries, farm income is very unstable from year to year. Farmers are particularly susceptible to changes in income due to weather conditions that affect crop output, yearly variations in market prices of agricultural products, and rising costs for maintenance and farm technologies. Yet Onondaga County agriculture as a sector has been consistently growing within Onondaga County's economy over the past 15 years, most recently producing $178 million in annual sales from a total of 623 farms (USDA NASS, 2017a). This is up 23% from 2007 (USDA NASS, 2007).

As demonstrated in Figure 26, dairy has been a primary driver of this growth, due to its significant market share of agricultural products and 27% growth in sales between 2012 and 2017 (USDA NASS2012; USDA NASS, 2017a). Poultry and egg sales have also consistently grown over recent years. This trend of dairy sales aligns closely with New York as a whole. New York has more than 35,000 farms covering 7.3 million acres, nearly one quarter of the state's land area. New York's U.S. rankings rose in 2017 compared to 2011 in milk, snap beans, and maple syrup. In 2019, New York State produced 820,000 gallons of maple syrup, marking a 75-year record (NYS Department of Agriculture and Markets, 2020). Milk is by far the state's largest

agricultural commodity, with $2.7 billion in sales in 2017, more than half of the total for all agricultural products (Office of the New York State Comptroller, 2018).

Figure 26. Changes in Crop Sales by Product



Source: USDA NASS, 2007, 2012, and 2017a. Note: dollar values do not account for yearly price inflation.

Agriculture provides approximately 2.1% of the total taxable sales in Onondaga County, which is a slightly lower ratio than that of New York State as a whole (2.5%, Schmidt 2019). Albeit a relatively small share of the county's total sales, dollars received in agricultural sales are important and cause ripple effects to the broader economy. The economic impact is especially important to consider for rural communities.

The USDA's Local Food System Economic Impact Calculator is a useful input-output model that can determine the ripple effects that agricultural sales can have in a local economy. The upper bound of economic impact that agriculture sales have in Onondaga County, based on 2017's total agricultural sales, is estimated to be $282,231,240 annually (USDA Agricultural Marketing Service & Colorado State University, 2022). This is a rough estimate that includes direct effects (e.g., sales farmers make at a market) as well as

indirect effects (e.g., how farmers spend those extra revenues by hiring or paying a local business to help them move product).[6]

Recently, an evaluation was conducted to assess the indirect and induced economic impacts from sub-sectors of agriculture across New York State. Through the single economic multiplier for all agricultural output sales in New York State was calculated to be 1.49; meaning that for every dollar directly generated in NYS agriculture, $0.49 are indirectly generated in NYS (non-agricultural) businesses (Schmit, 2021). These indirect impacts represent a combined effect due to business-to-business activity and labor income spending (Schmidt, 2021).

Additional market trends to consider are the types of markets in which farm operations participate. Onondaga County's agricultural operations are proportionally strong in direct sales (selling directly to consumers via farmers markets, farm stands, CSAs, etc.) and direct wholesale (selling directly to local restaurants, grocers, institutions, etc.).

Figure 27. Direct market participation (retail and wholesale)

Retail Direct Market Participation	United States	New York	Onondaga County
Number of Farms	130,056	5,697	132
Percent of Farms (%)	6.4%	17.0%	21.2%
Total Sales	$2,805,310,000	$222,711,000	$4,361,000
Percent of Sales (%)	0.7%	4.2%	2.4%
Sales Per Capita	$8.57	$11.40	$9.44
Wholesale Direct Market Participation	**United States**	**New York**	**Onondaga County**
Number of Farms	28,958	1,587	37
Percent of Farms (%)	1.4%	4.8%	5.9%
Total Direct Market Sales	$9,036,103,000	$316,286,000	$25,069,000
Percent of Sales (%)	2.3%	5.9%	14.1%

Source: USDA NASS 2017a.

Agritourism (agriculture tourism) is an additional market that has become more popular in recent years, both nationally and locally. Agritourism sites can include wineries, farmers markets, pumpkin patches, farmsteads, apple orchards, and more – all of which can be found in Onondaga County. Because agritourism is a relatively new term, the USDA NASS Agricultural Census only recently started measuring it. While it likely underestimates the total rate of agritourism in the county, it may provide a point of comparison to other geographies (see Figure 28). As evidence of the likely undercounting, according to the 2017 Central New York Regional Recreation and Heritage Plan, there are 19 agritourism sites in the county and since then the total numbers have likely increased. Major local destinations include u-pick fruit or vegetable

[6] As noted on its website, the calculator may underestimate economic impacts of agriculture in NYS, due to the state's high population levels, strong agricultural sector, many input suppliers, and strong local labor market.

operations like Tim's Pumpkin Patch and music venues like Beak & Skiff. Benefits of agritourism includes its role as an additional revenue source for farmers and its ability to improve the public awareness about the importance of local agriculture. However, Figure 28 shows only 9 agritourism sites as the USDA Agricultural Census does not include farmer's markets in their count of agritourism market participation.

According to the USDA NASS Agricultural Census, the rate of Onondaga County farms with agricultural tourism sales is nearly identical to national levels (1.4% of farms), but lower than the New York State overall (2.5% of farms). Meanwhile, Onondaga County's agritourism brings in twice the revenues compared to US rates of agritourism, but less than New York State. On average, a farm participating in agritourism generates about $101,000 in sales, which is much higher than a typical agritourism operation in New York State or in the US overall (see Figure 28).

Perhaps a way to explain this higher rate of revenues per farm in Onondaga County is that there are fewer smaller scale operations participating in agritourism locally than compared to other places. This indicates that Onondaga County may have room to build up small scale agritourism to mirror the rates of agritourism participation and revenues throughout New York State and the US. More information about the planning considerations for agritourism can be found in the Appendix B Farm Friendly Toolkit.

Figure 28. Participation in agritourism

Agritourism Market Participation	United States	New York	Onondaga County
Number of farms	28,575	826	9
Percent of farms (%)	1.4%	2.5%	1.4%
Total agritourism sales	$949,323,000	$36,847,000	$907,903
Average value of agritourism sales per farm	$33,222	$44,609	$100,878
Agritourism revenue for every $100,000 in total agricultural sales	$2.44	$6.86	$5.09

Source: USDA NASS, 2017a. Note: the USDA Agricultural Census provides a Coefficient of Variation (CV) measure of uncertainty for estimates. In this case, Onondaga County has a 53% CV for 2017 agritourism sales, indicating a relatively high amount of uncertainty in the data compared to the US (2% CV) and New York State (12% CV). Measures of agritourism are only measured for farm operations if receipts of sales can be provided.

An additional type of agricultural market trends to consider is value-added products, which can enable farmers to increase profit margins if done effectively. Value-added products refer to changes to the physical state, form, or production of the product in a manner that enhances its value. Examples include making apples into pie or obtaining organic crop certification.

Many more Onondaga County farms have some form of value-added product sales compared to national and statewide rates; however, total dollars from value-added sales are relatively low for Onondaga County, falling under statewide rates and only slightly higher than national rates. This suggests there may be more profitable innovations of current value-added products, such as producing higher price point products, packaging products more efficiently and selling products to higher paying purchasers (for example local higher educational institutions that could purchase in bulk). Large-scale investments should be linked with feasibility studies prior to implementation to make sure investments are viable for the market.

Figure 29. Participation in value added production

Value-Added Market Participation	United States	New York	Onondaga County
Number of Farms	33,523	1,977	51
Percent of Farms (%)	1.6%	5.9%	8.2%
Total Sales	$4,043,356,000	$182,305,000	$4,454,000
Percent of Sales (%)	1.0%	3.4%	2.5%

Source: USDA NASS, 2017a.

Despite the production and strong economic base in Onondaga County, there remains an unmet demand for certain types of agricultural produce, specifically local meats, poultry and eggs, and fruits and vegetables. Figure 30 illustrates the results of a surface-level analysis of the demand for local agricultural products within Onondaga County. This analysis describes local production and market demand in four ways:

- Local quotient is the percentage of category food sales produced within the area (in this case, Onondaga County). Location quotients identify export industries in an area (those industries producing more of a good or service than is needed to meet area demand) and import industries (those producing less than enough to meet area demand). A result of greater than 100% indicates that local demand could be met entirely with local production if it were directed to these markets through a local food system.
- Local food demand is the approximate value of category wholesale sales which could come from local sources if supply were available.
- Local food supply is the approximate value of category wholesale sales produced within the area based on the county-level local quotient, some of which may be shipped to other states.
- Unmet market for local food is the difference between the value of local food demand and area production (supply) in the chosen categories.

The analysis summarized in Figure 30 relies partially on statewide data, therefore an additional investigation of regional productive capacity and consumer purchase intent (and the gap between these two metrics) that is specific to Onondaga County and/or Central New York is required. Nonetheless, the magnitude of the potential market for local food shown here suggests that the marketplace could accommodate more production of poultry and eggs, and significantly more production of local fruits, vegetables, and meats.

Figure 30. Potential unmet market demand for local food in Onondaga County

	Dairy	Poultry & eggs	Fruits & vegetables	Meat
Local quotient	214 %	59 %	12 %	12 %
Local food demand	$ 48,000,000	$ 20,000,000	$ 140,000,000	$ 44,000,000
Local food supply	$ 100,000,000	$ 12,000,000	$ 17,000,00	$ 5,500,000
Unmet market for local food	See note*	$ 8,100,000	$ 120,000,000	$ 39,000,000

Source: New Venture Advisors (2018) Note: Per New Venture Advisors, in this instance, local demand could be fully met with local supply if it were directed to these markets through a robust local food system.

According to Food Plan CNY, urban agriculture and community gardening in Syracuse has expanded over the past decade providing new sources of food to consumers, often in the form of fruits and vegetables. This is one of many potential avenues for meeting local demand for these products. The Brady Faith Community Supported Agriculture and community gardening through Syracuse Grows are two programs that increase access to local fruits and vegetables to meet local demand.

TECHNOLOGY

Although agriculture has a reputation as being an established and traditional industry, the sector is always innovating and will continue to innovate into the future using technology. To meet rising demand in the future with a shift in workforce, climate change challenges, and limitations in the natural environment, technology will continue to drive agricultural innovation to create new types of products, develop efficiencies in food systems, and foster new synergies between industry sectors.

Recently an examination of New York State's Agrifood System revealed that large scale investments in NY were occurring in the following ways: indoor farming, consumer packaged goods and food delivery services, and food safety technologies to improve traceability, logistics, and transport (Grow-NY, 2021). This report also identified a gap in investment for robotics, despite the numerous benefits that it can provide given current and anticipated labor shortages in the future[7]. The farm robotics category is large, including technology-enabled mechanical harvesters, drones, and autonomous robots. For now, however, robotics and automated harvesting are still some distance away from widespread, practical applicability across all sectors in New York State (Grow-NY, 2021). Technologies like drones and robotics are important to certain types of agriculture in Onondaga County as they are used in precision technology (e.g., pesticide/fertilizer application), palletizers, and milk processing.

Broadband access is more important than ever, with internet being a key tool for marketing, participating in retail, and reaching customers. Despite this, as of 2019, over 11 million Americans in rural areas and over 846,000 Americans in tribal lands lacked access to broadband that meets the federal definition for minimum standards (National Association of Counties, 2019). While Onondaga County is relatively connected to broadband compared to other areas of the country, there are still anywhere from 17- 21% of households without broadband access (National Association of Counties, 2019). Recently Onondaga County has committed the Coronavirus State and Local Fiscal Recovery Fund (Recovery Fund), part of the American Rescue Plan Act (ARPA), to invest $15 million to bridge this digital divide and provide equal access to broadband in all areas of the county currently not served by providers.

[7] Over the past two years, Grow-NY has funded start-up business awards for companies working in farm robotics, ag-related biotechnology, food safety technology, and more.

LAND VALUE DYNAMICS

MUNICIPAL FISCAL IMPACTS

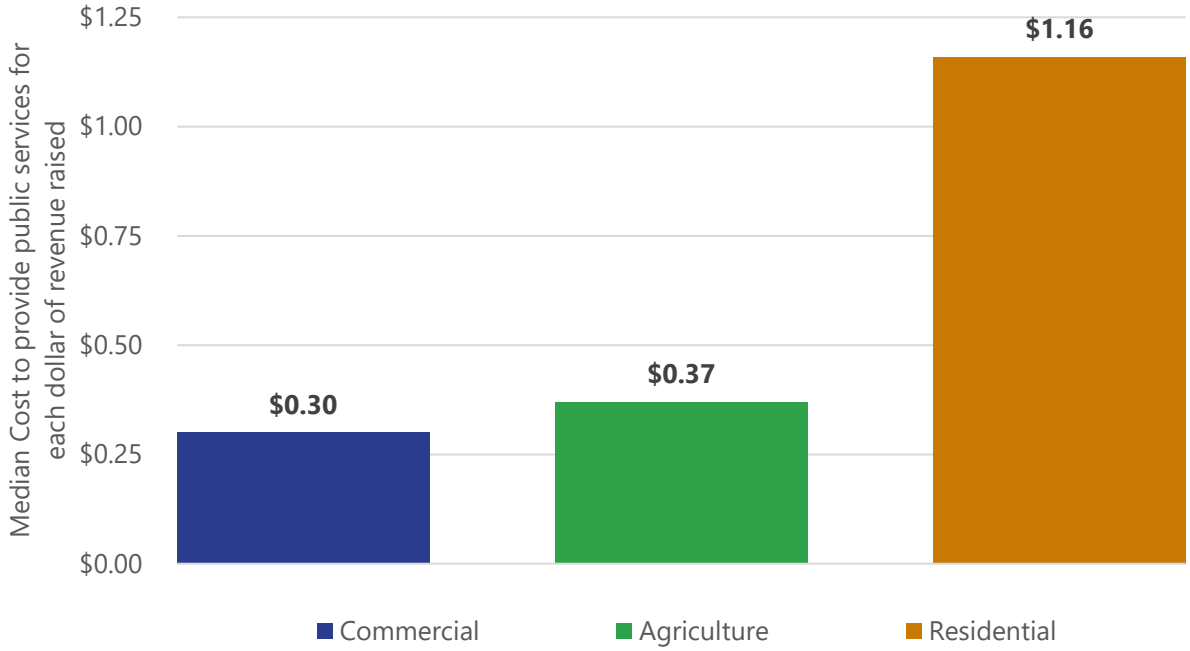
Conversion of agricultural land can have significant impacts for rural and suburban municipalities facing growth pressure. Fragmented, unplanned development of farmland can create inefficiencies in services, and environmental impacts such as traffic congestion, air and water pollution, loss of open space, and increased demand for costly public services. Outward growth of land development, often in the form of residential roadside development and subdivisions, into rural and suburban communities, predominantly in the form of residential development, is sometimes characterized as growth beneficial to a community's tax base, rather than agricultural uses, when the opposite is often the case. According to a 2016 report from the American Farmland Trust, specific misconceptions about farmland as it applies to municipal finances include:

- Myth 1: Open lands, including productive farms and forests, are an interim land use that should be developed to their "highest and best use."
- Myth 2: Agricultural land receives unfair tax breaks when it is assessed at its current use value for farming instead of at its potential use value for residential or commercial development.
- Myth 3: Residential development will lower property taxes by increasing the tax base.

Working lands and open space may generate less revenue than residential, commercial, or industrial properties, but they require minimal public infrastructure and services. A tool to examine the cost of community services was developed by the American Farmland Trust to consider how much agricultural lands contribute to the local tax base through comparative revenue-to-expenditure ratios to other land use classifications (i.e., residential, commercial, and industrial). As of 2016, over 150 of these studies had been conducted across the United States with 12 occurring in New York municipalities (American Farmland Trust, 2016). Following national trends, the studies across New York State municipalities indicate that working lands generate more public revenue than they receive back in public services. Their impact on municipal budgets is like that of other commercial and industrial land uses, with a much lower revenue-to-expenditure ratio. Median revenue-to-expenditures for land uses across these NYS municipalities are as follows: 1:1.25 for Residential, 1:0.26 for Business (Commercial + Industrial), and 1:0.29 for Agriculture (Working & Open Land).

Residential land uses have high infrastructure costs (both capital and maintenance), and consequentially must be subsidized by other community land uses like agriculture or business. Therefore, converting agricultural land to residential land use should not be viewed as a solution to increase municipal revenue. The Farm Friendly Toolkit for Municipalities further outlines methods for local governments to protect farmland and opportunities to increase local viability (Appendix B).

Figure 31. Median cost of community services nationally by land use types



Source: American Farmland Trust. 2016. Cost of Community Services Studies Fact Sheet and Technical Memo. Available at https://farmlandinfo.org/publications/cost-of-community-services-studies/ (Accessed January 9, 2021).

TAXATION OF AGRICULTURAL LAND

While property taxes in New York State are the 14th highest in the US (Tax Foundation, 2021), there are a variety of tax programs that work together to protect farmland. For newly constructed or reconstructed agricultural structures, New York State Real Property Tax Law allows a ten-year property tax exemption. Once granted, the exemption continues automatically for ten years pending no changes in use as a farming operation or conversion to a non-agricultural or non-horticultural use.

An additional opportunity for farmers to protect their farmland is through agricultural assessments. Agricultural assessments allow property owners to receive a property tax reduction for land in agricultural production by limiting the assessment to only the value of land in agricultural production, rather than its full development value. Onondaga County Real Property Tax Service parcel data indicates that approximately 1,385 individual property owners claimed an agricultural use value exemption in 2020.

An agricultural assessment applies to school, County, and town property taxes, and is based on the soil types on the farm. Agricultural assessments are limited to land used for agricultural production including cropland, pasture, orchards, vineyards, sugarbush, support land, and crop acreage either set aside or retired under Federal supply management or soil conservation programs. Up to 50 acres of farm woodland is also eligible for an agricultural assessment per eligible tax parcel. Further, land and water used for aquaculture production are eligible, as is land under a structure within which crops, livestock or livestock products are produced. Land visibly associated with the owner's residence is ineligible. The Onondaga County Soil and Water Conservation District will work with landowners to calculate acreage of agricultural soil groups.

Once a parcel, or any portion of it, is determined eligible for an agricultural assessment, the local assessor calculates such assessment by multiplying the acreage in each soil group and farm woodland by the applicable assessment value. The final assessment figure is the sum of the values multiplied by the municipality's most recent State equalization rate or special equalization rate. If property with an agricultural assessment is converted into a nonagricultural use[8], a payment is imposed to recapture the taxes forgone for converting such land. Assessors determine whether a conversion has occurred based on case-by-case basis. Conversion, as defined by New York State Department of Taxation and Finance, is, "an outward or affirmative act changing the use of agricultural land." These payments generally become the responsibility of the landowner at the time of conversion. Non-use of the property, such as abandoning land or leaving it idle, disqualifies the property owner from receiving an agricultural assessment, but is not considered a conversion. During the planning process, participating stakeholders expressed dissatisfaction with local assessment of agricultural land and a lack of awareness by local assessors regarding the nuances in the agricultural assessment policy as well as the wide variety of agricultural practices.

SOLAR AND OTHER RENEWABLE ENERGY DEVELOPMENT

New York State, including Onondaga County, is experiencing a large increase of utility solar energy development (systems producing 1 megawatt of solar energy or more). The demand for solar energy has been largely driven by increased efficiency within the panel technology, as well as New York State's renewable energy policy goals aimed at reducing greenhouse gases. Utility scale solar energy is land intensive, requiring on average five to ten acres of land per megawatt[9]. Developers often select agricultural land for solar installations due to its flat topography, minimal need for land clearing, and proximity to roads and transmission infrastructure. Approximately 40% of utility scale solar energy development in NYS occurs on agriculture lands and is anticipated to increase without any policy intervention.[10]

Solar energy in agricultural areas can negatively impactthe soil integrity of the land, and the agricultural industry. Utility scale solar, when developed in the traditional manner, removes agriculture from production. While some developers have co-located solar utilities and uses on the same site (e.g., using land for sheep grazing or creating pollinator habitat), land used for utility scale solar energy is more commonly removed entirely from agricultural production. Although there are decommissioning guidelines developed by New York State Department of Agriculture and Markets[11], soil disturbance resulting from the construction of solar facilities can compromise the long-term productivity of soil due to compaction, fill, and mixing soil layers.

[8] Conversion penalties apply if uses are converted within five years of last receiving an agricultural assessment if located in an agricultural district and within eight years of last receiving an agricultural assessment if located outside an agricultural district

[9] Syracuse Onondaga County Planning Agency. 2021. Solar Energy Best Management Practices for Agriculture-Friendly Projects. Available at: http://ongov.net/planning/documents/AgBestPractices05112021.pdf (Accessed February 2022).

[10] Katkar, V.V., Sward, J.A., Worsley, A., and Zhang, K.,M. 2021. Strategic land use analysis for solar energy development in New York State. Renewable Energy 173:861-975 Available from: https://www.sciencedirect.com/science/article/abs/pii/S0960148121004900 (Accessed February 2022)

[11] New York State Department of Agriculture and Markets. 2019. Guidelines for solar energy projects – construction mitigation for agricultural lands. Available at: https://agriculture.ny.gov/system/files/documents/2019/10/solar_energy_guidelines.pdf (Accessed February 2022).

Further, solar energy development on farmland can impact the way in which the land's taxable value is assessed (see Municipal Fiscal Impact section of this Economic Profile). If the primary use of the parcel changes from agriculture to energy production, the property owner will lose their agricultural tax exemptions.

If coordinated carefully between developers and landowners, solar energy can provide consistent supplemental income for farm operations to remain viable during difficult market changes. Solar energy is relatively environmentally benign. It provides valuable renewable energy to address climate change, does not generate on-site pollution, and maintenance does not require extensive truck traffic. However, solar energy can offer high value lease payments that are hard for farmers to refuse. This in turn can further drive the conversion of farmland, removing land from production and driving up the value and price of leasing agricultural lands. More expensive land prices can make it even harder for the farming community to access land.

Local land regulations can be used to facilitate a balance between agriculture and solar development. Local regulations can encourage the use of marginal farmland soils or non-agricultural areas for siting solar facilities and promoting dual uses on lands (i.e., co-located agriculture). The Farm Friendly Assessment Appendix provides additional information about how municipalities can work towards protecting farmland in balance with solar development.

NYS regulations are also evolving. The 2019 Climate Leadership and Community Protection Act (CLCPA) set forth a goal of having a minimum of 70% statewide electricity consumption from renewable sources by 2030 and emission-free by 2040. Under this act, the permitting of large-scale renewable energy projects (over 20-25MW) was expedited from the previous Article 10 permitting process to the more streamlined Section 94-c process. Through this process, solar developers must submit an agricultural plan to avoid, minimize, and mitigate agricultural impacts to active agricultural lands, consistent with NYS Department of Agriculture and Markets Guidelines to the maximum extent possible (New York State Office of Renewable Energy Siting, 2021).

Recently, American Farmland Trust released policy recommendations for a solar siting mitigation framework, ideas on how to increase agrivoltaic projects, and other recommendations designed to encourage solar developers to site projects in ways that strengthen farm communities and protect farmland (American Farmland Trust, 2022). Having siting tools that can consider projected capacities across regions, along with areas that are best suited for solar and agriculture, will further improve the ability to balance solar development while strengthening agricultural viability.

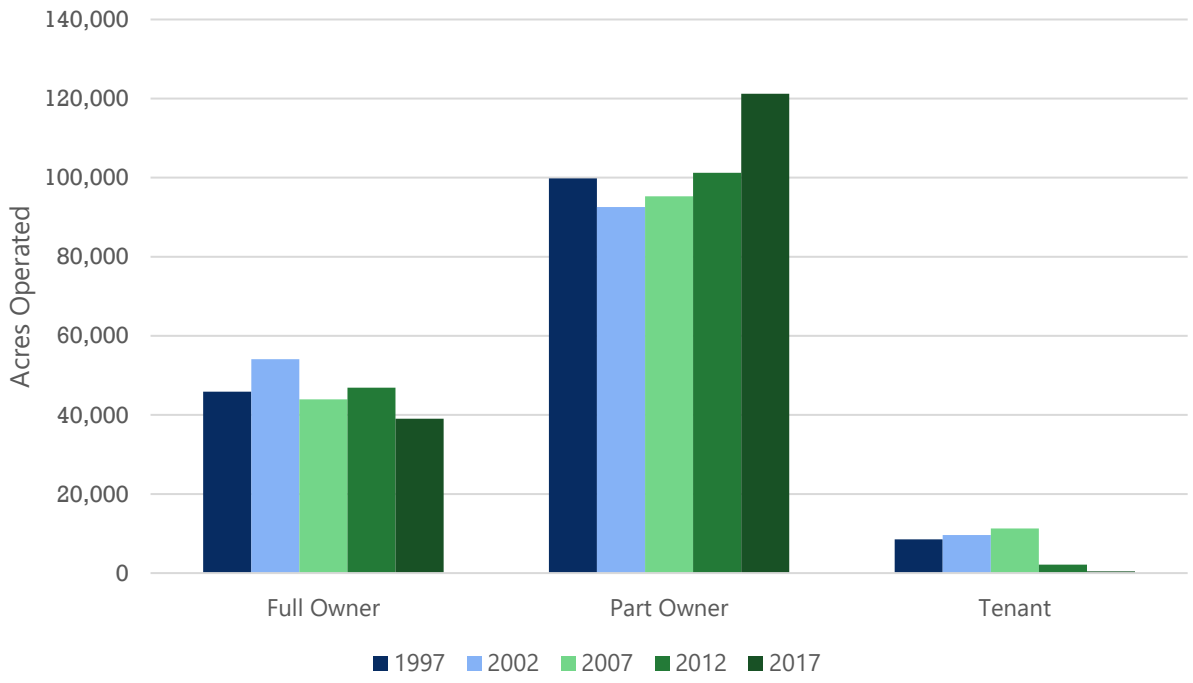
LAND OWNERSHIP TRENDS

To examine land ownership trends, the USDA Census of Agriculture classifies farms by tenure of producer. The classifications are defined as: (1) *Full owners* who operated only land they owned; (2) *Part owners* who operated land they owned and also land they rented from others, and (3) *Tenants* who operated only land they rented from others or worked on shares for others. Over the past 20 years, the renting or leasing of agricultural land has increased (Figure 32). While the total amount of operational agricultural lands in full ownership has decreased, the total amount of operational agricultural land in part ownership has increased. Typically, part owners own about 60% of the land with the remaining portion rented from others (the ratio between land owned and land rented has not changed).

Understanding the trends in leased farmland is important to consider in the context of land value and farm production. While leasing provides flexibility for farmers to "right-size" their operations, an overabundance

of leased land can create a degree of uncertainty. For example, if landowners decide to take land out of production for non-agricultural uses, such as solar or residential, this can drive up land prices for farmers leasing lands elsewhere. For the purposes of this report, however, ownership data of leased lands is not available, and additional analysis of this trend and its impact on land value is warranted.

Figure 32. Area of agricultural land in operation by land tenure



Source: USDA NASS 1997, 2002, 2007, 2012, and 2017a. Note: the USDA Agricultural Census provides a Coefficient of Variation (CV) measure of uncertainty for estimates. In this case, the 2017 tenant estimates had a 59% CV, indicating a relatively high amount of uncertainty in the data compared to the full owner and part owner metrics for the same year.

FARM SUCCESSION

An estimated 70 percent of U.S. farmland will change hands over the next 20 years, but many family operations do not have a succession plan that identifies a next generation farmer who is skilled in or willing to continue farming (USDA National Institute of Food and Agriculture, 2022). This trend should be anticipated in Onondaga County due to an aging farmer population, as discussed in the Demographic Overview of the Community Profile. If a farm has not adequately planned for succession, it is likely to go out of business, be absorbed into ever-larger farming neighbors, or be converted to non-farm uses.

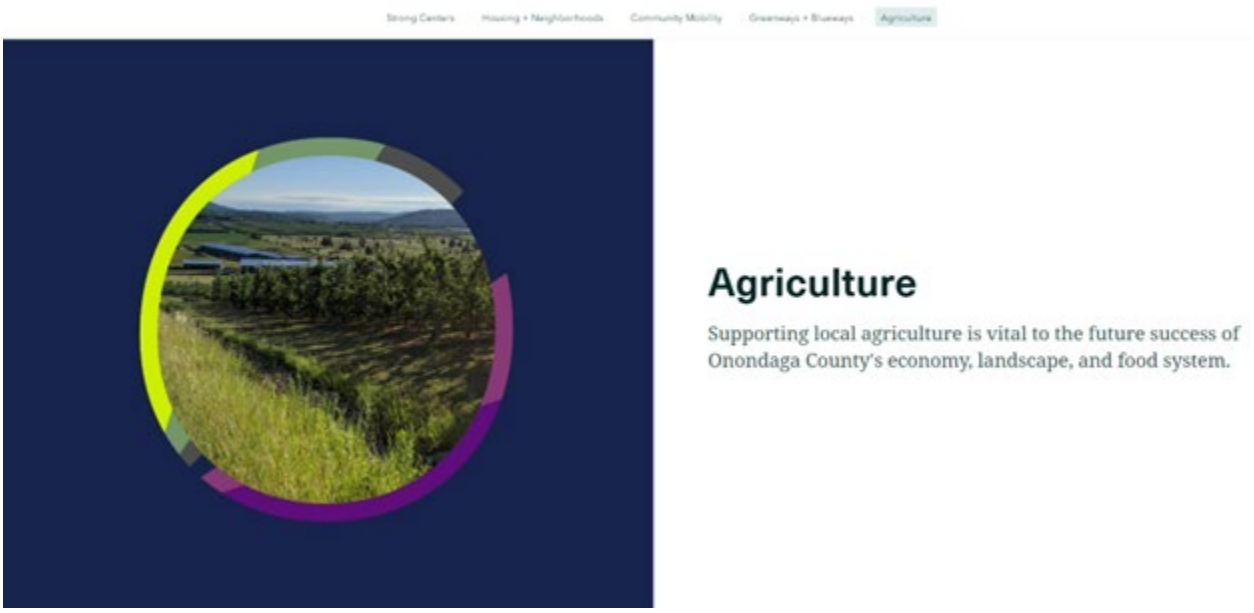
Fortunately, many tools exist to help manage these transitions of ownership (both in-family and out-of-family) through farm succession planning. Succession planning requires an array of financial management tools wherebusiness planning and estate planning are critical elements. There are also land link networking tools to connect existing farmers to farmers outside of the family (e.g., NY Farmland Finder). There are also

a range of land use tools that can be utilized by farmers themselves, (e.g., master planning for strategic subdivision strategies to create farmstead housing for future generations and applying for farmland protection easements), to others that require the involvement of municipalities (e.g., conservation subdivisions or fixed ratio/density averaging zoning). While there is no one single approach to succession planning, developing a plan requires a team of trusted professionals who can help navigate the process. Additional resources include the Farm Bureau, the FPIG program, and the Farm Friendly Municipal Toolkit of this plan, specifically the Farm Master Plan section.

ANALYSIS OF IMPORTANT FARMLAND

Farmland is at the core of the agricultural community and farming industry and is one of the most threatened components of the industry as well. As such, identification of the County's most important farmland was identified as a primary task for the updated Agriculture & Farmland Protection Plan. Mapping resources have been vastly improved since the last County Agriculture and Farmland Protection Plan and presents a new opportunity to share and analyze data related to our agricultural communities.

The Syracuse-Onondaga County Planning Agency, with its consultant team, have prepared a series of maps, to illustrate the agricultural community characteristics across the County, as well as create a model to highlight and measure certain characteristics related to farmland viability and the importance of land protection. The results of this mapping exercise can be found in the following pages, as well as through the **Onondaga County Ag Mapper**, which can be found on the County's agriculture website at *agriculture.ongov.net*. This interactive *StoryMap* application presents mapped data in an easy to digest format, with searchable, interactive layers of data (screenshot below).



It is envisioned that these mapping resources will help the AFPB, municipalities and the public in a variety of ways, including:

- Scoring and prioritization of projects being considered for endorsement by the AFPB and/or municipalities for local, state and federal grant programs, such as the NYS Farmland Protection Implementation Grants (FPIG) program. (See Farmland Protection Conservation Easements section below.)
- Integration of mapping analysis into County and municipal comprehensive plans and/or land use plans, to aid in identifying areas prescribed for future development and supportive infrastructure, or alternately, identification of lands to be protected from encroachment of urban development.
- Use of individual or aggregate data layers to understand land dynamics affecting a particular area or piece of land being proposed for development. Data layers in this analysis are also often

considered during zoning (zone changes, site plan review, special permits, etc.) and subdivision reviews, to assess impacts to land and resources and compatibility with neighboring uses.

- Increased availability and ease of use of data by the general public to understand various land conditions and factors affecting agriculture and development. Data helps our understanding of the local ag community.

FARMLAND PROTECTION CONSERVATION EASEMENTS

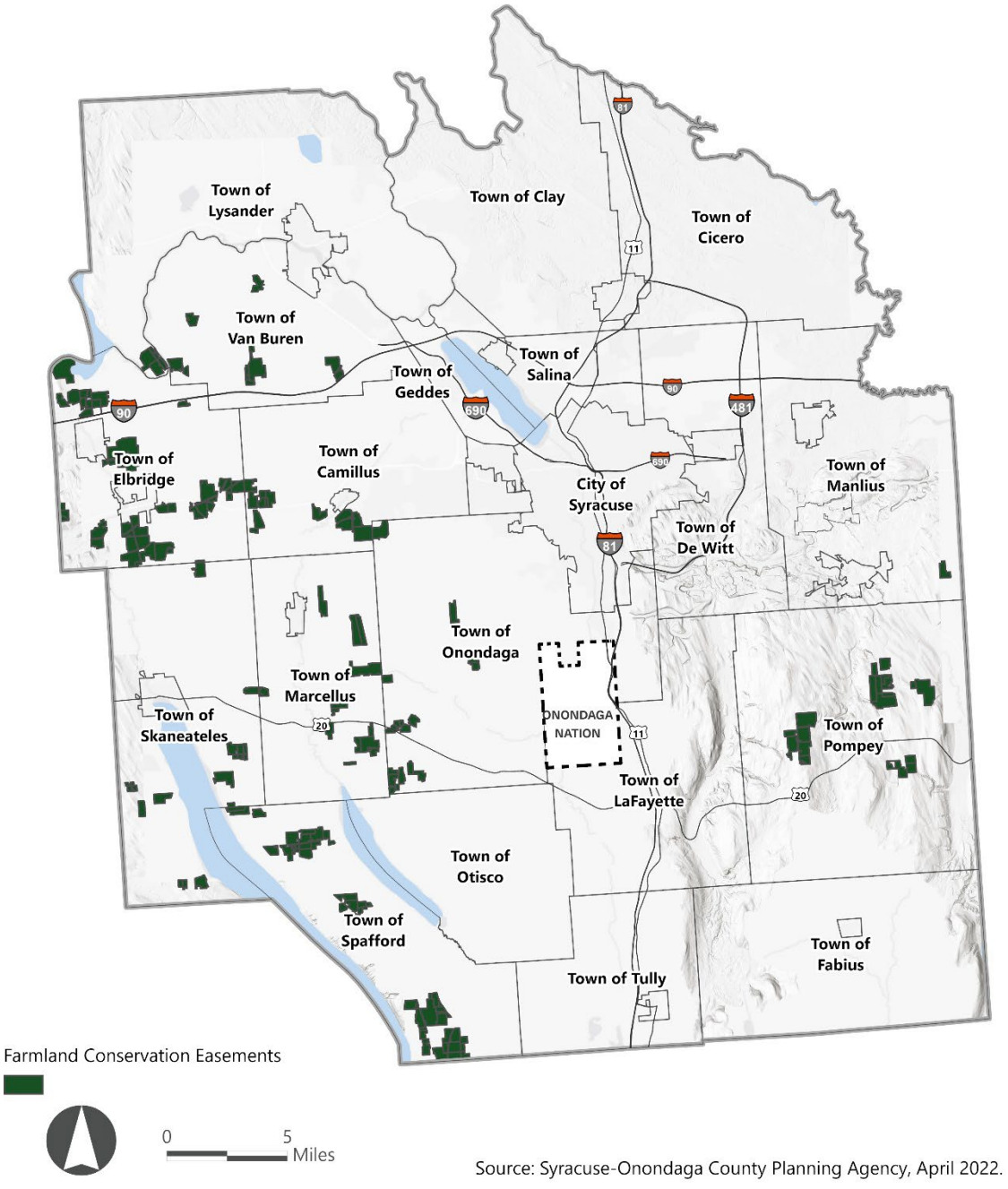
Onondaga County is engaged in a number of farmland protection activities, but perhaps the most important one is work involved with the protection of agricultural lands through conservation easements. Commonly known as the "Purchase (or Donation) of Development Rights" (PDR/DDR), farmland conservation easements are voluntary legal agreements that restrict the development of land, either as a donation or through monetary compensation, with the goal of preserving land suited for farming.

Onondaga County farmers have been protecting their land for future generations of agricultural use, through these easement programs since the first award in 1998. New York State's Farmland Protection Implementation Grants (FPIG) program, as well as USDA funds have provided tremendous assistance to the effort. Onondaga County has been an active partner in facilitating farm owner access to the program and is a leader in New York State.

Local partners have also contributed to the success of Onondaga County's easement program. The Town of Skaneateles and City of Syracuse Water Department have preserved over 700 acres in the Skaneateles Lake watershed. The Onondaga County Agriculture Council has supported the FPIG process, as well as locally financing the execution of multiple donation projects. And the local land trust community has long worked as active partners with farmers in Onondaga County to execute these important projects and have dedicated countless hours to the cause.

Now almost 25 years later, almost 12,000 acres of important agricultural lands have been protected from development in Onondaga County, representing an over $27 million investment in the preservation of local agriculture.

Map 5: Protected Farmland in Onondaga County as of April 2022

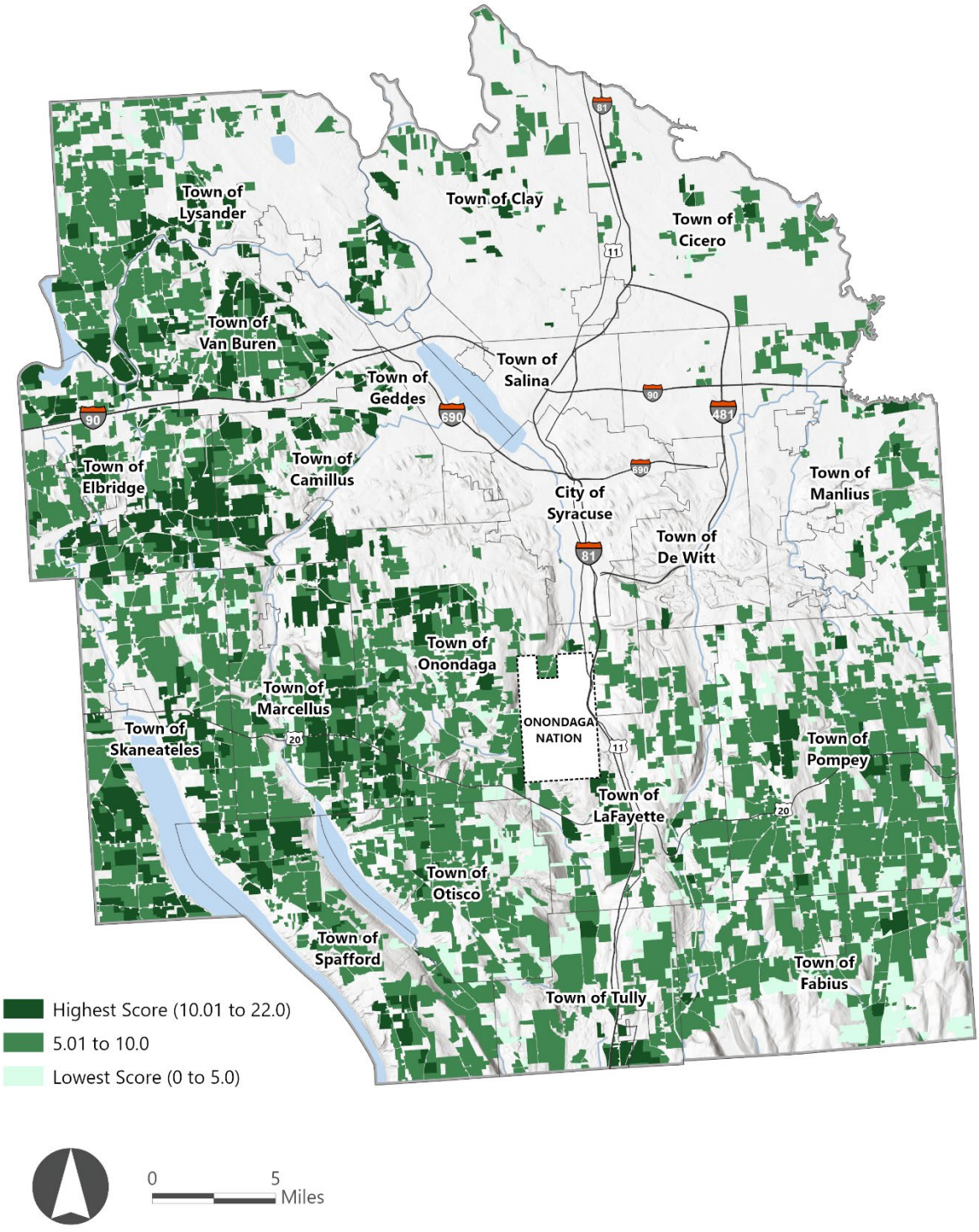


Source: Syracuse-Onondaga County Planning Agency, April 2022.

The prioritization of agricultural lands described in this section is modeled largely on the analysis used for years by the Onondaga County Agriculture & Farmland Protection Board in selecting projects for submission to the State's highly competitive easement grants program. This plan update has allowed the AFPB and SOCPA to further refine, as well as display publicly, the data and analysis used by the Board to help make difficult endorsement decisions.

To identify the County's most beneficial farmlands and areas of interest related to farmland protection efforts and programs, a GIS-based mapping analysis was conducted that considers data within each of the following four focus areas: Soil Value, Agricultural Vibrancy, Natural Resources, and Land Development. Important farmland, as defined in this mapping analysis, includes those with the highest soil value, those in proximity to other viable farm clusters, those also hosting natural resources, and land near development pressures. These are the lands that are most important to when strategizing farmland protection efforts.

For each focus area, individual datasets were weighted and aggregated into a Focus Area map showing the relative values for all agricultural lands in that category. Each of these analyses have also been combined to result in an overall scoring of important farmland throughout Onondaga County. As shown in the aggregate map below, there are clusters or areas of the agricultural community that stand out as highly important agricultural lands. Some are greatly based on inherent land qualities while others stand out based on high ranking for natural resource qualities, while others may highlight vulnerabilities to development pressure.


Town of Lysander
Town of Clay
Town of Cicero
Town of Van Buren
Town of Salina
Town of Geddes
Town of Elbridge
Town of Camillus
City of Syracuse
Town of Manlius
Town of De Witt
Town of Onondaga
Town of Marcellus
ONONDAGA NATION
Town of Skaneateles
Town of Pompey
Town of LaFayette
Town of Otisco
Town of Spafford
Town of Fabius
Town of Tully
Highest Score (10.01 to 22.0)
5.01 to 10.0
Lowest Score (0 to 5.0)
0
5
Miles

The county is also presenting this data in the form of an online **Ag Mapper** application, accessed through the **agriculture.ongov.net** website, to encourage users to explore and learn about the various data layers and visualize these inputs on a specific area or parcel.

Of note, identification of priority farmland is not a simple task, and the planning team acknowledges the inherent complexities and limitations on available data in this type of data analysis. Despite these limitations, the Agriculture & Farmland Protection Plan team is confident that the display of data layers and analysis of available data is a benefit to the planning process and to our communities. The Syracuse-Onondaga County Planning Agency, with the Agriculture & Farmland Protection Board, will continue to enhance the data and analysis of this mapping as new data and methods become available. Data is to be used as planning-level data and subject to refinement and/or corrections.

MAPPING ANALYSIS PROCESS

The following generally describes the GIS mapping components and methodology for identifying important farmland in Onondaga County. More detailed methodology and sourcing of data is found in Appendix C.

DEFINING FARMLAND

The mapping analysis was performed for parcels determined to be reasonably considered to be farmland in Onondaga County. As no single reliable single dataset adequately reflects the extent of land used in agriculture, the planning team relied on a variety of data to create a base farmland layer. For these analyses, parcels of land are deemed to be "farmland" if they meet any of these criteria:

- Land use classified by local assessment data as agricultural land (100-level land use class category), residential parcels with agriculture (241), or abandoned agricultural parcels (321); or
- Tax parcels that currently meet requirements to receive agricultural use value assessments; or
- Parcels protected with a farmland protection conservation easement; or
- Parcels with farmland visible via satellite imagery.

IDENTIFYING IMPORTANT FARMLAND

To identify the County's most beneficial farmlands and areas of interest related to farmland protection efforts and programs, a GIS-based mapping analysis was conducted that considers each of the following four focus areas:

- **Soil Value:** Farmland with valuable soils, specifically prime, statewide important soils, and prime if drained. These are soils known to result in the best overall crop yields throughout the state, and may also be considered to be of national significance
- **Agricultural Density:** Areas of dense agricultural activity. These vibrant areas of farmland are characterized by their proximity to other active agricultural lands.
- **Natural Resources**: NThe presence of natural resources on or near farmland including wetlands, floodplains, and other environmentally important features. Protecting farmland often means the protection of these natural resources, and these resources often benefit agricultural communities as well.
- **Land Development:** Farmland vulnerable to development as defined by the land's exposure, susceptibility, or capacity for the conversion to other more intensive uses, such as residential or commercial development.

These four focus group areas represent important factors that relate to farmland protection efforts, including identification of assets, beneficial relationships, as well as threats to farmland. For each focus area, several relevant datasets were identified by the project team. Data options were reviewed and selected by the Agriculture and Farmland Protection Board and mapped individually and in aggregate.

RANKING IMPORTANT FARMLAND

To highlight the most prominent lands within each focus area, the project team, with the AFPB, performed a ranking of agricultural lands for each focus area on a relative scale. Individual datasets were weighted and aggregated into a Focus Area map showing the relative values for all agricultural lands in that category.

Each of the four focus area ranking maps were then combined to result in an overall scoring of important farmland throughout Onondaga County. The result is an aggregate map that combines all identified and weighted features of important farmland into a single visual representation. This analysis can assist the County, land trust partners, municipal decision-makers and the public to better understand the impact of land use decisions on issues of resiliency and the long-term viability of the regional agricultural sector.

FOCUS AREA MAPPING

Mapping inputs and scoring of parcels within each of the four farmland protection focus areas is presented here,

SOIL VALUE

Soils are among the most basic and important assets of farmed land. While good soils are prevalent in Onondaga County, this is not the case nationally, and as such should be considered an important and limited resource. Prime Soils and Farmland of Statewide Importance are terms defined by the US Department of Agriculture. Prime farmland generally consists of identified soil types which have the best combination of physical and chemical characteristics for producing food, feed and other crops which are of value to the agricultural sector. Farmland of Statewide Importance reflects lands which do not specifically meet USDA criteria, but have been identified as important by the New York State.

Prime Soils

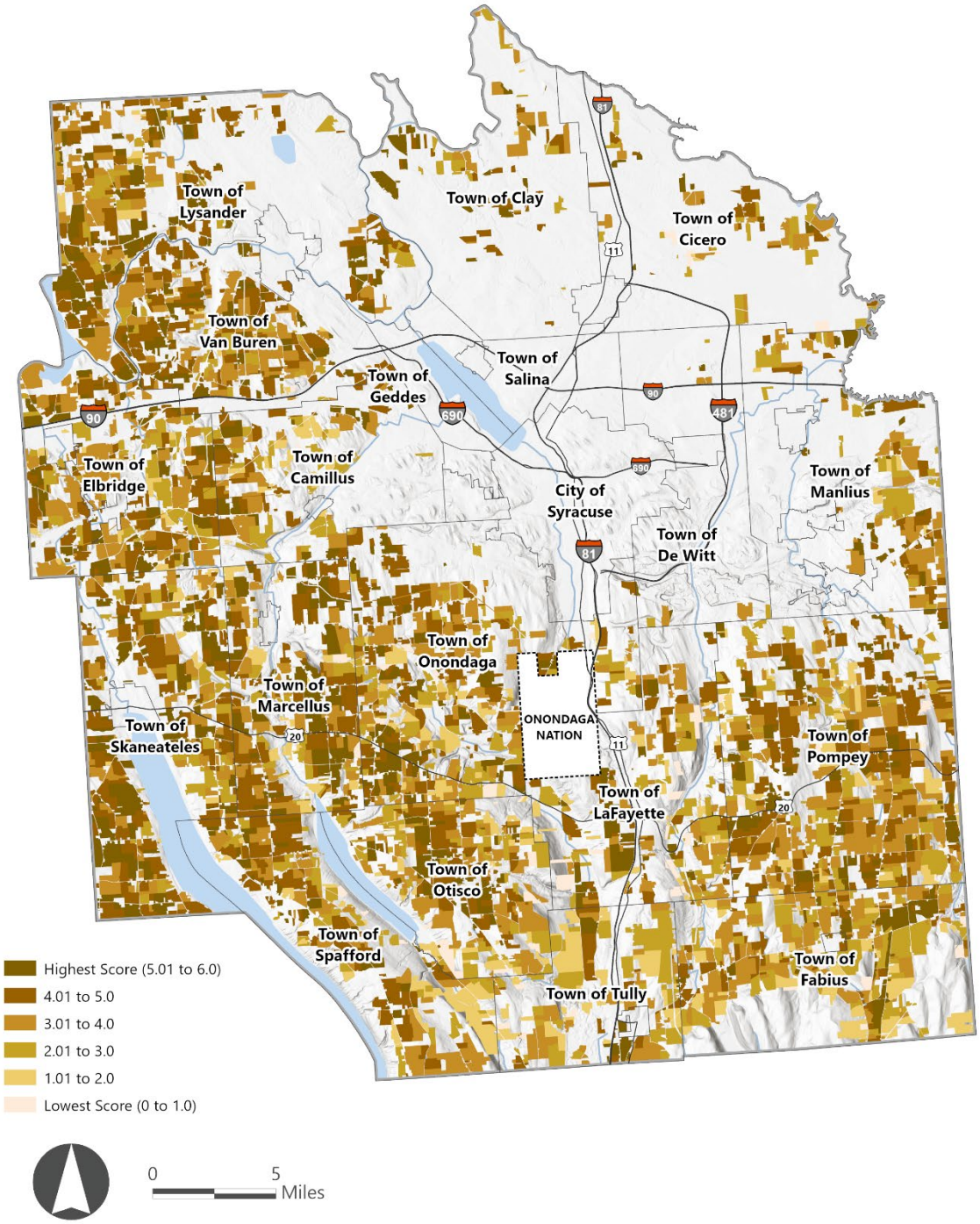
Prime Soils if Drained

Farmland of Statewide Importance

Source: USDA, NRCS, SSURGO Soils, 2016

This map reflects a weighted ranking of these combined data layers on lands identified as farmland by the project team. Agricultural lands shown in the darkest brown in Map 6 are those with the highest relative agricultural soil value "score." While Onondaga County is fortunate to have excellent soils throughout the County, higher value soils according to this analysis are found generally in the Finger Lakes watershed areas as well as in the northwest portion of the county.

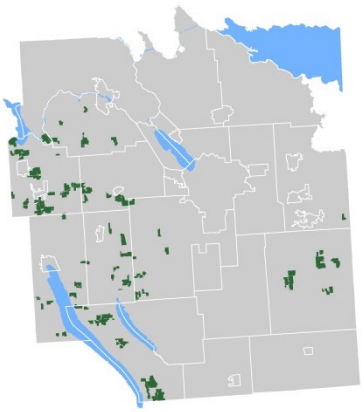
Map 6: Analysis of farmland by soil value



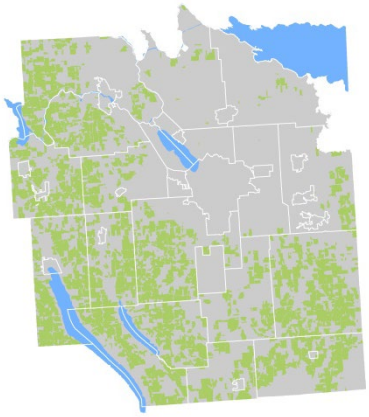
AGRICULTURAL DENSITY

Clustering or concentration of agricultural lands can have numerous benefits. Density of agriculture helps to support the viability of ag-related businesses and suppliers. Travel on rural, agricultural roadways is less dangerous and burdensome. Access to compatible and affordable lands is increased. And it reduces conflicts and inefficiencies from being located adjacent to urban development, minimizing neighbor conflicts.

The following data shows the location of actively cultivated lands, parcels receiving agriculture related tax exemptions and lands protected in perpetuity as agricultural land with related conservation easements.



Protected Farmland

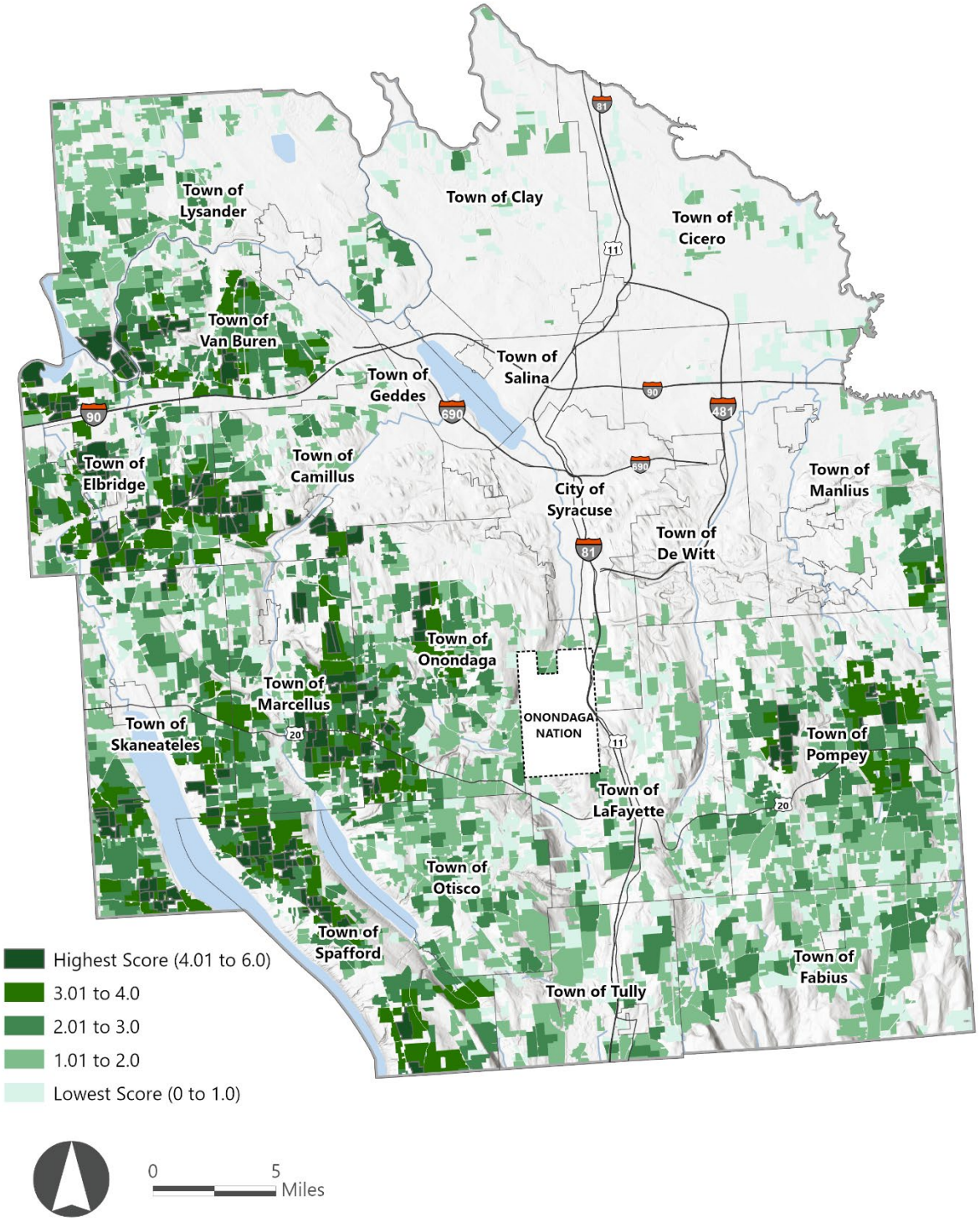


Parcels Receiving an Agricultural Assessment

Cultivated Land

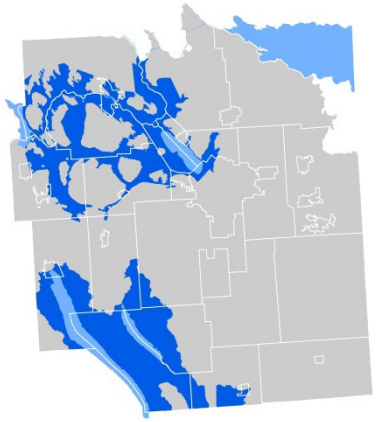
This map reflects a weighted ranking of these combined data layers on lands identified as farmland by the project team. Agricultural lands shown in the darkest blue areas are those with the highest "score", or highest agricultural density. Multiple areas of vibrant agricultural activity appear on this aggregate mapping, with strong clusters in different locations in Onondaga County. Note that parcel size is also included in the analysis as a numeric variable and not a categorical variable. Therefore, it is not included in the maps above to avoid inaccurate representation of the data.

Map 6: Analysis of farmland within dense agricultural clusters



NATURAL RESOURCES

Agricultural lands host, and often protect, key resources that are critically important to the environment. When farmland is transitioned to developed land, environmental values of the land are usually also compromised. As such, the presence of certain natural features such as wetlands, floodplains, and drinking watersheds, or the presence of open space and scenic lands and viewsheds, are a valued component of agricultural lands – both for the benefits these resources bring to farms in terms of water supply and management, but also the benefits having these resources on or near our farms have on these resources as well.



Drinking Water Supply Watersheds and Aquifers

State and Federal Wetlands

Floodplains

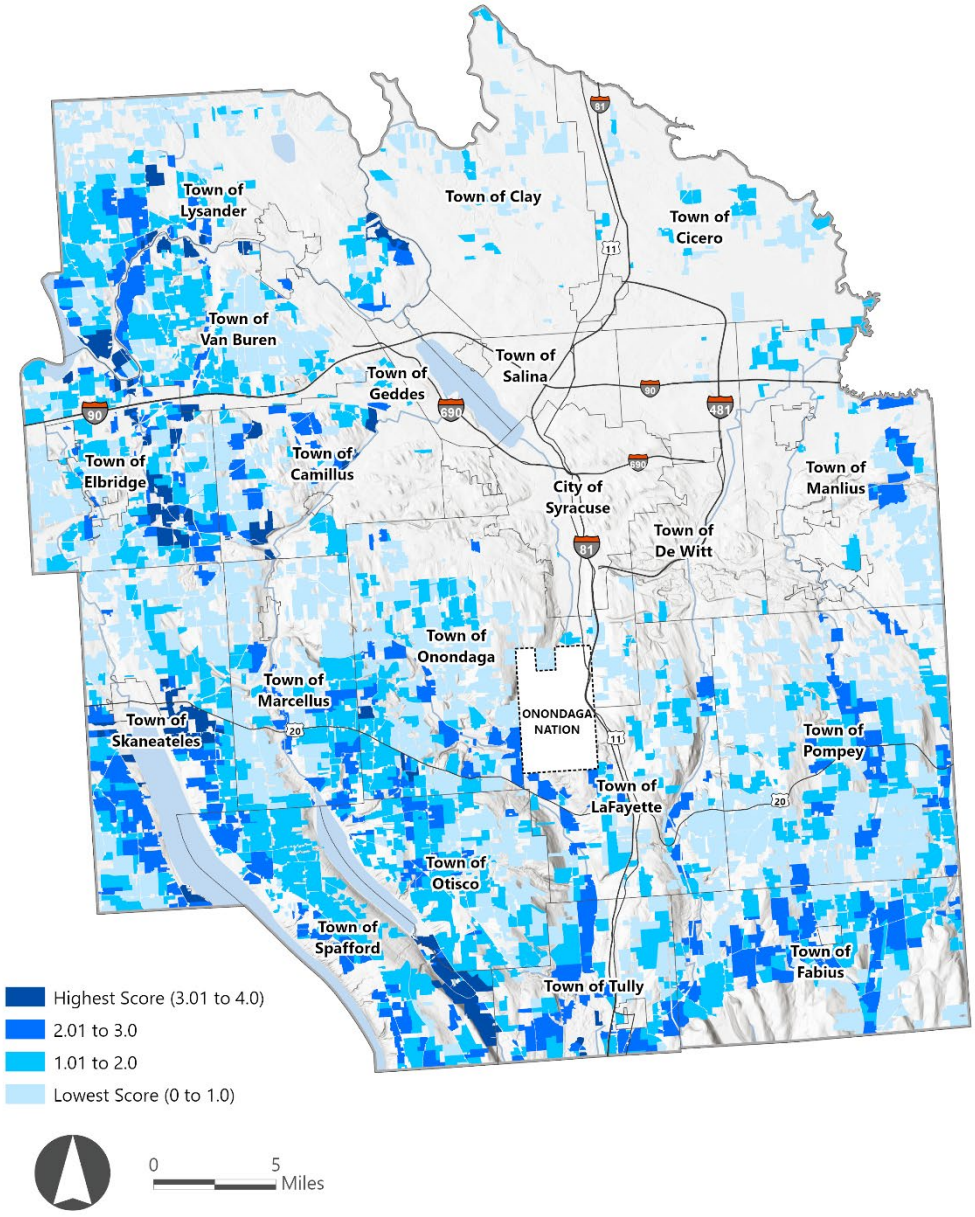
Protected Streams and Waterbodies and other Major Lakes and Ponds

Public Parks, Land Trust Owned, and Other Protected Properties

Routes 20 and 80 One Mile Viewshed

Map 7 reflects a weighted ranking of these combined data layers on lands identified as farmland by the project team. Agricultural lands shown in the darkest green areas are those with the highest natural resource "score" .

Map 7: Analysis of farmland and important natural features



ONONDAGA COUNTY

AGRICULTURE & FARMLAND PROTECTION PLAN

While Onondaga County has a vibrant and prominent agricultural presence, it also contains a major urban area and a population of approximately 476,000 residents. The land area contains a a central city, significant and emerging suburban corridors and neighborhoods, commercial centers, and more rural hamlets, villages and scattered homesites. Land development in a county such as Onondaga is a threat to agricultural land availability as well as affordability. The encroachment of residential development in proximity to agricultural operations can also cause conflicts between incompatible land uses.

In the last 50 years, Onondaga County has lost approximately half of its agricultural lands to development. It is increasingly important to preserve remaining agricultural lands threatened by development pressure. The following datasets are leading indicators of where residential and commercial development, as well as commercial solar development, is likely to be sited.

Major Electric Transmission Lines

Parcels with Public Water Service

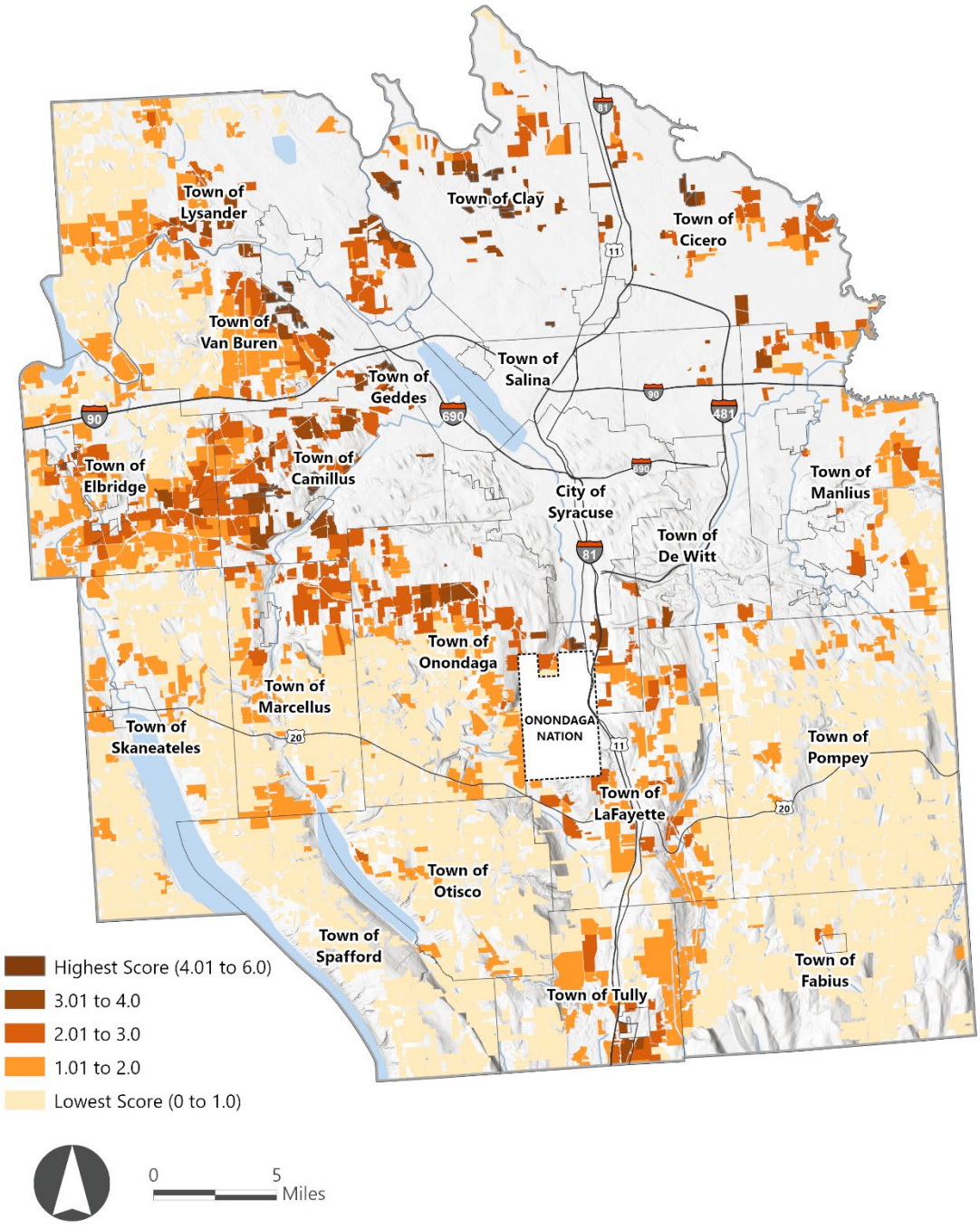
Parcels with Public Wastewater Service

Properties Developed Since 2016

3, 5, and 10 Minute Travel Times from Interstate Highway Interchanges

As shown with the darkest areas on Map 8, there is a significant perimeter around the Syracuse Urbanized Area that indicate the highest conversion values. The darkest areas with the highest development pressure rankings generally are found along highway corridors as well.

Map 8: Analysis of pressure on farmland for land use conversion



COMBINED IMPORTANT FARMLAND MAPPING

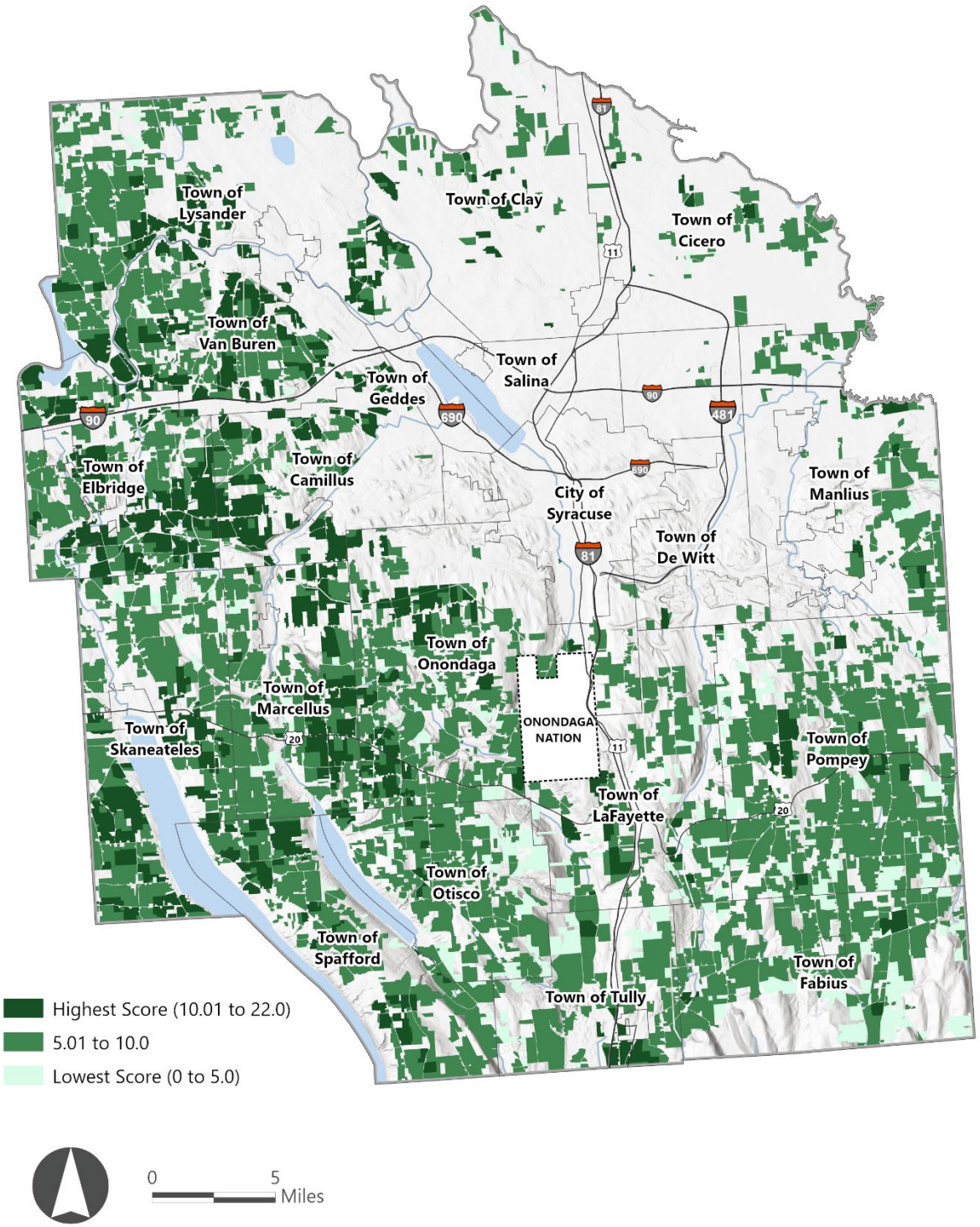
The following map shows a combined aggregate map of the four focus area mapping analyses to show an overall picture of important agricultural lands in Onondaga County. As shown in the aggregate map, there are clusters or areas of the agricultural community that stand out as highly important agricultural lands. Some are greatly based on inherent land qualities while others stand out based on high ranking for natural resource qualities, while others may highlight vulnerabilities to development pressure. Those with the highest-ranking likely rank highly in multiple areas.

These areas should be prioritized by Onondaga County agencies, municipalities and support organizations for policies to protect and enhance Onondaga County agriculture. Prioritizing these areas will result in improved strategized protection near areas facing the highest threat of land conversion, while also factoring in the value of soils, proximity to other agricultural clusters, and natural resource benefits. Note the areas of important farmlands (e.g., across the western and southern areas) are subject to change with updated mapping as the conditions faced by agriculture change in the upcoming years.

In addition to the above display of information, the Syracuse-Onondaga County Planning Agency has developed an online Onondaga County Ag Mapper application, which displays the data and analysis in a user friendly and interactive mapping platform. The Ag Mapper is available at agriculture.ongov.net.

Of note, identification of priority farmland is not a simple task, and the planning team acknowledges the inherent complexities and limitations on available data in this type of data analysis. Despite limitations, the Agriculture & Farmland Protection Plan team is confident that the display of data layers and analysis of available data is a benefit to the planning process and to our communities. The Syracuse-Onondaga County Planning Agency, with the Agriculture & Farmland Protection Board, will continue to enhance as well asl regularly update the data and analysis in these map products as new data and methods become available. Data is to be used as planning-level data and subject to refinement and/or corrections.

Map 9: Analysis of important farmland for protection



SUMMARY OF COMMUNITY CONTEXT

The following provides an overview of strengths and opportunities that have emerged from the process of developing this plan, as highlighted in the Community Profile, Economic Profile, Analysis of Important Farmland, Farm Friendly Land Use Tools, and engagement with the municipalities, stakeholders, and community members through the development of this planning process.

AGRICULTURAL ECONOMIC DEVELOPMENT

STRENTHS AND OPPORTUNITIES

- Onondaga County is in the top ten counties for all agricultural sales in New York State.
- Onondaga County is one of the top agricultural producers of poultry, eggs (#3) and dairy (#9).
- The CNY Regional Market provides a centralized location for reaching diverse markets.
- Numerous large institutions are sited in Onondaga County to provide a steady market for farmer products.
- Workforce development programs that relate to agriculture exist through CCE, BOCES, RISE, etc.
- Tech startups/industries may provide new opportunities for the agricultural sector.
- New crops (e.g., cannabis, greenhouse crops) can provide increased revenues for farmers.
- Biodigesters can provide supplemental income if managed effectively, but the technical requirements are a barrier as well as managing truck traffic.
- Solar, if sited appropriately, can provide supplemental income to farm families.
- Farm operations are highly efficient, and operators bring a wealth of business knowledge.
- Technology is always improving to maximize efficiency.
- Local businesses collaborating (e.g., distribution providers sharing transportation costs to ship produce to NYS) provide efficiencies that can keep prices down for local producers.
- New facilities can provide packaging opportunities for producers of multiple scales to provide food to local markets.
- Funding mechanisms for producers and agribusinesses do exist (e.g., cooperative agreements, granting programs) to alleviate capital costs for individual operators.
- Strong land base, great soils, plentiful water for irrigation.

ISSUES AND CHALLENGES

- The price of food is often fixed, while the costs of farming continue to increase.
- Institutions are not very adaptable to the seasonality of local agriculture. Also, different institutions can have different packaging needs.
- Not all farmers have broadband internet yet, which is more important than ever with the rise of robotics, drones, internet sales marketing via social media, and other technological advances.
- It will be harder to get migrant labor through the H2A program if it is incentivized in other states.
- New overtime pay laws will put a greater labor cost burden on the agricultural community.
- Fluctuating expenses combined with increasing production costs create tight margins.
- Increasing technological demands drive capital cost requirements for farmers.
- Value added production typically has limitations; organic dairy markets are one example of this.

- High property taxes in New York State make costs for farming more expensive.
- Lack of packaging, freezing, and distribution facilities limit economic opportunities for local producers.
- Limited food-based industries exist locally.
- Dairy consumes much of the County's agricultural land, impacting the ability to serve other food-based industry sectors.

PROTECTION OF AGRICULTURAL LAND

STRENTHS AND OPPORTUNITIES

- Multiple resources exist that can incentivize farmland protection, including the FPIG program, CREP program, and collaboration with local land trusts.
- Development pressure to convert farmland can be lessened through farm-friendly land use tools.
- Commercial solar development can bring in steady revenue streams that supplement agricultural operations.
- If panels are carefully sited on marginal lands or combined with agricultural uses, solar development can be an asset to agricultural operations. .
- Scenic vistas that are facilitated by open farmland, as well as nearby steep slopes, are highly important for protecting water quality and providing natural habitat.
- Protecting floodplains and wetlands can provide supplemental income/benefits to farmers (e.g., the USDA Conservation Reserve Enhancement Program).
- More communities are now knowledgeable and interested in protecting farmland.
- There is NYS funding available for the preparation of county and municipal farmland protection plans.

ISSUES AND CHALLENGES

- While resources exist to incentivize farmland protection, not enough resources exist to meet the demand, leaving farmland susceptible to land use conversion.
- Once development occurs on areas of farmed prime soil, it is very difficult, if not impossible, to restore the soil back to its original state.
- Due to ongoing residential and commercial expansion, Onondaga County has lost much of the agriculture that originally fed its population.
- New demands for renewable energy generation have given rise to utility scale solar development consuming rural lands and increasing agricultural land values.
- Commercial solar energy projects are often sited on active agricultural lands, removing prime agricultural land from production, and fragmenting farmland clusters.
- Opportunities to successfully pair solar developments with agri-voltaic solutions or "co-agriculture" are limited.
- Within the farming community of Onondaga County, there is a lack of awareness of farmland protection services provided (e.g., FPIG and CREP).
- Municipal regulations related to agriculture varies and may not be conducive for farmland protection.
- Expansion of infrastructure can facilitate sprawl and work against farmland protection goals.

- Roadside housing along rural roads is a more incremental form of sprawl, but one that is potentially just as significant in terms of acreage that it removes from production.
- Proximity to the Syracuse Urban Area creates inherent challenges for balancing development needs with farmland protection.
- Limited funds are available from the state for agricultural conservation easements, and is highly competitive.
- Land trust partners and local governments are limited in their ability to accommodate demand for farmland protection/conservation easement programs.
- Local funds are limited for agricultural conservation or programming.

LINKING LOCAL AGRICULTURE TO THE COMMUNITY

STRENGTHS AND OPPORTUNITIES

- Onondaga County's farms are in relatively proximity to urban populations and major transportation routes, making it relatively easier for residents and visitors to access and connect with farmers.
- Agritourism increases awareness of Onondaga County's agriculture, which in turn, can increase local food sales and tax revenues for rural communities.
- National and local resources exist for farmers interested in conducting agritourism activities.
- The increasing availability of broadband internet is enabling farms to reach new audiences.
- Local interest and incentives for agritourism have increased in recent years.
- Onondaga Grown has provided a framework to market local agriculture to residents.
- Municipalities are tailoring local zoning regulations to address the emergence of agritourism uses within rural areas.

ISSUES AND CHALLENGES

- Despite existing programs, there is always need for more awareness about the importance of local food systems with the public, and how to obtain local food.
- Food deserts, caused by the consolidation of grocery stores and decreased number of farmers markets, result in a lack of access to fresh food to individuals that lack mobility options and further disconnect people from local agriculture.
- Agritourism destinations that become "agritainment," or more focused toward entertainment than agriculture, can cause frustration and conflict with nearby farmers and neighbors (e.g., managing parking and crowd sizes).
- Introduction of larger scale commercial land uses affiliated with agritourism can create new burdens on public infrastructure in rural areas.
- Public awareness of farming is often oversimplified and lacks understanding of the difficulties and complexities of agriculture.
- Both "non-farming" and "farming" skills are required to develop links between agriculture and the broader community, and not everyone has both.
- Unintended consequences can occur between different interest groups, causing friction between the farming and non-farming community (e.g., well placement on adjacent properties can interfere with manure spreading on crop fields).
- Farmers can be difficult to contact as a single "farming community" (i.e., no single contact list exists that is useable for programming).

NEXT GENERATION OF FARMERS AND LABOR

STRENTHS AND OPPORTUNITIES

- Agriculture is a growing and vibrant sector of Onondaga County's economy and can offer local career opportunities.
- There is a growing interest in farming and models/programming available to connect interested new and beginning farmers to producers.
- Many individuals in immigrant/migrant communities already have a lot of agricultural know-how and want to farm. With the decreasing number of current farm operators, there is an opportunity for land ownership to transfer to farmworkers in order to maintain a diversity of landownership within the agricultural community.
- Opportunities exist to further link existing refugee workforce training programs with the agricultural industry.
- Regional workforce development in warehouse distribution, drone technology, and other tech industries may also attract new workers to the tech-oriented agricultural sector.
- There is a growing interest in farming and models/programming available to connect interested new and beginning farmers to producers.
- Onondaga County hosts or is in proximity to several nearby colleges and universities that offer higher education in agriculture or agriculturally related industries.

ISSUES AND CHALLENGES

- Limited opportunities exist currently to provide mentorships from active farmers to create high quality pathways for agriculture related careers.
- It will be harder to get migrant labor through the H2A program if it is incentivized in other states.
- New overtime pay laws will put a greater labor cost burden on the agricultural community.
- Limited access to land, higher startup costs, and increasingly unpredictable and extreme weather are barriers that future generations of agriculture entrepreneurs will face more than their predecessors.
- Farms endure low profit margins making it difficult to innovate and take risks. Additionally, the price of food is too low, while costs of farming continue to increase.
- Farm succession is a major challenge as young people move out of farming as a career; meanwhile, farms are getting consolidated into fewer operations and absorbing small or mid-size farms.
- Small and mid-size farms have difficulties competing with the name recognition, efficiencies, land base, and other offerings of larger farms.
- For new, minority, veteran, and women farmers, the path to a successful farming career can be more challenging, such as difficulties finding financing to purchase land, confronting historical racial and gender inequities, and transitioning back into civilian life after military service.
- Transportation access to agricultural work from urban areas is limited.

AGRICULTURE AND THE NATURAL ENVIRONMENT

STRENTHS AND OPPORTUNITIES

- Onondaga County is gifted with plentiful water and productive soils.
- Tools, programs, and funding exist (nationally and locally) to balance agriculture with the natural environment.
- Public awareness on the intrinsic relationship between farming and the environment is increasing thanks to internet resources and GIS mapping tools.
- Scenic vistas provided by farmland and nearby steep slopes also enhance agritourism experiences.
- Protecting floodplains and wetlands on farmland can recharge soils, provide habitat, and improve water quality.
- Agriculture is a land use that can benefitfrom occasional flooding, unlike most land uses.
- Biodigester technology provides agricultural operations opportunities to earn additional revenue and decrease environmental pollutants.

ISSUES AND CHALLENGES

- Increased stormwater runoff from more severe storm events, along with more dramatic temperature fluctuations and unpredictable dry spells, is happening and will continue to increase due to climate change, placing strain on farmers.
- Water quality issues are caused by both residential and agricultural runoff, leading to conflict and confusion.
- A decrease in pollinator populations and increased invasive species is occurring, negatively impacting agricultural productivity.
- The loss of prime farmland makes farmland more expensive and less productive overall.
- A lack of funding and staff capacity exists to protect environmental resources and administer grants at the rate to make programs effective for the landowners.
- Implementation of soil management best practices on farms must continue to protect water quality.
- Air quality issues during times of manure spreading can create conflicts with neighbors.
- Precision technology that can improve environmental impacts can be very costly and create barriers for farmers to implement.
- Combined Animal Feeding Operations (CAFOs) can produce more manure than is useable by a single operation. Waste lagoons as storage are undesirable. When manure is applied too frequently or in too large a quantity across an area, nutrients can runoff or are leached into waterbodies, leading to public health or environmental issues.

VISION

Where does Onondaga County see its agriculture going? What are goals to reach that vision? This section describes the guiding vision and goals to address the existing needs and opportunities faced by Onondaga County's agriculture. This vision is based on the contributions and foresight of participants involved in the development of this plan and is the basis for the goals and recommended actions.

The state of agriculture in Onondaga County has seen significant ***changes over the years. Through it all, local agriculture remains a critical part of its economy, food system, and landscape. The County is gifted with highly productive agricultural soils, a legacy of farming operations and know-how, and an environment that supports a highly diverse array of agriculture and opportunities to engage with the local food system. This plan honors the strengths of Onondaga County's agriculture and reflects these strengths in a vision for the future of agriculture throughout the County:***

Onondaga County is a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system.

GOALS

Enhance agriculture-related economic development activities and collaboration to capitalize on emerging markets, technologies, and incentives.

Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations.

Promote the importance of local agriculture and food systems throughout Onondaga County.

Support the next generation of farmers and agricultural entrepreneurs in Onondaga County.

Continue to enhance the relationship between agriculture and the natural environment.

GOALS AND STRATEGIES

Achieving the community's vision requires the development of planning goals, strategies, and tangible actions supported and embraced by public officials and the community. Achieving these goals will require commitment and collaboration between a variety of stakeholders across the County.

The following is a summary of the goals and related recommended strategies which were formulated through the planning process to inspire action and implementation of the vision for agriculture in Onondaga County. Recommendations in bold represent strategic projects which have been identified as ***Venture Proposals***. More detailed preliminary analysis has been prepared for a limited number of actions, as a way to further brainstorm and shape proposals for quick, coordinated action by stakeholder partners. See the Venture Proposals following the Implementation Matrix.

Enhance agriculture-related economic development activities and collaboration to capitalize on emerging markets, technologies, and incentives.

Venture Proposal: Establish an Agriculture Market Coordinator and eventually an Office of Agriculture and Food System Development (Office) to spearhead implementation of agricultural economic development related initiatives identified within this Farmland Protection Plan and beyond, including facilitation of projects, partnerships, funding opportunities and farmland protection.

Venture Proposal: Pursue Value-Added Economic Development Initiatives that elevate the local agricultural economy by expanding the County's agribusiness sector size, technological infrastructure, and accessibility to major markets. Potential projects include a regional food hub, flash freezing facility, commercial kitchen, a produce processing facility, and an agribusiness park.

Action 1: Create full-time staff to Agricultural Economic Development Coordinator position to spearhead and coordinate agriculture related partnerships and initiatives (see related Venture Proposal).

Action 2: Explore the feasibility for developing an agricultural business park and/or food hub (see related Venture Proposal).

Action 3: Develop a re-packing facility to provide cold storage, freezing, packaging, and distribution to institutions.

Action 4: Host periodic trainings to educate existing and prospective producers about resource management (e.g., implementation of BMPs), certifications, value-added production, and market development.

Action 5: Improve broadband in rural communities to support high-tech ag machinery and communication.

Action 6: Train and equip local support agencies to offer agricultural unmanned aerial vehicle (UAV) or drone services to their constituents.

Action 7: Facilitate the development and operation a commercial kitchen to provide operations the ability to create value-added products.

Action 8: Explore the feasibility of developing a USDA certified meat processing facility compared with utilizing regional meat processing facilities.

Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations.

Action 1: Improve capacity and increase funding within the local land trust community to partner on conservation easement project or develop new avenues to execute farmland protection easement programs.

Action 2: Work with municipal boards and staff to understand the land use tools available to incorporate best practices in siting, construction, and monitoring of larger scale commercial solar developments to minimize impacts on farmland resources and agricultural communities.

Action 3: Follow and engage in statewide efforts to update utility-scale solar energy siting regulations, to ensure that local communities farmland protection goals and objectives are considered in site location and mitigation assessment.

Action 4: Utilize the mapping tool developed herein for identification of priority lands for farmland protection, including conservation easement programs, corridor protection, and local planning and zoning.

Action 5: Enable and facilitate Smart Growth development practices which encourage growth in existing built communities and compact subdivision designs, which ultimately serves to preserve agricultural lands, open spaces, and rural road frontages.

Action 6: Conduct an agritourism corridor study along NYS Routes 20 and 80.

Action 7: Promote and maintain the Farm- Friendly Toolbox for Municipalities as a continuing resource for local support for agricultural communities.

Action 8: Work with municipal boards and staff to update and revise their comprehensive plans and land use regulations to better support agricultural uses and accommodate new agritourism related activities

Action 9: Encourage towns to create their own agricultural protection plan that works in coordination with the Onondaga County Agricultural and Farmland Protection Plan.

Action 10: Explore the feasibility of establishing a local farmland protection fund for purchasing conservation easements.

Action 11: Provide training for municipal tax assessors to conduct more accurate assessment of lands and buildings in agricultural use.

Promote the importance of local agriculture and food systems throughout Onondaga County.

Venture Proposal: The Community Greenhouse Initiative will address the need for improved and expanded community greenhouse spaces to generate a range of positive community outcomes,

including an extended growing season, indoor demonstration areas to expose youth to agriculture as a career path, workforce development training space, and general promotion of agriculture to the public.

Action 1: Develop an agriculturally oriented year-round community greenhouse to host agritourism events/ educational programming.

Action 2: Increase County support for agriculture-related promotional events and marketing, particularly for agritourism (e.g., startup assistance, social media help, siting, and logistics).

Action 3: Promote public awareness of local agriculture through the Onondaga Agricultural Council and its Onondaga Grown Buy Local Campaign.

Action 4: Continue to grow OnFarm Fest programming to serve as a well-known opportunity to educate residents of Onondaga County's agriculture.

Action 5: Continue to support the CNY Regional Market and local farmer's markets, CSA programs and other similar opportunities for direct sales of farm products to consumers throughout Onondaga County.

Support the next generation of farmers and agricultural entrepreneurs in Onondaga County.

Venture Proposal: Develop an Agritourism Support Program, in which Onondaga County though the Agricultural Council and its agriculture planning programs, will continue to invest in and develop upon planning initiatives and marketing support for agritourism opportunities.

Action 1: Develop and expand upon a New Farmer Program(s) that provides land, landowner connections, management training and other resources to serve the next generation of farmers or newly arrived immigrants familiar with farming.

Action 2: Develop a farm specialty labor pool by creating a program of trainings for high-tech agriculture (or link to existing programs).

Action 3: Provide training for agri-service, land use planning professionals, and farming community to support succession planning and direct farmers to appropriate stress-related support services.

Action 4: Increase programming and partnerships with agriculture-related higher education programs.

Continue to enhance the relationship between agriculture and the natural environment.

Venture Proposal: Create an Agricultural Waste Stream Strategic Plan to address agricultural waste issues in Onondaga County.

Action 1: Develop a strategy to decrease overall waste in the agricultural sector, for example renewable natural gas projects for dairy waste and promoting paper/plastic recycling and reuse working with OCRRA.

Action 2: Increase funding, and flexibility thereof, available to evaluate causal pathways for water quality issues and assist farmers in implementing strategic water quality management practices.

Action 3: Increase technical assistance related to climate resiliency (e.g., flooding and drought), stormwater management, and other environmental management issues, like runoff nutrients, farmyard management, silage nutrient management, fertilizer application calibration, hazard mitigation, etc.

Action 4: Increase funding for marketing and technical assistance to increase farmer participation in programs that protect soil health.

Action 5: Encourage, plan for, and fund stream corridor buffering, wetland and floodplain restoration/enhancement, and bank stabilization efforts.

Action 6: Conduct viewshed analyses to preserve the most scenic and valued agricultural and open space vistas in our rural communities.

IMPLEMENTATION MATRIX

The Implementation Matrix is a table summarizing the recommended actions, organized by related goals, that Onondaga County has established to guide the implementation of the Onondaga County Agriculture and Farmland Protection Plan. It is a useful tool for decision-making and for monitoring progress, as it is expected that the implementation in Onondaga County will take place over the course of the next 10-20 years. The table is meant to provide additional information on the expected timeframes, sponsors, partners, and funding sources necessary to accomplish each action. This table should be updated as part of the regular review of the Plan. Each of these priority actions is assigned the following in the implementation matrix:

- Project Lead – who is most likely to be responsible for seeing that the action is pursued
- Potential Project Partners – who is most likely to assist, oversee, or advise during implementation
- Timeframe – Short Term (0-3 years), Medium-Term (4-7 years), Long-Term (>7 years), Ongoing
- Potential Funding Source – potential sources of funding (either internal or external; see Glossary of Acronyms) Several projects may be funded through departmental budgets or other means. See also: list of *Potential Funding and Financing Resources (Appendix D)*
- Preliminary Cost Estimate – ranges from minor ($) to major ($$) undertakings
- Implementation Status – utilized to track progress toward implementation of the specified action: Not Started, In Progress, Completed (include date of completion) and can be utilized in conjunction with the periodic review of the plan to measure overall progress toward plan implementation.

Figure 33. Acronym Guide for Implementation Matrix

Acronym	Full Title	Acronym	Full Title
AFPB	Onondaga County Agriculture and Farmland Protection Board	OCIDA	Onondaga County Industrial Development Agency
AFT	American Farmland Trust	OCOED	Onondaga County Office of Economic Development
CCE	Cornell Cooperative Extension of Onondaga County	OCPF	Onondaga County Planning Federation
CenterState CEO	CenterState Corporation for Economic Opportunity	SOCPA	Syracuse Onondaga County Planning Agency
CNYRMA	CNY Regional Market Authority	SOFSA	Syracuse-Onondaga Food Systems Alliance
CNYRPDB	CNY Regional Planning and Development Board	SWCD	Onondaga County Soil and Water Conservation District
NOFA	Northeast Organic Farming Association	SYRAP/RISE	Syracuse Refugee Assistance Program/Refugee and Immigrant Self-Empowerment
NYSDAM	New York State Department of Agriculture and Markets	USDA NRCS	US Department of Agriculture Natural Resources Conservation Service
OCAC	Onondaga County Agriculture Council	USDOE	US Department of Energy

Figure 34. Implementation Matrix

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE(S)	PRELIMINARY COST ASSESSMENT
Goal 1: Enhance agriculture-related economic development activities and collaboration to capitalize on emerging markets, technologies, and incentives.					
Action 1: Create full-time staff to Agricultural Economic Development Coordinator position to spearhead and coordinate agriculture related partnerships and initiatives (see related Venture Proposal).	OCOED	CCE, CenterState CEO	Short-term	USDA Regional Food Systems Partnerships	$$
Action 2: Explore the feasibility for developing an agricultural business park and/or food hub (see related Venture Proposal).	OCOED	CNYRMA, Individual or cooperative of local produce distributors	Long-term	ESD Feasibility Study grant program, USDA AMS Local Food Promotion Program; USDA Value-Added Producer Grant	$$
Action 3: Develop a re-packing facility to provide cold storage, freezing, packaging, and distribution to institutions.	OCOED	Individual or cooperative of local produce distributors	Long-Term	ESD Feasibility Study grant program; USDA Partnerships for Climate-Smart Commodities	$$
Action 4: Host periodic trainings to educate existing and prospective producers about resource management (e.g., implementation of BMPs), certifications, value-added production, and market development.	CCE	SWCD, BOCES, Higher Ed Institutions	Long-term	American Farm Bureau Foundation for Agriculture	$
Action 5: Improve broadband in rural communities to support high-tech ag machinery and communication.	CNY RPDB	Broadband providers	Short-Term	USDA ReConnect Loan and Grant Program	$
Action 6: Train and equip local support agencies to offer agricultural unmanned aerial vehicle (UAV) or drone services to their constituents.	CCE	Grow NY, SWCD, Cazenovia Equipment	Mid-term	Grown NY; FEMA Building Resilient Infrastructure	$$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE(S)	PRELIMINARY COST ASSESSMENT
Goal 1: Enhance agriculture-related economic development activities and collaboration to capitalize on emerging markets, technologies, and incentives.					
				and Communities	
Action 7: Facilitate the development and operation a commercial kitchen to provide operations the ability to create value-added products.	OCOED	CCE	Mid-Term	USDA Rural Business Development Grant Program	$$
Action 8: Explore the feasibility of developing a USDA certified meat processing facility compared with utilizing regional meat processing facilities.	OCOED	CCE	Mid-Term	USDA Meat and Poultry Processing Expansion Program	$$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 2: Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations					
Action 1: Improve capacity and increase funding within the local land trust community to partner on conservation easement project or develop new avenues to execute farmland protection easement programs.	SOCPA, NYS Ag & Markets	Municipalities, Onondaga County, NYALT, CNY Land Trust, Finger Lakes Land Trust	Mid-Term	Private foundations, NRCS Conservation Innovation Grants	$
Action 2: Work with municipal boards and staff to understand the land use tools available to incorporate best practices in siting, construction, and monitoring of larger scale commercial solar developments to minimize impacts on farmland resources and agricultural communities.	SOCPA, NYS Ag & Markets	CNY RPDB, OCIDA, Municipalities AFT, NYPA	Short-Term		$
Action 3: Follow and engage in statewide efforts to update utility-scale solar energy siting regulations, to ensure that local communities farmland protection goals and	SOCPA, CNYRPDB	OCIDA, Municipalities AFT	Ongoing		$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 2: Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations					
objectives are considered in site location and mitigation assessment.					
Action 4: Utilize the mapping tool developed herein for identification of priority lands for farmland protection, including conservation easement programs, corridor protection, and local planning and zoning.	SOCPA	CNY RPDB, OCIDA, Municipalities AFT	Ongoing		$
Action 5: Enable and facilitate Smart Growth development practices which encourage growth in existing built communities and compact subdivision designs, which ultimately serves to preserve agricultural lands, open spaces, and rural road frontages.	SOCPA	CNY RPDB, OCIDA, Municipalities	Ongoing		$
Action 6: Conduct an agritourism corridor study along NYS Routes 20 and 80.	SOCPA	OCIDA, Municipalities, SMTC, RPDB	Mid-Term	SMTC, OCIDA	$
Action 7: Promote and maintain the Farm- Friendly Toolbox for Municipalities as a continuing resource for local support for agricultural communities.	SOCPA	CCE, SWCD, CNYRPDB	Ongoing		$
Action 8: Work with municipal boards and staff to update and revise their comprehensive plans and land use regulations to better support agricultural uses and accommodate new agritourism related activities	SOCPA, NYSDAM	OCPF, Town legislative boards and/or planning boards	Ongoing		$
Action 9: Encourage towns to create their own agricultural protection plan that works in coordination with the Onondaga County Agricultural and Farmland Protection Plan.	SOCPA	NYSDAM	Ongoing	NYSDAM	$$
Action 10: Explore the feasibility of establishing a local farmland protection fund for purchasing conservation easements.	Ag Council	Onondaga County, Municipalities,	Short-Term	Development fees and mortgage tax	$$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 2: Strategically protect agricultural lands throughout Onondaga County to sustain and improve its vibrant agricultural operations					
Action 11: Provide training for municipal tax assessors to conduct more accurate assessment of lands and buildings in agricultural use.	NYS	Municipalities, Assoc of Assessors, NYS, AFT, Farm Bureau	Ongoing		$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 3: Promote the importance of local agriculture and food systems throughout Onondaga County.					
Action 1: Develop an agriculturally oriented year-round community greenhouse to host agritourism events/ educational programming.	NYSDAM, City of Syracuse	Brady Farm, CCE, NYS Fairgrounds, NYSDAM, City of Syracuse	Ongoing	USDA Urban Agriculture and Innovation Production competitive grants, NYS Fairgrounds, Empire State Development	$$
Action 2: Increase County support for agriculture-related promotional events and marketing, particularly for agritourism (e.g., startup assistance, social media help, siting, and logistics).	OCAC	USDA Agricultural Marketing Service	Ongoing	USDA AMS Local Food Promotion Program	$
Action 3: Promote public awareness of local agriculture through the Onondaga Agricultural Council and its *Onondaga Grown* Buy Local Campaign.	OCAC	Farm Bureau, SWCD	Ongoing	American Farm Bureau	$
Action 4: Continue to grow OnFarm Fest programming to serve as a well-known opportunity to educate residents of Onondaga County's agriculture.	OCAC	CCE, SOCPA	Near-term		$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 3: Promote the importance of local agriculture and food systems throughout Onondaga County.					
Action 5: Continue to support the CNY Regional Market and local farmer's markets, CSA programs and other similar opportunities for direct sales of farm products to consumers throughout Onondaga County.	CNYRMA, NYSDAM, OCAC	CCE, SOCPA, SOFSA, SWCD	Near-Term	USDA AMS Local Food Promotion Program	$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 4: Support the next generation of farmers and agricultural entrepreneurs in Onondaga County.					
Action 1: Develop and expand upon New Farmer Incubator Program(s) that provides land, landowner connections, management training and other resources to serve the next generation of farmers or newly arrived immigrants familiar with farming.	CCE, NY FarmNet	SYRAP/RISE, Salt City Harvest Farm, and Brady Farm, NOFA, FFA, 4H,	Ongoing	NYS New Farmers Grant Fund, Center for Agricultural Development & Entrepreneur-ship (CADE) Beginning Farmers resources	$$
Action 2: Develop a farm specialty labor pool by creating a program of trainings for high-tech agriculture (or link to existing programs).	CCE	AFT, grow NY, LeMoyne College, Other Higher Education Institutions,	Ongoing	Private Foundations, FFA Foundation	$$
Action 3: Provide training for agri-service, land use planning professionals, and farming community to support succession planning and direct farmers to appropriate stress-related support services.	CCE	FarmNet, AFPB, SOCPA, SWCD, Municipalities	Ongoing	NY FarmNet	$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 4: Support the next generation of farmers and agricultural entrepreneurs in Onondaga County.					
Action 4: Increase programming and partnerships with agriculture-related higher education programs.	CCE	Cornell University, SUNY ESF, SUNY Morrisville SWCD	Ongoing	Private Foundations, FFA Foundation	$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 5: Continue to enhance the relationship between agriculture and the natural environment.					
Action 1: Develop a strategy to decrease overall waste in the agricultural sector, for example renewable natural gas projects for dairy waste and promoting paper/plastic recycling and reuse working with OCCRA.	SWCD, OCCRA	USEPA	Long-Term	USDA Community Compost and Food Waste Reduction grants, EPA AgSTAR	$$
Action 2: Increase funding, and flexibility thereof, available to evaluate causal pathways for water quality issues and assist farmers in implementing strategic water quality management practices.	SWCD	CCE, USDA NRCS, City of Syracuse, Onondaga County Water Authority, Onondaga County Department of Water Environment Protection	Ongoing	USDA NRCS, City of Syracuse	$
Action 3: Increase technical assistance related to climate resiliency (e.g., flooding and drought), stormwater management, and other environmental management issues, like runoff nutrients, farmyard management, silage nutrient management,	SWCD	CNYRPDB, FEMA, CCE, USDA NRCS, City of Syracuse, Onondaga County Water Authority, Onondaga County Department of	Mid-Term	FEMA, CNYRPDB	$

ACTION	PROJECT LEAD	POTENTIAL PARTNERS	TIME FRAME	POTENTIAL FUNDING SOURCE	PRELIMINARY COST ASSESSMENT
Goal 5: Continue to enhance the relationship between agriculture and the natural environment.					
fertilizer application calibration, hazard mitigation, etc.		Water Environment Protection			
Action 4: Increase funding for marketing and technical assistance to increase farmer participation in programs that protect soil health.	SWCD	CCE	Ongoing	USDA NRCS	$
Action 5: Encourage, plan for, and fund stream corridor buffering, wetland and floodplain restoration/enhancement, and bank stabilization efforts.	SWCD	CCE, USDA NRCS, City of Syracuse, Onondaga County Water Authority, Onondaga County Department of Water Environment Protection	Ongoing	USDA NRCS	$
Action 6: Conduct viewshed analyses to preserve the most scenic and valued agricultural and open space vistas in our rural communities.	SOCPA	OCIDA	Short-Term	OCIDA	$

VENTURE PROPOSALS

AGRICULTURE MARKET COORDINATOR

Establish an Agriculture Market Coordinator and eventually an Office of Agriculture and Food System Development (Office) to identify and facilitate new market opportunities for Onondaga County farmers and food businesses. Throughout development of the Agriculture & Farmland Protection Plan process, the need for dedicated staffed resources to lead and coordinate implementation of Plan goals, actions, and venture proposals was highlighted as a need. Expansion of food system coordination efforts were also included as one of five key recommendations in the 2021 Central New York Food Plan.

Ideally, this individual or office will work directly with farmers to facilitate successful matches between farmers and buyers, government programs and private sector partners throughout the food chain. The Coordinator position will be an agile and responsive position that connects needs with resources within Onondaga County to strengthen the local and regional agricultural economy. The Coordinator will develop and organize partnerships to support producers, processors, distributors, and buyers to build mutually beneficial supply chain relationships.

Coordinator responsibilities may include:

1. Develop Agribusiness Opportunities: Attract agribusiness opportunities to utilize Onondaga Grown products, local processing assets, and transportation industry assets. The Coordinator should advance initiatives such as the siting of food industry businesses and development of critical infrastructure and programming including an agricultural business park, business incubation programs, food hub services, commercial kitchen development, and shared packing facilities.

2. Agribusiness Marketing and Support: Link farmers to distribution, aggregation, and processing networks. Expand availability of farm labor through programming such as: farm labor and new farmer training, refugee coordination, and providing support for high-technology shifts. Advance the Onondaga Grown marketing program. Provide technical and marketing support for agritourism businesses.

3. Intergovernmental Liaison: Coordinate policy with local and state government staff to advance agriculture-oriented programs. Partner with the CNY Regional Economic Development Council to capitalize on economic development opportunities from agriculture. Support farmers through the development of direct and indirect funding programs, grant writing support, and improved access to government financial services and loans.

4. Partner with Local Programming: This includes providing support for farmers' markets and urban agriculture programming. Coordinate programs with Cornell Cooperative Extension staff and nonprofit organizations such as SOFSA.

BASIC INFORMATION

Targeted Populations

The work of the Coordinator, and eventually the Office, will expand the availability of locally and regionally grown foods for Onondaga County consumers. The Agriculture Market Coordinator and related staff

members will directly serve farms, food businesses, and buyers by identifying and facilitating market matches. Bolstering the local and regional agricultural economy will provide community-wide benefits through increased revenue circulation from strengthened market relationships between Onondaga County farms, businesses, and institutions.

Potential Project Lead and Sponsors

Potential Project Lead(s):

- New private or not-for-profit entity
- Onondaga County Office of Economic Development
- CenterState Corporation for Economic Opportunity
- Cornell Cooperative Extension of Onondaga County

Potential Project Partners:

- Syracuse-Onondaga County Planning Agency
- Syracuse-Onondaga Food Systems Alliance (SOFSA)
- Onondaga Agriculture Council

BACKGROUND

Demonstrated Need

A variety of logistical and market barriers create a disconnect between Onondaga County's farmers and local and regional buyers despite interest on both ends of the supply chain. For example, institutions interested in local producer might be contracted to out-of-state producers, despite availability of local produce but the lack of awareness, coordinated logistics, or available funding. Local producers interested in providing for local institutions might not be able to meet demand unless they partner with other producers. Active coordination efforts from a designated Agriculture Market Coordinator will prioritize building relationships, troubleshooting bottlenecks and barriers to bridge existing gaps between Onondaga County farmers and buyers.

Since the recommendations from Agriculture and Farmland Protection Plan are aspirational, there will need to be focused effort to implement recommendations. Stakeholder engagement and research throughout plan development process affirmed the need for a designated economic development coordinator to increase market opportunities for local farmers. This position can help to navigate the Economic Development community and link available government assistance to exploratory ways to increase the agricultural viability of Onondaga County. Existing resources are fragmented among a variety of organizations and agencies, with competing priorities and limited resources. No one entity is focused on specifically agricultural economic development.

The Central New York Food Plan (FoodPlanCNY) also includes the expansion of food system coordination efforts as one of five key recommendations. Strategies for this coordination include the need to develop a project-based, inclusive process in coordination with a food council to integrate food systems into city and county policies, plans, and programs.

Similarly, the CNY Regional Economic Development Council's 2015 Upstate Revitalization Initiative report calls for enhancing connections between farmers and markets through soft and hard infrastructure upgrades. Local organizations such as the Syracuse-Onondaga Food Systems Alliance are specifically working to address local food system gaps through relationship building, aligning resources, and public policy advocacy.

Alignment with the Agriculture and Farmland Protection Plan

The Agricultural Market Coordinator position would work directly towards the Onondaga County Agriculture and Farmland Protection Plan's vision as being "a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system." This venture proposal aligns with the goals of the countywide plan, directly and indirectly.

Direct Alignment

INDIRECT ALIGNMENT

Preliminary Cost Estimate

$120k for 5 yrs

Considerations and Challenges

There are several initial considerations in scoping this proposal. As evidenced in prior section, the potential activities of the Agricultural Economic Development Coordinator can be significant and varied. It will be important to refine the potential activities and responsibilities into a focused, manageable, and effective work program.

Identifying the most appropriate and effective entity to house, sponsor, and provide oversight to this position will be an important first consideration. Should this be a standalone organization, perhaps a not-for-profit, with flexibility in activities and oversight, but reliant on outside funding to sustain its operations? Or should this be part of a larger governmental agency, who may be most capable of hosting a staff position, but subject to the limits of public employment and spending?

Whether private or public sector supported, funding is a challenge, given limited resources for such activities within local government and the not-for-profit sectors. Governmental grant funding often precludes sustained multi-year support for staff positions. Funding opportunities that span multiple (three or more) years will have greater potential to realize returns on investment.

A related challenge in funding positions such as this is demonstrating and quantifying the positive impacts of coordination activities. When considering funding opportunities, it's important to keep in mind that it takes time for coordination activities to impact traditional metrics such as increased sales or increased job creation. Impacts for investors and participating businesses should be measured; the program should determine at the outset what economic data will be tracked and how it will be captured

Finally, tight economic competition, limited resources and profitability of farming to accommodate necessary investments into economic development projects will be an ongoing challenge to developing working relationships necessary for this coordinator position, but that challenge is the very reason for this work. The position and office will need a varied skillset and the bandwidth necessary to reach the varied farming and food system, as well as economic development community.

As the position matures and programming needs become clearer, grant funds can play an important role in expanding the positive impact of the Coordinator role. State grant funds can also play an important role in expanding the positive impact of the Coordinator role. Funding for the position could be sought through the New York State Consolidated Funding Application (CFA) process with support from the CNY Regional Economic Development Council.

Federal grant programs could also provide financial resources for the Onondaga County agricultural economy including USDA grant programs such as the Local Food Promotion and Farmers Market Promotion Programs. The implementation phases of many USDA grants provide operations and maintenance funds that could be leveraged. In addition, the Coordinator could explore the possibilities of the NYS per-meal rebate for schools in purchasing at least 30% NY-grown products. Collaborative funding initiatives between neighboring governments and jurisdictions should also be considered.

Funding Opportunities

NYS Ag & Markets

ESD

Agribusiness forums

Local/Co govts

IDA

REDC

USDA

CCE

Timeframe

Preliminary Steps (pre-hire): Finalize funding and hiring strategy for Coordinator position.

Short term (1-3 years): Establish near term strategic plan for Coordinator position that outlines priority goals and programmatic offerings. Convene agricultural stakeholders to to develop strategies for agricultural sector growth. Identify low-hanging fruit, market matches, and support for Onondaga County producers.

Medium term (3-6 years): Establish strategic plan for Coordinator position and convene agricultural economy stakeholders to address medium term market opportunities, align resources, and develop strategies for agricultural sector growth.

Long term (6+ years): Establish strategic plan for Coordinator position and convene agricultural economy stakeholders to address medium term market opportunities, align resources, and develop strategies for agricultural sector growth. If appropriate, grow position into an office with additional resources and support for Onondaga County farmers and value chain actors

Precedent Examples and Additional Resources

CORNELL COOPERATIVE EXTENSION, ONEIDA COUNTY

The position of Economic Development Specialist at CCE Oneida County is the closest available analog to the proposed Coordinator position in Onondaga County. Close geographic proximity, local government funding and support, and similar job responsibilities make the Oneida County position a useful model to look to for lessons learned and metric of success.

- Relevant Staff Position(s):
    - Ag Economic Development Specialist, Marty Broccoli
- Background
    - From the CCE Oneida County website: "The Ag Economic Development Program was created in 1998 in accordance with the Oneida County Farmland protection Plan (OCFPP) and officially registered with the NYS Department of Agriculture & Markets in 2000. The mission of AED is to help foster an economic climate that supports and promotes the expansion of agricultural business within Oneida County.

      Areas of focus: Educating consumers about the importance of agriculture in today's society. Working with farmers to explore ways to enhance their sales through direct marketing or developing value-added products. Working with the Mohawk Valley EDGE, Cities of Utica and Rome to conduct outreach visits to regional agribusinesses to help ensure agricultural industry viability and create employment opportunities. Working with the Oneida County Farmland Protection Board to reach out to town and county governments to become more aware and sensitive to agriculture industry issues. Educating today's younger children of the many rewarding employment opportunities that the world of Agriculture offers."

LOUISIANA CENTRAL

The positions of Executive Director for Farm and Food and Director of Farm to Market Operations at Louisiana Central demonstrate how a nonprofit economic development agency targets support to agricultural and food system entrepreneurs. The organization's programmatic offerings are worth

consideration for an Onondaga County Coordinator (workshops, online programs, technical assistance, business coaching, financial advising, etc.)

- Relevant Staff Position(s):
    - Executive Director for Farm and Food, Bahia Nightengale
    - Director of Farm to Market Operations, Audrey Kolde
- Background
    - Louisiana Central is an economic development agency serving a ten-county region in central Louisiana. The nonprofit supports agricultural economic development primarily through investing in farmers markets and hosting a farmer training program which "offers group workshops, online programs, one on one technical assistance, business coaching, access to business loans, and many crucial services that support local production of specialty crops and grass-based livestock." The Farmer Training Program is supported by USDA Natural Resource Conservation Service (NRCS) funding.

HUDSON VALLEY AGRIBUSINESS DEVELOPMENT CORPORATION (HVADC)

HVADC is a nonprofit economic development agency with a focus on growing the agricultural economy of the Hudson Valley. HVADC offers several programs that could be considered for implementation by an Onondaga County Agriculture and Food System Development Coordinator. Programs include a farm incubation, funding accelerator, educational and technical resources, amongst others.

- Relevant Staff Position(s):
    - Executive Director, Todd Erling
- Background
    - From the HVADC website: "The Hudson Valley Agribusiness Development Corporation (HVADC) is the only economic development agency in the Hudson Valley with a specific focus on the viability of the agricultural economy in the region. HVADC's charge is to enhance the agricultural sector in the Hudson Valley by assisting both new and existing agri-businesses and supporting policies and regulations that recognize and support New York State's agricultural economy.

      Our services are carefully designed to promote the Hudson Valley as an attractive, viable region for agriculture and to foster growth and development of the agricultural sector through a creative program or marketing, promotion and the provision and coordination of financial and other resources. We are a not-for-profit organization with offices in Hudson, New York, enabling us to work closely with a variety of public and private partners throughout the Hudson Valley."

PURDUE UNIVERSITY, INDIANA FARM CONNECT FARM CONNECT

Indiana Farm Connect demonstrates food system economic development through coordination across the state of Indiana. The project is a case study into how multiple coordinators can collaborate at the regional level to grow market opportunities for farmers. Once release, the results of the project may have important lessons learned to share with an Onondaga County Coordinator.

- Relevant Staff Position(s):

  - Value Chain Coordinator, Food and Growers Association, Oak Hawk
  - Local Food Coordinator, City of Bloomington, Rachel Beyer
  - Business Development, Fischer Farms Natural Foods, Joseph Fischer
  - Value Chain Coordinator, Northwest Indiana Food Council, Virginia Pleasant
- Background
  - An ongoing public-private collaboration hosted by Purdue University that works to strengthen food systems in the state of Indiana by connecting local suppliers and purchasers. The project has provided funding for four value chain coordinators at partner organizations across the state. These coordinators are tasked with building networks between buyers, farmers, distributors, aggregators, processors, and local organizations in order to drive economic opportunities for farmers and other food system businesses. In addition to network building, the grant recipients provide technical assistance and support for fruit and vegetable growers to reach wholesale markets with a focus on food safety and business assistance. The Farm Connect program was funded in 2018 by a Local Food Promotion Program grant from the USDA Agricultural Marketing Service.

THE WALLACE CENTER VALUE CHAIN COORDINATION RESOURCES

The Wallace Center at Winrock International has been working since 1983 to support regional food system development. The Center has created a series of resources that introduce the concept of value chain coordination (very similar to economic development coordination) and its potential impacts for regional food system development. Additional resources outline strategies for evaluating economic outcomes from coordination activities.

- Relevant Resources:
  - Value Chain Coordination Quicksheets
    - Roles of Value Chain Coordination
    - Funding Value Chain Coordination as a Place-Based Development Strategy
    - Evaluating Economic Outcomes
    - Evaluating Convening Events: Social Network Analysis and Rapid Stakeholder Surveys
- Background
  - From the Wallace Center's website: "Since 1983, the Wallace Center has been leading the regional food movement in innovation, networking, support, and capacity building. We seek to affect systems change to bring benefits to the environment, to communities, and to the farmers and food businesses that are the building blocks of a just and equitable food system. Through the support of our funders, we engage with organizations and individuals working on local and regional food systems development across the country to provide technical assistance and training, share best practices, cultivate learning networks and catalyze shifts in systems thinking."

Value Chain Coordination is a market-based approach to developing local and regional food systems that better serve communities. Value chain work includes the development of collaborative ties among businesses along the food supply chain, with the expectation that the economic position of these supply chain members improves. Value Chain Coordination describes leveraging the soft infrastructure, in the form of skills, competencies and relationships, in a food value chain. With a strong soft infrastructure, individuals and organizations are far more readily able to acquire and utilize hard infrastructure in their communities."

DEPARTMENT OF AGRICULTURAL ECONOMIC DEVELOPMENT, POLK COUNTY, NC

Although the county structure in North Carolina is slightly different than the county structure in New York, Onondaga County could form a similar government entity to advise on policy needs while encouraging and supporting agribusiness within the county.

From the Polk County website: "The purpose of the Agricultural Economic Development office is to encourage, support and maintain growing agricultural enterprises in Polk County, North Carolina. Objectives of the office include:

- Marketing Polk County's agricultural products and services by creating market opportunities.
- Encourage value-added enterprises.
- Identify trends and support services.
- Assist in training and scaling up agricultural businesses.
- Supporting new farmer enterprises through connection and mentoring opportunities
- Encourage expansion of secondary Agricultural businesses such as distribution and marketing, business planning, support business such as dry goods, seeds, implements, equipment, etc.
- Maintaining an appropriate agricultural land base to support a viable agricultural economy in Polk County specifically through Farmland Preservation and other conservation programs
- Encourage value-added enterprises. Identify trends and support services. Assist in training and scaling up agricultural businesses."

Note that the North Carolina Agricultural Economic Development department may have more freedom to make policy decisions because it is governed by a board, which can make independent decisions from the county commissioners. In New York, an agricultural economic development department would likely need to rely on the county executive and legislature to make policy and budgeting decisions.

COMMUNITY GREENHOUSE INITIATIVE

Land and infrastructure assets exist within Onondaga County that can be better leveraged to benefit agricultural producers and the broader community. Stakeholders have highlighted the need for improved and expanded community greenhouse spaces to generate a range of positive community outcomes:

1) Extend growing season for urban farmers and community gardeners by expanding access to greenhouse space
2) Expose youth to agriculture as a career path and as a general topic of interest through targeted programming
3) Workforce development through technical training focused on emerging career opportunities in agriculture including specialty crop production and Controlled Environment Agriculture (also called CEA and includes vertical farming, hydroponics, etc.), which can foster job opportunities for individuals with barriers to stable employment (e.g., immigrants and refugees or formerly incarcerated youth)
4) Provide demonstration sites to promote agriculture to the broader community

Through the development of this Venture Proposal, stakeholders identified two possible locations for community greenhouses, each with a different purpose and way to address community needs. The first location suggested was the Onondaga Park Greenhouse. The existing greenhouse space at Lower Onondaga Park is underutilized and could be used to enhance the production capacity of urban agriculture. The second location is adjacent to the Expo Center at the State Fairgrounds. Development of a community greenhouse at this location could be used to increase community-wide understanding of vegetable and fruit production, increase public interest in agriculture, and create a year-round agritourism destination. The State has already committed approximately 1.5-acres for a state-of-the-art greenhouse structure at the Fairgrounds. Details for the additional use, renovation, and potential development of the Onondaga Park Greenhouse should be evaluated in coordination with the City of Syracuse (property owner). Details for the construction of a greenhouse space at the State Fairgrounds should be evaluated in coordination the New York State Fairgrounds (property owner). Local nonprofits that may conduct programming at the greenhouses could also inform development or redevelopment activities at each site.

BASIC INFORMATION

Communities Served

Community greenhouse spaces have the potential to serve several communities within Onondaga County. Community greenhouses could serve Onondaga County producers or community gardeners who would benefit from expanded access to greenhouse space, youth through exposure to agriculture and educational programs, provide opportunities for job seekers through technical training and workforce readiness preparation, and/or benefit the general public through the provision of engaging educational and cultural experiences.

Potential Project Lead and Sponsors

Potential Project lead for Onondaga Park Greenhouse: City of Syracuse

Potential Project lead for NYS Fairgrounds Greenhouse: NYS Fairgrounds/Department of Agriculture and Markets

Potential Project Partners:

- Onondaga County Parks and Recreation
- Refugee and Immigrant Self-Empowerment (RISE)
- Brady Farm
- Syracuse-Onondaga County Planning Agency (SOCPA)
- Cornell Cooperative Extension Onondaga County (4H, Master Gardeners, etc.)
- Onondaga County Agricultural Council
- Onondaga Earth Corps
- Future Farmers of America
- Other volunteer organizations

PROJECT BACKGROUND

Demonstrated Need

1) Expanded access to greenhouse space would allow growers to increase production for local markets. Multiple Onondaga County stakeholders suggested urban growers would use community greenhouse space, if made available. The following groups were highlighted as likely users of greenhouse space: Urban farmers, community gardeners, immigrants, refugees, and nonprofits that serve these groups
2) Community greenhouse space is in demand for a variety of educational programming and workforce development purposes. Stakeholders suggested a combination of youth education and occupational skills training programs could be hosted at a community greenhouse space. Occupational skills training could be targeted towards community members who are experiencing barriers to employment (refugees, immigrants, individuals transitioning from incarceration, etc.) and/or emerging opportunities in agriculture such as specialty crop production or Controlled Environment Agriculture.
3) Expanded community greenhouse space provides opportunities for engaging, year-round agritourism experiences to increase community-wide knowledge and appreciation for agriculture. Stakeholders expressed interest in creating new opportunities for community members and tourists, youth, and adults, to learn about regional agriculture and innovative CEA technology. A community greenhouse space could provide a venue to host demonstrations, agritourism events, and other educational experiences year-round.

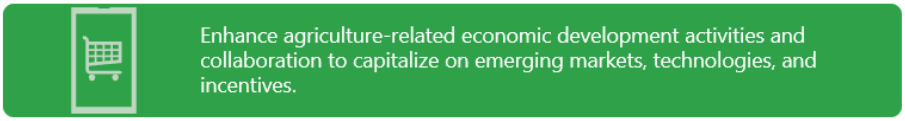
Alignment with Agriculture and Farmland Protection Plan

The Community Greenhouse Initiative would work directly towards the Onondaga County Agriculture and Farmland Protection Plan's vision as being "a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system." The Community Greenhouse Initiative directly and indirectly aligns with plan goals as outlined here:

DIRECT ALIGNMENT

ONONDAGA COUNTY

AGRICULTURE & FARMLAND PROTECTION PLAN



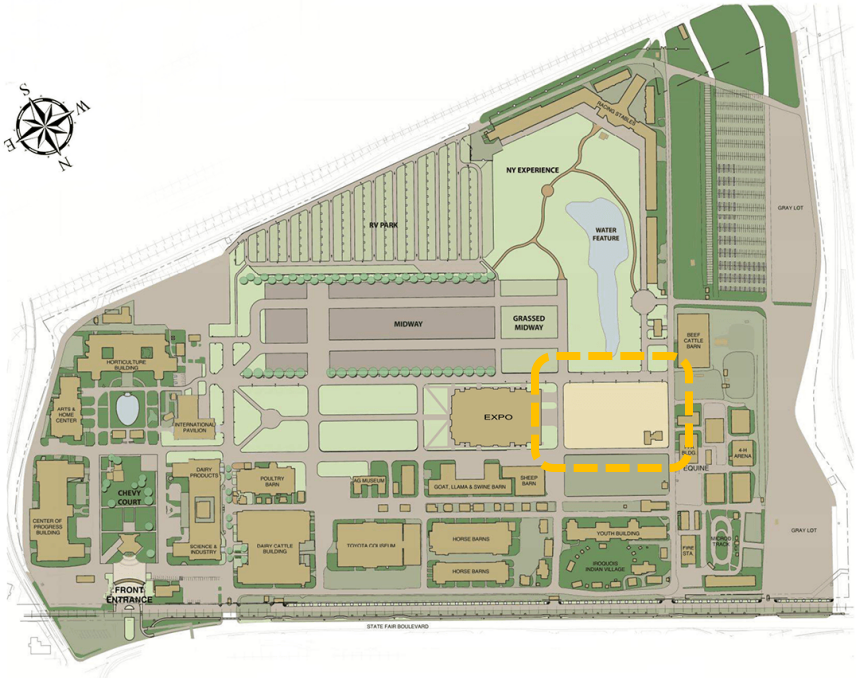
INDIRECT ALIGNMENT

Additional Details

The following photos of the Onondaga Park Greenhouse demonstrate both the current state of facility and overall underutilization of the space. This venture proposal provides opportunities to increase the utilization of the exisitng facility.

Source: Erica Tauzer (EDR). April 1, 2022. View from the top left photo is looking south along Onondaga Ave showing the historic park infrastructure near the facility, view from top right photo is looking inside the western most greenhouse, which is currently utilized by the City for ornamental plants, view from the bottom two photos is looking north towards the southern portion of the greenhouse facility showing the existing facility, its parking lot, and composting area.

The following map of the New York State Fairgrounds shows the planned location of the greenhouse facility (see dashed orange rectangle) to be developed (by Fall 2023).



Source: New York State Fairgrounds based on personal correspondence with EDR and KK&P on May 10, 2022. Map available at: https://nysfairgrounds.ny.gov/maps

Preliminary Budget Items

Greenhouse Construction or Renovation

1. Estimated Site Assessment cost: $30,000
2. Renovation costs: This will be determined by the results of the site assessment. There are roofing, ventilation, and watering issues with the building that need to be addressed to use it at full capacity. $300,000 of American Rescue Plan Act (ARPA) funding has been allocated to cover some greenhouse improvements, however, it is likely that additional funds will be needed to cover all repairs as determined by the site assessment.
3. State Fairgrounds: Funds have already been allocated for this

Greenhouse Management, Staffing, and Operations

1. Onondaga Park: $240,000 (3 gardeners and one greenhouse crew leader)
2. State Fairgrounds: $100,000 (1 greenhouse operator)

Note: These staff estimates are based on current staffing. If facilities and/or programming expands, additional staffing may be necessary. Operation costs will be in addition to the staffing costs (e.g., equipment repairs, seedling materials)

Educational Programming and Workforce Development Programming

1. Year-round educational program focusing on urban agriculture: $200,000

a. During the school year, 2x per week (40 weeks, average of 20 participants/session, 2 staff): $102,000
b. Summer (8 weeks, maximum of 1600 youth, 5 staff): $98,000

Funding Opportunities

A wide range of funding opportunities could support community greenhouse initiatives in Onondaga County. The US Department of Agriculture and state level grant opportunities that target local foods, economic development, or agricultural demonstration could be one important in funding community greenhouse programs. Specifically, the USDA National Institute of Food and Agriculture (NIFA) Agriculture and Food Research Initiative (AFRI) provides funding through the Education and Workforce Development Grant Program. The program offers annual grants of up to $500,000 with proposal deadlines annually in the fall. In addition, the Research and Education grant program offered by the Northeast Sustainable Agriculture and Research and Education ("Northeast SARE") could be leveraged to fund educational programming or research at a community greenhouse. The grant program accepts preproposals in mid-summer and invites select proposals in the fall. Project awards typically range between $30,000 and $250,000.

In summer 2022, the New York Department of Agriculture and Markets will be releasing a new funding opportunity for community gardens. The details of the opportunity are yet to be shared publicly, but the program will be relevant to one or both potential greenhouse spaces.

Considerations and challenges.

Considerations and challenges will vary depending on the specific site and program plans. The following considerations will be relevant for any community greenhouse project: Capital investment to renovate or build new greenhouse space (in the case of the Onondaga Park Greenhouse), sustained funding for programs and staffing, and interorganizational coordination and collaboration.

Timeframe

Preliminary Steps (0-1 years):

1. Determine site(s) for greenhouse renovation or construction
2. Hire an engineering or architecture firm to assess greenhouse renovation needs or to evaluate the need for developing a new greenhouse facility

Short term (1-3 years):

1. Build or renovate greenhouse space (Note: NYS Fairgrounds has stated a goal to have a greenhouse facility constructed and in operation in advance of the August 2023 State Fair.)
2. Hire key staff
3. Design and launch programming
4. Outline evaluation metrics to determine success over the short and long term

Medium term (3-6 years)

1. Monitor programming success
2. Expand and grow programming
3. Continue fundraising efforts

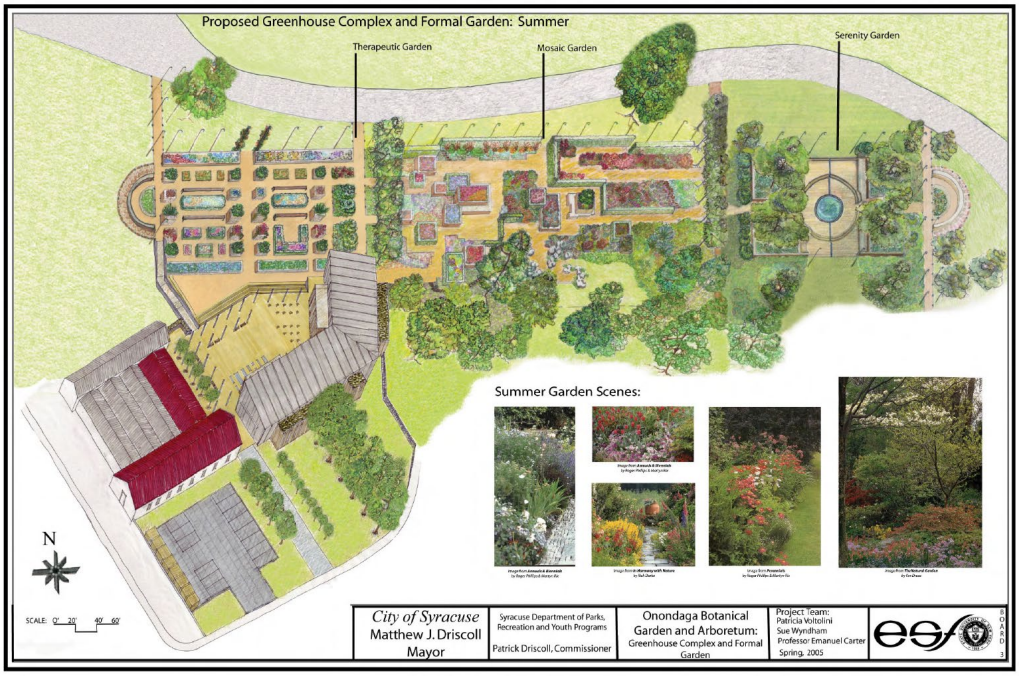
Long term (6+ years)

1. Monitor programming success
2. Expand and grow programming
3. Continue fundraising efforts

Precedent Examples and Additional Resources

2004 ONONDAGA BOTANICAL GARDEN & ARBORETUM MASTER PLAN

The 2004 Onondaga Botanical Garden and Arboretum Master Plan outlined a plan that included re-designing and programming development at Lower Onondaga Park, the site of an existing greenhouse facility. Although the plan was not implemented, the landscape designs can be used as a starting point for evaluating the potential for expanded use of the Onondaga Park Greenhouse moving forward. The plan proposed a 228-acre facility that encompassed Lower Onondaga Park along with portions of Kirk Park, Elmwood Park, and the Onondaga Creek Corridor. The intended audience for the facility were students and staff from local school districts, local citizens, researchers and professionals from local institutions, and the Centers for Nature Education. The Onondaga Botanical Garden & Arboretum Master Plan is available at https://www.esf.edu/la/carter/mplancombine2.pdf (Accessed April 27, 2022).



KROHN CONSERVATORY, CINCINNATI, OH

Owned and operated by the City of Cincinnati, the Krohn Conservatory is a botanical tourism destination for the community and tourists. The Conservatory is co-located at the same city park as several other attractions including the Cincinnati Art Museum and other landmarks and historical structures. The Krohn Conservatory has hosted agricultural exhibits in the past including a hydroponics demonstration. The Krohn Conservatory originally opened in 1933. The Conservatory is located at Eden Park, a city park two miles from downtown Cincinnati. The conservatory hosts the following collections in separate rooms: Fern House, Palm

House, Desert House, Orchid House, Bonsai Gallery, and a seasonal floral show room. The conservatory offers paid admission year-round for visitors.

WINDY CITY HARVEST, CHICAGO, IL

Opened to the public in 1972, Windy City Harvest is an education and jobs-training program offered by Chicago Botanic Garden. Chicago Botanic Garden is owned by a local governmental commission, the Forest Preserve District of Cook County, and managed by the Chicago Horticultural Society. The Windy City Harvest program provides:

- Paid trainings for more than 150 people every year, with an average of 80 percent placement rate in food systems jobs post-training. Since 2013, Windy City Harvest has helped to grow twenty-five small farm businesses.
- Cooking and nutrition classes as well as affordable or free produce for more than 1,000 community health center patients with diet-related diseases every year. Supports a network of more than sixty family-run community garden plots, empowering families to grow their own healthy food.
- More than 100,000 pounds of produce every year grown on over fifteen farms. Most of the produce stays in the communities where it is grown.

RIVERVIEW GARDENS, APPLETON, WI

Riverview Gardens is a non-profit organization offering job training and employment to people experiencing barriers to employment. The organization offers their ServiceWorks program which is a 90-hour job-training model to train individuals with transferrable work skills with the goal to obtain stable and permanent employment. The training program is offered at their nonprofit urban farm and other enterprises.

Riverview Gardens' mission is to build dignity through job training and employment. The organization engages the entire community in addressing the root causes of unemployment, poverty and homelessness through hard work, creativity, and human dignity. Riverview Gardens hosts the following enterprises: certified-organic urban farm, hydroponic greenhouses, event and park space, maintenance contracts for other non-profit organizations, and supplemental cleaning services from C.A.R.E. (Clean, Assess, Refresh, Enhance) Team in collaboration with the City of Appleton and Appleton Downtown, Inc

STONE BARNS CENTER, TARRYTOWN, NY

Stone Barns Center is a non-profit farm and educational center with a partner restaurant, Blue Hill at Stone Barns. The Center is open to the public for self-guided tours and offers a variety of educational programs including annual apprenticeships for aspiring farmers. Programming is funded by donations and farm revenue.

The farm at Stone Barns is a four-season operation with approximately six acres used for vegetable production and several hundred acres for livestock. The farm grows two hundred varieties of produce year-round, in outdoor fields and gardens and in a 22,000-square-foot minimally heated greenhouse that capitalizes on each season's available sunlight. Stone Barns offers a variety of programs for farmers, teachers, and the public. Annually, the farm engages eight apprentices. The hands-on training also includes courses on business, pollination, water, and soil. Programs include the Young Farmers Conference, Entrepreneurship Intensive for Farmers, and Food Education for high school students.

QUEENS COUNTY FARM MUSEUM, QUEENS, NY

Queens Farm connects visitors to agriculture and the environment through the lens of its 47-acre historic site, providing learning opportunities and creating conversations about biodiversity, nutrition, health and wellness, climate change and preserving local history. The farm is owned by the NYC Department of Parks and offers educational programming to youth and adults.

Queens County Farm Museum is one of the longest continually farmed sites in New York State. The farm's 47-acre historic site has produced food and fed New Yorkers for over three centuries. Queens Farm grows a variety of nutritionally dense and culturally relevant produce using sustainable and best farming practices. The farm's Agriculture Department and its growing practices teach New Yorkers about where their food comes from and illustrates the broader food system, beginning with the seed and ending with the consumer. The farm is owned by the New York City Department of Parks and is operated by the Colonial Farmhouse Restoration Society of Bellerose, Inc. Queens Farm's programs are supported in part by public funds from the NYC Department of Cultural Affairs in partnership with the New York City Council.

RED HOOK INITIATIVE / RED HOOK FARMS, BROOKLYN, NY

Red Hook Initiative (RHI) is a nonprofit farm that reaches over 6,500 local youth and residents of Brooklyn's largest public housing community annually through a model of youth development, community building and local hiring. RHI manages two farms totaling 3.86 acres and harvests over 20,000 pounds of produce each year. RHI offers the Fresh Food Box Program, which is a week-to-week sign up for fresh produce that is discounted for NYC Housing Authority residents and anyone paying with SNAP.

Each year, RHI engages over 450 youth from sixth grade through age 24. Youth development programs offer year-round support for middle schoolers, high schoolers, and young adults. These programs ensure that Red Hook youth can work toward academic success, explore careers, develop life skills, strengthen social support systems and lead by example in their neighborhood. RHI's approach builds leadership skills in youth and adult residents to address issues facing the neighborhood. Community building programs work to drive positive change and increase social cohesion to build a more resilient Red Hook. Over the past year, the Community building team prioritized issues such as unsafe public housing conditions, discriminatory over-policing, and transit access. RHI is a significant community employer with over 150 youth and adults from Red Hook on staff. RHI hires locally and invests in residents who will improve their lives and the community in which they work.

THE HERITAGE FARM AT SNUG HARBOR, STATEN ISLAND, NY

Hosted at the Snug Harbor Cultural Center and Botanical Garden, the Heritage Farm is a working nonprofit farm. The Farm offers educational programming. Established in 2011, the Heritage Farm is a 2.5-acre production farm that uses sustainable, low-till farming practices that focus on building soil health through the use of compost, crop rotation, intercropping, and cover cropping. The Heritage Farm offers a CSA to Staten Island and NYC residents and donates thousands of pounds of produce to local community partners annually.

Snug Harbor Cultural Center & Botanical Garden is the result of more than four decades of restoration and development to convert a 19th century charitable rest home for sailors into a regional arts center, botanical gardens, and public park. It is a place where history, architecture, gardens, agriculture, visual and performing arts, and education come together to provide a dynamic experience for all ages. Snug Harbor consists of twenty-eight buildings, fourteen distinctive botanical gardens, a two-acre urban farm, wetlands and park land on a unique, free, open campus.

SQUARE ROOTS, BROOKLYN, NY

Square Roots is a private company that grows produce year-round inside refurbished, upcycled shipping containers. They currently have farms in New York, Wisconsin, and Michigan. Square Roots aims to create meaningful jobs in modern farming for local community members. They incorporate diversity, equity, and inclusion in hiring practices and invest in their teams to offer accelerated career paths to all employees. Square Roots hires locally, unlocking new opportunities in farming and enabling young people to launch successful careers in high-tech agriculture. Purchases of Square Roots produce support farmers working in the local community. **I**n-house training programs open career opportunities for young farmers, not only within farming but across many departments at Square Roots. The career paths of farm team members span R&D, sales, food safety, and operations, reflecting the company's commitment to professional advancement and personal development.

AGRICULTURAL WASTE STREAM STRATEGIC PLAN

This project is the creation of a strategic plan to address agricultural waste issues in Onondaga County. Agricultural waste represents a missed opportunity to improve both today's and tomorrow's economic, social, and environmental condition. Both food and non-food agricultural waste is a significant and growing problem both in Onondaga County and across the US (16% of all food waste stems from agriculture). Agricultural waste is characterized by a number of sources, including produce, paper and plastics used in agricultural activities, and manure (if not put back into the soil). Fortunately, several opportunities exist to recycle or convert these waste products into energy or usable materials. The Agricultural Waste Stream Strategic Plan will use a three-pronged approach to:

1) Decrease the amount of agricultural waste that ends up in landfills and the amount of methane that ends up in the atmosphere
2) Increase the recycling of paper and plastic waste from agricultural distributors and producers in Onondaga County; and
3) Increase the processing/composting agricultural wastes, including manure.

The strategic plan should determine the specific needs and feasibility of actions that can be implemented, such as specialized recycling facilities, appropriately designed anaerobic digesters with adequate technical assistance available, or programs to gather rescued produced to stop food waste at the farm level. The strategy could be developed through coordination between local entities engaged in the County's agricultural planning efforts including the Onondaga County Soil and Water Conservation District, Cornell Cooperative Extension of Onondaga County (CCE), the Onondaga County Resource Recovery Agency, as well as private businesses. The resulting Food and Agricultural Waste Stream Strategic Plan will set countywide food and agricultural waste reduction goals for the next 10 to 15 years. Identified actions are anticipated to support businesses and institutions needing to comply with the recently enacted NYS Food Donation and Food Scraps Recycling Law. Additionally, partnering agencies will provide ongoing, up-to-date technical assistance for farm operators interested in working towards waste reduction strategies. This project should build upon existing initiatives that provide waste reduction support, such as the Onondaga County Soil and Water Conservation District's agricultural tire recovery program.

BASIC INFORMATION

Targeted Populations

- Agricultural producers
- Large-scale food waste producers (e.g., restaurants and businesses)

- Onondaga County residents

Potential Project Lead and Partners

Onondaga County Soil and Water Conservation District, the Onondaga County Resource Recovery Agency, CCE Onondaga

BACKGROUND

Demonstrated Need

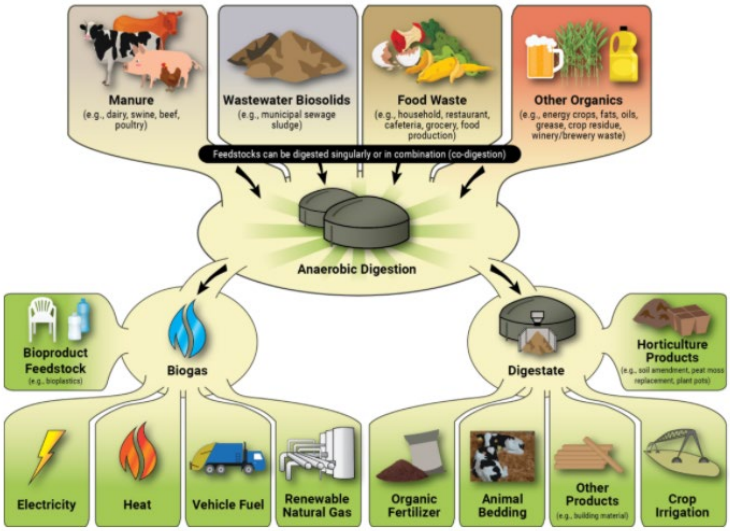
The need for an agricultural waste stream analysis is demonstrated by the increasing amount of food waste across the United States. This waste can be understood as a resource in all food system sectors. Food waste in the US is generated from consumers (43%), market (40%), and production (16%; Food Plan CNY, 2021):

- Consumer waste stem from cooking and uneaten leftovers, as well as spoilage and an increase in residential composting.
- Market food waste is generated by overstocking, extending past the sell-by date, consumer demand for unblemished food, and packaging requirements.
- Farm production food waste is created by crop loss, pests, mechanical failures, contamination, changes in market demands, or labor shortages.

Non-food agricultural waste include manure, oil, silage plastics, fertilizer, pesticides, and herbicides. US farmers generate 816 million pounds of plastic waste annually, mostly from plastic mulch and containers (Mancl, 2020). Waste recovery options include recycling, recovery, and composting.

Food and agricultural waste are significant contributors of greenhouse gas emissions. While carbon dioxide is often considered the primary greenhouse gas of concern, food waste and manure emit methane and nitrous oxide, which are 23 and 300 times more potent as greenhouse. Agricultural waste, primarily from livestock, also emits methane and contributes to climate change. Approximately 40% of all methane emissions in the US is produced by agriculture (US Energy Information Administration, 2011). Cattle are estimated to produce 3.4% of total GHG emissions, with dairy cattle responsible for 1.3% of the US total (EPA, 2017; American Dairy Science Association, 2018). Food waste is also a large contributor of methane; food waste is the single largest category of landfill material, and these landfills account for about 14% of all US human-related methane emissions. Fortunately, there are technologies available that can assist in decreasing the amount of methane that reaches the atmosphere by capturing it and converting it through energy production. Organic materials, both agricultural and food waste, can be separated from the municipal solid waste (MSW) stream and processed in an anaerobic digester.

Figure 35. Flow Of Feedstocks through Anaerobic Digester System to Produce Biogas and Digestate



Source: US Environmental Protection Agency. How does anaerobic digestion work? Available from https://www.epa.gov/agstar/how-does-anaerobic-digestion-work Accessed in April 2022.

In New York State, new regulations have been enacted for businesses and institutions to manage food waste directly and sustainably. These regulations require that businesses and institutions generating large amounts of food waste donate or recycle. If designed and managed appropriately, food waste can be used with manure-fed biodigesters to increase the energy production. The Onondaga County Resource Recovery Agency (OCCRA) operates two fee-based food and yard waste compost drop-off sites, which produce award-winning compost. OCCRA also manages a variety of recycling programs and disposal/drop-off locations.

Alignment with the Agriculture and Farmland Protection Plan

The Food and Agricultural Waste Stream Strategic Plan would directly support the Onondaga County Agriculture and Farmland Protection Plan's vision to be "a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system." This venture proposal aligns with the goals of the countywide plan, directly and indirectly.

DIRECT ALIGNMENT

Continue to enhance the relationship between agriculture and the natural environment.

Enhance agriculture-related economic development activities and collaboration to capitalize on emerging markets, technologies, and incentives.

INDIRECT ALIGNMENT

Preliminary Cost Estimate

$100,000 to develop a strategic plan examining the options and feasibility for managing on-farm agricultural waste in Onondaga County. This effort could be expanded to explore all food waste for additional fee and scope.

Funding Opportunities

The New York State Department of Environmental Conservation - State Assistance Programs for Waste Reduction, Recycling and Household Hazardous Waste Programs provides municipal grants for Waste Reduction/Prevention Projects, Recycling Capital Projects, and Recycling Coordination and Education Projects. With the exception of the Recycling Coordination and Education Projects, proposals for projects are accepted on an ongoing first-come-first-served basis. In general, grants are typically awarded during the months of August, September, and October of each calendar year, with funds being dispersed the following calendar year.

The Sustainable Agriculture Research and Education (SARE) grant program through the USDA offers six competitive grant programs to advance sustainable agriculture and food systems in the Northeast. Funding opportunities related to this Venture Proposal may include the Partnerships Grant (up to $30,000) or Research for Novel Approaches grant ($30,000 to $200,000).

NYS Empire State Development Strategic Planning & Feasibility Studies Program

Considerations and challenges

The Agricultural Waste Stream Strategic Plan should be based on an analysis that prioritizes the most cost-effective ways to achieve on-farm waste reduction while working around the challenges to meet these goals. There are several challenges in addressing agricultural waste issues, specifically as it relates to anaerobic digestion and agricultural recycling. In general, these challenges relate to the complexity of the necessary processes and the lack of resources, incentives, and available technical staff to operate digestion and recycling facilities.

While incentives such as credits traded to implement California's Low Carbon Fuel Standard, are in place to make anaerobic digesters profitable for farm operators, the burgeoning industry can be risky. Manure processing is highly technical, costly to construct, requires customization to each farm, and requires careful and on-going management. According to local stakeholders, the economics and policy do not align in the favor of facilities used to transport and process manure for renewable natural gas production. As the market continues to develop, innovation, increased technical expertise and support systems, and changes to pricing of energy credits may provide solutions to these barriers. There will be a continued need to ensure that the

management of these systems is adequate and contracted energy specialists hold the adequate amount of liability in the facilities.

According to the 2015 CNY Rising Upstate Revitalization Initiative Agribusiness Strategy, an important strategy identified to "develop technologies and support services to manage organic wastes". Recommendations to achieve this strategy include:

1) Provide design/build services for use of these technologies consistent with operating farm and processing businesses;

2) Inventory technologies focused on water quality and extraction of valuable nutrients; and

3) Identify service providers with resources to support, e.g., environmental engineers and contractors.

More information is available through https://esd.ny.gov/central-ny-rising-uri.

Another significant challenge relates to the recycling of agricultural plastics, which is complex because these materials are often saturated, covered with dirt, and can be contaminated with herbicides and pesticides. Furthermore, these materials come in a variety of products, ranging from silo covers, irrigation pipe, herbicide/pesticide containers, and bale wrap, among others. To address these challenges, Cornell University's Recycling Agricultural Plastics Program features best management practices for both farm operations and agri-service practitioners.

Timeframe

Short (1-2 years)

Additional Resources and Precedent Examples

- Cornell Waste Management Institute Recycling Agricultural Plastics Program: http://www.recycleagplastics.css.cals.cornell.edu/agplastics-2.htm
- New York State Department of Environmental Conservation Waste Management for Agriculture Regulations: https://www.dec.ny.gov/chemical/84728.html
- Environmental Protection Agency. (2009). Inventory of U.S. greenhouse gas emissions and sinks: 1990- 2007. Retrieved from http://epa.gov/climatechange/emissions/usinventoryreport.html
- See https://www.dec.ny.gov/chemical/114499.html#DFSG for more information on the NYS Food Donation and Food Scraps Recycling Law enacted in January 2022.
- List of Designated Food Scrap Generators in NYS: https://www.dec.ny.gov/docs/materials_minerals_pdf/dfsglistfinal.pdf
- California clean fuel standard sparks renewable gas boom in Midwest https://energynews.us/2021/05/13/california-clean-fuel-standard-sparks-renewable-gas-boom-in-midwest/
- St. Lawrence County Agricultural Plastics Recycling Project: https://projects.sare.org/sare_project/ONE09-112/
- Past CFA projects related to food waste in Central New York: Round 6 City of Cortland Construction and Pilot Operation of a Food Waste Vermicomposting Facility – DEC funding and Round 8 Regional Organic Waste to Energy Honeywell International partnering with NYS

Fairgrounds – ESD funding The Regional Organic Waste to Energy project will collect and process commercial and institutional sources separated organics, primarily food waste, for use as feedstock in a planned anaerobic digester to be built as part of a brownfield redevelopment.

- US Energy Information Administration. 2011. Emissions of Greenhouse Gases in the US: Methane Emissions. Available at: https://www.eia.gov/environment/emissions/ghg_report/ghg_methane.php

Figure 36. Anaerobic Digesters in or near Onondaga County

Project Name	Location	Digester Type/Biogas Use	Start Year	Attributes
Cayuga Regional Digester	Auburn NY	Complete Mix for Cogeneration	2013	Animals: 1,255 dairy Co-digestion: Food Wastes Biogas Production: 215,616 ft3/day Electricity Generated: 4,624,000 kWh/y
Twin Birch Dairy Digester	Skaneateles	Horizontal plug flow digester for electricity/boiler/ furnace fuel	2003	Animals: 1,900 dairy Co-digestion: Process Water Biogas Production: 100,000 ft^3/day Electricity Generated: 420,480 kWh/yr.
Patterson Farms Digester	Auburn NY	Complete mix digester for cogeneration	2005	Animals: 1,900 dairy Co-digestion: Dairy Processing Wastes; Food Processing Wastes Biogas Production: 173,300 ft^3/day Electricity Generated: 3,092,280 kWh/yr.
Roach Dairy Farm	Scipio Center, NY	Complete mix digester for electricity	2010	Animals: 1,350 dairy Co-digestion: Process Water Biogas Production: 113,230 ft^3/day Electricity Generated: 2,102,400 kWh/yr.
Sunnyside Farms	Scipio Center, NY	Complete mix digester for electricity	2009	Animals: 3,200 dairy Electricity Generated: 6,615,552 kWh/yr.

Source: https://www.epa.gov/agstar/livestock-anaerobic-digester-database

AGRITOURISM SUPPORT PROGRAM

"Agritourism" describes businesses, operated as an accessory use to an active farm, which brings together tourism and agriculture for the education and enjoyment of the public. These agritourism destinations may include: hayrides, corn mazes, hay mazes, farm animal petting zoos, farm tours, and agriculture themed festivals and other events. Agritourism benefits the local economy, rural communities, and farm operations alike by providing added revenues for farm operators to sustain and grow their ag operations. It also exposes the public to working lands and operations to learn about local food production and positive impacts of agricultural community. Agritourism exhibits strength and potential for Onondaga County, as demonstrated by the successes of the Onondaga Grown Campaign in recent years. Onondaga County, though the Agricultural Council and its agriculture planning programs, will continue to invest in planning initiatives and marketing support for agritourism opportunities through the development of an Agritourism Support Program. This program would encompass activities such as:

- Corridor Planning: Enhance rural planning and inter-municipal and agency coordination along agritourism corridors (e.g., NYS Routes 20 and 80) through the analysis of agricultural community assets, roadside uses, accommodations and incentives for agritourism operations, viewshed analysis/protection measures, transportation planning, etc.
- Marketing and Promotion: Continued exploration of opportunities to market and promote Onondaga County farms and agritourism venues to the Central New York Region and beyond. Partner with existing tourism campaigns (e.g., Visit Syracuse and Visit Central New York), development of social media/advertising campaigns, etc.
- Technical Assistance for Businesses: Information and training for farms and farm businesses to start, improve, or expand existing agritourism ventures, assistance for market analyses, media support, etc.
- Technical Assistance for Municipalities: Information and training on best practices related to regulation and permitting of agritourism land uses, such as zoning accommodations, site planning considerations, and model design guidelines.

BASIC INFORMATION

Targeted Populations

- Agricultural producers ranging from small hobby farms to large-scale farm operations
- Businesses in rural villages and hamlets
- Onondaga County residents and visitors
- Rural municipalities

Potential Project Lead and Partners

- Onondaga County Agriculture Council, Syracuse Onondaga County Planning Agency, CCE Onondaga, agritourism producers, municipalities, Visit Syracuse, Visit Central New York, local Chambers of Commerce (e.g., Skaneateles Area Chamber of Commerce, Greater Baldwinsville Chamber of Commerce), farmers markets, Onondaga County Economic Development Department, Industrial Development Agencies CNY Regional Planning and Development Board, Departments of Transportation.

BACKGROUND

Demonstrated Need

Emerging issues in agritourism development, such as farm-to-table activities, U-pick venues, small-scale breweries and cideries, and celebratory venues have demonstrated need on a case-by-case basis. This piecemeal approach risks creating inadvertent conflicts between individual concerns and precludes a comprehensive approach to agricultural-economic development across Onondaga County.

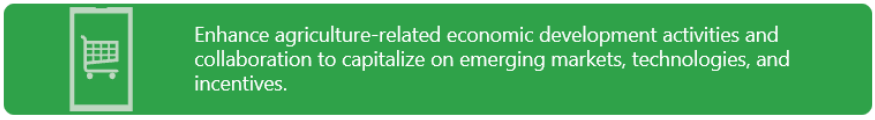
Due to a lack of advertising and varied levels of business experience within the agricultural community, there is a need is to provide a coordinated agritourism marketing platform as a way to better support to new and existing ventures. Additionally, there is a need to market to a variety of audiences, including new visitors to the area as a way to leverage agritourism opportunities.

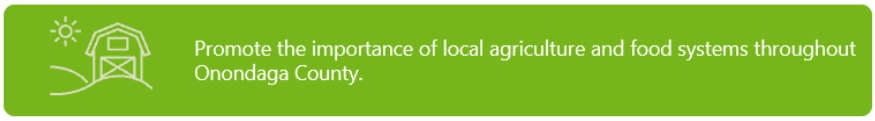
There is also a need to share business and site design tools to agritourism businesses and the communities in which they reside as a way to minimize potential local land use conflicts and address infrastructure considerations. This can be done developing and sharing safety and design tools for businesses, municipalities, and infrastructure providers and in doing so, build local awareness, bring dollars into local rural economies, and ensure good management of agritourism operations.

Alignment with the Agriculture and Farmland Protection Plan

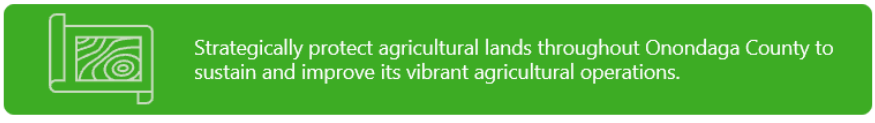
The Agritourism Support Program would contribute to the Onondaga County Agriculture and Farmland Protection Plan's vision of being "a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system." This venture proposal aligns with the goals of the countywide plan, directly and indirectly.

DIRECT ALIGNMENT





INDIRECT ALIGNMENT



Preliminary Cost Estimate

$250,000

Potential Funding Opportunities

- Corridor Planning: , NYS Main Street Grant Program (Homes and Community Renewal), NYS Empire State Development Strategic Planning & Feasibility Studies Program, Onondaga County General Fund, Onondaga County Industrial Development Agency, Onondaga County Agriculture Council. Syracuse Metropolitan Transportation Council (Unified Planning Work Program).
- Marketing and Promotion: The 2022 NYS Empire State Development Market New York grant program has funds for agritourism events, marketing initiatives, or capital projects that can demonstrate a 20% match and have a minimum grant request of $25,000 or more for regional marketing or at least $150,000 for capital projects.
- Technical Assistance for Businesses: The USDA Sustainable Agriculture Research and Education (SARE) grant program offers six competitive grant programs to advance sustainable agriculture and food systems in the Northeast. Specific funds that may relate include the Professional Development Grant ($30,000 to $150,000 available) or Partnerships Grant (up to $30,000 available).

Considerations and challenges

Contact databases to reach agritourism operators require regular updates. This effort should build upon recent updates of agricultural producer databases and update contact lists on a frequent and regular basis.

Land use conflicts can occur between agritourism facilities and neighboring landowners. Other related land use planning issues include change in character, traffic/infrastructure needs, event management, noise/lighting. It is also a challenge to keep agriculture as primary use and sometimes agritourism operations can actually take agricultural lands out of production. A balance of local oversight is needed to keep the local agricultural lands and landscapes intact, while keeping agritourism a viable option for local farm operations.

The skillsets for retail, restaurants, event management, and marketing can vary greatly within the farming community. Resource and knowledge-sharing is one way to overcome this knowledge and skillset gap.

Timeframe

Short (1-2 years)

Precedent Examples and Additional Resources

- Montgomery County Maryland Agritourism Study: This Agritourism Study examines issues raised by farmers, entrepreneurs, community members, planners, and regulators. It draws and expands on the earlier work of the Montgomery County Heritage Area Management Plan, as well as utilizes consultant assistance to conduct a study of agritourism policies and regulations in the county and comparable jurisdictions. The Agritourism Study seeks to identify considerations, including opportunities and challenges, as well as develop a menu of potential solutions to provide a comprehensive and coordinated approach for agricultural-economic development. The study seeks to preserve the character of the Agricultural Reserve while also enhancing the economic viability of farming. For more information visit: https://montgomeryplanning.org/planning/agricultural-reserve/agritourism-study/
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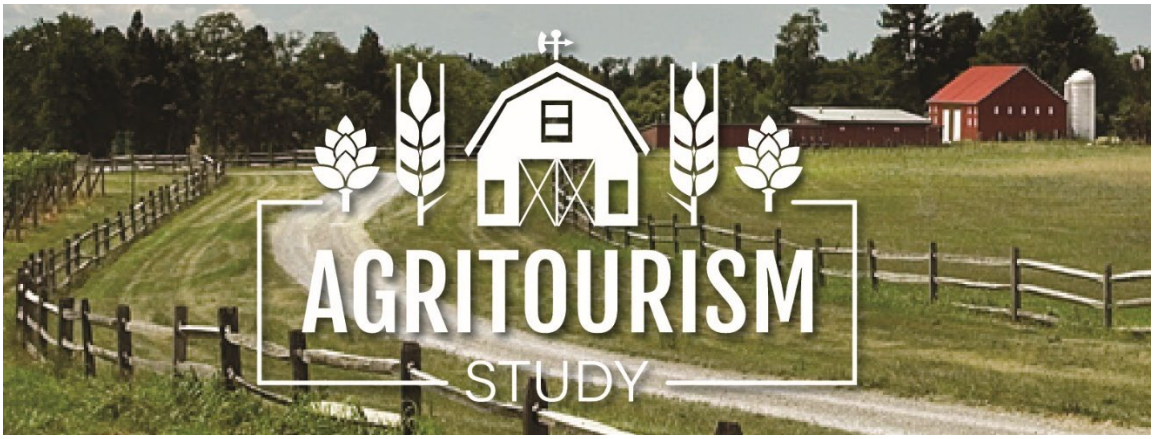

- *Source: Montgomery County Agritourism Study*

- Finger Lakes Farm Country: This program promotes the abundance of agritourism resources in the southern Finger Lakes by creating a memorable brand for agritourism attractions and businesses while highlighting educational and recreational activities for regional visitors. The program is a partnership between Chemung, Schuyler, Steuben, Tioga, and Yates counties, along with the Cornell Cooperative Extension and the Finger Lakes Wine Country Marketing Organization. In addition to online promotions and calendar coordination, the program features brochures that are distributed to tourism kiosks. For more information, visit: https://fingerlakesfarmcountry.com/

Source: Finger Lakes Farm Country website: https://fingerlakesfarmcountry.com/

- Getting Started in Agritourism Handbook: Originally developed in 2007 and updated in 2016 by Tompkins County CCE and posted on the Monroe County CCE website, this guidebook is targeted to farm operators interested in initiating agritourism operations, and provides guidance for visitor expectations, considerations for customer relations, generating income from agritourism, liability considerations and working with insurance providers, and marketing considerations. For more information, visit: http://monroe.cce.cornell.edu/resources/getting-started-in-agritourism

Source: Cover page of 2007 Agritourism Handbook

VALUE-ADDED ECONOMIC DEVELOPMENT INITIATIVES

Onondaga County and the Central New York Regional Economic Development Council recognizes agribusiness as a key sector for strategic economic growth due to its role as a cornerstone for the regional economy. Value-added products offer farmers the potential to capture a larger share of the food dollar. Examples are endless and might changing the physical state of crops like making apples into cider, certifying produce to be organic, or creating efficient ways of packaging or processing agricultural products. This venture proposal advances value-added economic development project ideas emerging from the Onondaga County Agriculture and Farmland Protection Plan that can work to elevate the local agricultural economy by expanding the region's agribusiness sector size, technological infrastructure, and accessibility to major markets, all with the intention of offering farmers the ability to capture a larger share of the food dollar.

Initial projects were identified through the research and data conducted in support of the Onondaga County Agriculture and Farmland Protection Plan, interviews with local farmers, the Onodaga County Office of Economic Development, and Cornell Cooperative Extension, among other interested stakeholders. Projects may include:

- A regional food hub (i.e., an organization that actively manages the aggregation, distribution, and marketing of source-identified food),
- A flash freezing facility that rapidly distributes freezing cold air throughout a commercial unit, eventually cooling produce to safe and legal temperature so that produce can be distributed
- A commercial kitchen that is fully equipped, meets the requirements for cleanliness and safe food handling, and able to be rented out for shared use.
- A produce processing facility that manufactures, packages, labels or stores food and provides food for sale or distribution to other business entities such as other food processing plants or food establishments.
- An agribusiness park located on an industrial site that has been assessed for the attributes (utilities, transportation, workforce, etc.) necessary to attract new companies within the designated industry sectors.

More research related to the market, feasibility, siting, management, and role of governmental partners in these facilities is needed.

BASIC INFORMATION

Targeted Populations

Individual producers, local institutions, and consumers

Potential Project Lead and Partners

Local private distributors, farmers, Onondaga County Office of Economic Development and Industrial Development Agency, Empire State Development, Centerstate CEO, . , Syracuse Onondaga Food Systems Alliance, , Central New York Regional Market Authority,

BACKGROUND

Demonstrated Need

According to the 2021 Progress Report for Central New York Regional Economic Development Corporation's Upstate Revitalization Initiatives, a demonstrated need facing Central New York's agriculture is to build resiliency into the supply chain and local food systems. To accomplish this, two key recommendations were outlined that pertain to this venture proposal: 1) invest in technology that extends the shelf life of local products, and 2) diversify revenue streams through value-added products. These recommendations were specifically directed towards dairy, fruits, and vegetable products, and even more specifically, crops or products that are threatened by climate change and other issues impacting water availability in areas of the country (e.g., the California Central Valley).

In addition to advancing regional agribusiness goals, this initiative will strongly benefit farmers. In a national survey of food hubs and producers, producers that were associated with food hubs hired more people, increased their acreage size, and extended their growing season (Michigan State University 2013).

Alignment with the Agriculture and Farmland Protection Plan

The Value-Added Economic Development Initiative would work directly towards the Onondaga County Agriculture and Farmland Protection Plan's vision as being "a dynamic agricultural community of vibrant, resilient, and experienced farm operators and farm-related entrepreneurs who are the stewards of local viable farmland and the food system." This venture proposal aligns with the goals of the countywide plan, directly and indirectly.

DIRECT ALIGNMENT

INDIRECT ALIGNMENT

Preliminary Cost Estimate

Perform a scoping study to define the specific value-added needs in the Syracuse area, and those value-added initiatives or projects with the most potential benefit to the agricultural community, based on community needs and available resources. The scoping process will involve identification and mobilization of potential partners and stakeholders ($20,000)

Potential concepts identified through an initial scoping study will then likely require additional detailed analysis in order to establish poof of concept, feasibility and detailed management and funding mechanisms. This will involve market research/survey, business and/or operational needs assessment, data analysis, and financial feasibility analysis, and funding options. Depending on the results of the scoping study, a minimum of $75,000 per initiative should be allocated towards this effort.

Funding Opportunities

NYS Empire State Development offers funding for strategic planning and feasibility studies as well as for capital projects associated with agribusiness initiatives (acquisition of land, buildings, machinery and/or equipment; demolition and environmental remediation; new construction, renovation, or leasehold improvements; acquisition of furniture and fixtures; soft costs of up to twenty-five percent (25%) of total project costs). Funding may also be obtained through the NYS Grown & Certified Infrastructure, Technology, research, and Development Grant Program.

Considerations and challenges

Scaling up production and adding processing and packaging activites to serve new, larger institutional users with value-added products can be difficult for farmers, many of which tend to be small scale or mid-sized in their operations. Careful coordination and planning are needed to ensure that producers and processing facilities can accommodate fluctuations of demand pressures due to seasonal shifts in harvesting.

Timeframe

Each potential venture will take a two-pronged approach when considering the timeframe for implementation. This timeframe may be expedited to the extent that projects can be combined (e.g., a commercial kitchen that can be sited with a food hub facility):

Short (1-2) for developing the scope of work, and initiating a feasibility study

Medium (3 to 6 years) for securing the necessary capital agreements, and initiating project development

Precedent Examples and Additional Resources

Russo Produce - This Syracuse-based produce distributor which is currently operating out of two warehouses on the Central New York Regional Market campus. In recent years, the operation has partnered with an organization in Oneida County, securing an additional 30,000 square feet for value-added production. Russo has invested in space and installation of machinery to custom cut fresh fruit and vegetables as well as repackage (tray wrap, overwrap, bag, and clamshell) product according to vendor needs. The business has been in contact with local school districts and institutions in an effort to expand their value-added product processing distribution network. Ideally, Russo is seeking to consolidate its operations and locate its packing and processing facilities in or near its existing warehouse in the Syracuse area and is currently scoping opportunities for a 40-60,000 square foot facility. The company has also expressed interest in linkages to a central commercial kitchen facility operation. It is estimated that the expansion and relocation could result in the addition of 10-30 new direct jobs as well as new and expanded demand for local agricultural products from area farmers.

The Wallace Center has developed resources to improve food hubs' operation and raise awareness of this critical link in the value chain by developing a one-stop location for information. Structured in many forms,

from co-ops to multi-farm CSAs to big, bustling warehouses, food hubs are a critical component of a viable thriving local food economy. Resources include tools and information related to individual enterprises, food hub management, food safety and quality information (e.g., the USDA GroupGap program), funding and financing tools, value chain coordination, and leadership and equity within the food system. For more information, see https://foodsystemsleadershipnetwork.org/resource-library/topic-areas/

The Eastern Food Hub Collective has a framework outlining how a collection of food hubs can work together to expand market opportunities for farmers, improve operational efficiency, and grow regional food system influence. By participating in the collective through a Memorandum of Understanding that sets agreements on prices, food quality, sustainability, equity, and community, local producers and buyers can leverage a larger buying power across the east coast. For more information, see https://www.easternfoodhubcollaborative.org.

Source: Screenshot from https://www.easternfoodhubcollaborative.org/

Cayuga Milk Ingredients Expansion, Auburn, NY - Cayuga Milk Ingredients continues to be one of the largest producers of dried milk in the world. They are currently in the midst of a $90 million expansion to install a new reverse osmosis filtration system, evaporator, and feed system to their current dryer. This will increase their capacity and allow production of additional products.

Agribusiness Park Feasibility Study- This study defined subsectors within the food processing sector to focus economic development attraction efforts. Industrial sites throughout the County were assessed for the attributes (utilities, transportation, workforce, etc.) necessary to attract new companies within the designated industry sectors. For more information, see https://www3.erie.gov/agriculture/agribusiness-park-feasibility-study

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