ALBANY COUNTY AGRICULTURE AND FARMLAND PROTECTION PLAN UPDATE, 2018

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Mission:

To develop goals and strategies to support and enhance Albany County's agricultural industry and agricultural resources.

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Introduction

Purpose of the Plan

Nationwide agriculture is changing. In Albany County the nature of this change is affected by internal—such as zoning that is accommodating towards agricultural uses—and external factors—such as the loss of dairy markets with the closure of processing plants. The Albany County Agriculture and Farmland Protection Plan Update, 2018, was developed to ensure the long-term viability of a strong and prosperous agriculture industry in the county.

With market support to "buy local" and state and federal funding support for value-added product development, markets for locally grown and made products are skyrocketing. Albany County's location just hours from the nearly insatiable New York City market, as well as the broader metropolitan area and the Hudson Valley, makes new agricultural endeavors a strong possibility.

However, pressure from development and a lack of contiguous, high quality farmland mean that farmers are hard-pressed to purchase existing property to expand operations or to start anew. Also, because of regional land economics, young and beginning farmers may be forced to start operations on small lots that are often close to non-farm neighbors or have less than optimal soils.

In response to the above opportunities and challenges, Albany County recognized the need to update the Agricultural and Farmland Protection Plan that was adopted in 2004. The purpose of this update is to reassess the county's farmland and agricultural resources and establish initiatives to enhance the profitability of agriculture in the county, identify opportunities and issues for agricultural and farmland preservation, and formulate strategies and recommendations for implementation.

Structure of the Updated Plan

As the plan was developed, it became clear that issues fit clearly into two subject areas; land use and economic development, and so the plan was organized in two separate reports.

The land use report emphasizes the protection of existing agriculture and its land base. The focus is on the specific issues related to farmland protection and the tools that may be used to preserve land for agricultural production.

The second report focuses on economic development, concentrating on recommendations that improve the viability of agriculture in the county. The issues and recommendations identified relate to programs that strengthen the business of agriculture through market development, professional and technical assistance, targeted development incentives, and infrastructure improvement. Each report includes associated support in several appendices.

Vision of Agricultural Protection and Viability

It is clear from surveys, the 2004 Albany County Agriculture and Farmland Protection Plan, the Capital Region Sustainability Plan, and various town plans that agricultural operations are essential to preserving the quality of life in the county. However, the definition of agriculture and the means for sustaining it are always evolving. It is therefore paramount that the community adopts a Vision of Agricultural Protection and Viability to guide planning and implementation initiatives for agricultural and farmland protection going forward.

Vision of Agricultural Protection and Viability

To protect and enhance the agricultural industry in Albany County in a manner that protects the farmers' ability to operate profitably while providing for community character, natural resource protection, and open-space needs.

Plan Update Process

In 2016, Albany County received funding from NYS Department of Agriculture and Markets to update the county's Agricultural and Farmland Protection Plan. Agricultural and Community Development Services (ACDS, LLC) was chosen as the consultant to develop the updated plan under the direction of the Albany County Department of Economic Development, Conservation and Planning in partnership with the Agricultural and Farmland Protection Board and Cornell Cooperative Extension of Albany County.

At the outset, an advisory committee was established to provide input and feedback. The committee included municipal officials, agricultural agency staff, and farmers. In March of 2017, the planning process began with an initial kick-off meeting of the project partners and contributors. Additional meetings were held throughout the planning process to review data and drafts and to provide comments

Quantitative and qualitative data collection methods were applied in the different components that make up this plan. Quantitative methods include the collection and analysis of acreage data for agricultural districts and agricultural use. Qualitative methods include the administration of a survey to measure land ownership per farm, land use, and farming practices. The survey used a purposive sampling of local farmers and others involved in agribusiness to obtain information from sources who are most familiar and knowledgeable about the County's agricultural sector. The general public was also surveyed to gauge the overall knowledge of and support for agriculture among Albany County residents. These methods guided the Plan's findings and helped shape the recommendations and implementation strategies, including the decision create a two-prong focus: one on protection and the other on viability.

The following diagram is representative of the process undertaken by ACDS, LLC to update the 2004 Plan.

Summary of Recommendations

Following is a summary of the recommendations developed by ACDS and approved by the Agriculture and Farmland Protection Advisory Committee. Details regarding each recommendation can be found in their respective chapters and in the matrices at the end of each chapter.

Agricultural Protection

- **Land-Use Recommendations Preservation**
  - Improve participation in existing farmland conservation programs.
  - Improve access to land conservation information at the community and farm levels, to include:
  - Create a Critical Farm Program.
  - Support enhanced land use management tools to protect high value concentrations of agricultur-al land from conversion to nonagricultural uses.
  - Create a countywide lease of development rights program.
- **Land-Use Regulations**
  - Harmonize definition of agriculture
  - Support the development of a regional information exchange program
  - Review road design standards
  - Support a regional view of agriculture
  - Develop an annual land use training program to improve integration

Improving Farm Viability: Economic Development Recommendations

- **Goods and Services Market Transformation**
  - Support year-round farmers' market development
  - Enhance craft beverage supply chain development
  - Create forest product innovation plan
  - Support study of specialty processing opportunities
  - Create an electronic exchange system for production assets and farm services
  - Encourage adoption/expansion of meat quality programs
  - Encourage regional agritourism development
- **Entrepreneurial Services Improvement**
  - Hudson Valley Agribusiness Development Corporation membership
  - Support creation of regional beginning farmer Mentor-Protégé Program that extends reach of existing programs
- **Critical Infrastructure**
  - Support improved roadway conditions
  - Improve broadband access
  - Encourage greater use of community scale alternative fuels in combined heat and power projects

2004 Agricultural and Farmland Protection Planning

Summary of Findings

In 2004, Albany County completed its first Agricultural and Farmland Protection Plan (AFPP). Many of the issues discussed in this update are similar to the issues faced fourteen years ago. The original report discussed challenges and issues facing Albany County agriculture at the time. The number of farms and the number of acres in production had fallen, farmers were aging, development and high property taxes put pressure on production land.

At the same time, agricultural was recognized then, as it is now, as a net contributor to the economy and quality of life in the county. Farm owners contributed economically by hiring about 500 people every year and doing business in the county, keeping revenue circulating locally. Agricultural land requires fewer services than residential developments, so it contributed positively to the budgets of local governments. Agricultural land contributed to the general quality of life by providing open space, wildlife habitat, and buffer zones for sensitive ecological areas and preserving the rural character of outlying parts of the county.

Summary of Recommendations

The recommendations in the plan centered on three main goals:

- Increase marketing opportunities, competitiveness, and profitability of farming and the agriculture industry;
- Increase public recognition of the value of agriculture, farmers, and farmland and convey a better understanding of farm issues among non-farmers; and
- Retain farmland for agricultural purposes by keeping Albany County farms viable.

The recommendations supported actions that reviewed local laws for consistency with farmland protection and agriculture promotions initiatives, promoted farms through tourism and marketing efforts, strengthened the community and local government connection to agriculture, and assisted farmers with identifying programs to protect farmland and increase profitability.

Shortly after adopting the plan, the county acted to complete identified "rapid response projects." These were defined as short-term, low-cost initiatives that could foster awareness of agriculture in the county and promote local products. These initiatives included the following:

- County Right to Farm Law (adopted 2007)
- Resolution establishing a local food purchasing policy for Albany County government (2009)
- Developed a display on agriculture in the county for an event at the Empire State Plaza
- Organized a farm tour for local officials
- Developed Albany County Bounty printed map of farms, farm stands and farmers markets (now on the county website and interactive map)
- Developed a drive-it-yourself farm tour event
- Three successive years of Albany County Farms to Restaurant week
- Improved access to maps and information about the county Agricultural Districts by putting them on the county website
- Participated in the Agriculture Cluster of the Capital District Economic Development Council, City of Albany Sustainability Plan, Bethlehem Agricultural and Farmland Protection Plan, and Capital District Cleaner Greener Communities Plan to explore opportunities for regional marketing projects.
- Trained tax assessors (through Cooperative Extension) on assessment of farm structures, agriculture districts and agriculture value assessments

The county and partners at Cornell Cooperative Extension, Soil and Water Conservation District, and USDA Farm Service Agency continue to focus on efforts to implement the recommendations of the Plan including:

- Reviewing changes to local plans and zoning for consistency with farmland protection goals,
- Seeking to fund agricultural economic development projects,
- Pursuing opportunities to capitalize on regional collaboration and marketing initiatives,
- Offering a variety of educational programs and certification courses for farmers,
- Creating opportunities for the public to visit farms and learn about farming,
- Working with farmers on land conservation, pollution prevention, and best management practices,
- Encouraging participation in the Agricultural Districts Program,
- Holding additional assessor training this summer, and
- Looking for opportunities to convey foreclosed property for use in agriculture.

In addition to the county's progress toward agricultural and farmland protection, several municipalities have either updated comprehensive plans and zoning, adopted a Town Agricultural and Farmland Protection Plan or passed a Town Right to Farm Law to extend protections and enhance the agricultural industry in their towns. With this 2018 AFPP update, the county continues its efforts working with the Agriculture and Farmland Protection Board (AFPB) farming and advisory committee and hiring ACDS to complete a strategy for protecting farmland and enhancing the agriculture industry in Albany County.

1

Protecting Farmland - Land Use

AGRICULTURAL CONDITIONS IN 2018

Value of Farmland to the Community

As reported in the 2004 plan, farmland's value to the community extends well beyond the economic returns that it generates. (The economic contributions are detailed in the Economic Development Report, submitted separately.) The county's current 494 farms (an increase of 98 from the 2004) constitute a large working landscape with activities as wide-ranging as forestry, dairy, horticultural activities, vegetable cultivation, fruit production, beef cattle, small ruminants, poultry, craft beverages, beekeeping, sugaring, and many more. Adding in value chain activities like processing, marketing, and distribution of crops and livestock products completes a picture of a vibrant community activity that lays a critical role in the entire life of the county.

Beyond its economic impact, agriculture has many other positive benefits to the community. Farmers represent a significant source of creativity, innovation, and productivity. They are natural resource managers whose practices can protect water quality, enhance ecological systems, and improve quality of life. Active and engaged farmers are also working with local organizations like Capital Roots to improve food access to those rural and urban residents who are food insecure.

Protecting agriculture as a critical land use and important economic driver is important to many constituencies. Agriculture is still widely accepted to be a net contributor to the tax base and the local economy. As demonstrated by Cost of Community Services studies (see Appendix 1) agricultural land requires less in services than its owners contribute in taxes. Because of this, governmental and non-governmental entities have structured means to provide land conservation assistance.

These programs and regulatory structures come in many forms but are anchored by New York State's Agricultural Districts Law. An agriculture district program has been implemented in Albany County to provide a level of basic protection to 72,644 acres of farmland in three Agricultural Districts (Figure 1). This number is an increase of 4,364 acres from 2004, indicating the success of the program. The annual review period established in 2004 to allow landowners to add parcels to the districts outside of the full 8-year review also helped the program grow. In addition to the Agricultural Districts parcels, there are an additional 5,350 acres of land in farming and 6,500 acres of inactive farmland in the county. It is the county's goal to expand the acreage in agricultural districts to include all farmland in the county.

During the summer and fall of 2017, an internet survey of the general population was conducted. The survey was introduced to the public through a press release and widely distributed through the county and municipal websites, as well as in person at the Altamont Fair. The survey's purpose was to gauge the general population's level of interest and understanding regarding agricultural issues, as well as to assess the value of agriculture to the community. The 78 survey responses indicated strong support for agriculture as well as agricultural program-ming and produced the following major findings.

1. Over 90 percent of respondents are concerned about farmland loss
2. Respondents are supportive of agriculture in their towns
3. Respondents are concerned about the issues threatening farm viability such as farm financial conditions, high tax burden, and the low replacement of farmers.
4. Respondents are supportive of both financial and regulatory strategies to protect farmland
5. A majority of respondents like to visit farms and participate in agriculturally related events.
6. Many respondents would like to see more promotion of local agriculture.

Responses may not represent all county residents. Full responses are included in Appendix 2.

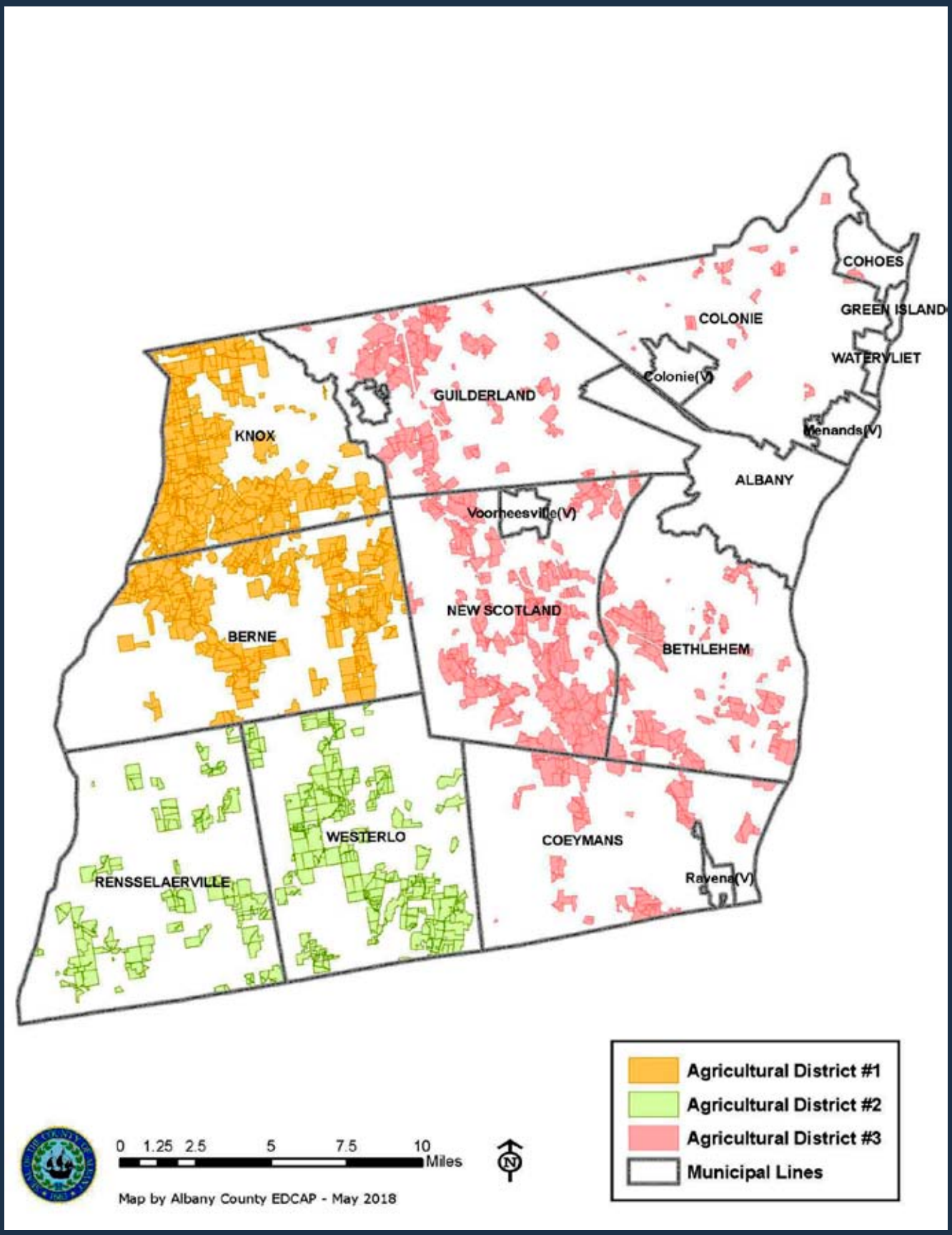


Figure 1—Agricultural Districts in Albany County, Source: Albany County EDCAP

Value of Forest Lands to the Community

In addition to traditional crop farming and livestock pasturing, farms in Albany County hold significant acreage in timber tracts. These forest lands provide multiple benefits to the landowner and community such habitat for woodland birds and mammals, and water quality benefits for the region's water supply reservoirs. Local forests may also represent significant unrealized economic value. Despite the pressures of disease and invasive species as well as effects of poor management practices, the county has significant standing timber resources. Additionally, the forest lands anchor a small, but thriving, maple sugar industry where sugar maple stands have high enough density to sup-port extraction.

The timber resource is spread widely over public and private lands and is mostly unmanaged. High grading during harvest and the county's mixed forest productivity rating caused changes in the forests stands. Valuable hardwood species such as oak and hickory are declining, with low value species on the rise.[1] With fewer high-value species, industry infrastructure has decreased, and the county no longer supports an active logging operation and has only two remaining sawmills.

With low harvest value, there is little interest among landowners and regional mills in certifying forest management techniques through programs like the Sustainable Forestry Initiative (SFI) or the Forest Stewardship Council (FSC). These programs certify that specific growing and supply chain practices are being met, thereby allowing certification of products for use in LEED (Leadership in Energy and Environmental Design) and Green Building Council projects. Without such accreditation, markets for wood products are declining, further reducing the value of standing timber. Unmanaged and unimproved timber stands not only have reduced economic value but also have reduced ecological value due, in part, to lower species diversity.

Finding the means to generate the returns necessary to improve stands and forest health is in the best interest and will benefit farmers and residents alike. A strategy for meeting this goal is described in the economic development section of this plan.

Agricultural Issues in Albany County

View from the Farm

A survey of farmers and farmland owners was conducted during the summer and fall of 2017 to assess the top issues affecting the industry. Thirty-two farmers answered the survey, representing eight of the nine towns with farmland in Albany County. Respondents ranged from young to old and represented farms of many different sizes. Still, they shared many of the same views and concerns related to the future of agriculture. Results of the survey can be found in Appendix 3. Some of the key findings can be found below:

1. The six most important issues facing farmers, in order of importance are:
   - a. Rising tax burden
   - b. Access to affordable medical insurance
   - c. Low commodity prices
   - d. High input prices
   - e. High cost of labor
   - f. Estate planning and farm transition
   - g. High level of farm debt.
2. Farmers expressed a desire for educational op portunities to:
   - a. become better informed about conservation programs,
   - b. support beginning farmers, and
   - c. improve markets.
3. In open responses, farmers expressed concern over road conditions, property tax burden, and land access.
4. Farmers do not feel that town or county-level poli cies are supportive of the industry.

1 U.S. Forest Service Resource Information Group, https://www.fs.fed.us/emc/rig/D ATIM/index.shtml

The results of the survey corroborated and supported the findings of in-depth interviews of more than forty-five farmers, agribusiness owners, suppliers and others conducted during the study.

Special District Tax Pressure

Agricultural exemptions provide property tax relief from county, city, town, village and school taxes. However, special tax districts are not automatically subject to the agricultural exemption, so the taxing entity must elect to do so. Farms can be subject to several special tax districts, and these additional taxes add considerable expense to their bottom line. As mentioned above, growing tax pressure is the item of greatest concern to Albany County farmers. More details regarding special tax districts can be found in Appendix 4.

Climate Change Influence

While the true impacts of global climate change on agriculture in New York remain in question, well established climatic trends indicate that there may be significant impacts on agriculture in varied ways. These could include changes in land use patterns, adoption of new energy systems, changes to transportation systems, amendments to crop and livestock productions systems, changes in management techniques, and water supply management. Based on various university and intergovernmental reports, and input from farmers the following key trends will likely have the most significant impact on agricultural operations:

1. Increased incidence of storms yielding 2 or more inches of rain in a 24-hour period[2]
   - a. More localized flooding causing:
     - i. Periodic shutdown of key market infrastructure within the floodplain
     - ii. Relocation of floodplain developments onto well-drained upland soils
     - iii. Increased flooding of fields exposing plants to hydric conditions
     - iv. Changes of road design standards to accommodate greater water movement that may be incompatible with moving farm equipment
     - v. Relocation of roads and bridges from low-lying areas putting pressure on adjacent farmland
   - b. New infrastructure to manage a higher volume of stormwater causing:
     - i. Redesign of water features and manure lagoons to manage volume stress
     - ii. Improvement of existing roadway ditches and culverts to expand capacity which may effectively decrease road widths and cause more field flooding in low lying areas
     - iii. Increased stormwater impoundment capacity adjacent to developed areas and other impervious surfaces placing additional demand on farmland
     - iv. Water quality concerns in surface water impoundments and reservoirs
   - c. Adaptation of cropping systems
     - i. Change in disease and insect pressure
     - ii. Changing crop varieties
     - iii. Updating in-field infrastructure for managing water
2. Increased incidence of heat waves and seasonal drought[3]
3. Increases in average temperatures are expected to continue with wide-ranging effects that will impact systems in different ways.[4]
   - a. Cropping systems will be affected by:
     - i. Higher heat stress during critical times in crop development cycles causing shifts in crop mix, risk profiles, output volume, crop quality, and production costs.
       1. Perennial crops such as orchards may no longer be economically sustainable
       2. Current varieties of field crops may need to be replaced with more heat tolerant varieties

2 Wolfe, David W., "Climate Change Impacts on Northeast Agriculture: Overview", 2012, Cornell University. NYSERDA, "Responding to Climate Change in New York, Technical Report", 2011.

3 IBID
4 IBID

3. Water demand for crops will increase due to higher biomass production related to the CO2 fertilization effect

ii. Pest and disease pressures will increase from,

1. New pests and diseases
2. Increased number of breeding generations
3. More overwintering events

iii. Weed pressure increases from,

1. New invasive weed species
2. Earlier weed pressure

iv. Opportunities may arise to adopt new crops and new cropping systems that were not previously climatically supported.

v. Longer seasons may allow for greater use of forages for animal production due to increases in biomass production.

b. Livestock systems may face the most significant challenges from temperature increases.

i. Dairy industry is expected to experience significant production declines due to heat stress with relief from:

1. Upgrading facilities to add animal cooling options
2. Increasing the capacity of watering systems
3. Adaptation of animal genetics
4. Increased attention to animal health from increased disease incidence

ii. Beef cattle are not expected to be as profoundly impacted as dairy due to their higher thermal heat index, but will require:

1. Improved attention to animal health as disease pressure increases
2. Increased capacity of watering systems.

iii. Poultry may be a more viable commercial livestock operation given its higher thermal heat index.

c. Climate change in Albany County may impact many other systems that are important to agriculture. These include:

i. Transportation systems

1. Rail, which is important for commodity transportation, is expected to have a greater level of system delays and failures to accompany line relocations due to rising water levels.
2. Roads and bridge redesign and relocations are likely to accommodate flooding and the movement of large stormwater volumes.

ii. Water systems

1. Stabilization of supplies for potable and non-potable uses will be critical and require investments in both surface and groundwater resources
2. Protection of water quality will require significant investments to limit the effects of runoff from surface sources and overrun of wastewater facilities into public waterways.

iii. Energy systems

1. Renewable energy systems used for district-level heating and electricity production will become more important creating greater opportunities for commercial biomass.
2. Energy consumption on farms will increase and may require onsite energy solutions to meet demand for new energy uses such as animal cooling systems and irrigation.

Successfully navigating climate change in agriculture will take a concerted effort across agencies, institutions, and the industry. Problems associated with system-wide challenges, such as water management will require carefully crafted, community-wide actions and better real-time information on localized weather conditions and on-farm production impacts. Locally this means interdisciplinary groups could meet to discuss system level investments and policies in water management, transportation systems, distributed energy use, localized research needs, and proactive education and extension efforts to raise the general level of understanding of the issues associated with climate change.

Many of the effects of climate change that we see today, such as the increased incidence of storm events and in-

creasing average temperature, will require that individual farms make strategic business decisions to manage production risks, invest in new infrastructure, diversify operations, and be more engaged in providing data to climate researchers. Assisting small businesses with this decision making is addressed in the Economic Development Report.

Topography and Soils

Albany County stretches from the Hudson River in the east to Schoharie County in the west. The lowlands, which include mostly urban and suburban areas, are separated from the rural areas (hilltowns) by the Helderberg Escarpment. The soils that are classified by the USDA as prime and productive are widely dispersed throughout the county. The area of the county that has the highest concentration of such well-drained soils is under the greatest development threat, in towns like Bethlehem, New Scotland, and Guilderland.

To the west of Albany and Bethlehem, few parcels have even 50 percent prime and productive soils. The hilly area of the county to the west tends to have hydric and stony soils mixed with soils of statewide importance that are best for pastureland **(Figure 2)**.

Healthy soils are not only important for sustaining agriculture but also provide protection for the local water supplies like the Alcove Reservoir and the many private wells on which rural residents depend.

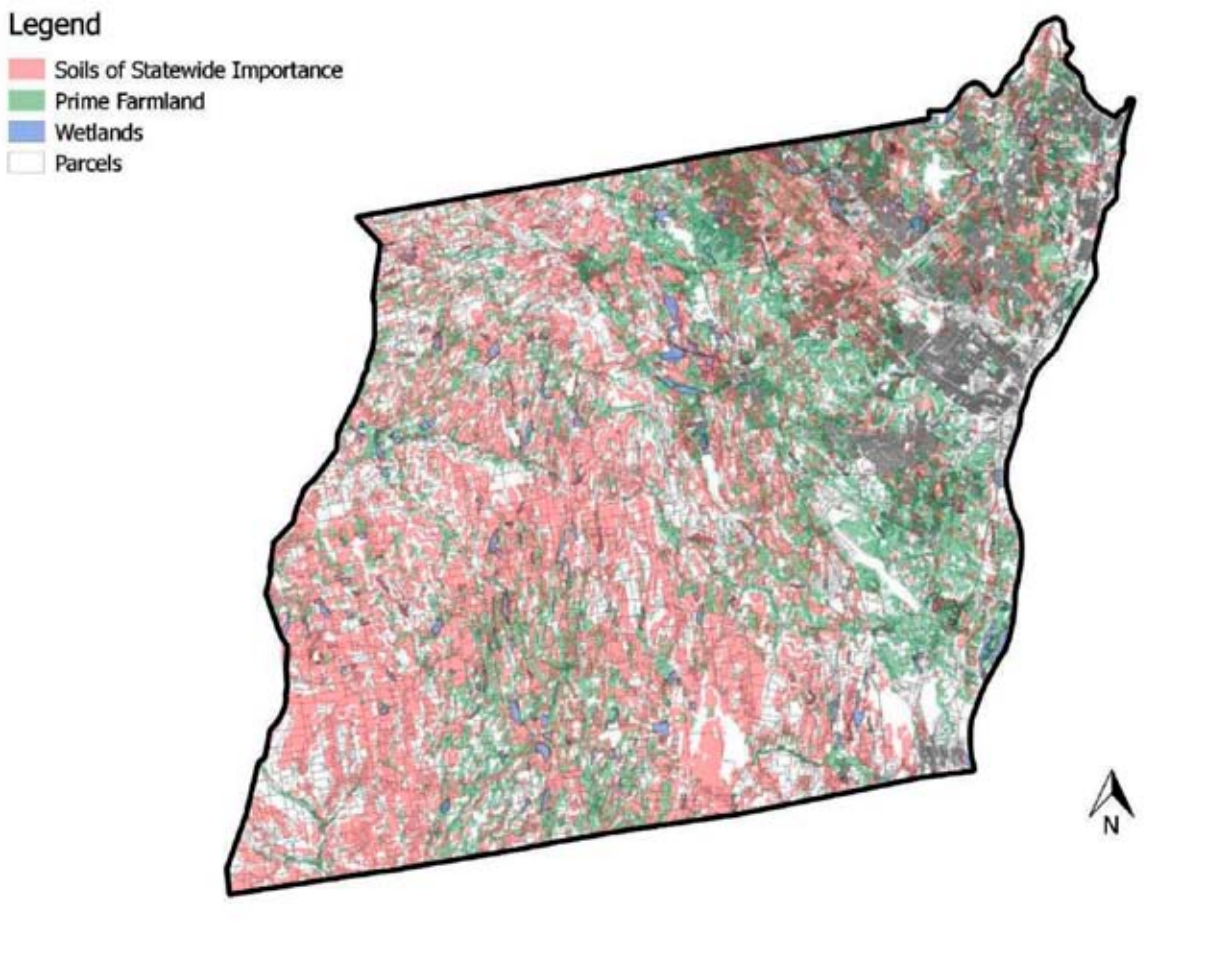


Figure 2--Albany County Soils, Data source: Tjaden Design

Extent of Development Pressure on Farmland

While Albany County is one of the few counties in upstate New York that has seen an increase in population, the population grew by a mere 3,687 between 2010 and 2016, accounting for 527 people per year. Albany simultaneously experienced an increase in housing construction of 3,845 structures, resulting in 550 structures built per year between 2010 and 2016. Homeownership declined by 4.2 percent in the county between 2012 and 2016, and 10.4 percent of the new housing units were vacant, indicating slow absorption of new units.

Continued housing development is occurring despite high vacancy rates. Towns such as Bethlehem, Colonie, New Scotland and Guilderland are showing consistent growth trends in population and single-family home development.

Population Trends

The population of Albany County continues to grow and is currently around 307,891. The population increased 3.3 percent from 2000 to 2010 and 1.3 percent from 2010 to 2016.[5] Its population is projected to steadily but slowly increase from 2010 to 2050 by roughly 9,000 people **(Table 1)**.

The distribution of the population across municipalities has also changed over the years. Using population projections from the Capital District Regional Planning Commission **(Table 1)**, it is estimated that the Town of Bethlehem will see the largest growth rate, 10 percent, between 2010 and 2050, followed by the Town of Guilderland at 9 percent. Berne, Colonie, Menands, and Westerlo are projected to experience a six percent increase in population between 2010 and 2050, all of which are modestly above the replacement rate. The City of Albany is experiencing lower growth than the surrounding rural and suburban communities. Recent changes to the City's zoning code are seeing a reverse of the slow growth and abandonment of existing housing. Early, anecdotal information suggests that the market is responding favorably to the more flexible, performance-based code, with projects approved in downtown Albany, on Clinton Avenue, on Ontario Street, and Sandidge way. This new residential development is suggesting the market is responding to the new zoning code.

Albany County is expected to have little growth overall, and some towns will increase in population, and one will decrease. This trend, combined with housing growth in some jurisdictions indicates suburban sprawl as the population simply redistributes ((see Appendix 5 for details). The concern is that growth will occur in regions with prime and productive agricultural soils, such as in Berne, Guilderland, Colonie, New Scotland, and Bethlehem. The growth in these communities is happening due to a number of socio-economic conditions. The retirement of aging farmers and the current zoning allow residential development is contributing to the loss of agricultural land at the expense of cities like Albany. Suburban sprawl can also directly threaten agricultural land when that development occurs in large lot, single-family home development. This type of development is often char-acterized by high service costs with only moderate tax base enhancement. The double-edged sword then is the loss of productive agricultural economic activity and increased deficit spending on services.

Physical Infrastructure

The condition of rural infrastructure was a nearly universal complaint of farmers, and the issues focused on two infrastructure elements. The first was roadways. Complaints about roadway conditions fell mostly into three categories. The first is related to roadway and shoulder widths. Farmers find that overall roadway width is declining as drainage ditches get both deeper and wider. This trend coincides with farmers utilizing larger equipment. This policy creates unstable shoulder conditions and unsafe travel conditions for equipment as there is less room for normal road traffic to pass and

5 2012-2016 ACS 5-Year Estimates

few places to pull over. The second issue relates to the first. As ditches are designed to move more water, faster, it is causing field flooding in discharge areas. Soils with-out sufficient drainage or organic matter composition negatively impact yields. The third issue relates to bridge widths and weight limits.

The second infrastructure issue is access to broadband. Despite the fact that Albany is considered one of the most connected cities in America, many rural areas of the county have no high-speed internet access at all, and nearly one in four farms lacks access to broadband internet service which is essential for implementing many modern farming and marketing practices. The Albany County Executive's Office is undertaking a project to extend broadband to those areas, particularly in the hilltowns.

By undertaking the Agriculture and Farmland Protection Plan, the county and local municipalities are committing to supporting agriculture now and into the future.

Table 1: Population Projections

Albany County 2010-2015

Municipalities	Population 2010	Population 2050	% Change in Population
Albany County	**304,204**	**317,183**	**4%**
CIty of Albany	97,856	98,324	0%
Town of Berne	2,794	2,965	6%
Town of Bethlehem	33,656	36,899	10%
Town of coeymans	7,418	7,457	1%
Village of Ravena	3,268	3,299	1%
City of Cohoes	16,168	16,784	4%
Town of Colonie	81,591	86,363	6%
Village of Colonie	7,793	7,870	1%
Village of Menands	3,990	4,233	6%
Town/Village of Green Island	2,620	2,538	- 3%
Town of guilderland	35,303	38,403	9%
Village of Altamont	1,720	1,804	5%
Town of Knox	2,692	2,851	6%
Town of New Scotland	8,648	8,918	3%
Village of Voorheesville	2,789	2,884	3%
Town of Rensselaerville	1,843	1,860	1%
City of Watervliet	10,254	10,271	0%
Town of Westerlo	3,361	3,550	6%

[5] 2012 - 2016 ACS 5-Year Estimates Source: Capital District Regional Planning Commission

INTEGRATING AGRICULTURAL LAND PRESERVATION TOOLS INTO THE CONSERVATION TOOL KIT

This section of the Plan highlights the land preservation needs and appropriate tools to service those needs for local landowners and farm operators. This section will address the desires of the community for preserving farmland and summarize tools that are available.

Integration with Comprehensive Planning

Zoning and local planning both seek to protect the natural resources of the region. Comprehensive plans are more expansive in scope and more collaborative with other ordinances than are farmland preservation plans.

In 2004, only seven municipalities in Albany County had comprehensive plans, but today, fourteen have completed such plans. Of those that have not, some have created master plans for redevelopment, or development districts, in which they discuss land use practices. For example, although the Village of Menands does not have a comprehensive plan, they do have a Planned Development Districts document that expresses the aim to use land efficiently to prevent erosion and disruption to natural waterways. Similarly, although the City of Watervliet has zero percent of their population employed in farming, fishing, and forestry, their comprehensive plan includes water protection and erosion reduction.

The Capital District Regional Sustainability Plan puts in place a goal to increase farm production and preservation of agricultural lands across its eight member counties. Initiatives to accomplish this goal include increasing market opportunities, building collaboration between agriculture, higher education, technology and other sectors, increasing consumption of local food, and encouraging continued preservation initiatives. This plan represents a shared vision developed by urban, suburban and rural communities that includes land and agriculture preservation goals.[6]

Towns must balance the complex needs of each community by creating regulations that support a range of community uses. Sometimes these uses may conflict, as is the case when the industrial conditions of agriculture, such as spraying or manure spreading, conflict with the quiet enjoyment expected by residents. When this happens, normal business activities, such as plowing on dry days, might be a nuisance to residents. To help towns manage these potential conflicts, the NYSDAM provides guidance documents and a self-evaluation form to provide a framework for understanding how farm-friendly local regulations may be. The survey form can be found in Appendix 6.

Three communities completed a self-audit of their comprehensive plans using the NYSDAM evaluation documents: Bethlehem, Guilderland, and New Scotland. Bethlehem, pressured with the highest rates of growth in the county, not only integrated agriculture into its comprehensive plan (written in 2005) but also developed a town level Agricultural and Farmland Protection plan in 2009. Both plans integrated public input specifically regarding agriculture and farmland. Through these plans, Bethlehem emphasizes the value of agriculture and a level of commitment to preserving open spaces in the face of development. The comprehensive plan encourages participation in agricultural districts and recommends the use of conservation subdivision planning, right-to-farm ordinances, and updating zoning rules for rural areas to better accommodate a variety of uses like agri-tourism, farm stands, and other non-traditional functions.

The Town of Guilderland has also completed an Open Space and Farmland Protection Plan, called the Rural Guilderland Study, along with its comprehensive plan. As does Bethlehem, Guilderland recognizes the importance of agriculture to the local community and addresses the subject in mission statements for each document. With its Rural Guilderland Study, the town put additional focus on preserving the rural character of the area and makes recommendations to minimize the intensity of new development in the countryside.

6 http://sustainablecapregion.com/sites/default/files/CRSP_5_14_13_0.pdf

Table 2: Comprehensive Planning

Municipalities	Comprehensive Plan	Zoning Regulations	Subdivision Regulations	Resource Conservation in Comp. Plan	Planning Board	Right to Farm Laws in Comp. Plan	Farmland Protection Plan
City of Albany	**Y*-April 2, 2012**	**Y**	**Y**	**Y**	**Y**	**N**	**N**
Town of Berne	Y*-May 16, 2011	Y	**Y**	**Y**	**Y**	**Y**	**Y^**
Town of Bethlehem	Y*-Aug 24, 2005	Y	**Y**	**Y**	**Y**	**Y**	**Y**
Village of Ravena	N	Y	**Y**	**N**	**Y**	**N**	**N**
Town of coeymans	Y*-Sept 2006	Y	**Y**	**Y**	**Y**	**Y**	**N**
City of Cohoes	Y-June 2017	Y	**Y**	**Y**	**Y**	**N**	**N**
Town of Colonie	Y*-Aug 25, 2005	Y	**Y**	**Y**	**Y**	**N**	**N**
Village of Colonie	Y	Y	**Y**	**Y**	**Y**	**N**	**N**
Village of Menands	N	Y	**Y**	**Y**	**Y**	**N**	**N**
Town/Village of Green Island	N	Y	**N**	**N**	**Y**	**N**	**N**
Town of Guilderland	Y*-Aug 7, 2001	Y	**Y**	**Y**	**Y**	**Y**	**Y**
Village of Altamont	Y*-Nov 2006	Y	**Y**	**Y**	**Y**	**N**	**N**
Town of Knox	Y- 201	Y	**Y**	**Y**	**Y**	**Y**	**N**
Town of New Scotland	Y-July 2012	Y	**Y**	**Y**	**Y**	**Y**	**N**
Village of Voorheesville	Y-Jun 2015	Y	**Y**	**Y**	**Y**	**N**	**N**
Town of Rensselaerville	Y-Mar 8, 2007	Y	**Y**	**Y**	**Y**	**Y**	**N**
City of Watervliet	Y*-Jan 19, 2010	Y	**Y**	**Y**	**Y**	**N**	**N**
Town of Westerlo	Y*-May 2014	Y	**Y**	**Y**	**Y**	**Y**	**N**

* Change f om 2004 Albany County Agriculture & Farmland Protection Plan
^ Included in Comprehensive Plan, not separately approved by NYSDAM

Municipalities with Agricultural District Land are in boldface.

[6] http://sustainablecapr

The Town of New Scotland also recognizes the value of agriculture and addresses the subjects in its comprehensive plan. The town gathered public input and integrated recommendations that focus on site protections using agricultural districts and local zoning. New Scotland's current comprehensive plan mission statement does not mention agriculture, but it will be included in the goals of an upcoming plan update. New Scotland was also the first town in Albany County to pass a right-to-farm law.

Albany County finds itself in a difficult position among jurisdictions in the Capital District. Its unique demographic, physical and geographic characteristics make developing a countywide Farmland Protection plan a challenge. Farmland preservation issues are not the same across the county. Some areas are dealing with low growth and others are seeing pressure from high levels of development. From an agricultural preservation standpoint, this means that the towns with the most productive soils are experiencing a high level of farmland loss like Colonie, New Scotland and Bethlehem. This loss is causing a shift in the way jurisdictions are viewing agriculture both as a land use and an economic driver. This plan will attempt to provide a countywide context for discussing these changes and planning for a better future for our residents, farms, and other agribusinesses.

The following sub-sections describe the unique aspects of the county's agricultural resources, soils, environmental areas, and development pressures.

Recognizing the Need for Preservation

There are countless economic and environmental benefits of land preservation, including improved water quality, better soils, better drainage, increased biodiversity, increased tourism, and the increased land value due to open space. Several of the municipalities' comprehensive plans in Albany County have "supporting the 'rural character' of the municipality" as a motivation for land use policies that protect agricultural land. Over 70 percent of participants of the Albany County Farmland Protection Plan Survey of the general public responded that the role of agriculture in Albany County is to preserve "landscape and rural character." When asked what actions the county should address for issues facing farms, the answers that generated the highest response rates were the three solutions regarding farmland protection: providing grants for farmland protection, limiting non-farm development in agricultural areas, and providing incentives for farmland to be protected, including tax incentives. Each was selected more than 84 percent as a preferred solution.

Additionally, local and regional land conservation organizations have begun to target portions of Albany County for land conservation spending. Most recently, Scenic Hudson, one of New York's largest private conservation organizations, is working with its local partner the Mohawk Hudson Land Conservancy to target two areas of the county considered critical to protecting the foodshed of New York City.[7] The process did not follow the typical Land Evaluation and Site Assessment (LESA) rating convention (discussed in a later section) used on farmland conservation but instead used an agricultural land value and industry cluster approach to assessing targeted lands.

Development has heavily impacted the availability of larger tracts with quality soils, and the county has lost a significant portion of its productive lands as a result. Prized farmland with flat, suitable soil in the county either has been or is increasingly likely to be sold to developers for residential and commercial uses. Specific examples include Kleinke Farm and LaVie Farm, which have been sold to developers resulting in the loss of large tracts of prime and productive soils. Other obstacles to agricultural activity include hilly terrain, narrow and winding roads, weight limits on roads, and distance between farm operations and vendor locations.

To address the need for increased, continuous and contiguous land preservation in the region, the current tools and programs utilized for farmland preservation must be expanded in addition to implementing new programs to improve land preservation strategies and results.

7 https://www.scenichudson.org/foodshedplan

Review of Tools and Programs

There are eight mechanisms for Albany County to consider as a means of preserving the county's remaining farmland. These include agricultural districts, right-to-farm laws, permanent conservation easements, term easements, a critical farm program, conservation subdivision regulations, soil protection, and purchase of development rights. Additional information about these tools and other can be found through American Farmland Trust's document: Planning for Agriculture in New York.[8]

Agricultural Districts

New York State first formalized its agriculture and farmland protection efforts in 1971 with the passage of the Agricultural Districts Law, under Section 308 of Article 25-AA. The law recognizes that, though agricultural land is one of the state's most important resources, non-farm development threatens farmland throughout New York. The law's purpose is to provide local, non-regulatory mechanisms for keeping land in agricultural production. The Agricultural Districts Program is the most used farmland protection tool in Albany County. Although the agricultural district guarantees right-to-farm and certain tax benefits—the program makes it easier to qualify for agricultural use exemptions—participation is a voluntary 8-year commitment, which does not provide the long-term preservation necessary to truly protect farmland. Furthermore, the 72,644 acres of agricultural district land is dispersed throughout the county in several disjointed areas. These patches of protected land result in pockets of land surrounded by development, which is not conducive to productive agriculture.

According to New York State's Department of Agriculture and Markets (NYSDAM), there are 210 state-certified agricultural districts, in 53 of the 62 counties, including Albany.

In total, they comprise roughly 8.8 million acres of land, including 25,632 farms on 6.3 million acres. Albany County has 72,644 acres enrolled in three agricultural districts.[9]

8 http://www.farmlandinfo.org/planning-agriculture-new-york-toolkit-towns-and-counties

9 https://www.agriculture.ny.gov/ap/agservices/dis8/Summary-AgrDistrict-Law.pdf

In 1992, the Agricultural Districts Law was enhanced significantly to support New York State's farmland protection activities. Since then, the law was amended, including stronger right-to-farm protections and the establishment of a statewide agricultural and farmland protection program, which authorizes this planning activity. Agricultural and farmland protection efforts in New York State are listed below.

- **Agricultural Districts**
- **Tax Relief Opportunities o Agricultural assessment**
  - **Ad valorem limitations**
  - **Farmers' school tax credit**
  - **Farm building exemptions**
  - **Sales tax relief for farm supplies**
  - **Local tax abatement**
- **Right-to-Farm "Package"**
- **Agriculture and Farmland Protection Program**
  - **Planning grants**
  - **Purchase of Development Rights (PDR) grants.**

Right to Farm

The Agricultural District Law establishes New York's Right to Farm protections from private nuisance suits. The law establishes a four-step process for determining when farmers are due protection. The first step is the assessment of whether the farmer used sound agricultural practices. These are practices "necessary for the on-farm production, preparation, and marketing of agricultural commodities." Next, the state considers whether the agricultural practices are being "conducted by a farm owner or operator participating in "its Agricultural Environmental Management Program" (AEMP) as well as to "consult appropriate state agencies and any guidelines recommended by the advisory council on agriculture."

Once complete, the state will issue an opinion on the case which can be challenged within 30-days. If the opinion survives the challenge, the practice is deemed sound and cannot legally be considered a private nuisance.

If the challenge continues, the Right-to-Farm statute authorizes recovery for the reasonable costs attributable to defending against such a lawsuit. As suburban areas encroach into farming communities, conflicts become inevitable due to the potential incompatibility of uses.

The Right to Farm statute provides a structured process for intermediating the results and reducing the costly burden of constant legal challenges to farming activities.

Beyond the state's Right to Farm Statute, many counties and towns have enacted statutes, often with the intent to provide further protection to farmers. Albany County has had a Right to Farm Statute since 2007, and at least eight towns or villages within Albany County have enacted Right to Farm laws or intend to do so. See Appendix 7 for more information.

Permanent Agricultural Conservation Easements

Conservation easements are voluntary legal agreements between a landowner and a land trust or government agency that permanently limits uses of the land to protect its conservation values. Agricultural conservation easements (ACE) restrict future development of a property and preserves the land in perpetuity. ACEs permit agricultural production activity, reduce property tax burden, and provide immediate charitable donation tax deduction for landowners. The restrictions on the land can help farm operators and residents plan for their futures and protect prime farmland.

ACE programs have a long history as a cornerstone tool of agricultural protection efforts. ACEs have many benefits in helping to anchor the land base associated with agriculture and do best when combined with active economic development support for agriculture to ensure that the industry persists alongside the land base.

ACE programs are most effective when they employ farmland conservation priorities. Using such priorities allows the program operators to target limited funds to the highest and best use base on important, local criteria. Priority criteria often start with the USDA Natural Resource Conservation Service Land Evaluation and Site Analysis (LESA) (Appendix 8) as the basis for evaluation. The LESA system can be modified to create a scoring system and priority preservation map that incorporates additional, locally significant evaluation factors such as development pressure, road frontage, the presence of specialized agricultural assets, historical significance, special environmental conditions, and community and other important factors. Appendix 9 specifies the ranking criteria developed by AFPP advisory committee based on conditions specific to Albany County. The ranking criteria are followed by a map that highlights land that is in agricultural districts, in agricultural use, or has been granted agricultural exemption.

The entity purchasing the easement is purchasing a bundle of rights from the landowner that includes the right to develop the land. The landowner is left with fee-simple ownership and restrictive covenants that define what may, or may not, occur on the property. The value of the transaction is set formulaically. Typically, the formula assigns a value to the development rights by subtracting the appraised agricultural value of the land from the appraised fair market value. The difference in value constitutes the forgone opportunity and sets the value of the payment or donation.

Because easement value is affected by development pressure, applications are often biased toward the highest value properties. Ranking criteria are often used to ensure that properties can effectively be used for commercial farming and may include project size, soil characteristics, adjacency to protected lands, adjacency to active farming, the presence of unique agricultural assets, among other things. The intent is to avoid disorganized protection patterns and ensure that the most productive farmlands are protected. A side effect of having agricultural easements in developed areas is the increase in the value of adjacent, unprotected properties.

ACE tend to be expensive programs to design and operate. Each easement must be individually negotiated and

can be very technical to close. Ongoing monitoring is required to ensure compliance and periodic negotiations may be required to deal with financing and development issues on the farm. Because easements are perpetual and based on current industry definitions, they may need wholesale revisions to accommodate future agriculture uses and ancillary activities.

Where ACE has been successful, it has required significant, long-term funding resources. In areas like Suffolk County, NY and Howard County, MD, county-level funding commitments exceed $300 million. Bond issues and special taxes are the most common ways of funding these programs.

Albany County does not have an active ACE program of its own. Without a strong local program, the county has seen little permanent preservation using ACE. Several land trusts operate in the region, however, that are actively engaged in financing and settling ACE. Those main organizations doing so are the Mohawk Hudson Land Conservancy, the Open Space Institute, and Scenic Hudson.

However, the state has a program that is available to Albany County residents. New York created New York State's Farmland Protection Program in 1992 as part of the Agricultural Protection Act. In 1996, the state amended Article 25-AAA of the act to encourage further development of agricultural and farmland protection programs at both State and local levels. This amendment enables counties that have approved plans to receive implementation grants to purchase the development rights to farmland.

New York's Farmland Protection Program pays farmers up to 75 percent of the cost to complete the purchase of development rights transaction. The remaining 25 percent comes from a private source like a land conservation organization, such as Open Space Institute, Scenic Hudson, or Mohawk Hudson Land Conservancy. The land itself remains in private ownership and on tax rolls.

Programs that authorize and manage PDR programs have a long-term commitment to monitoring the easement. Enacting a county-wide program would require additional funding, oversight and many hours of monitoring to be successful. Instead, it is suggested that the county utilize the aforementioned land-conservancy organizations, coupled with the New York State program to enact PDR programs, instead of creating its own. The Department of Agriculture and Markets is tasked with performing on-site reviews of each eligible parcel, allowing the county to focus its energy on other relevant farmland protection programs.

Multiple land preservation programs can work in conjunction to preserve Albany's remaining farmland and further incentivize the protection of existing natural resources through conscientious planning and collaboration among the county, its towns, its farms and its other residents.

Detailed descriptions of land preservation tools in New York can be found at https://www.farmland.org/initiatives/saving-farms-in-your-community.

STEPS IN PARTICIPATING IN THE NYS FARMLAND PROTECTION PROGRAM

1. Farmer informs AFPB and / or municipality of interest
2. Municipality / AFPB submits an application to New York State Department of Agriculture & Markets (NYSDAM)
3. NYSDAM scores, ranks, and selects farms
4. NYSDAM sends contracts to AFPB / municipalities.
5. Land planning and conservation easement discussions completed with landowner
6. Appraisal and title work completed
7. Documents are finalized and sent to NYSDAM for review
8. NYSDAM approves documents and requests that the comptroller issue payment to municipality
9. Municipality pays landowner and landowner signs easement at closing

Mohawk Hudson Land Conservacy

- Founded in1992 to protect natural, scenic, agricultural and cultural landscapes
- Protected more than 5,000 acres in Albany Schenectady and Montgomer y Counties
- Working with regional land conser vation organizations and the state t o create an agricultural easement pr ogram for Albany County.

Figure 3 - New York State Farmland Protection Program -
Source: http://www.smht.org/NYPDR_Factsheet_revised-1-.pdf

Term Easements

Term easements are being used in an increasing number of situations to help stabilize the agricultural land base during critical transition periods. These inflection points vary widely by community and 19 industry but are often put in place when agriculture is undergoing a long-term restructuring with significant asset transfers.

As with ACE, the voluntary nature of term easements makes it difficult to target the lands in most need of preservation. This difficulty can lead to a patchwork of protected lands that fails to meet the conservation goals. Funding of term easements may also be challenging. Taxpayers can be reluctant to support temporary conservation programs unless there is a very clear public benefit.

Depending on the objective of the term easement program, easements may range from three to twenty-five years in duration. The duration of the easement is most often tied to the transitional needs of the community or certain land-use policy objectives. Landowner payments vary based on the rights being forfeit and the length of the easement. Most often, these payments come in the form of tax abatement or annual lease payment.

The Town of Bethlehem is currently the only town in Albany County to employ a term easement (Appendix 10). Bethlehem's conservation easement exemption employs temporary easements in exchange for property tax reductions. The program is relatively new, and its impact on agricultural sustainability is difficult to assess. Its existence demonstrates a need for conservation easements, and Albany County can adopt a similar program. However, its temporary nature coupled with its reliance on local taxes may not make it effective at a larger level.

Conservation Subdivision Regulations

Subdivision regulations are put in place to conserve undivided, buildable tracts of land as open space. Using subdivisions, development is grouped and limited to one portion of the tract to conserve as much open space as possible. These regulations must be consistent both with zoning laws of the area as well as with the comprehensive plan. Conserving the maximum amount of open space is environmentally beneficial, but it can also serve as an economic benefit. Homeowners value proximity to open space and are willing to pay more for it. In South Kingston, Rhode Island, lots in conservation subdivisions cost an average of $7,400 less to produce and sold in about half the time compared to lots in conventional subdivisions.[10]

The biggest barrier to conservation subdivision regulations is prohibitive zoning regulations. In Town of Guilderland, zoning in rural areas requires the minimum lot size of three acres, but with the conservation subdivision plan, developers are enabled to cluster smaller lots together to preserve farmland and wooded buffer zones on other parts of the property. Conservation subdivision regulations could and should be a point made in those zoning and conservation conversations.

Soil Protection Through Mitigation

Flat, accessible land is as attractive to developers as it is to farmers. For this reason, Albany County already lost much of its prime and productive soil to development. Maintaining the productivity of the remaining soil is of the utmost importance.

Quality soil is less likely to degrade, improves crop health, and benefits the environment by improving the absorption of water and nutrients which minimizes soil loss and runoff. Furthermore, a higher level of organic matter in soil coupled with no-till farming practices reduces labor costs, machinery costs, and time requirements, thus resulting in an economic gain for the farm operator. Providing farmers with additional resources to further develop soil protection strategies would be valuable for the ongoing prosperity of the remaining farmland in Albany, as well as the economic prosperity of individual farms. Farm operators in Albany can take advantage of USDA's Natural Resources Conservation Services' (NRCS) conservation innovation grants through their Environmental Quality Incentives Program to continue to prioritize soil quality to ensure the

10 Conservation Subdivision Handbook, North Carolina State, http://www.ncufc.org/uploads/Conser vation_subdivision.pdf

longevity of their land. Additional resources are available from the Soil and Water Conservation District's Agricultural Environmental Management Program. Furthermore, the county can consider encouraging best practices for soil protection on currently unoccupied land, particularly in agricultural districts, to protect and preserve remaining soil.

Critical Farms Program

Critical Farms Programs provide financial assistance in the form of emergency revolving credit for the acquisition of easements on farmland at risk of development, particularly when easements through traditional land preservation programs cannot be acquired promptly. There are two methods to accomplish this acquisition:

Purchase of an easement option can be quickly committed to preservation and provides intermittent or emergency funding to finance the acquisition of easements on critical lands. Such a purchase can be put in place more quickly than the 12 to 18-month process it takes to enter existing easement programs. The lending authority or partner land conservancy would buy an option to purchase an easement from the landowner, acting as a legal agreement to place an easement on the property within a fixed time. When a permanent easement is placed on the land, the easement option is repaid to the Critical Farms Program, with the landowner retaining any excess funds received from the easement. If the easement is not sold privately during this period, the option contract automatically becomes a permanent agricultural conservation easement, which serves as the payment of the contract.

In-fee purchase and resale with easement enables the overseeing entity to purchase properties on the market and/or from interested sellers when the property is at high risk of being purchased for nonagricultural use. The property is then auctioned with an easement in place to a private buyer. This system can also prioritize the sale of productive farmland to individuals capable of managing a farming operation, thus bolstering farmland as well as agricultural activity in the county.

Frederick County, Maryland has a Critical Farms Program which lends full-time farmers the up-front capital required to purchase farmland in the county. This loan is considered an option to acquire an easement on the property. The farmer then must apply for a period of 5 years to sell an easement under a land preservation program. If the farmer successfully sells the easement, he or she can repay the county at the original option price. If he is not successful, he may exit the Critical Farms Program and repay the option price, or he may keep the Critical Farms money, and an easement is placed on the property. Funding is provided through multiple funding streams to include a land conservation tax, real estate transfer tax, and state grant funds.

A technical assistance grant to could be used to create a Critical Farms Program and allocate the revolving funding required for the success of the program. The New York State Department of Agriculture and Markets has an established Land Trust Grant Program, which provides $50,000 technical assistance grants to county agriculture and farmland protection boards. Such grants enable counties to identify the specific amount of funding required, because funding requirements for Critical Farms vary by market. Since these programs act as revolving loan funds, the principal value is expected to remain within the program. Given the security provided by outside funding for ACE, these tend to be low-risk endeavors and may fit well within an economic development loan fund.

Conservation easements through the Critical Farms Program effectively sell development rights to protect farmland from development permanently.

ZONING AND LAND USE CONTROLS FOR FARMLAND PROTECTION

This section of the Plan highlights the needs of local landowners and farm operators for access to improved land use controls that permit continued farm production, adhere to the community's development values, and are within the enforcement capacity of the county and its constituent towns. This section not only identifies needs and tools but also summarizes possible actions that can be taken to implement solutions.

Zoning

Zoning allows governments to regulate and control the physical development of land. The basic purpose of zoning is to divide a municipality into residential, commercial, industrial, and agricultural zones. Zoning laws specify and restrict the uses that can be made in each zoning district. For instance, an R-1 residential zone may only allow single-family detached homes rather than apartment complexes. These regulations also control the density of development and whether animals or livestock are allowed. Other zoning ordinances regulate resource extraction, land for public institutions, open space, and protected land.

Most zoning codes focus on residential, commercial, and industrial districts. The focus is problematic for agriculture since many municipalities adopt codes that are designed for urban and suburban land uses. Further, zoning codes that allow for agricultural activity are often excessively restrictive. It is especially true where sprawl has placed development pressures on agricultural land. The proximity of residential and agricultural properties often presents conflicts. Residents may complain about large farm vehicles or odors from livestock and composting activities. Farmers may also come in conflict with residents or visitors who are unfamiliar with agricultural practices.

Addressing these issues involves creating a pro-agriculture zoning code that is complementary with other land uses. Zoning codes are driven by comprehensive plans, which also sets the tone for economic development plans and subdivision codes. The comprehensive plan should set the stage for a zoning code that is flexible and inclusive of agricultural activities.

Many rural and suburban zoning codes do not consider new and innovative agricultural activities, which are essential for the future viability of agriculture in the region. Performance-based zoning is one method to provide more flexibility. Rather than a code of permitted uses and conditional uses, performance-based zoning allows planners to set goals for land use zones. For instance, a zone can have goals for the number of agricultural jobs created. Such a goal allows businesses to meet standards without specifying how. However, it requires well-designed performance criteria to prevent spot-zoning and encourage community-appropriate uses.

Urban zoning rarely addresses agriculture as an allowed use. However, the 2017 update of the City of Albany land use regulations specifically allows agriculture as a use by right in two residential zones and one mixed-use zone. Furthermore, the code allows agriculture as an accessory use in 12 additional zones and as a conditional use in two more. In fact, agriculture is a prohibited use in only two zoning categories. Because the City is actively seeking to encourage economic uses, its zoning code includes ten mixed-use zones that allow for more flexible land uses that combine activities such as agriculture, artisan manufacturing, farmers markets (temporary use), and live-work spaces. This innovative approach to performance-based zoning allows for the creation of artisan food and beverage clusters that are vertically integrated. These issues will be explored in more depth in the Economic Development Report.

The Need for Land Use Controls

Comprehensive land-use plans set the stage for the development and improvement of land-use controls. As such, comprehensive plans present a vision for the community and suggest a means for extending this vision into new or refined public policies. To be truly effective, comprehensive plans are developed where land use authority resides at the municipal level.

Given the increasing vertical integration of agriculture with the food, beverage, fiber, energy, art, entertainment, and education sectors, land use planning must catch up with the land-use needs of these emerging opportunities. At a minimum, land use planning efforts should open the discussion of the appropriateness of these expanded agricultural opportunities within the discrete context of each municipality as well as at the aggregate county level. The City of Albany's new zoning code points to the success of such interactions in finding innovative ways to embrace community and economic development initiatives simultaneously.

County Planning Board Guidance

Albany County plays a critical role in coordinating municipal planning and zoning activities. The county planning office provides recommendations and assistance to the County Planning Board, County Executive, County Legislature, and other county and municipal agencies in areas of technical land use planning and regulation.

In compliance with NYS General and Municipal Law Section 239, municipalities submit certain development applications, proposed zoning changes, and comprehensive plans to the County Planning Board for review, comment, and recommendations before taking final action. The county uses this process to encourage local decision-makers to consider the inter-community and countywide impacts of local land use changes and to add a regional perspective to local land use decisions. Countywide plans, like the AFPP, help to inform this process and set countywide goals for farmland conservation. Such plans also encourage innovative approaches for town and county level conservation and growth goals for environmental and farmland protection, paving the way for the development of new regulatory tools (see Table 3).

Table 3 - Land Use Regulation Tools

PROTECTION TOOL	DEFINITION	BENEFITS	DRAWBACKS	APPLICABILITY
Comprehensive Plan	Guiding vision of what a community wants to be in the future and a strategy for achieving it.	An organized way to identify productive farmland and set growth and protection goals. Serves as basis for land use regulations.	Not legally binding. Maybe changed or ignored by officials as they rule on development proposals.	The county should encourage towns to coordinate planning efforts to ensure that unintended cross jurisdictional effects do not unduly burden agriculture. Climate protection goals should be coordinated at all levels government and across all affected agencies to ensure proper representation of agricultural interests.
Differential Assessment	Taxation of farmland based on its agricultural use rather than its development value. New York provides a range of tax benefits to farmers to manage tax burden including the differential tax assessment.	Modest incentive to keep land in commercial farming.	Despite its differential tax assessment, USDA reports that New York farmers consistently rank in the top ten for highest property tax assessments nationally. Differential taxes can also benefit land speculators.	The county should encourage towns to develop tax easements such as Bethlehem's Conservation Easement Exemption program.
Incentive Zoning	A system by which a community can provide incentives to a developer in exchange for physical, cultural, or community benefits. Such a system adds flexibility to local zoning code by allowing the Town and developer to negotiate mutual benefits within the structured rules of the incentive zoning system.	Incentive zoning can be used to protect open space and provide financing for public infrastructure and economic development programming. Benefits can accrue to the agricultural industry.	To be effective, incentive zoning systems require complex rules and complicated negotiations. Because of this, there are often high transaction costs that are not envisioned when the initial rules are set. This can make it difficult to implement the expected benefits or can add sufficient cost to a project to disincentive its use.	The County Planning Board should work with towns to harmonize plans and recommend land conservation goals as they develop incentive zoning.
Subdivision Regulations	Subdivision regulations allow property owners to divide land into smaller parcels and subsequently develop parcels. These ordinances include minimum requirements for water supply, road construction, setbacks, lot size, as well as other public safety, environmental, and quality-of-life considerations.	Subdivision regulations can be written to protect agricultural operations within rapidly developing areas by allowing sufficient setbacks, establishing design standards, and requiring buffering. Cluster subdivision provisions further enhance protection of soils and open space.	Subdivision regulations regulate how, not if, farmland is developed. Also, agriculturally supportive regulations may create tension between residential and farmland uses if new neighbors object to the sights, sounds, and smells of commercial farming. Cluster subdivisions may promote open space, but generally, they are not designed to support commercial agriculture.	The County Planning board should encourage Soil mitigation techniques and conservation subdivision ordinances through the county review process. Remaining parcels should take into account groundwater recharge to improve recovery from instances of drought and support overflow or impoundment of water from overflow events.
Transportation Plans	A goals-based document that guides both capital investment as well as transportation policies in communities. Effects community character, road design, traffic flow, public transit, and	Supports proper road design to accommodate agricultural activities as well as other community transportation needs. At the urban-rural edge, may build in the transportation needs of the agricultural workforce living in urban areas.	Not legally binding and has long lead time for projects to materialize in the capital budget. Most plans focus on high-speed commuter connections that may conflict with agricultural uses in rural areas and low speed, limited access roads in town centers making it difficult to move agricultural equipment.	The higher incidence of large storms is affecting ditch sizes and road maintenance standards, making it difficult and unsafe for farmers to move equipment. New design standards and an expanded discussion of the impact of climate change on the rural road system are becoming necessary.

Farm Friendly Audits

The NYSDAM Farm Friendly Audit discussed earlier also guides towns working through their zoning and subdivision regulations. So, when Bethlehem, Guilderland, and New Scotland audited their comprehensive plans for farm friendliness, they also reviewed their zoning regulations. The following chart has a portion of the audit questions and the answers provided by the three towns. See Appendix 6 for the full form.

Audit: Comprehensive Plan for Farm Friendliness

for Bethlehem, Guilderland & New Scotland

	BETHLEHEM	GUILDERLAND	NEW SCOTLAND
Farm stand limitations on sales? Site Plan review required?	Not for existing. New farm stands need site plan review.	**No**	No, but 50% must be farm raisted; food prepared offsite or in food truck
On-farm accessory buildings by right	Yes, permit required for new buildings with human activity	Yes	Yes
Standards requiring PB or ZBA evaluation of impact on ag	Yes	Yes	Yes, evaluates impact on neighbors
Regulations define agriculture, agritourism, agribusiness	Yes	Yes	Yes
Non-traditional or retail farm-based business allowed	Yes, but maybe require site plan	Yes, with site plan or special use permit in some cases	Yes, must follow NYSDAM guidelines
Ag data statement required with application for site plan, subdivision, special use, etc.	Yes	Yes	Yes, within 500′ of ag parcels
Placement of agricultural disclosure statement required on plans for development in ny Ag district	Yes	Yes	Yes
Special use permit required for ag-related uses	Yes, site plan for new agriculture uses	No, except stores selling farm equipment	Yes, when below minimum acreage or use is not ag
Silos and other farm structures exempt from height requirements	Yes, only silos	Yes, in agriculture districts; must meet setback requirements	Yes, only silos and windmills

Applicable Tools and Programs

As the regulatory environment at the local, state, and federal levels becomes more complex, compliance becomes costlier across all sectors. Many communities have developed responses to this issue by using their economic development offices as a means for streamlining processes and improving efficiency in both the development process and with on-going corporate outreach. Tools such as one-stop licensing, regulatory ombudsmen, and specialized training of enforcement officers have proven both affordable and effective.

In some areas where recent regulatory enforcement actions exist, it may be necessary to create a buffering system whereby the general community, farm operators, and landowners can seek greater understanding of the law and the relationship of their specific issues to that law. Creating an ombudsman to deal with such issues is often warranted and may be recommended as a regional/county-based effort, particularly as it relates to land use and health code regulations.

At a more strategic level, embracing more open dialogue of integrated agriculture at the comprehensive planning level can have significant long-term impacts on how communities view agriculture as a net contributor to the economic, environmental, educational, recreational, and health of the entire community. As individual communities struggle to adapt to the unique and emerging impacts of climate change, the role of agriculture may become more vital as a buffer to the deleterious effects of change on water quality, water availability, and flooding. Land use planning should also consider the potential positive effects that expanded seasons and wider crop availability may have on markets.

RECOMMENDED ACTIONS

The following recommended actions build on the needs and tools identified in the preceding sections. Recommendations are divided between those focused on farmland preservation and those directed at land use and zoning. These recommendations are an outline of useful tools that can be incorporated into a series of regional, county and municipal level programs that address the unique nature of farming in Albany County. Once adopted these tools will form the basis for a long-term farmland protection work plan.

Preservation Recommendations

Improve Participation in Existing Farmland Conservation Programs

Increasing landowner participation in conservation program begins with more engaged municipal support. Towns with agriculture in the county are encouraged to apply for state funds to develop a framework for farmland to increase landowner participation in a manner that best fits in the town context. NYSDAM provides 50/50 cost share support through a competitive grant process. County planning staff may be a resource to assist municipalities in the application and planning process.

Interviews and community surveys indicate that farmers and agricultural landowners in Albany simply do not know about the tax exemptions and beneficial assessment programs that are available to them. A straightforward approach to improving participation in existing tax programs (ag districts, ag value assessments, and other tax programs.) by the farmers and landowners is recommended.

Consistent outreach to landowners through Cornell Cooperative Extension, Farm Bureau, Soil, and Water Conservation District and other organizations is an important initial step. However, a new approach may be necessary to expand participation in farmland conservation programs. Cornell University and Cornell Cooperative Extension should work with Department of Agriculture and Markets to develop continuing education curricula for accounting and legal professionals. Professionals in these fields are often the most trusted advisors of farmland owners and, therefore, should have a complete understanding of the estate and tax planning tools available. The lessons would describe

the protections, benefits and eligibility requirements for programs like agriculture districts, property tax exemptions, agricultural district law, and agricultural value assessments. Doing so through continuing education credits encourages professionals to share information with their clients and disseminates knowledge to clients that might benefit.

Curricula at a minimum should address the following:

- **Ag Districts**
- **Ag Value Assessment**
- **Soil and Water Conservation programs**
- **Other tax programs**
  - **o School Tax Assessment Relief**
  - **o Conservation Easement Property Tax Exemption**

Increase Understanding of Agriculture and Application of Conservation Tools

Educating professional service providers will increase participation in land conservation programs, but it is also imperative to increase the public availability of information regarding land conservation programs.

The following methods of outreach are recommended to increase general knowledge of land conservation programs and options in Albany County. These programs should be in print and electronic media for direct distribution like brochures and DVDs.

- **Develop a website that provides information on the available programs with contact points for each. Use that website to advertise opportunities for additional training.**

- **Hold landowner information seminars that address different programs and options such as using agricultural preservation programs in estate planning or developing alternative organizational structures for farm and land ownership.**

- **Develop a schedule to "train the trainer" programs for service providers that regularly interact with farmers and landowners., such as staff from the county, Farm Bureau, town and city governments and others.**

- **Ongoing training of town supervisors and town boards covering land preservation programs, innovations and state laws. This training could also involve policy tours that introduce town leaders to farmers and landowners who can discuss the impacts of specific policies on their operations.**

Create a Critical Farm Revolving Loan Fund

Farmers in Albany County have access to numerous PDR program options, but few of these can be used to facilitate a quick land transaction. Critical Farms programs are revolving loan programs designed to provide bridge funding to provide interim or emergency financing for the acquisition of agricultural preservation easements on farms that would otherwise be sold for nonagricultural uses.

Generally, farms protected using a Critical Farm Revolving Loan Program must serve a primary, or critical, role in the local agricultural economy. The characteristics that make a farm "critical" may include: 1) location, development pressure, unique assets, or soil productivity; 2) circumstances of the sale and how they contribute to the risk of conversion, and 3) characteristics of the buyer to include age, experience, or special needs. To be funded the farm must also have a reasonable expectation of meeting the land conservation goals of one or more farmland conservation funders.

Critical farm programs are most effective when operated collaboratively with well-funded conservation programs. Such collaboration ensures that the program will have the ability to revolve its funds quickly. Otherwise, it will be difficult to meet its objective of being available for quick deployment when the need arises.

The need for this program became clear during the interview phase of this planning project. The interview team encountered three family farms in transition that were looking for solutions that would allow the purchaser of the farm, young farmers in these cases, to access the equity of the farms they intended to purchase in order to complete the transaction. The PDR process was considered too long and costly to be effective, and the only agricultural revolving loan fund in the region was underfunded at the time.

Albany County could apply for technical assistance grants mentioned above. Organizations like the Equity Trust, the Open Space Institute, Scenic Hudson, Mohawk Hudson Land Conservancy, or other land trust programs could partner with Albany County to aid both financially and administratively to manage the Critical Farms Program. A program of this nature benefits Albany County by protecting its farmers and farmland and designating allocated properties as open, farmable space in perpetuity, and benefits land trust organizations by effectively protecting land.

Several land trusts in the region, such as the Mohawk Hudson Land Conservancy, Equity Trust, and Scenic Hudson may be willing partners in the development of such a fund. Financing should be viewed in the same way as economic development revolving funds with funding levels between $2 million and $4 million to be matched with philanthropic funds.

Enhanced Protection of Prime and Productive Soils

Albany County does not have large consolidated blocks of Prime and Productive soils making protection of these soils an important consideration if farming is to remain viable. While it is often assumed that the loss of Prime and Productive soils mostly impacts crop farmers, Albany County's livestock producers are also challenged by the loss and fragmentation of these soils because of their need for nutrient management.

The loss of Prime and Productive soils is most commonly associated with housing development. Demand for these soils can come from many other sources including energy projects, industrial development, and conservation programs. Additional pressure to provide critical drainage areas to accommodate the increase in high volume rain events makes access to well-drained soils imperative for management of runoff.

Protecting these soils should be approached at the community level. Using mitigation techniques that protect soils from being converted to non-production uses should be a centerpiece of community-level discussions to balance the costs of conservation with the development needs of the community. Management tools such as the Capital District Planning Commission's

community-scale solar model can help municipalities balance the demands of economic development and energy projects with the needs of agriculture.

If a community chooses a "no net loss" approach, demonstrated in Figure 4, farmland protection would require that towns adapt zoning and subdivision codes to require that when highly productive soils are lost properties of equal size and productivity class must be protected on site within the development plan, elsewhere in the county, or pay a hefty fee-in-lieu. Mitigation programs create a privately-funded market for the protection of high-quality agricultural soils.

In New York, the state legislature created a mitigation requirement in the Agricultural Districts Law. Section 305(4)(h-1) requires mitigation when land is taken by eminent domain for use as a landfill. The provision became effective January 1, 1998, representing the first time that a mitigation requirement has been applied to farmland in New York. Amendments since this time apply to mitigating the impact of wind energy projects on farms by requiring the replacement or recovery of agricultural soils. The Army Corps of Engineers has also routinely utilized the concepts of mitigation and "no net loss" for the protection of wetlands. Such mitigation provisions are a way to balance growth and resource protection that is meaningful at the parcel level.

Local soil mitigation ordinances are already in use to support farmland protection in many parts of the country to include Marin County California, Davis County California, King County Washington, and the Town of Kinderhook[11] in Columbia County, New York.

The mitigation requirement should reflect the need to protect agriculturally significant concentrations of these soils by establishing a minimum soil concentration before the mitigation rule kicks in. Mitigation should ensure the protection of like-kind and like-quality soils and encourage banking within areas of concentrated agricultural production activity. Likewise, soil mitigation may target areas where land resources may need to be conserved to allow for climate change mitigation strategies such as expanded groundwater recharge, water impoundments, and water quality improvement projects.

11 http://www.farmlandinfo.org/sites/default/files/Town-of-Kinderhook-Zoning-Code_1.pdf

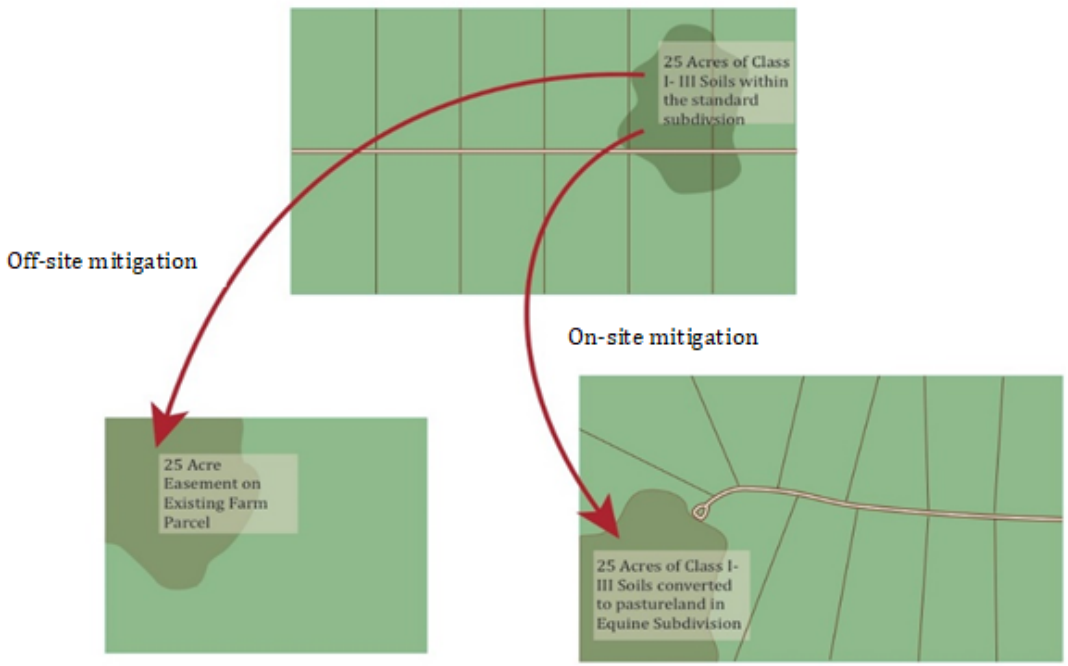


Figure 4 - Soil Mitigation Techniques

Support a Regional View of Land Use and the Business of Agriculture

The success of countywide efforts to protect farming begins at the town level with the adoption of comprehensive plans, zoning codes, and subdivision regulations. Adoption and amendments of these policies can have significant effects beyond local borders in myriad ways, such as redirecting growth patterns, shifting traffic patterns, or restricting certain value-added activities. Section 305-a of the New York State Agriculture and Markets Law (AML) provides some direction to how communities should plan to accommodate agriculture within the local land use code. Furthermore, the Section 305-a gives the Commissioner of Agriculture the right to review local laws and make determinations if they are unreasonably restrictive of agriculture.

This recommendation is focused on providing access to guidance to municipalities considering changes to land use code. Such access will ensure that the outcomes are consistent with community needs, the county's desire to support agriculture as expressed in other recommendations in this report, and Section 305-a of the AML. This starts with access to county and regional planning documents to help communities understand the broader framework of demographic shifts, development patterns, zoning trends, and farm and forestland protection initiatives. This information can be provided by adding a resource library to the AFPP website recommended in Section 2 of the report. GIS support for planning and zoning including regional base zoning maps is also critical to good planning and zoning outcomes and could be accommodated through the Capital District Regional Planning Commission.

Working with the New York Planning Federation, the New York State Department of Agriculture and Markets, local planning officials, and agribusinesses to develop model ordinances that are supportive of agribusiness activities would be useful to ensure that policies are agriculture friendly. Policies such as clustered development and forest/wetland mitigation while well-intentioned and often necessary for environmental conservation can be detrimental to agriculture by forcing mitigation and development activities onto productive farmland. Given the market pricing for mitigation projects, it can be difficult for farmers to compete for needed land resources. Developing soil mitigation requirements, as discussed previously, could reduce this level of competition for the best soils. Similarly, the minimum lot size standard for cluster development can have an unnecessarily large impact on residual farmland plots. Alternative models such as area-based allowances could become a best-case model, like Plainfield, Illinois employs.

Zoning codes should strongly consider the use of performance standards for agricultural operations to ensure that agribusiness entrepreneurs have the necessary flexibility to be nimble and adaptive to emerging market opportunities. Examples of performance standards can be found in the City of Jacksonville Florida z oning code[12]. These standards are designed to allow manufacturing and processing activities while limiting public exposure to harmful community effects. Recently, performance standards have been used to support small-scale energy projects located on farms, such as mobile biomass processing, windmills, and solar arrays.
These standards are used to define clearly what is permissible in the overlay zone. They do not list all things that are permitted; instead, they list what limitations exist on common activities. Common factors considered for performance standards are:

- **Potentially harmful conditions.**
- **Management of liquid wastes.**
- **Compatibility issues with the community such as odors, hours of operation, and noise.**

Performance standards will vary by town but may include relevant performance standards for the prepared value-added products; the context for nonconforming uses; signage for a home-based business; and the size, structure, and appearance of roadside stands.

Create a Lease of Development Rights Program

Lease of Development Rights (LDR) programs, also known as term agreements, are voluntary mechanisms to suspend the development potential of agricultural

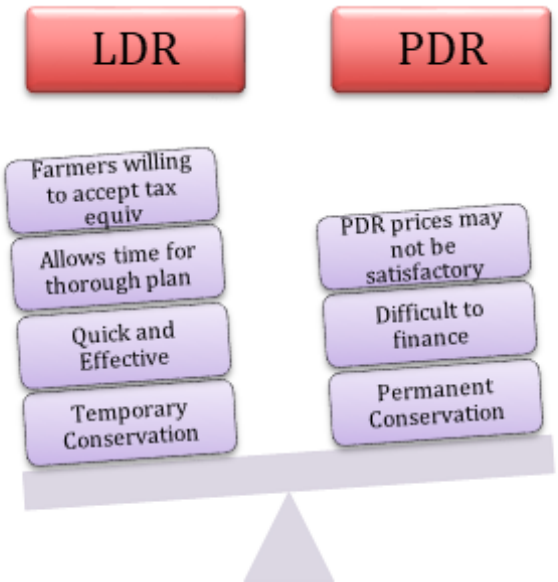
12 http://www.coj.net/depar tments/planning-and-development/docs/district-summaries/agr .aspx

real estate for a defined period in exchange for some contractual consideration. The length of the term of the agreement will vary depending on the goals of the program. For instance, forestry-related easements typically use a term of 20 or 30 years to mimic the production cycle of the crop while a deferred development agreement may take a shorter term to match a local planning cycle such as a comprehensive planning period. Term easements may also be used in conjunction with beginning farmers and mentor-protégé programs to encourage both intellectual capital development and asset transfers. In this case, term easements would be short-term and structured as a lease with purchase option for beginning farmers participating in structured support programs.

Pricing of LDR is a challenging proposition because LDR cannot use the same "lost value" pricing approach taken in pricing Purchase of Development Rights easements. If one were to use such an approach, the price would reflect the net present value of the deferred development value over a shorter period. This process would likely be costly and subject to challenge.

Other pricing models are available. Based on interviews with farmers, these can be as simple as matching the payment to the carrying cost of land or opening access to economic development incentive programs. When the term (speculation period) is reduced to within a reasonable planning horizon, such a payment could be used. In such an instance, the LDR payment would be equal the property tax paid on unimproved land. Using LDR as an access point to economic incentive programs is an approach that has proven itself in several areas such as Massachusetts where it used by the Massachusetts Farm Viability Program and North Carolina where term easements are employed to increase cost share for the installation of Best Management Practices.

Given the importance of cost control to farmers, matching term easements to tax abatement seems a logical starting point. The Town of Bethlehem is one of two towns in the state currently experimenting with term agreements[13] in exchange for sliding scale of certain tax abatements which are based on the term of the agreement. One of the challenges facing the Town of Bethlehem is that town taxes are only one component



13 http://www.townofbethlehem.org/DocumentCenter/View/8791

of the total tax bill and participation from the county, the school districts, and other special districts (see Appendix 4) are very important to providing adequate tax relief to make the program attractive. To date, the County and Bethlehem School Districts participate. Two other school districts in the town have not yet opted in.

Furthermore, limiting participation to Agricultural District properties, or to areas where agriculture is being encouraged, may enhance participation in the Agricultural District program thereby extending right-to-farm protection. For example, the Southern Maryland Agricultural Development Corporation created a grant program that was only open to farmers that participated in the tobacco buyout term easement. The county may consider offering additional economic incentives to increase the attractiveness of LDR such as the inclusion of extra payments for land enhancements for water quality management such as stream buffers, silvopasture, and overflow areas for stormwater catchment. It can offer economic development incentives on a case by case basis to famers participating in a longer-term easement.

Even though LDR programs tend to be less expensive to operate than a traditional PDR program, funding is likely to be a challenge. Tying LDR to an identifiable conservation goal that is consistent with the term selected, such as agricultural transition or temporary viewshed protection is essential in presenting this conservation option to the public.

Land Use Recommendations

Harmonize Definition of Agriculture

The New York State Agricultural Districts and Markets Law, Article 25-AA of the State code. Provides a definition of agriculture that attempts to capture the essence of agriculture on a statewide basis. Many communities chose to use this definition as the default definition in comprehensive plans and zoning code since it provides an ever-evolving baseline definition of agriculture that all state legislation references.

Agriculture in Albany County may be sufficiently differentiated from its statewide counterparts in diversity, scale, and community relationship to warrant a more expansive understanding of agriculture. Such a definition would guide towns' assessments of vertically integrated farming operations that may incorporate processing, distribution, agricultural tourism, and the related activities that have become so important to modern, urban-influenced agricultural operations. As a note, any new definition of agriculture cannot conflict with the State's definition.

Communities with strong entrepreneurial cultures in agriculture are moving toward a value-added standard for defining agriculture based on the USDA's recommendation that agriculture operations are increasingly engaged in upstream and downstream processing and distribution activities as follows.

Value-added agriculture combines the production of raw farm products plus:

- A change in the physical state or form of the product (such as milling wheat into flour or making strawberries into jam).
- The production of a product in a manner that enhances its value, as demonstrated through a business plan (such as organically produced products).
- The physical segregation of an agricultural commodity or product in a manner that results in the enhancement of the value of that commodity or product (such as an identity preserved marketing system).
- Marketing of agricultural products from the farm property and other certified local sources to increase economic integration and a greater level of farm specialization.
- Agricultural education, tourism, and related event management to encourage the further integration of farmers within the community fabric while enhancing farm level economic returns.
- Adoption of climate mitigation strategies, on a performance basis, to allow for use changes as may be necessary.

As a result of the change in physical state or the manner in which the agricultural commodity or product is produced and segregated, the customer base for the commodity or product is expanded. Thus, a greater portion of revenue derived from the marketing, processing or physical segregation is made available to the producer of the commodity or product.

Albany County will review its Right-to-Farm law and consider amendments to the definition of agriculture. The expanded definition will serve as a model for towns to consider adopting.

Support the Development of Regional Information Exchange Program

This recommendation focuses on the creation of a networked group of practitioners, academics, and public officials who will focus on emerging issues in agriculture and forestry to ensure that policy creation and infrastructure developments are proactive rather than reactive. This networked group would operate a virtual convening using social media or a blog to manage moderated discussions. Based on the results of community and industry outreach, moderated topics energy, transportation, water use, food security, food safety, ecosystem protection, and economic development. The collaboration should include broad representation and facilitate robust feedback loops to ensure that local, regional, and state level policy and planning is coordinated and using up-to-date industry feedback. This effort should seek to provide the agriculture industry with the latest advisories to best adapt to expected changes as well as access to information about funding resources to improve management practices, risk abatement, and infrastructure enhancements.

Review Road Design Standards

As discovered through interviews and surveys, there was nearly universal agreement among farmers and loggers that road standards are changing and making it more difficult to move machinery and commodity products safely around the region. Because this issue is regional in nature and involves a complex web of federal, state, and local standards, developing a better understanding of the key issues by road system is imperative to advancing this discussion. The Albany County Department of Public Works (DPW) will work with Cooperative Extension to conduct a survey of farm operators to identify specific problem areas in the county's road network. This survey would seek to identify:

- areas where road widths are too narrow to move equipment safely,
- shoulder conditions have deteriorated to the point were they are not servicable for using as pull offs, sight distances are insufficient,
- areas with a need for turnouts,
- and signage improvements.

DPW will work quickly to solve problems identified on the county road system. Issues requireing long term infrastrucure investment or multi-jurisdictional effort will be referred to a study group of industry representatives, transportation officials, and local policymakers to discuss the key issues and develop an action plan to address the deficiencies.

Develop an Annual Training Program

Albany County will partner with the Capital District Regional Planning Commission, Cornell Cooperative Extension, American Farmland Trust, and the New York Planning Federation (NYPF), to train local officials on issues related to land use and infrastructure planning for agricultural and forestry activities. This recommendation intends to improve the level of regional cooperation related to these industries as well as increasing the understanding of the nuanced nature of planning for agriculture and forestry.

When important issues that need deeper exploration are identified, the NYPF offers customizable group courses in farmland protection planning, comprehensive planning, smart growth evaluation, planning research, forestry, and open space planning. Customized training and planning certification are also offered in conjunction with Pace University Law School and may be offered for continuing education credits as a means to recruit attendance. Combining these courses with tours to highlight challenges or best practices in planning and policy would allow for greater learning. CDRPC also offers an annual planning and zoning workshop that focuses on different land use issues.

Recommendation Support Matrix

Following is a matrix of recommendations that lists possible support agencies and program partners. It also lists related activities, priority ranking as determined by the advisory committee, and budget and funding information.

PRESERVATION RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
P1. Improve participation in existing farmland conservation programs. - Town level farmland protection plans - Ag District - Conservation cost share programs - Tax relief programs - Term easements - Revolving loan programs - NYSDAM Preservation Program Involves conducting educational and networking events for service professionals as well as one-on-one outreach and training.	Possible Lead Agencies : Mohawk-Hudson Land Conservancy (MHLC), Albany County, Albany County Soil and Water Conservation District (SWCD) Possible Program Partners: Scenic Hudson, The Equity Trust, American Farmland Trust (AFT), The Land Trust Alliance (LTA), Hudson Valley Agribusiness Development (HVADC), Dirt Capital, NYS Dept. of Agriculture and Markets (DAM), Cornell Cooperative Extension (CCE), Capital District Regional Planning Commission (CDRPC), and Hudson-Mohawk Resource Conservation and Development (RC&D)	Various DAM Programs, NYSERDA. Various USDA and USDOI Grant Programs. Various land trust activities.	Less than $10,000 for training and outreach activities. If support activities are offered to facilitate deal activity, additional funds will be necessary.	2018	Foundation grants, LTA county support, NYSDAM, USDA, others by specific opportunity or need

RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
P2. Increase understanding of agriculture and application of conservation tools: - Farmland conservation website - One-on-one counseling enables farmers to understand impact of existing programs in financial planning. Levels the playing field.	Possible Lead Agencies : Mohawk-Hudson Land Conservancy, Albany County. Possible Program Partners: Scenic Hudson, The Equity Trust, AFT, LTA, HVADC, CCE, NYSDAM, county and local governments, and other counties.	AFT, OSI, Scenic Hudson, ALBANY COUNTYs, Local Governments (e.g., Bethlehem), HVADC	Website $5,000 to $15,000. Print materials and DVD's $1,800. One-on-one counseling approximately $300 per session.	2018	Foundation grants, county support, NYSDAM, USDA, others by specific opportunity or need
P3. Create a Critical Farm Program. - Allow quick reaction to community needs - Promote intergenerational transfer and beginning farmer retention Designed as an economic development focused revolving loan fund.	Possible Lead Agencies : Mohawk Hudson Land Conservancy, Albany County. Possible Program Partners: Scenic Hudson, The Equity Trust, AFT, LTA, HVADC, CCE, NYSDAM, county and local governments, and other counties.	Dirt Capital, The Equity Trust	$15,000 to $25,000 for program design. Program funding of $1 million+ is recommended and should be coordinated with municipalities and private foundation partners.	2018	Foundation grants, county funding, and municipal funding.
P4. Enhanced protection of Prime and Productive soils. Encourages/Incentivizes towns to adopt policies to reduce loss of large blocks of Prime and Productive soils and soils of statewide importance. Work with emerging technical resources such as the community scale solar model being developed by CDRPC.	Possible Lead Agencies : Albany County Possible Program Partners: Cornell Cooperative Extension, County Planning, Pace University, CDRPC, NYSERDA, and SWCD	Scenic Hudson, Equity Trust, LTA, AFT	Less than $5,000 annually to support seminars and draft policy development.	2019	County and local government matching allocations with foundation support.
P5. Create a countywide lease of development rights program. - Encourage young and beginning farmers - Provide land transition options for retiring farmers - Support county and land trust conservation goals - Allow considered integration of short-term and mid-term climate change goals Allows landowners financial benefits for achieving temporary conservation goals while other programs are developed.	Possible Lead Agencies : Albany County Possible Program Partners: Cornell Cooperative Extension, DAM, DEP, NYSERDA, NRCS, CDRPC, Federal Emergency Management Agency, Albany Land Bank, and SWCD	HVADC, municipalities, land trusts, DEP	$25,000 for program design. Program financing will depend on design.	2019-2020	County and local government. Various state and federal programs.

LAND USE RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
L1. Harmonize definition of agriculture to: - Allow for more value chain activities - Support expansion of allowable agricultural activities - Anticipate climate change mitigation needs - Harmonizes the definition across the county to support common agricultural development goals	Possible Lead Agencies : Albany County Possible Program Partners: Cornell Cooperative Extension, County Planning, municipalities, CDRPC, DAM, SUNY Cobleskill, SWCD	Municipal planning efforts, NYS DAM	Less than $5,000	2018	County
L2. Support the development of a regional information exchange program: - Transportation - Land use - Climate change strategies Initiates broad exchange of regional information and ideas related to major policy, infrastructure, and climate change decisions using moderated topics in an online setting.	Possible Lead Agencies : Albany County and CDRPC Possible Program Partners: Cornell Cooperative Extension, County planning, municipalities, CDRPC, DAM, SUNY Cobleskill, Albany Law School Government Law Center	CDRPC	Less than $2,500 for challenge grant	*2019*	County, municipalities, foundations, and industry associations
L3. Review road design standards with a focus - Road width - Shoulder stability - Speed - Water management Improve local and state planning and design initiatives to full incorporate interests and needs of agriculture.	Possible Lead Agencies: Cornell Rural Road Program and Albany County Possible Program Partners: Cornell Cooperative Extension, County planning, municipalities, CDRPC, Capital District Transportation Committee (CDTC)	NYSERDA, CDTC	Approximately $2,500 for conference support. May consider sponsorship of design study with University engineering seminar - $8,000 to $10,000.	2018	Foundation grants. County and local government. Various state and federal programs.
L4. Develop an annual land use training program to improve integration of: - Agriculture - Forestry - Tourism Continuing Education Accredited training to expand understanding and employment of best practice planning using smart growth principles.	Possible Lead Agencies: Albany County Possible Program Partners: Cornell Cooperative Extension, County planning, municipalities, CDRPC, New York Planning Federation, DAM, SWCD	New York Planning Federation, Pace University Law School, DEC - Smart Growth Program	X	2021	X
L5. Support a Regional View of Agriculture by: - Convening of municipal, county, and r al industry specialists to enhance coordination and understanding of agriculture - Encouraging "Farm Friendly" code audits - Encouraging "Smart Growth" audits Developing a shared view of agriculture across municipalities and industry sectors will improve planning outcomes.	Possible Lead Agencies : Albany County Possible Program Partners: Cornell Cooperative Extension, County planning, municipalities, CDRPC, DAM, SUNY Cobleskill, SWCD	DEC - Smart Growth Program	Approximately $2,500 for conference support and $1,000 for 2 challenge grants for towns "Farm-Friendly" code authorities.	2020	County funding

2

Agricultural Viability - Economic Development

Agricultural Economic Development Plan

Agriculture is part of a complicated economic system that supports food, beverage, and fiber production as well as related sectors such as manufacturing, distribution, recreation, education, and entertainment. This economic system is often referred to as the Agricultural Value Chain, and the success of agriculture as an industry is based on the health of the entire value chain. This component of the Agriculture and Farmland Protection Report will focus on current conditions in the value chain with the intent to expose certain pain points that may negatively affect industry or business performance and recommend solutions to overcome these challenges.

Current Conditions in the Agricultural Value Chain

The purpose of this section is to summarize key elements of the agricultural value chain with an initial focus on the key, transformative trends that may affect the viability of the agricultural producers in Albany County. The discussion regarding trends in production and producer characteristics are followed by highlights of the agricul-ture value chain.

As of the 2012 US Census of Agriculture, the production sector in Albany County was made up of 494 farms producing a wide range of crop and livestock products. Many farms are diversified with a few areas of specialization in beef cattle, grain, hay production, sheep & goats, and vegetables, as well as, greenhouse, nursery, and floriculture.

Table 1 - Albany Farms by Primary NAICS,

NAICS sectors	Farms
All	494
Oilseed and grain farming	51
Vegetable and melon farming	36
Fruit and tree nut farming	10
Greenhouse, nursery, and floriculture	41
Other crop production	299
Beef cattle farming	65
Cattle feedlots farming	7
Dairy cattle and milk products	14
Hog and pig farming	8
Poultry and egg production	26
Sheep and goat farming	26
Other animal production	115

Source: infoUSA

Table 2 - Albany County Agriculture - Summary Profile,

	2012	2017	% change
Number of Farms	494	498	-
Land in Farms	63,394 acres	61,030 acres	+
Average size of Farm	128 acres	123 acres	+
Market Value of Products Sold	$45,957,000	$22,415,000	+ 10
Crop sales	$31,072,000		
Livestock sales	$14,884,000		
Average Per Farm	$93,029	$45,010	+ 10
Government Payments	$384,000	$270,000	+ 4
Average Per Farm Receiving Payments	$4,622	$2,572	+ 8

Source: USDA 2012 Census of Agriculture

1 This percentage reflects the presence of two large nursery wholesalers whose warehousing and repacking activity are reflected in USDA Ag Census data.

From 2007 to 2012, Albany saw growth in both farmed acreage and the average acreage per farm. This growth was accompanied by a 105 percent increase in net returns led by the nursery, greenhouse, and floriculture sector (NAICS 1114) and beef cattle ranching and farming sector (NAICS 112111). The resulting per farm gross return increased by 107 percent, bringing per farm returns to 61 percent of the State average.

Some sectors have a larger impact than others. The greenhouse, nursery, and floriculture sector accounts for more than 48 percent of total sales[1] with beef cattle and dairy sales accounting for 15.6 percent and 11 percent respectively. Sales in other sectors are broadly dispersed indicating a diversified agricultural economy made up of small independent producers. Often, this is an indication that sectors have little industrial structure but are instead made up of independent, entrepreneurial firms. The implication for agricultural development is relatively straightforward. Most agricultural sectors will respond better to business development program, rather than economic development programs that focus on industrial development activities.

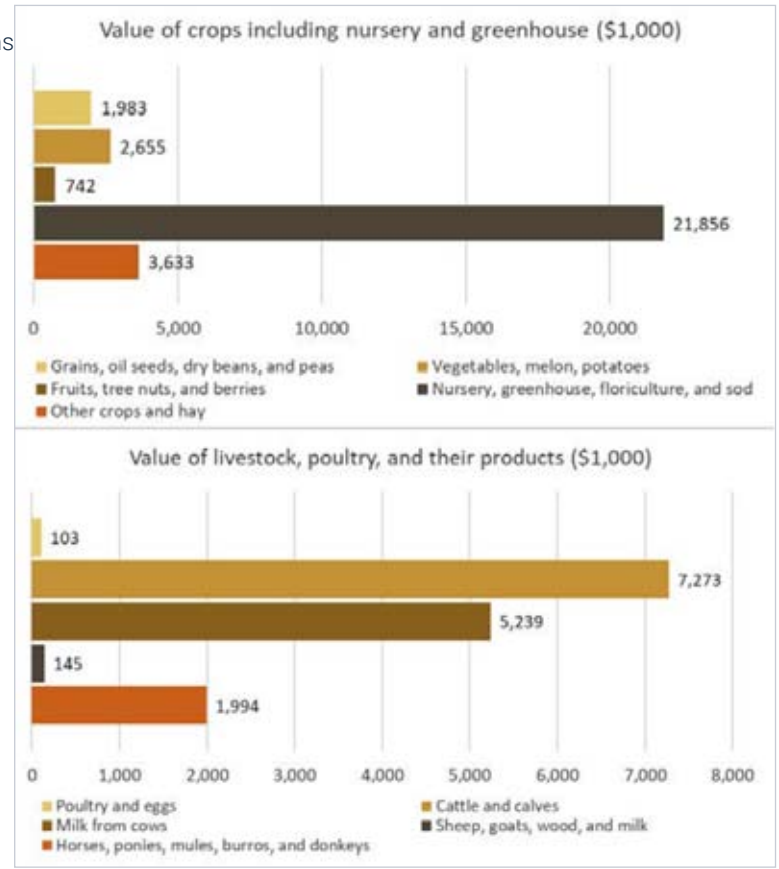


Figure 5 - Market Value by Sector, Source: 2012 Census of Agriculture

Understanding the future of agriculture is about more than tracking historical sales trends. Agriculture, as it is practiced in Albany County, is about the interests of the business owners and their view of the future. Albany County's 494 farms are run by 761 operators and are owned by 476 individuals and 18 tenants. Fewer than 230 farm operators work at farming as a full-time occupation. At an average age of nearly 61, local farm operators are older than their state and national counterparts. More than 85 percent of farm operators have more than ten years of farming experience, and the County lags the state and nation in the number of beginning farmers with only 16 farm operators having less than five years of experience. The distribution of operator age is heavily skewed

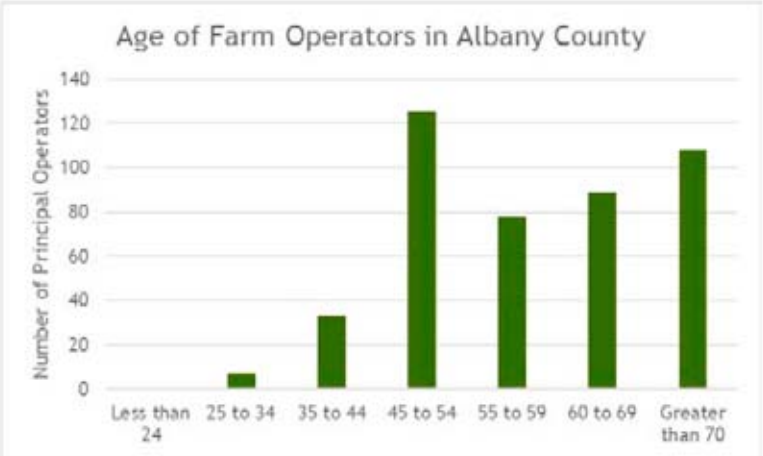


Figure 6 - Age of Farm Operators in Albany County, Source: 2012 Census of Agriculture

1 This percentage reflects the presence of two large nursery wholesalers whose warehousing and repacking activity

toward farmers over 45 (92 percent) with two large cohort groups. The largest cohort is aged 45 to 54 and accounts for 25 percent of farm operators. The second largest cohort is over 70 years of age and accounts for 22 percent of farm operators. The data clearly shows extraordinarily low replacement rates, which presents a long-term challenge for the future of agriculture.

Land value in Albany County has been steadily increasing. Two factors drive this. The first is the phenomenon of suburban sprawl that puts pressure land values and shifts the cost of providing community services. Even when population and tax base grow, land costs tend to increase and the cost of community services increases as well. The second is the sometimes-intense competition between farmers for small parcels of good quality land. Currently, farmland is trading for approximately $3,100 per acre, a nineteen percent premium over statewide land values. Given the poor soils dominant in the area and the fact that almost seventy-five percent of agricultural land is wooded, the high value is surprising.

As land values have risen due to non-farmer competition, the county is following a land rent trend seen in many places. This trend manifests itself in lower rents, as non-farm landowners seek lower rents with a five year lease to ensure that land is farmed and qualifies for agricultural value assessment tax relief. Five years terms are not beneficial to farmers seek-ing to improve properties to make them suitable for specific types of agriculture. For example, livestock pro-ducers may need to install fencing, an invest-ment with a 10-year capitalization. Cornell Cooperative Extension is encouraging landowners to sign seven to ten year leases to mitigate this issue.

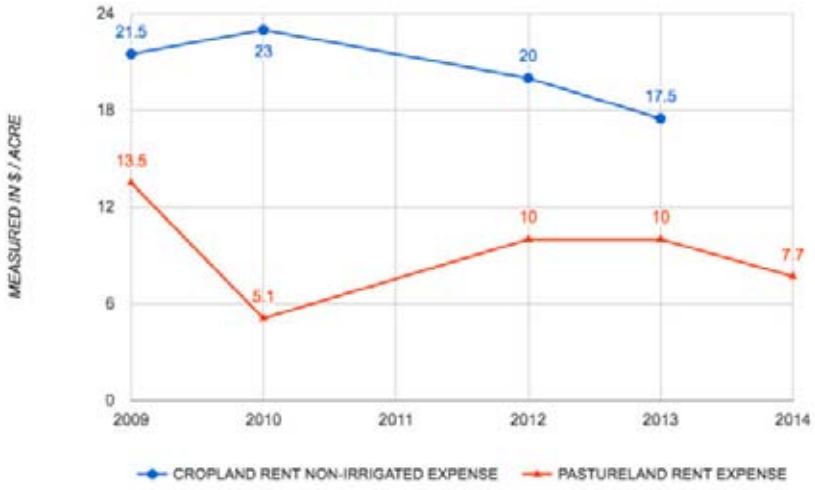


Figure 7 - Average Rental Rate by Year, Source: 2012 Census of Agriculture

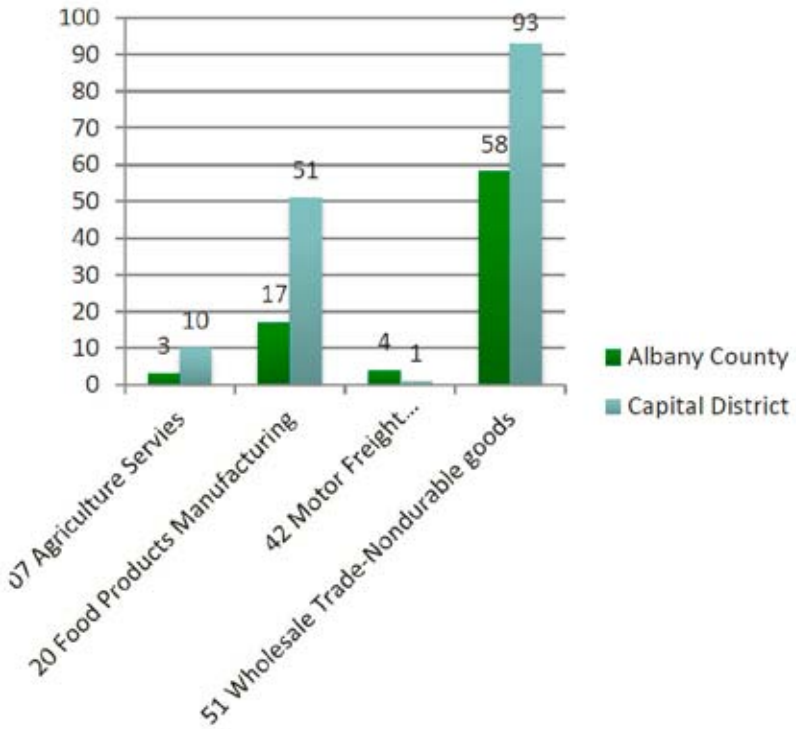


Figure 8 - Agriculture Value Chain, Firm Numbers, Source: InfoUSA

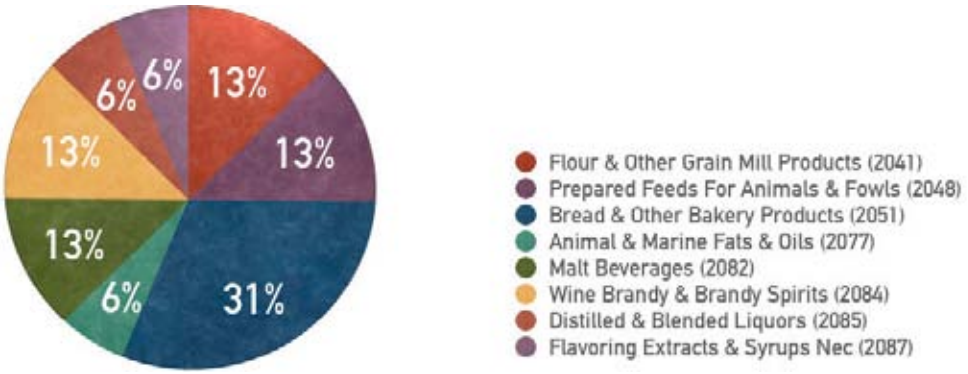


Figure 9 - Value of Output by NAICS Sector, Source: Info USA

Additionally, the value of farm equipment and machinery has been declining over the last five years, falling by just over 3 percent. Despite being a relatively insignificant decline, the trend of decreasing value may indicate disinvestment, which would be expected given the age distribution highlighted in the prior paragraph. Rising average age and declining investment may signal that farmers do not feel confident in the future of agriculture are unwilling to invest in the future.

The future of agriculture also relies on healthy markets for goods as well as strong service and supply networks. These networks do not respect political boundaries, meaning that the evaluation of input and output industries must take a regional view. In the case of the Albany County Agriculture and Farmland Protection Plan Update, the project team uses the Capital District as the study region.

The region supports a robust and diversified value chain made up of approximately 265 firms with just over $8 billion in sales. Despite the large sales allocation and firm numbers, there is only modest specialization in the economy. It is found in foodrelated manufacturing, food distribution, and alcoholic beverages, as well as grain and feed related manufacturing and distribution. Albany County is home to significant grain and feed infrastructure due to its port and rail infrastructure. Food-related warehousing and distribution, particularly refrigerated and ambient warehousing are strengths of the Albany value chain as well as a small cluster of fresh fruit and vegetable wholesalers anchored by the Capital District Farmers' Market in Menands, NY.

Albany county	Firm #
Crop Harvesting Primarily By Machine (0722)	1
Farm Labor Contractors & Crew Leaders (0761)	1
Farm Management Services (0762)	1
Sausage & Other Prepared Meat Products	1
Flour & Other Grain Mill Products (2041)	2
Prepared Feeds For Animals & Fowls (2048)	2
Bread & Other Bakery Products (2051)	5
Animal & Marine Fats &Oils (2077)	1
Malt Beverages (2082)	2
Wine Brandy & Brandy Spirits (2084)	2
Distilled & Blended Liquors (2085)	1
Flavoring Extracts & Syrups Nec (2087)	1
Farm Products Warehousing & Storage (4221)	2
Refrigerated Warehousing & Storage (4222)	2
Groceries General Line (5141)	18
Packaged Frozen Foods (5142)	1
Dairy Products Except Dried or Canned (5143)	2
Meats & Meat Products (5147)	3
Fresh Fruits & Vegetables (5148)	6
Groceries & Related Products Nex (5149)	13
Livestock (5154)	1
Farm-Product Raw Materials Nec (5159)	1
Beer & Ale (5181)	3
Wine & Distilled Alcoholic Beverages (5182)	2
Farm Supplies (5191)	5
Flowers Nursery Stock & Florist Supls (5193)	3
TOTAL	82

Table 4 - Number of Firms by NAICS Code Source: InfoUSA

The local value chain is otherwise unremarkable with only a handful of firms spread widely across sectors. From an agricultural development standpoint, this level of diversification offers some level of risk management but indicates that the market lacks any aggregated development opportunities upon which to build sector strength. This lack is particularly concerning given that there is little support infrastructure to back up the county's largest agriculture sectors. Sustained growth in these sectors requires solid value chain integration as well the development of additional direct marketing opportunities. This situation is also evident in the timber industry as the county only has a single wood products manufacturer and no companies in timber harvest and management.

Input markets at the local and regional level present a particular challenge for the area. For livestock producers, the lack of qualified large animal veterinarians is particlarly challenging. Many farmers are forced to conduct health and wellness evaluations and normal vet services on their own. Larger farms often have out of area or out of state veterinarians on call, adding costs and service delays. Trucking, equipment repair, and parts are similarly challenged, making it difficult and expensive to farm in Albany County. These and other issues combine to make the average operating expense on local farms more than $87,500, yielding a net operating return of just $12,260 per farm.

The concern for the project team is that loss of critical markets on either the input or output side of agriculture may cause a tipping point that makes it uneconomical to continue farming in certain industries. For instance, if Garelick's Dairy in Greenbush, New York were to close, the loss of an end user for fluid milk would make it difficult to maintain milk truck pickup routes in the region, sending shocks through the production sector. Such a loss may cause further closures in critical service and support infrastructure, ultimately leading to the decline in dairy production. Loss of support land and diminished production of dairy steers may also have negative impacts in the beef sector. These types of tipping points potentials can be seen in areas of the supply chain with two or fewer players.

While intermediated markets, such as those discussed above are limited in number and depth, the same cannot be said for direct marketing outlets. The county, with a population of just over 300,000, supports a large array of direct marketing outlets. These include thirty-nine CSAs based in or delivering into the county, twenty-one farmers' markets, twenty-one on-farm markets, three delivery services, and one direct market dairy operator, as well as numerous grocers that promote local, sea-sonal products. The abundance of direct market outlets means that there is one direct market option per 1,460 residents. This high ratio indicates a high level of market saturation that may dilute the value of the market for local producers.

The dilution of the consumer market comes at a time when two market factors are colliding. First, direct market sales by farmers are on a multi-year slide that is affecting all but the largest metropolitan areas in the US[2]. According to the USDA, the value of direct market sales declined at 1 percent per year from 2007 to 2012 while the number of farmers' markets grew at 17 percent. The growth in markets was accompanied by an increase in non-farmer participation in the manner of prepared food and craft sales[3]. Interviews with USDA and state officials indicate that the inflation-adjusted losses in sales may be more extreme by the next census. This trend is reflected in markets around the county, as confirmed by interviews with local market directors and farmers on the market.

The second, and perhaps more important, trend is the structural change that the entire food retail sector is undergoing. This trend started almost twenty years ago when mass merchandisers like Walmart and Target entered the retail food business by selling perishable grocery items, and grocers, like Ahold-Delhaize, built robust home delivery businesses that changed the

2 http://www.mercurynews.com/2015/02/14/sales-decline-at-farmers-markets/

3 https://www.treehugger.com/green-food/how-farmers-markets-are-evolving-be-less-about-farms.html

consumer's traditional relationship with local grocers and specialty markets like butchers, farmers markets, and roadside stands. More recently, the entry of online grocers, meal kit companies, grocery delivery services (Instacart and UberEats), and the entry of e-tailers into the food space are further overturning the retail food sales model. These new models are focussed on delivering convenience, quality, and price competitiveness to a consumer base that is unsettled and hops readily from one channel to another. When these factors are combined, it requires that new marketing methods be developed, or direct market outlets will continue to struggle.

Adapting to the above changes has serious implications for farmers at the wholesale and retail levels. Perhaps first among the impending changes are the requirments to meet food safety standards following the principles of Good Agricultural Practices (GAP) and the Food Safety Modernization Act (FSMA). Adapting to technology requirements of customers and being nimble enough to respond to quickly changing demand are important to future success. Vertical integration into processing and packing for retail trade is similarly important. Farmers can look to existing models to address these issues, but new business models are likely to emerge as market forces impact the sector. Otherwise, the costs of complying with new market standards will bury all but the strongest farms.

Additional farm-level and value chain economic data can be found in Appendix B-1.

Agricultural Economic Development Issues

Albany County farmers, policymakers, value-chain businesses, elected officials, and planners were interviewed during the spring and summer of 2017 to ascertain the most important issues they faced regarding the economic stability of their industries and communities. Within the context of these interviews, several themes emerged. These are addressed in the following section.

High Cost of Doing Business – Given the small average size of local farms and the commodity nature of beef, dairy, forage, and grain production, many farmers in Albany County work near operational breakeven bottom lines. Farmers highlight several concerns. First, the high property tax burden faced by local farmers puts them at a competitive disadvantage to farmers in the rest of

MidAtlantic who pay the bulk of their taxes as income tax. In years like 2017, when commodity prices are at near record lows, this puts farms at a competitive disadvantage to others in the MidAtlantic.

Second, the loss of service and supply infrastructure means that farms have higher costs of maintenance and repair. This is due to two factors. First is the high cost of locally inventoried goods. Second are the service delays caused by third-party shipping of parts.

Finally, there are efficiencies of scale. Small farms have a more difficult time allocating costs of overhead. Quite a few sectors, like dairy, have extensive capital and overhead requirements that make it difficult to perform in an economically efficient manner. Several farmers surmised that farmers could make better use of technology to share underutilized assets to the benefit of the entire sector including enhanced use of Section 1031 of the Internal Revenue Code.

Competition for Resources – Competition for land resources was the most commonly referenced challenge. Given the paucity of large, aggregated blocks of high productivity soils, expanding farms are increasingly forced to bid against one another to secure land for production purposes. This lack impacts dairy farmers and beef feedlot operators who operate Confined Animal Feeding Operations (CAFO's) in particular. Their CAFO plans require that they secure sufficient land to manage nutrients effectively. Having such land nearby and under consistent, long-term control is, therefore, a requirement. Limited availability of appropriate soils for nutrient management purposes often means that growers operate over a widely dispersed geographic area, adding to the costs of doing business discussed previously.

Market Development – Markets for goods and services were a concern for almost all farmers interviewed, whether they sold into direct market channels or industrial supply channels. Farmers selling directly to retail customers were feeling the effects of declining farmers' market purchasing as customers were increasingly switching to purchases of prepared meals and value-added items. Additionally, these farmers felt that consumers can access so many convenience-oriented shopping opportunities, that farmers' markets, with their limited hours and days of operations, were no longer competitive.

On the wholesale side, increased demand for value-added products, merchandising support, and grower contracts are making it difficult to compete within certain aspects of the supply chain. Adoption of FSMA, GAP, and GlobalGap, which are a response to large-scale food safety scares in the global and national supply chains, are causing the supply chain to be more sensitive to food safety requirements, which make compliance a challenge for small farmers and wholesalers. As a result, wholesale trade opportunities are declining, and food is bypassing local logistics suppliers and wholesalers. As a result, these businesses are looking for new sales avenues to help navigate the change.
Given the low demand for standing timber, supporting the recruitment or development of secondary manufacturing industries is needed to rejuvenate the primary manufacturing and timber harvest and management subsectors. Business recruitment should focus on industries such as Mass Timber manufacturers and thermal wood processing operations that can utilize low-value hardwood species.

Infrastructure Development – Infrastructure issues abound in Albany County. Farmers almost universally complained about changes in rural road design. Among the issues were narrowing shoulder widths, narrow bridges, and the installation of deeper roadside drainage ditches. Collectively, these changes are making it difficult to move machinery across the county in a safe, community-friendly manner.

Finding access to reliable broadband internet services was similarly vexing to county farms. Nearly one-quarter of the county's farms have no Internet access. Many others complain about the quality and reliability of the connection. For farmers with electronic data interchange needs, this makes client account management extraordinary difficult.

Internet Type	Farms	Percent
None	116	23%
Dial-Up	27	5%
Cable	174	35%
Fiber Optic	44	9%
Mobile	58	12%
Satellite	61	12%
Broadband Over Power	7	1%
Other	7	1%
TOTAL	494	100%

Regulatory Compliance – Regulatory compliance issues were a concern for farmers in the livestock, fruit, vegetable and field crop sectors. For livestock producers, compliance with small CAFO requirements is a limiting factor for planned growth. Producers are concerned that the accessibility of land suitable for proper nutrient management makes expansion beyond a minimum viable footprint inefficient and difficult to achieve. Resource sharing may make compliance easier for some, thereby allowing for operational expansion and efficiency gains.

New and emerging food safety regulations may have significant impact on the economic viability of fruit and vegetable growers. Farmers expressed concerns about the layering of regulatory compliance initiatives such as Good Agricultural Practices (GAP), the Food Safety Modernization Act (FSMA) Produce Rule, and the food safety provisions of New York Grown and Certified. Many are confused about what rules apply and when the implementation dates will impact their farms.

Transportation planning and enforcement of transportation regulations on farm vehicles was a significant area of concern in both in-person interview and in the farmer surveys. Farmers find that rural road design standards are not compatible with the needs of farming or the community. Narrow bridges, low/nonexistent shoulders, deep drainage ditches, and few pull-off areas combine to create dangerous driving conditions for farmers and residents alike. Furthermore, there is poor understanding amongst local law enforcement officers about the proper code enforcement for agricultural vehicles such as weight limits and load covers.

Beginning Farmer Support – Farmers and farmland owners shared a significant concern about the fate of farming given the low replacement rate of farm operators. As one interviewee put it; "there is no sense conserving farmland, if there will be no farmers to operate it." These concerns are reflected in the data. Nearly 22 percent of farm operators are over the age of 70, and 92 percent are over the age of 45. Beginning farmers account for only 14 percent of all farmers, and their average age is nearly 50. Finding ways to support beginning farmers, such as helping them gain access to land and capital, to ensure that farming has a future is important in almost all sectors.

Public Education – Improving community relationships through education was a major theme of many interviews with a focus on two-way information exchange. Important issues around transportation, production needs, conservation practices, culinary arts, and marketing were often discussed. Additionally, the decline in high school programs such as Future Farmers of America (FFA), agricultural classes and home economics (cooking and shopping instruction) have led to an increasing disconnect between food consumers and producers.

Access to Economic and Business Development Resources – As farming has gotten more complex and technologically advanced, farmers require specialized training and business assistance programs. Existing service providers, such as Cornell Cooperative Extension, are recognized as providing excellent services but lack the resources to provide wrap-around

services such as product development, feasibility analysis, market research, brand development, intellectual property development, finance, estate planning, and similar business programs. Demands for these services are highly individualized and often require short duration access to technical and professional services not resident in the County making it difficult to provide on a local basis.

Targeted Industry Development Assistance - Certain sectoral focus areas were highlighted during the interviews to include the need for recruitment, retention, and attraction efforts to support the beef cattle, dairy, craft beverage, small ruminant, and medicinal plant industries. Establishment of marketing programs, processing capacity, storage, and distribution were most commonly referenced.

Applicable Tools and Programs

Local communities often benefit by providing structured economic development support to regionally important industries. Agriculture is no exception. In fact, public policy efforts to protect the farmland base, such as land use planning and purchase of development rights, are often more effective when combined with economic development programming.

Effective economic development tools generally concentrate on supporting the private interest of the industries (i.e., the profit-making potential of individual firms within an industry sector) while providing a clear public benefit such as employment creation, infrastructure improvement, wealth generation, and quality of life enhancement. In the case of agriculture, the greatest public benefit may be the stability of the working landscape and all the secondary benefits that follow. Examples of economic development programming that can benefit the agricultural industry at the local level are summarized here:

Business Development

Business development programs focus on supporting the needs of small businesses, generally fewer than 500 employees, by addressing specific needs such as access to financing or technical and professional services. Nationwide, the U.S. Small Business Administration leads efforts to support small business development through its lending programs as well as technical and grant support. As well, most U.S. counties are supported by technical and professional counseling and mentoring services through a Small Business Development Center (SBDC) and the Service Corps of Retired Executives (SCORE). These services are generally offered through a local community college, economic development agency, or Chamber of Commerce. These agencies often add additional benefit to their services by providing access to a broad network of technical and professional specialists that enhance the base value of SBDC and SCORE.

Specialized agribusiness support services are available to many farmers in the Hudson Valley through the Hudson Valley Agribusiness Development Corporation (HVADC). HVADC is a regional economic development agency in the Hudson Valley with a specific focus on the viability of the agricultural economy in the region. HVADC's works in the Hudson Valley by assisting both new and existing agribusinesses and supporting policies and regulations that recognize and support New York State's agricultural economy.

HVADC provides support to agriculture and food businesses through technical assistance, project planning and development, feasibility studies, and several other areas. The organization provides additional training to ag entrepreneurs through its Farm and Food Business Accelerator (FFBA) and its Incubator Without Walls (IWW). The FFBA is an intensive six-month program of mentoring and training with instruction in planning, management, marketing, capacity building and access to capital. The IWW provides traditional economic

development services to startup and existing businesses with comprehensive assistance like networking, technical assistance from a network of exports, grant writing and referrals and client networking.

HVADC services are available only to farmers in member counties that fund its activities. HVADC uses these funds to leverage federal, state, local, and private resources, to provide additional value-added services at subsidized rates. Albany County is not currently a member of HVADC. However, HVADC is actively working with local businesses such as the Capital District Farmers' Market in Menands.

In addition to the services noted above, some communities choose to provide more directed support to small businesses. Often these services are designed to fill a critical local gap in service provision or are designated to support the unique needs of targeted industry sectors. Examples of this type of enhanced business development programming include:

Business Incubators

Business incubators generally provide flexible real estate and business service solutions for selected small businesses. Business service solutions are generally targeted to the needs of high growth industry sectors and may include professional assistance from attorneys, accountants, and marketing specialist; technical assistance from product developers, laboratories, and engineers; as well as administrative assistance with secretarial duties, personnel, and bookkeeping. Business incubators are costly and technically challenging to implement, but when successful have a proven track record of accelerating small business growth and keeping those businesses in the community. Agribusiness incubators are employed for a variety of uses ranging from developing biotechnology products (e.g., Monsanto's incubator) to supporting value-added food products (e.g., Unlimited Future, Inc, in West Virginia). Regionally, Hudson Valley Agribusiness Development (HVADC) operates the Incubator Without Walls that focuses specifically on supporting business in the agriculture and food sector.

Entrepreneurship Training and Support

Entrepreneurship training and support is very similar to business incubation in that it provides support services to start-up and early-stage companies that generally have a high need for specialized technical and professional services. However, these programs often support a wider array of business sectors ranging from agriculture to retail and high technology. These programs rarely offer real estate options or day-to-day business support and are therefore much less expensive to operate versus a business incubator. Agribusiness entrepreneurship training and support programs are becoming popular across the United States, and the HVADC has developed an extensive network that provides several such services for the region.

Small Business Support Networks

Small business support networks tend to be informal, peer-based systems where small businesses counsel one another. These systems are often sponsored, but not operated, by an agency or organization such as an economic development office or industry association and rely on participating businesses to direct their programming. Programming may include a speakers' series relative to topical industry issues, advisory boards, and brown bag lunches. Agribusiness roundtables are popular in many areas of the United States as a means to improve network development among farmers as well as upstream and downstream industries.

Small Business Finance

Small business finance programs generally target gaps in private sector funding such as limited access to equity capital within a region or specific industry sector. Most programs are oriented toward providing revolving credit and include the provision of capital for early-stage businesses, farm ownership, interest rate buy-downs, loan guarantees, down payment loans, and operating capital. One of the greatest challenges in making finance programs work is developing enough deal flow to cover the costs of operations. Agricultural finance programs such as Aggie Bonds are used nationally to improve farmer access to development capital and to enhance capital availability to new farmers.

Workforce Development

Workforce enhancement programs recognize that businesses and economies cannot function without a well-trained and available workforce. When companies, no matter the industry, seek to relocate or expand within a marketplace, workforce conditions, both current and future, are among the first tier of criteria they examine. Because of this, communities often seek to address workforce development from a global, economy-wide, or firm level. At the economy level, communities use public financing through the school system, primarily through higher education, to reinforce the skills sets that are required by that community's industrial base. In transitional economies, this means that workforce development issues are likely to focus on new job classifications rather than more traditional, existing ones. Firm-level workforce development assistance is typically used to assist at-place and relocating employers with discrete training needs and is often supported by loans and grants.

Business Cluster Development

The United States has seen a trend toward concentrated clustering of industries during the last several decades led by access to key infrastructure, workforce characteristics, concentrations of wealth, advances in information technology, and enhanced telecommunications capacity. Communities have responded by developing targeted strategies, many of which are highlighted in this section, to enhance lifecycle development (lifecycle development includes companies at all stages of development, from start-up to mature) of companies within a business cluster (a business cluster includes a primary industry sector as well as its input, output, support sectors). Because business cluster development is industry specific and generally forward-looking, it requires that significant community resources be speculatively dedicated to targeted assets in-place as a precursor to industry development. For this type of development to be successful, the area must support, or have the capacity to support, at least the minimum needs of the target industry otherwise business cluster development will likely fail.

Agriculture is a business, especially as it relates to upstream and downstream industries and marketing, that is predisposed to clustering due to efficiencies of scale and the industry's propensity to spin-off new ventures. For example, Lancaster County Pennsylvania has been successful, through its Chamber of Commerce, in attracting a strong agribusiness cluster. This cluster continues to grow in strength despite high growth pressure in the area.

Economic Development Incentives

Many communities offer economic development incentives to attract or retain their industrial base. Incentives are often financially based and tied to a corporation's costs of relocation, real estate development, job creation, or expected tax impact. Incentives are best employed as part of a larger economic development strategy and must clearly be understood in the context of their fiscal impact to a community as well as their true impact on relocation decision making. Many incentive programs are put in place as a competitive response to programs in other jurisdictions and often do not match local needs and assets.

Economic development agencies in New York have been creative in using traditional economic development incentives, such as Payment-in-Lieu of Taxes (PILOT) programs, to facilitate capital investment in both on-farm and off-farm improvements in the dairy industry. Such programs have supported growth in small scale dairies such as Argyle Cheese Farmer and Battenkill Dairy. Formerly, these programs were limited in use to non-agricultural businesses.

Additionally, Empire State Development Corporation's Downtown Revitalization Initiative (DRI) has program been successfully used to support agribusiness development within DRI neighborhood footprints. The latest round of DRI funding includes approval for a plan to support portions of the City of Albany[4]. Catalytic projects that support agribusiness development may emerge from this and similar efforts in the Sheridan Hollow

neighborhood if the application is expanded during the next round. As efforts like this proceed, it is imperative to link rural and urban constituencies to maximize the potential benefits to the county.

Infrastructure Development

A community cannot be effective in retaining or attracting industry if its basic infrastructure such as roads, water and sewer cannot accommodate industry needs. Good economic development planning, therefore, makes sure that the current and future needs of industry are accounted for as communities plan infrastructure. This planning becomes doubly important when a community is engaged in business cluster development activity that requires the development or enhancement of specific infrastructure such as redundant broadband access.

Infrastructure development generally applies to upstream and downstream agribusinesses and includes such examples as Sandpoint, Idaho expanding its sewer and water capacity to accommodate the development of a new dairy processing facility. Currently, this is the only such facility in that region and serves as an important milk outlet for regional farmers.

Real Estate Development

In today's corporate environment, many relocation decisions are made and implemented with very short development cycles. Communities that have worked with the real estate development industry to pre-position built capacity and/or pad sites often have an advantage in attracting and retaining businesses. As with other economic development tools, the target industries must be clearly understood and a marketing strategy in place for this tool to be effective. Otherwise, real estate investments may go un-recovered or moved at fire-sale rates. The State of Georgia uses its system of statewide farmers' markets, including the Atlanta State Farmers' Market, to attract food industry to the region through the specialized development or real estate and infrastructure. Having pre-positioned real estate has allowed the State to attract several major food companies that would have located in other parts of the Southeast.

Regulatory and Policy Guidance

As the regulatory environment at the local, state, and federal level becomes more complex, compliance becomes costlier across all sectors. Many communities have developed responses to this issue through their economic development offices to streamline processes and improve efficiency in both the development process as well as on-going corporate operations. Tools such as one-stop licensing, regulatory ombudsmen, and specialized training of enforcement officers have proven both inexpensive and effective.

Some communities such as Saint Mary's County Maryland utilize economic development staff to act as regulatory ombudsmen on behalf of farmers. According to local farmers, this process can significantly shorten the development cycle and provides an important feedback loop to politicians regarding the agricultural impact of regulations.

4 http://capitalizealbany.com/wp-content/uploads/2017/06/Downt own-Albany-CR_DRI_Application-Finalweb.pdf

Characterization of Agricultural Viability (SWOT)

SWOT analysis is a tool used by strategic planners and marketers to assess the competitive environment of a region, industry, business, or product. It is a very simple technique that focuses on the Strengths, Weaknesses, Opportunities, and Threats (SWOT) facing farms in Albany.

In creating the Plan, strengths, weakness, opportunities, and threats were assessed for the agricultural industry, both production agriculture and agricultural support industries. The SWOT criteria identified are drawn directly from the study team's interviews with the agricultural industry within the town and county, as well as through the landowners' survey. As such, this analysis should be considered an industry self-assessment. The chart below provides a brief overview of the issues the project team discovered. More extensive discussion of each issue can be found in Appendix B-2.

Table 4 - SWOT Analysis Results

INTERNAL FACTORS	
STRENGTHS:	WEAKNESSES:
• Agricultural heritage	• Cost / availability of leasing land for agricultural production
• Public support for agriculture	• Residential development near working farms
• Exhisting on-farm value-added processing	• Intermixing of residential, retail, commercial and agricultural uses (use conflicts)
• High economic value (value-added, jobs)	• Limited new farmer recruitment
• Good agricultural soils	• Physical and agricultural intrastructure decline
• Grain infrastructure at the port of Albany	• Lack of internet access
• Diverse production types	• Tax burden from numerous levels of government
• Strong demand regionally for local food	• Limited knowledge of/access to preservation programs
• Existing agritourism	
EXTERNAL FACTORS	
OPPORTUNITIES:	THREATS:
• Farming for the next generation	• Regional farmland loss
• Expansion of on-farm value-added production	• Development pressure
• Improvements in marketing infrastructure	• Speculative holding of land
• Demand for regional foods and craft beverages	• Low commodity pricing
• Expansion of development rights protection / conservation planning	• Suburban sprawl
• Local support for purchase of development rights	
• Increased inter-jurisdictional planning	

Recommended Actions

Even with best practice regulatory policy in place, agrculture and the supply chain it supports will fail without economic viability. Viability, in this case, is driven by the entrepreneurs in agriculture and their willingness to invest in the human, intellectual, and financial capital required for success.

From a positioning standpoint, Albany County has many of the location factors that would indicate the potential for success. It has good market access to the entire Northeastern United States, solid transportation networks, and a strong workforce. It also has abundant natural assets, is part of a strong regional agriculture economy, supports a vibrant tourism industry, and has strong community support for the industry. These strengths balance well against notable infrastructure weaknesses in broadband and transportation systems.

Even with these strengths, farm operations face very limited input and output markets. This adds risk to farming and should encourage operators to adopt value-added planning principles as they look toward the future. Whether as individuals or in small groups, farmers are looking toward more entrepreneurial responses to market challenges where additional risk is rewarded with higher returns.

This section of the report focuses on three areas of need to encourage higher returns to the entrepreneur, and ultimately the communities in which they reside. These areas of need include:

1. **Transforming local and regional markets for goods and services**
2. **Improving access to entrepreneurial services**
3. **Updating critical infrastructure**

These focus areas are explored in more detail below.

TRANSFORM LOCAL AND REGIONAL MARKETS FOR GOODS AND SERVICES

Liquidity is the gold standard for agricultural viability, and it takes well-functioning markets to ensure that farmers have positive cash flow to fund operations and invest in the future of their businesses. Based on the market conditions observed in the region and national industrial development trends, ACDS, LLC finds seven areas for directed market development efforts that will have a direct impact on the financial viability of farms.

Support Year-Round Retail Market Development

Seasonal direct marketing opportunities abound for farmers in Albany County, but year-round opportunities are limited. During interviews, many farmers and other market participants indicated that market sales for all products except convenience-oriented foods were in decline. Farmers indicated that they were traveling farther and to a larger number of markets to make the same gross income. As a result, many farmers felt that they were working harder to make lower net income.

This trend is not limited to Albany County. Many community markets across the US, as well as major food retailers, find that customers are increasingly demanding pre-prepared foods over raw ingredients. As a result, on average, farmers' market sales have declined throughout the United States, forcing producers to find alternative methods to increase revenue by competing for year-round sales with an expanded line of raw and processed commodities.

Coupled with the above, Albany County has a $64 million retail gap for grocery stores, meaning the demand for grocery stores outweighs the supply. Specialty food stores show a similar leakage trend with nearly $10 million in sales leaving the County. With more than 40,000 residents living in "Food Deserts" in both rural and urban communities, these figures are unsurprising[5].

5 https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx

Solutions may come from the AFPB partnering with Capitalize Albany to ensure that both urban and rural communities benefit from market growth. With the recently announced Albany DRI, state funding will become available to build marketing and processing infrastructure within communities that offer both a ready market and a workforce to support processing and distribution. Encouraging the creationof a hybrid market with that ability to process and sell raw and ready to eat foods to include locally produced fruits, vegetables, dairy, meats, maple products, herbs, and other specialty items. The City of Albany can apply to include the Sheridan Hollow building in DRI funding, but it has not done so yet.

The developer of the above-referenced facility is interested in working with local farmers and community leaders to create a mobile market system that can link underserved rural communities with local raw and value-added products. The mobile market would allow residents to shop online or at the mobile site on a year-round basis. Unlike the many mobile markets, it is anticipated that this market would service rural communities on multiple days of the week, in collaboration with marketing partners that can support the facility for longer periods of time. Every effort will be made to ensure that the mobile markets do not displace existing markets, both private and public.

The AFPB strongly supports redevelopment and adaptive reuse of the Capital District Farmers' Market to include elements such as an integrated marketing structure that incorporates processing, commissary operations, wholesale activities, farmer sheds, and an indoor retail market. The new market facilities would be designed to increase value-added integration at the farm and industry level while creating a closer relationship between consumers and producers. The market's commissary operations would be designed to support community events and embrace the emerging model of kitchen sharing that is disrupting the long-standing relationship between diners and restauranteurs.[6] Such a model, if proven feasible would vastly simplify building relationships between farmers and the food service industry. The AFPB also supports the expansion of mobile markets and food hub work of Capital Roots, an organization that is working to reduce the impact of poor nutrition on public health.

Enhance Craft Beverage Supply Chain Development

Albany County has a burgeoning craft beverage sector based around beverage manufacturing under the "Farmstead" rules adopted by the State of New York. (See Appendix B-3 for a full discussion of local conditions.) Development of the manufacturing capacity is highly cooperative and evident in both rural and urban communities. However, the future of the farmstead industry is predicated on the development of a 100 percent New York certified ingredient supply chain.

Farmers can benefit from this demand only if sufficient local demand exists to drive the creation of processing, transportation, and storage infrastructure focused on serving the farmstead element of the craft beverage industry. Development of this opportunity requires that three simultaneous tracks be followed. First, the county should work with regional partners to support entrepreneurship in farmstead craft beverages, assist existing processors with expansion, and recruit operations looking for to relocate into the Northeastern US. Second, the county should work collaboratively with Cornell University and the Hudson Valley Farm Hub to conduct extension and outreach activities that promote variety selection, cultural practices, harvesting standards, and post-harvest handling of grains and other agricultural inputs to manufacturing to ensure that local farms are producing the right products for the market. Third, the County should support the development of regional processing and storage infrastructure such as the Grain Hub proposed in Saratoga County to ensure that the proper intermediary functions exist in the market.

6 https://www.forbes.com/sites/thehar tmangroup/2015/05/13/uber-y our-cooking-the-sharing-economy-comes-to-yourkitchen/#8e68cb942e8e

Create a Forest Products Innovation Plan

Much of the county is under forest cover, and timberland value is in decline as forest sound management practices become less prevalent, and the primary forest products manufacturing industries leave the area. (See Appendix B-3 for a full discussion of local conditions.) AFPB recommends a comprehensive approach to redeveloping the timber markets in the region that starts with improving the forest management techniques employed by landowners following the example to the partnership between The Nature Conservancy, the Virginia Department of Forestry, and private landowners in the Clinch Valley.[7] With forest management plans in place, the supply chain can be certified by one of the major certification organizations leading to the development of a Green Building Council certified supply chain.

Forest landowners will only be interested in taking on the extra burden of active forest management if the county is actively seeking to develop timber markets. Low-value markets for dimension lumber and energy products are unlikely to be a sufficient incentive. Recruitment of industries that are engaging in industry-leading products production such as Mass Timber and Thermally Modified Wood should bemactively recruited to the area. These emerging product areas may find the combination of workforce, market access, supply area, and transportation system very attractive for relocation or expansion.

Support Study of Specialty Processing Opportunities

The dairy industry is undergoing significant structural change that is driven in large part by a 40 percent decline in fluid milk consumption in the US over the last three decades. (See Appendix B-3 for a F ull discussion of Local Conditions.) This trend is exacerbated in the Northeastern United States where fluid milk markets dominated the processing industry and offered solid opportunities for price premiums. The decline of fluid milk markets combined with the decline in overall milk pricing and an increase in demand for lower-priced milk for yogurt and cheese manufacturing means that farmers in the region have a full loss of more than $12 per hundredweight of milk produced[8].

These trends are unsustainable and must be addressed. During interviews, farmers indicated a willingness to enhance the market by cooperatively exploring new product development activities. The intent is to increase fluid milk consumption by creating additional value-added products such as A2 milk, halal dairy products, and other fluid milk derivatives. Farmer can also co-develop products and own both formulations and brand names as a means to increase farmer participation in value creation. Some are also diversifying away from dairy. Additional opportunities could involve raising small ruminants for meat production.

Create an Electronic Exchange System for Production Assets and Farm Services

Interviews with farmers included mention of the possibility of efficiency gains that could be had through an exchange system for assets and services. Most frequently, this was mentioned as it related to the inefficiencies of moving production assets around the county to keep up with production scheduling, knowing that a nearby farm may have the assets and capabilities to cover the production requirement at alower cost. Long-term and short-term land exchanges, particularly to support nutrient managementneeds or farm growth was a similar concern.

Asset and service sharing is common in other industries as well agricultural communities in Western New York and the Midwest. AFPB believes that the technology platforms are in place to develop a Capital District agricultural exchange program. With some modification to policies and technology, the samesystem could be used to facilitate IRC Section 1031 like kind asset exchanges providing additional tax incentives for farmers to participate. More information can be found in Appendix B-4.

7 https://www.nature.org/ourinitiatives/regions/nor thamerica/unitedstates/vir ginia/placeswepr otect/clinch-valleyconservation-forestry.xml
8 https://www.ers.usda.go v/data-products/milk-cost-of-production-estimates/milk-cost-of-productionestimates/#Monthly

Once adopted, the technology platform could be easily expanded for intergovernmental assets sharing. Currently agencies such as Public Works Departments and School Districts. The application could similarly allow government agencies to access farm equipment during times of high demand or to lower the costs of delivered services such as plowing and mowing in remote areas. Such cooperative utilization may be able to add needed liquidity to farms while offering capital and operating savings to agencies and municipalities.

Encourage Expansion/Adoption of Meat Quality Programs

Albany County's beef cattle industry is growing in importance and increasingly populated by small operators who independently approach the production and marketing of beef cattle as cow-calf operators. Additionally, increasing opportunities are being found in markets for pork, lamb, and goat. This uncoordinated system produces a mix of genetics and carcass quality that affects the overall income opportunities available to small farmers. (See Appendix B-3 for a full discussion of local beef conditions.) The AFPB, therefore, recommends the implementation of simplified meat quality programs modeled after commonly used industry standards employed by New York Grown and Certified and regional beef buyers such as Meyer Natural Food to enhance local premiums. The programs would be designed as a grower operated self-certification systems to encourage greater participation and cooperation and give buyers the opportunity to buy grouped animals that can be certified as local and under a growing protocol that is acceptable to retail buyers such as Wegmans and Whole Foods.

Encourage Regional Agritourism Development

The agricultural and culinary tourism sectors in the Capital District are a significant component of the Region's "Creative Economy." So-called creative industries make up the fourth largest employment sector in the Capital District and account for nearly 9 percent of all private sector jobs. Culinary Arts and Food and Agriculture account for 22,219 of the region's employment base, including jobs in farm-totable restaurants, chef-centric restaurants, farmstead craft beverage makers, and specialty food production services[9]. According to USDA's Census of Agriculture, the 2012 on-farm impact of this sector included more nearly 4 million dollars in sales from agritourism activities from 105 agritourism entities, including hunting, fishing, farm and wine tours, and hay rides, among other activities (NASS 2012).

Albany County lagged the region significantly with too few operations reporting agricultural tourism revenue to report. These low numbers highlight the needs to improve the revenue and employment stream from this segment of the economy.

The AFPB supports regional funding to create craft beverage, culinary maker, and agritourism trails that help to leverage the activity already flowing into the region. The intent is to pull a greater share of the tourist dollar into Albany County by focusing on existing and well-known assets such as Indian Ladder Farm and the craft beverage cluster in the warehouse district on Broadway Avenue. The Charlevoix region of Quebec created a Flavour Trail, which includes a website that provides information on regional cheeses, chocolates, ciders and beers. It provides a model of what is possible as a promotion effort for regional agritourism.[10] As with the year-round market, this effort should be a joint undertaking of Albany County and the City of Albany with a focus on supporting vertical supply chain development with investment, job growth, and wealth creation opportunities distributed across the County.

Improve Access to Entrepreneurial Services

With the level of diversification in the local production sector, farm operators, particularly beginning farmers, will demand business development services that wrap around existing support programs. Counties with similar issues have taken two basic approaches to address the issue. The first is to

9 http://www.ceg.org/articles/capital-regions-industries-impacting-economy/
10 https://www.tourisme-charlevoix.com/en/what-to-do/routes-and-circuits/flavour-trail/

embed an agricultural entrepreneur-ship program within an existing economic development office or business incubator. The second is to join a regional agricultural business development support organization. Generally, the second option allows for a higher service level to be offered to entrepreneurs since the operating overhead is spread out over a larger area and most technical and professional services can be delivered virtually.

Hudson Valley Agribusiness Development Corporation Membership

One of the nation's best-known agribusiness development programs, the Hudson Valley Agribusiness Development Corporation, operates in the region and is currently providing services in the Capital District to Washington, Rensselaer, Green, and Columbia Counties. Its services include a virtual agribusiness incubator, and agribusiness and food industry accelerator program, food hub development support, business planning, feasibility studies, and profession and technical service support in legal, accounting, marketing, finance, product development, food safety, process design, and brand development. AFPB believes that it is in the best interest of Albany County to join the HVADC business support network thereby launching a full suite of wraparound services without the necessity of building such a network from scratch.

Support Creation of Regional Beginning Farmer Mentor-Protégé Program

Given the importance of developing new entrant farmers to facilitate farm transition, AFPB recommends that Albany County explore partnerships with existing new farmer training programs and interested farm operators to create a mentor-protégé program to help increase the success rate of new entrants. Design and oversight of such programs are critical and should follow the design known best practices such as the pilot New Farmer Development program at the American Farm Bureau Federation and the US Department of Defense' small business mentor program.[11] This recommendation is based on an analysis of key success factors for beginning farmers that highlights a strong correlation of success to long-term support by existing farmer operators. Research further indicates that graduate of one and two year beginning farmer training programs require an additional five to eight years of industry-specific support to be substantially change the expected rate of success. The program should be developed in collaboration with regional partners like HVADC, Farm Credit, the Farm Hub, New York Farm Viability Institute, and the New York Farm Bureau and with from larger organizations such as the National Young Farmers Coalition and the North-east Organic Farmers Association. Additionally, more local partners, such as towns with existing agriculture advisory committees, can create opportunities by easing access to land and capital.

Updating Critical Infrastructure

Access to basic infrastructure is critical to the success of any industry and farming is no different. Farms in Albany County face two main infrastructure challenges. The first relates to the inadequacies of the transportation infrastructure as described in the recommendations found in the Albany County Agriculture and Farmland Protection Update, Land Use Report.

The second major infrastructure issue is broadband data access. Broadband access is essential for any business to operate efficiently, and farming is no exception. Farmers, particularly those embedded in an Electronic Data Interchange system require reliable, high-speed access ideally with competitive options to ensure that broadband penetration, access, and bandwidth are sufficiently competitive. Much of rural Albany County does not have access to competitive broadband services with nearly one-quarter of farms have no access, seventeen percent have only dial-up or cellular options, nine percent have fiber access, and a further thirty-five percent have cable access with limits to upload speeds that may affect EDI participation. Improving both wired and wireless access points is a critical starting point, and timing is of the essence.

11 http://business.def ense.gov/Programs/Mentor-Protege-Program/

Additional infrastructure projects that could be beneficial to the farming community include the promotion of micro-grids and distributed power generation such as Combined Heat and Power (CHP) systems that create demand to local woody biomass as a fuel source. Updates to municipal plans are likely required to facilitate adoption of these systems.

Recommendation Support Matrix

Following is a matrix of recommendations that lists possible support agencies and program partners. It also lists related activities, priority ranking as determined by the advisory committee, and budget and funding information.

RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
Transform Local and Regional Agricultural Markets for Goods and Services					
Support year-round retail market development • Support creation of integrated market development in City of Albany with mobile markets to service outlying areas • Support redevelopment of Capital District Farmers' Market to improve processing and wholesale activities. • Support expansion of Capital Roots mobile markets and food hub	***Possible Lead Agencies:*** Albany County Land Bank, 518A, Capital District Farmers' Market, Capital Roots ***Possible Program Partners:*** Albany County, Capital District Farmers' Market, NY State Department of Agriculture and Markets (NYSDAM), Cornell Cooperative Extension, Capital Roots, The Regional Food Bank of Northeastern New York, private businesses, and school districts	Capital Roots Veggie Mobile, Capital Roots Food Hub, existing farmers markets and CSA's	Minimal - Albany County may support grant applications with support letters and in-kind contributions.	2019	USDA - Value Added Producer Grant, USDA - Rural Business Development Grant Program, USDA -Farmers' Market Promotion Grant, ESDC-DRI, Brownfield Redevelopment, New Market Tax Credit Progam
Enhance craft beverage supply-chain development • Encourage greater use of locally sourced supplies • Assist farmers with transition to new crops • Attract new craft beverage companies to the area • Expand existing companies • Improve marketing and tourism opportunities around the sector	***Possible Lead Agencies:*** Albany County and Capitalize Albany ***Possible Program Partners:*** NYSDAM, HVADC, Carey Institute for Global Good, Farm Hub, Cornell Cooperative Extension, private businesses	Carey Institute Craft Beverage Incubator, Farm Hub distiller grain trials, Capital Craft Beverage Trail, and other wine and beverage tourism and trails activities	Minimal - Costs associated with applying for grants	**2019**	USDA - Value Added Producer Grant (VAPG), USDA - Rural Business Development Grant Program, USDA - Local Food Promotion Program

RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
Create forest product innovation plan • **Impr**ove markets for low quality wood • Increase utilization of green building products • Increase adoption of biofuels in community heating and power projects • Develop a center of excellence in engineered wood products to bridge the gap with product development in Europe and Asia • Increase rate of regulatory adoption of engineered wood products	***Possible Lead Agencies:*** Albany County ***Possible Program Partners:*** HVADC, New York State Department of Environmental Conservation (DEC), NYS-DAM, Syracuse University, SUNY Cobleskill, Rensselaer Polytechnic Institute (RPI), NYFVI, private industry, municipalities	DEC Wood Product Utilization Program, Private R&D, RPI engineering research, Applied forestry research as Syracuse University	Minimal - Costs associated with applying for grants	2019	USDA –Wood Innovation Grants, USDA/EPA – Building Better Rural Places, Foundation grants, ESDC-DRI,
Support study of specialty processing opportunities • Dairy products o Ethnic o Kosher o Grass Fed • Meat processing for small ruminants • Alternative markets • Soy and hemp beverage and building products	***Possible Lead Agencies:*** Albany County ***Possible Program Partners:*** Capital District Regional Planning Commission, Municipalities, Utilities, NYSERDA, DEC, Forest Products Operators, ESDC, Nature Conservancy, Mohawk Hudson Land Conservancy	Tillamook Creamery, Marquez Brothers Creamery, Brewer Livestock Company	Minimal - Costs associated with applying for grants	2019	USDA - VAPG, USDA – RBDG, USDA – LFPP
Create an electronic exchange system for production assets and farm services • Improve asset utilization • Increase utilization of like-kind exchanges • Improve inter-municipal, interagency, and farm to municipality asset sharing • Requires broadband improvement as a prerequisite	***Possible Lead Agencies***: Albany County ***Possible Program Partners:*** HVADC, SUNY Cobleskill, Farm Bureau, Farm Hub, New York Farm Viability Institute, Cornell Cooperative Extension, Municipalities, and School Districts	Harvest Port, Hello Tractor, and Gold Farmers	Explore codevelopment opportunities at a future date.	TBD	New York Farm Viability Institute, Foundation grants, and RBDG

RECOMMNENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
Encourage adoption/expansion of meat quality programs • Adopt industry standard practices • Participate with national marke-tng organizations • Develop local brand identity with regional/local retailers	***Possible Lead Agencies:*** Cornell Cooperative Extension ***Possible Program Partners:*** Albany County, farmers, processors, and retailers	**NY State BQA, Taste of New York, Meyer Natural Beef, Pineland Farms Natural Meat**	Minimal - Costs associated holding producer meetings	**2019**	**Internal, Taste of NY, NY Grown and Certified**
Encourage regional agritourism development • Leverage regional tourism assets • Improve income generation from agricultural and craft beverage industry development • Increase utilization of recreational trails for agritourism • Encourage greater participation in Community Supported Agriculture	***Possible Lead Agencies:*** Capital Region Economic Development Council, Hudson Valley CSA Coalition ***Possible Program Partners:*** HVADC, Albany County, City of Albany, Visitors on Convention Bureau, Municipalities, Regional Counties, Convention Center, pri-vate hospitality companies, craft beverage companies, farms	**Lodi Wine Center**	Minimal - Costs associated with applying for grants	**2020**	**USDA – Sustainable Agriculture Research and Education Grant**
IMPROVE ENTREPRENEURIAL SERVICES					
Hudson Valley Agribusiness Development Corporation membership • Increase access to business development services • Increase access to alternative funding • Improve regional cooperation	***Possible Lead Agencies:*** Albany County ***Possible Program Partners:*** Individual towns, Private busi-nesses, Farm Bureau, Carey Institute, and Department of Agriculture and Markets	-	$25,000 annual dues. Suggest funding partnership with Towns with Albany County offering a $5,000 challenge grant.	**2020**	**Albany County**
Support creation of regional begin-ning farmer mentor-protégé program that extends reach of existing programs • Increase success of beginning farmers • Improve farm asset transfer	***Possible Lead Agencies:*** . Albany County ***Possible Program Partners:*** HVADC, Farm Hub, Farm Bureau, Farm Credit, Carey Institute, Glynwood Center, Hawthorne Valley Association, Chester Ag Center, Agricultural Stewardship Association, National Young Farmers Coalition, Hudson Valley Farm-link Network, town level agriculture advisory committees	**DOD – Mentor-Protégé Program**	$125,000 in start-up funding across 5 counties. $80,000 in annual funding support.	**2019**	**Foundation Grants**

RECOMMENDATIONS	POSSIBLE LEAD AGENCY(IES) AND PROGRAM PARTNERS	EXISTING AND RELATED ACTIVITIES	BUDGET IMPACT	START	FUNDING SUPPORT
UPDATE CRITICAL INFRASTRUCTURE					
Support improved roadway conditions • See land use recommendations	-	-	-	2019	-
Improve broadband access • Increase broadband coverage through wired and wireless infrastructure development • Achieve internet reach to 95 percent of farms	***Possible Lead Agencies:*** Albany County ***Possible Program Partners:*** Capital Region Economic Development Council, Capital District Regional Planning Commission, Municipalities, Utilities,First Responders, and Telecom-munications Companies	Bozeman, Montana wireless broadband project	Minimal - In-kind support for feasi-bility studies and support letters for grant applications by utility providers	2019	**USDA - Rural Connect Grants, USDA - Broadband Loan and Loan Guarantee Program, FCC Rural Broadband Fund, Utility Foundations**
Encourage greater use of community scale alternative fuels in combined heat and power projects • Encourage use of community scale in urban redevelopment • Improve utilization of marginal land for solar projects • Improve utilization of agricultural and forestry byproducts	***Possible Lead Agencies:*** Albany County andCity of Albany Sustainability Advisory Council ***Possible Program Partners:*** Capital District Regional Planning Commission, Municipalities, Utilities, NYSERDA, DEC, Forest Pro-ducts Operators, ESDC, Na-ture Conservancy, Mohawk-Hudson Land Conservancy, ESCOs	Central Hudson Green Energy Portfolio Investments	Minimal - Funding required to hold informational meetings with county, municipal, and developers and utility officials	-	-

APPENDICES - PROTECTING FARMLAND

APPENDIX A-1: COST OF COMMUNITY SERVICES STUDY

Cost of Community Services

What is a Cost of Community Services Ratio?
Many municipalities find it useful to analyze how land use impacts local budgets. The Cost of Community Services (COCS) ratio measures this by comparing tax and nontax revenues to expenditures for each land use type (residential, commercial, industrial, and farm and open land).[14] In other words, the ratio compares the amount of revenue a local government receives to the amount used to provide services to those land uses. Ratios greater than 1.0 indicate that expenditures are greater than the respective contributions from the associated land use, and vice versa.

Cost of Community Services Studies in New York

The American Farmland Trust and others have analyzed COCS across many communities. Studies conducted in New York are consistent with findings elsewhere – farm, forest, and open land generate more tax revenues than they receive in public services; residences require more in services than they contribute in revenue. In fact, agricultural and open land costs towns $0.29 for every $1.00 paid in taxes, whereas residential land costs $1.27 for every $1.00 paid in taxes.[15]

Below is a snapshot of COCS studies done in New York[16]:

Community	Residential including Farm Houses	Commercial & Industrial	Working & Open Land
Amenia	**1 : 1.23**	**1 : 0.25**	**1 : 0.17**
Beekman	1 : 1.12	1 : 0.18	1 : 0.48
Dix	1 : 1.51	1 : 0.27	1 : 0.31
Farmington	1 : 1.22	1 : 0.27	1 : 0.72
Fishkill	1 : 1.23	1 : 0.31	1 : 0.74
Hector	1 : 1.30	1 : 0.15	1 : 0.28
Kinderhook	1 : 1.05	1 : 0.21	1 : 0.17
Montour	1 : 1.50	1 : 0.28	1 : 0.29
North East	1 : 1.36	1 : 0.29	1 : 0.21
Reading	1 : 1.88	1 : 0.26	1 : 0.32
Red Hook	1 : 1.11	1 : 0.20	1 : 0.22
Rochester	1 : 1.27	1 : 0.18	1 : 0.18

Source: Farmland Information Center, "Cost of Community Services Studies," September 2016,

Conduct a COCS Study

The general process of calculating COCS ratios involves obtaining revenue and expenditure data and allocating them across land uses that provide or require the monies. Data is obtained from municipalities and its respective school district(s), and are combined to calculate the ratio of revenue to expenditures.

Please refer to the PennState Extension step-by-step guide for more detailed information.

Cost of Community Services Study for Town of Bethlehem

A COCS study was completed for the Town of Bethlehem for FY 2017. The results are consistent with that of other studies in New York and beyond. In 2017, agricultural land and open land in Bethlehem costed $0.16 for every $1.00 paid in taxes, whereas residential land costed $1.10 for every $1.00 paid in taxes. See the table below for more details.

The COCS study followed the procedures outlined in by the PennState guide. Tax base data was collected through the Department of Economic Development & Planning, and queried based on the classification codes from the NYS Real Property Tax Service. All municipal tax revenues, non-tax revenues, and expenditures were collected from Bethlehem's 2017 Final Revenue Budget and 2017 Final Expenditure Budget.

Accessing the school district tax revenues, non-tax revenues, and expenditures data took the most time. Bethlehem has three school districts: Bethlehem Central, Ravena Coeymans Selkirk, and Guilderland. The budgets for each district were not broken down by municipality, but each school district had data on the total school district taxes coming from each municipality. Thus, the calculation for Bethlehem's share of school district tax revenues assumed a proportional distribution based on its share of each school district's taxes.

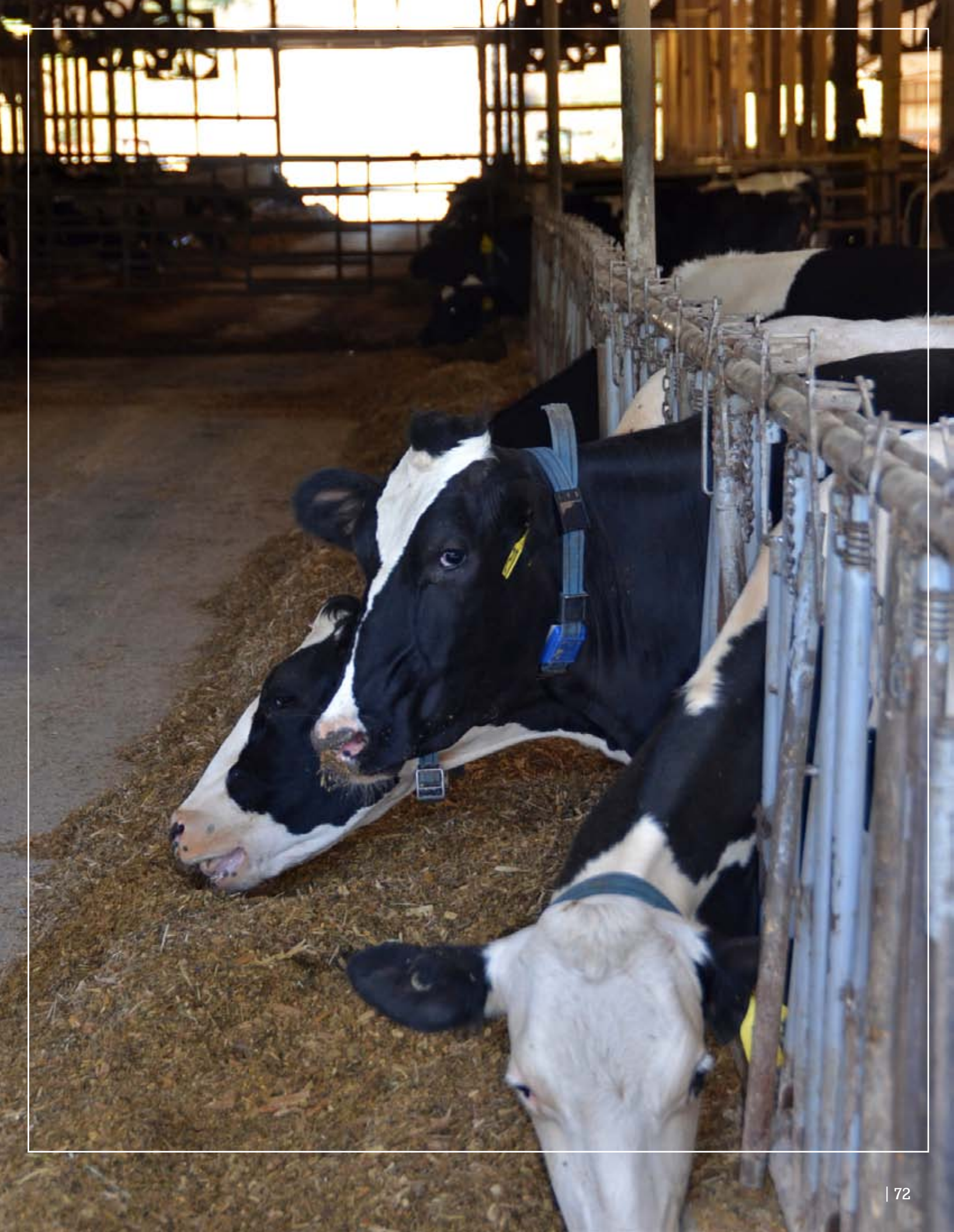
This COCS study was relatively straightforward and took about 15 hours. The challenges involved knowing when to change the allocations of tax base percentages, and recognizing differences data reporting. For most cases, allocations across land use types are based on the default tax base percentages. However, there are various instances when certain line items pertain only to residential or to commercial land uses. An example is the Payment in Lieu of Taxes (PILOT), which only impacts commercial and industrial land uses. Lastly, school district budgets are often provided differently. It is important to understand how to properly incorporate each data source.

14 Timothy W. Kelsey, "Calculating a Cost of Community Services Ratio for Your Pennsylvania Community" (PennState Extension, 1998).

15 David Haight, Diane Held, and Doris Mittasch, "New York Agricultural Landowner Guide: A Guide to Public Farmland Conservation Programs" (Saratoga Springs, NY: American Farmland Trust, 2010).

16 Farmland Information Center, "Cost of Community Services Studies," September 2016, http://www.farmlandinfo.org/cost-community-services-studies.

	$ TOTAL	$ RESIDENTIAL	$ COMMERCIAL	$ INDUSTRIAL	$ AGRICULTURAL
REVENUES					
General Fund Municipal Tax Revenue	11,333,767	9,005,592	1,452,354	840,033	35,788
General Fund Municipal Nontax Revenue	1 : 1.12	1 : 0.18	1 : 0.48	916,298	56,180
Highway Fund Municipal Revenues	1 : 1.51	1 : 0.27	1 : 0.31	87,974	62,585
Water Fund Municipal Revenues	1 : 1.22	1 : 0.27	1 : 0.72	91,035	78,015
Sewer Fund Municipal Revenues	1 : 1.23	1 : 0.31	1 : 0.74	41,862	35,875
School District tax revenues	1 : 1.30	1 : 0.15	1 : 0.28	1,486,168	1,064,962
Municipality share of school district nontax revenues	1 : 1.05	1 : 0.21	1 : 0.17	577,689	495,071
Total Revenues	**1 : 1.50**	**1 : 0.28**	**1 : 0.29**	**4,041,059.77**	**1,828,477.22**
EXPENDITURES					
General fund municipal expenditures	14,769,303	12,283,912	2,163,586	173,294	1,828,477.22
Highway Fund municipal expenditures	5,066,928	4,214,261	742,265	59,452	50,950
Water Fund municipal expenditures	7,173,121	5,966,022	1,050,806	84,165	72,128
Sewer Fund municipal expenditures	2,673,367	2,223,491	391,627	31,368	26,882
School District expenditures	157,382,512	157,382,512	0	0	0
Total Expenditures		182,070,197.94	4,348,284.35	**348,278.96**	**298,469.84**
COCS RATIOS					
	$ Total	$ Residential	$ Commercial	**$ Industrial**	**$ Agricultural**
total Revenues	**203,558,804**	**164,904,478**	**32,784,789**	**4,041,060**	**1,828,477**
Total Expenditures	**187,065,231**	**182,070,198**	**4,348,284**	**348,279**	**298,470**
Ratios **(Expenditures divided by revenues)**	**-**	**1.10**	**0.13**	**0.09**	**0.16**



APPENDIX A-2: ALBANY COUNTY FARM-LAND PROTECTION PLAN-GENERAL PUBLIC SURVEY

Albany County Farmland Protection Plan General Public Survey

Survey Background:This survey was sent out to Albany County residents and community members to gain insights into their understanding on, opinions of, and concerns over agricultural issues. It also sought to understand their engagement with local food. The survey received a total of 78 responses.

Key Insights

1. Respondents are supportive of agriculture and are concerned about issues threatening farm viability.
2. 92.2% of respondents are concerned or very concerned about farmland loss. They feel that the County should protect farmland through financial strategies and regulations.
3. While financial measures are often cited as a problem or solution, the respondents indicate that they are least knowledgeable about farm taxes.
4. A majority of respondents would like to visit farms and have engaged in agriculture-related events in the past year.
5. These residents suggest that farmland protection, education, encouraging a new generation of farmers, and promoting local agriculture are ways to maintain farm viability in the County.

Background and Demographics

There was representation from 12 sub-districts and villages within Albany County. 70% of the respondents were from Schenectady, Delmar, and Albany. The rest were from Slingerlands, Glenmont, Latham, Voorheesville, Troy, Selkirk, Guilderland, Ballston Lake, and Rexford.

60% of respondents were older than 50 years of age. There was representation from each age category except for those 20 years and younger. Most of these folks also do not own a farm or agribusiness or have a family member who does. Further, the vast majority of people live in single-family homes.

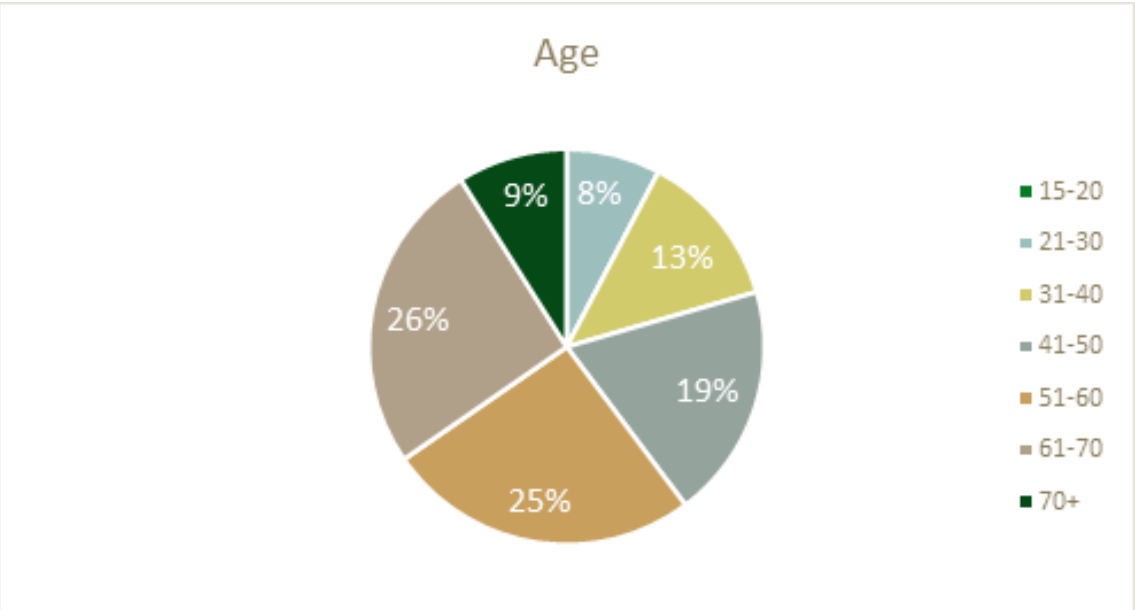


Figure 1 - Age of survey respondents

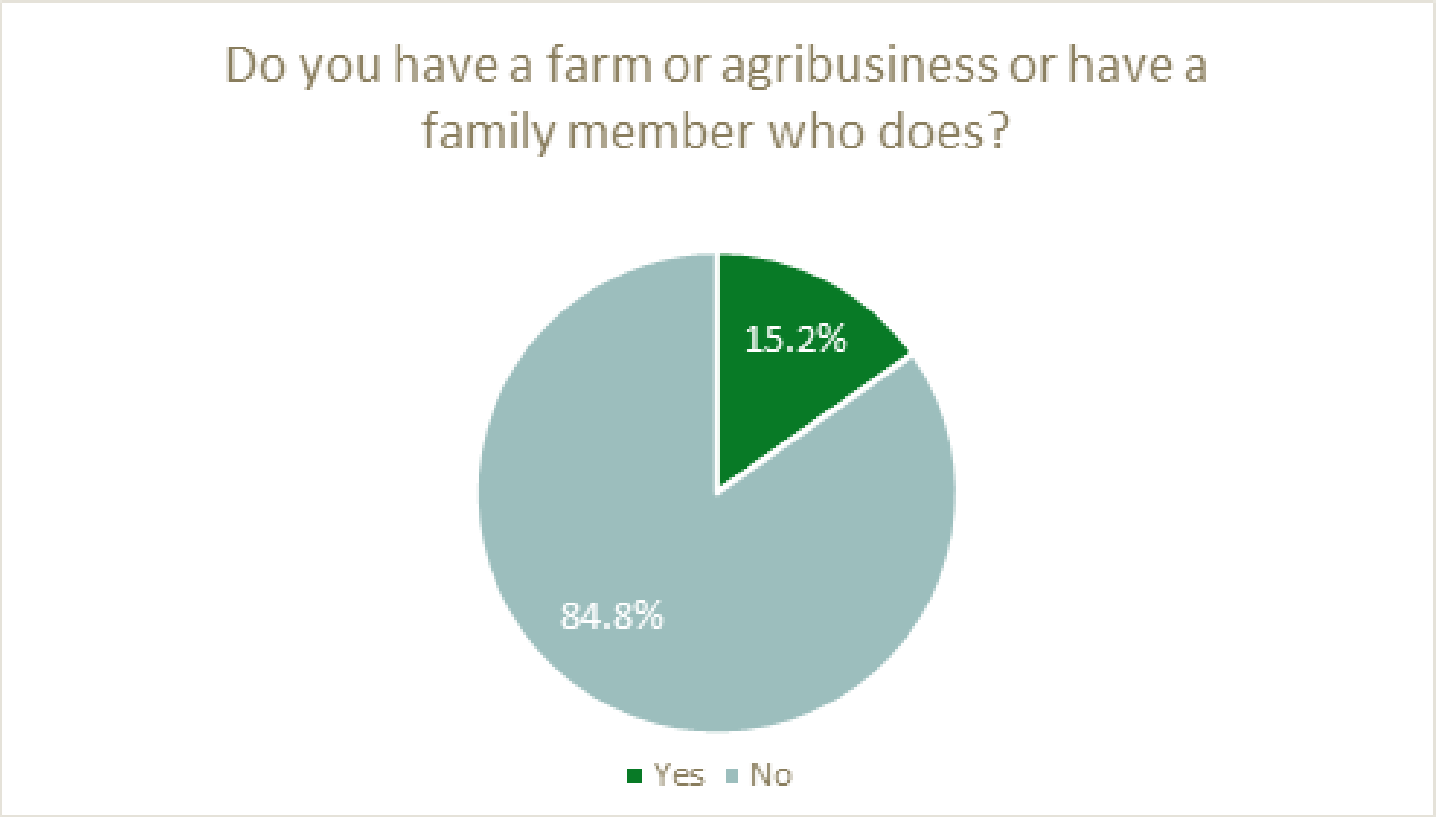


Figure 2 - Farm or agribusiness ownership

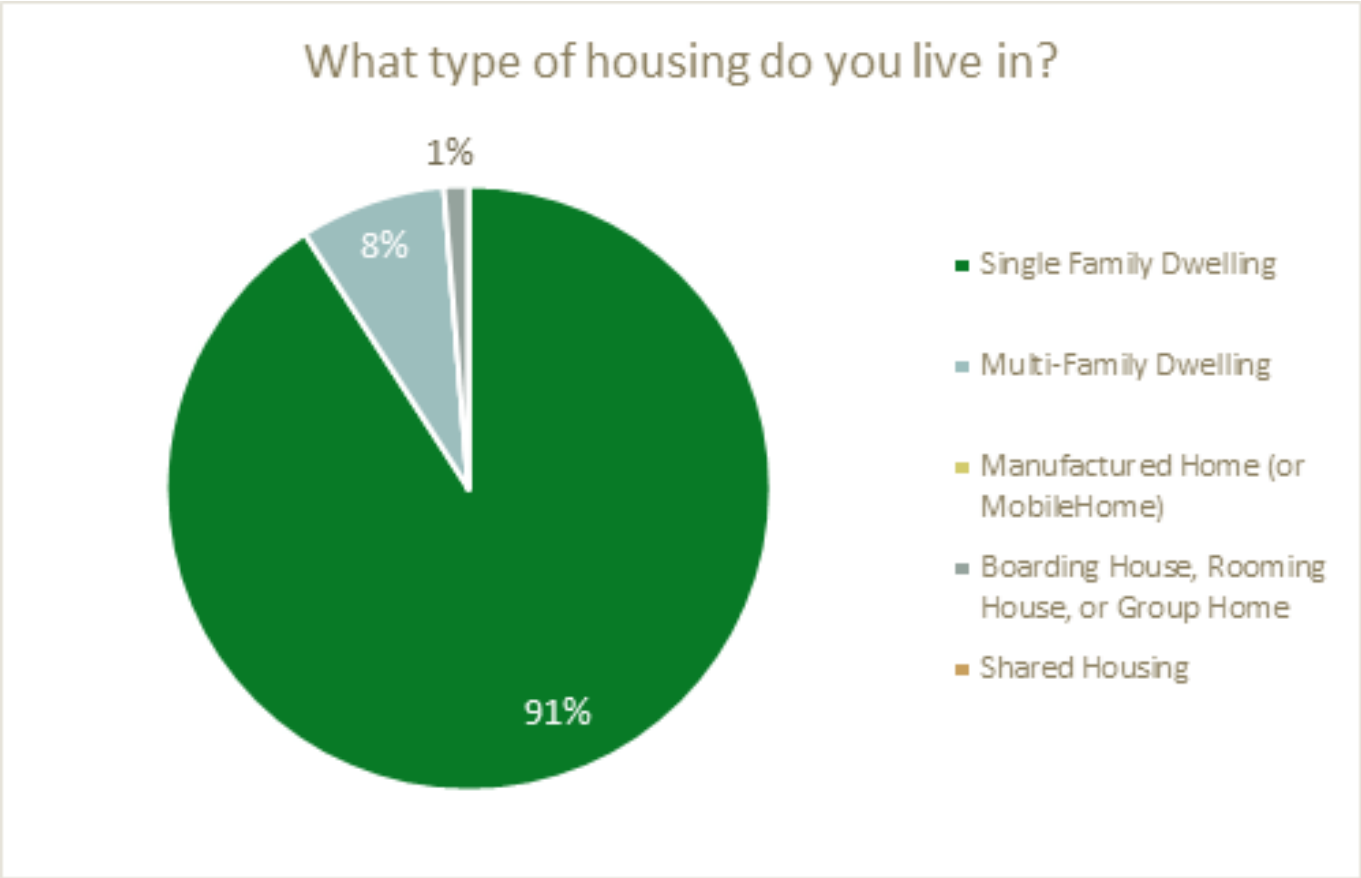


Figure 3 - Type of housing

Views and Knowledge on Agriculture

The survey asked people to identify the role(s) of agriculture. The number one role identified was that agriculture provides fresh and local food. Other top roles include agriculture's contribution to rural character, quality of life, the local and regional economy, and environmental conservation.

Survey respondents also ranked their understanding of agriculture-related issues. This survey shows that most people are knowledgeable about the types of produce grown in the county and the CSA model. However, people are unfamiliar with farm taxes and food safety plans.

Most of the respondents agree that Albany County should undertake the actions listed in Table 3. The percentage of responses for each of the actions was close. Interestingly, the top three actions are related to protecting farmland, with the top two focusing on financial strategies to achieve farmland protection. Similarly, 92.2% of respondents are concerned or very concerned about the loss of farmland.

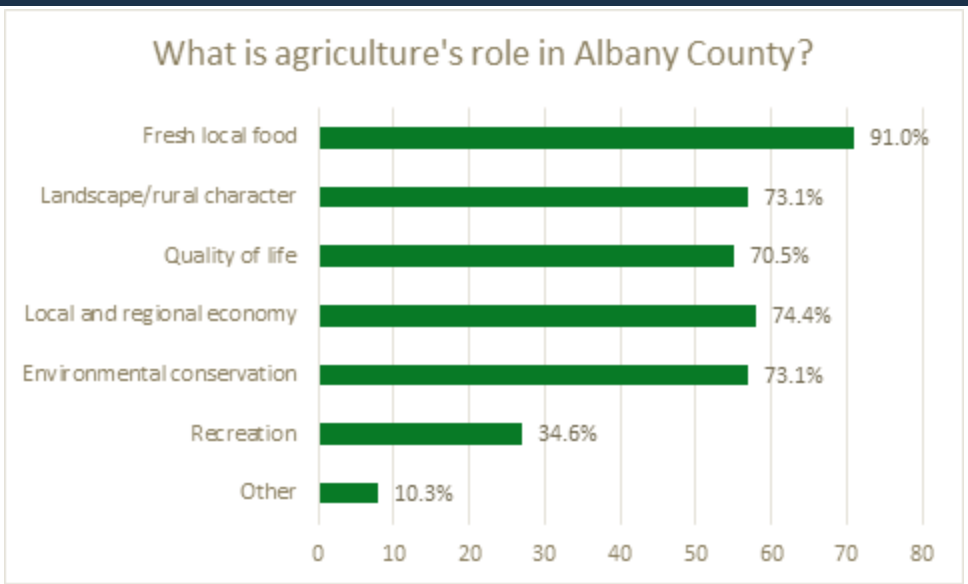


Figure 4 - Roles of agriculture in Albany County

Table 1 - Ranking on knowledge of agriculture related issues

Rank	Issue	Very knowledgeable	Somewhat knowledgeable	Not familiar	Have no idea
1	The types of produce grown in the county	24	49	3	1
2	Community Support Agriculture(CSA) model	24	20	21	10
3	Environment impact	18	39	17	1
4	Food safety plan	9	16	35	14
5	Farm taxes	3	16	36	19

Table 2 - Ranking of actions the county should undertake to address issures facing farms

Rank	Action	Percentage
1	Provide incentives for farmland to be protected, including tax incentives	86.7%
2	Assist with obtaining grants for farmland protection	85.3%
3	Limit non-farm development in productive agricultural areas	85.3%
4	Assist with grants for promoting agriculture	76.0%
5	Encourage development consistent with protection of farmland	76.0%
6	Organize activities to promote locally grown farm and forest products	74.7%
7	Facilitate first-time farmer financing programs	72.0%
8	Invest in facilities and infrastructure needed by farmers to process, transport, and market their products	69.3%

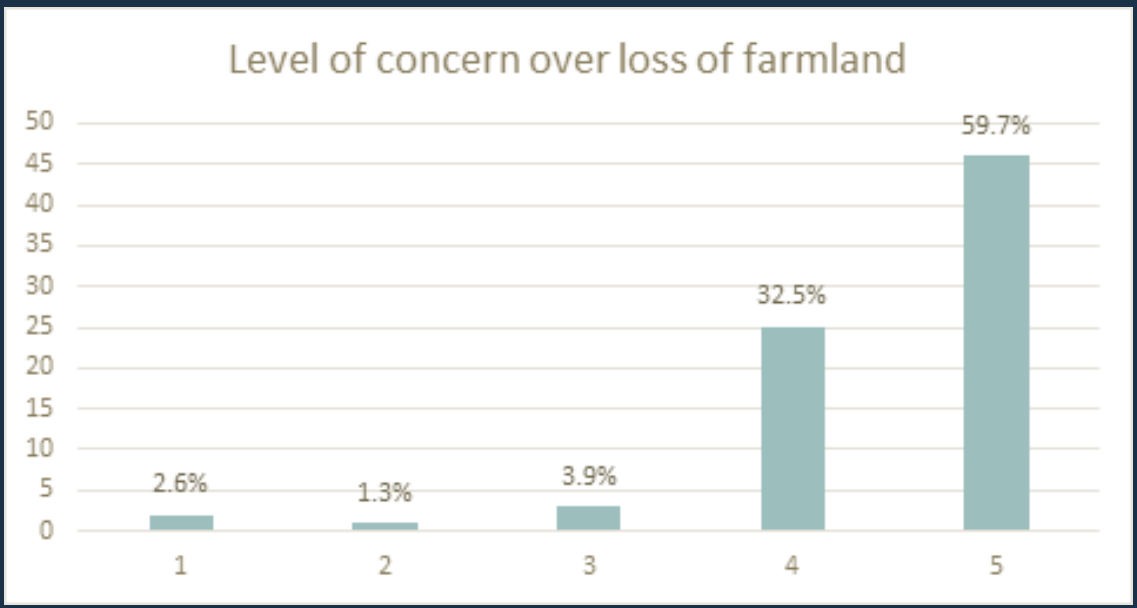


Figure 5 - Level of concern of loss of farmland (5–very concerned, 1–least concerned)

Local Food Consuption

This group of respondents shops for local foods at a variety of venues. The most popular ones include farmers markets (67.9%), supermarkets (57.7%), and co-ops/ independent local grocery stores (52.6%). Most of these respondents shop for local products at least once a week. 47% shop once a week, and 36% shop a few times a week.

The survey asked respondents if they would like to visit a farm and why. 50 people responded to this question, and 90% said they would visit a farm. The top reasons include:

1. Staying connected to agriculture, knowing the farmer, learning about growing practices.
2. Exposure and education on agriculture for self and the future generation.
3. Other reasons involved having grown up or around farms, enjoying agritourism, staying connected to the land or nature, or supporting local farmers.

The survey also asked if the individual participated in any local agriculture-related event in the past year. 42 people responded, and 81% said they participated in an agriculturally related event. Most people stated that they receive CSAs, participate at a farmers' market, or went to a pick-your-own farm. The rest of the responses

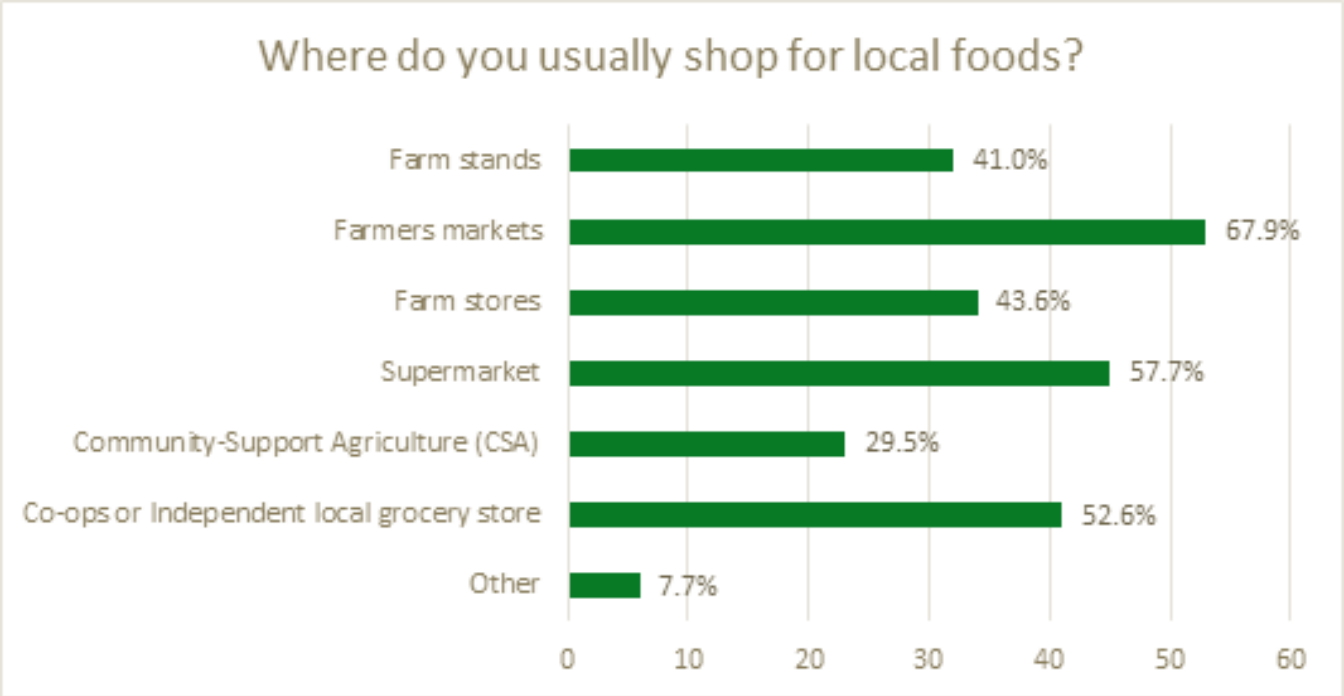


Figure 6 - Venues for local food

indicated that 12% went to a festival or fair, and 9% went to an on-farm event. A small percentage of respondents engaged through conferences, forums, or volunteering

Final Comments

Lastly, the respondents provided comments on ideas to keep farming viable in the county. The following provides a summary of the suggestions:

1. Prevent development on and around productive farmland.
2. Restrict non-farming development through taxes, zoning, fees, and regulations.
3. Preserve existing farmland, which includes conservation easements.
4. Lower agricultural taxes.
5. Support and encourage more farmers markets, agricultural festivals, and local purchasing.
6. Publicize local agriculture (farms, farmers markets, CSAs, etc.).
7. Encourage a younger generation of farmers through education, training, and grants/financial support.
8. Provide educational opportunities and resources.
9. Use education to connect younger generation back to agriculture and the food system.
10. Strategize against climate change and extreme weather, which impact agricultural production.

Figure 7 - Frequency of shopping for local products

APPENDIX A-3: ALBANY COUNTY FARM-LAND PROTECTION PLAN-FARMER SURVEY

Survey Background: This survey was sent out to farmers in Albany County for input on local farming issues. The survey received 32 responses. The following sections analyze the responses received.

Key Insights

1. There is a shortage of beginning farmers. Most farmers are over the age of 50.
2. Farmers are primarily concerned about issues related to taxes, sales revenue, costs, debt, and profitability.
3. Farmers believe educational and training programs will help encourage a new generation of farmers.
4. Direct-to-consumer sales such as on-farm sales and farmers markets are the dominant market channels.
5. Farmers are seeking suppliers and agricultural services outside of Albany County.
6. There is a need for agricultural education with regards to land conservation programs.

Farmer Background

This survey had representation from 9 of the ten towns in Albany County. Farmers responding to this survey had farms in Guilderland, Westerlo, Berne, Colonie, Bethlehem, New Scotland, Knox, Coeymans, and Rensselaerville. Most of these were small farms; 53% of the farms were 100 acres or fewer. 78.1% of the farms were also located in an Albany County Agricultural District. The other farms were not located in an agricultural district, or the respondent was unsure.

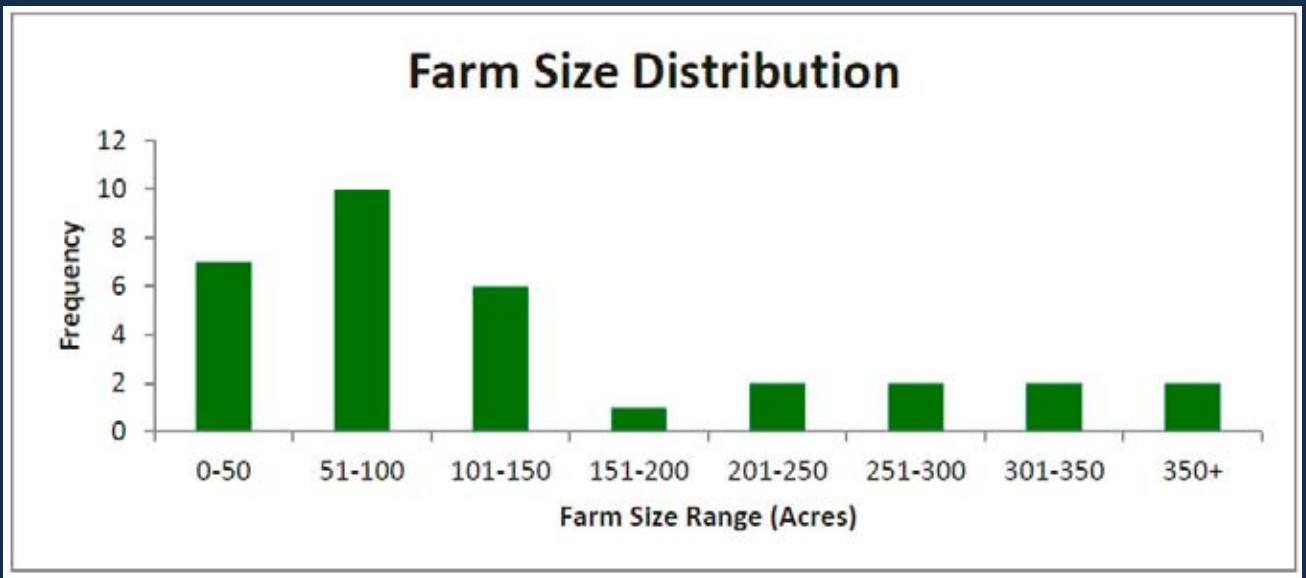


Figure 1 - Total Farm Size

Based on the survey, these farms focus on livestock or poultry production. 72% of the farms had livestock or poultry. In fact, most of the respondents raised beef cattle, dairy cattle, lamb, and layers. Further, 39% of the farms grew hay or grains, often in conjunction cattle production.

The average age of the principal operator was 60.2 in Albany County in 2012. This survey confirms the national trend of an aging farming population; 59% of survey respondents were 61 or older. Likewise, 59.4% of the respondents indicated that farming was not their primary occupation. Of the 40.6% who have an off-farm primary occupation, 57.7% state that farming contributes less than 20% of their household income.

Curent Agricultural Issues

The survey asked farmers to rank the importance for 28 issues. The top six issues are:

1. Rising taxes and existing tax burden.
2. Medical insurance (reasonably priced) for farmers.
3. Prices paid for farm products are low and cost of production is high.
4. Cost of labor.
5. Estate and transition planning, maintaining profitability for next generation.
6. On-farm level of debt.

Financial and economic concerns dominate the top issues. Taxes, overhead costs, labor costs, and sales influence profitability of farming operations. Taxes are posing a burden for many farmers, and many are eager to avoid high costs or debt.

Farmers recognize that farm profitability is crucial for successful farm transition. A profitable farm economy means land is maintained in agriculture. It can also encourage people to start agricultural enterprises, which is important for agricultural viability.

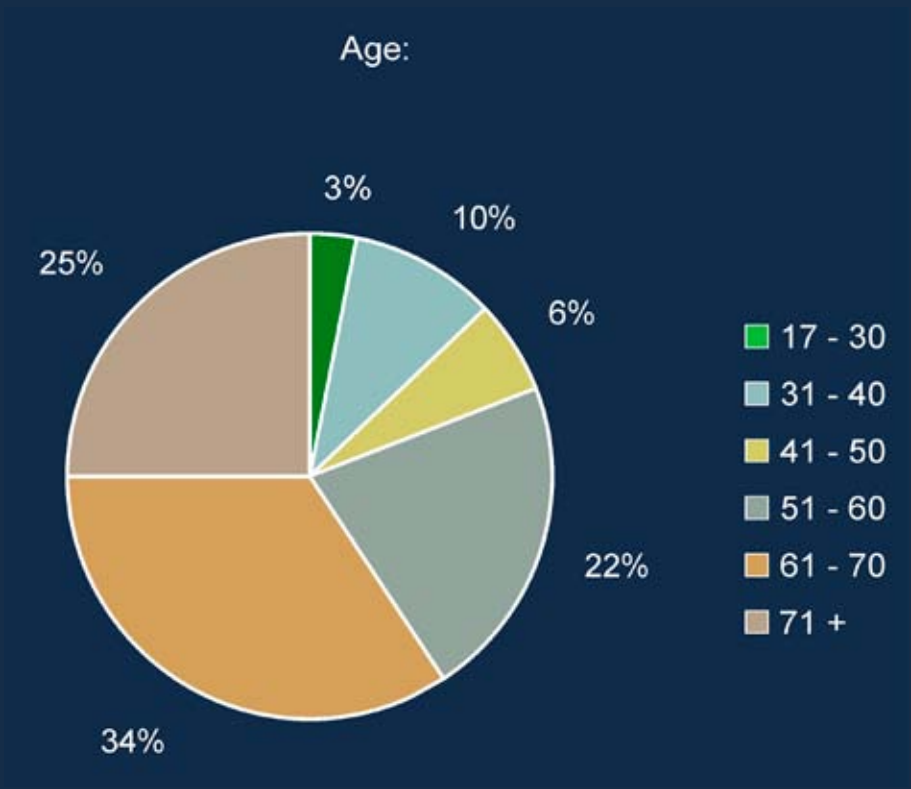


Figure 2 - Farmer Age

Table 1 - Ranking of Current Agricultural Issues

RANK	ISSUE	VERY IMPORTANT	IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	$ AGRICULTURAL
1	Rising taxes and existing tax burden	25	6	1	0	0
2	Medical insurance (reasonably priced) for farmers	17	6	5	4	0
3	Prices paid for farm products are low and cost of production is high Revenues	14	11	4	2	1
4	Estate and transition planning, maintaining profitability for next generation	13	8	7	4	0
5	Cost of labor	13	5	9	4	0
6	On farm level of debt	13	4	11	2	1
7	Consumer education regarding agriculture and food	12	7	8	4	1
8	**Availability of labor**	12	6	8	5	0
9	**Political advocacy for farming**	11	10	8	1	2
10	**DEC regulations and other government restrictions**	11	9	8	4	0
11	Access to large animal veterinarians	11	6	6	7	2
12	Access to high speed internet	11	5	10	5	1
13	Programs to bring young people into farming	X	X	X	X	X
14	Marketing support	X	X	X	X	X

RANK	ISSUE	VERY IMPOR-TANT	IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	$ AGRICULTU-RAL
15	Agricultural products processing facilities	9	6	9	6	2
16	Assistance obtaining grants for farmland protection	9	3	8	11	1
17	Agricultural marketing facilities	8	8	10	5	1
18	Long distances from farm for basic farm supplies and an absence of support services	8	8	9	6	0
19	Expertise in local agriculture	7	9	11	3	2
20	Availability of farmland to purchase	7	6	10	7	2
21	Farmland purchase financing options	7	5	10	9	1
22	**manure management**	7	4	12	7	2
23	**Quality of soils and land var**	6	13	11	1	1
24	**c limate change**	6	6	7	10	2
25	Obtaining on-farm food safety certification to gain access to additional retail channels	6	2	12	10	2
26	Expertise in local agronomy	5	9	11	5	2
27	Availability of farmland to lease	5	7	12	7	1
28	Affordable housing	3	6	8	12	3

Town or County Level Support

Most farmers indicate they do not benefit from town- or county-level support for agriculture. Those that are benefiting are receiving lower property tax rates for agricultural use, or receive other benefits for being in an Agricultural District.

Supporting Young and Beginning Farmers

Young and beginning farmers are vital to the continued health of agriculture in Albany. Respondents were asked to suggest programs that would attract young people to agriculture. The answers suggest that education and training programs remain popular tools. There is also recognition that improving access to land and capital is important. Other suggestions included a farmer loan forgiveness program and lower taxes. The farm loan forgiveness program would ease educational costs for young farmers who make a 10+ year commitment to agriculture.

A few comments echoed concerns over the economic viability of farming. Some believe that farming is not profitable, and poses a financial barrier for individuals interested in farming. Others are curious about solutions that do not rely on subsidies.

Infrastructure

Concern for the agricultural workforce was the most frequent response. This is followed by concerns over road conditions and utilities. However, more research is required to assess these issues further.

Agricultural Market Channels

Survey results indicate that most farmers are marketing through on-farm sales (80%) and farmers markets (43.3%). About half of the farmers have easy access to a local market. However, 42% of farmers either do not have easy access to a local market or are unsure of their ease of access.

Supplier and Buyer Dynamics

The farmers were asked about the top five suppliers and buyers of their products, and to indicate whether they were inside or outside of the county. The responses indicate that over half of the farms purchase supply more from outside the county than from inside the county. The number of outside suppliers also more than double that of inside suppliers. On the other hand, about 37% of the farms have more buyers outside of the county than from inside the county. These buyers are represented in the high proportion of direct-to-consumer market channels (Figure 18).

Agricultural Land

77% of farmers claim an agricultural assessment on their property taxes. However, 21% of farmers that rent land do not know if their landowner claims an agricultural assessment. Further, the length of leases appears to be well distributed.

Finally, there is a need for additional agricultural education. 35.5% of the farmers surveyed were not familiar with land conservation programs, and 50% of respondents indicated they wanted to learn more about these programs.

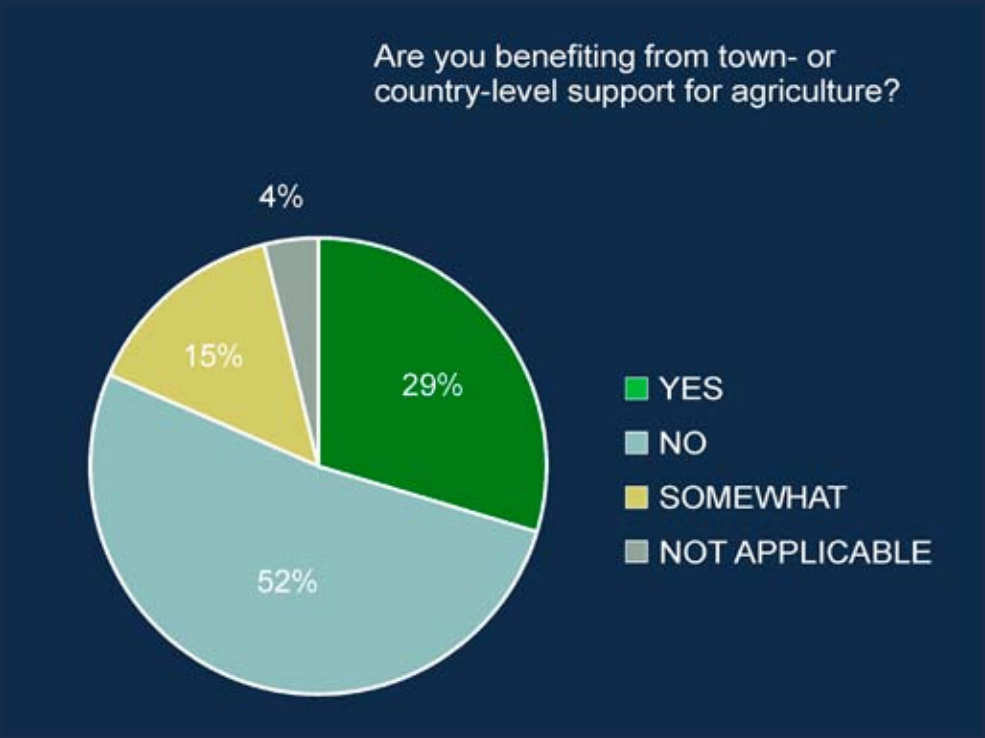


Figure 3 - Town or county-level support for agriculture

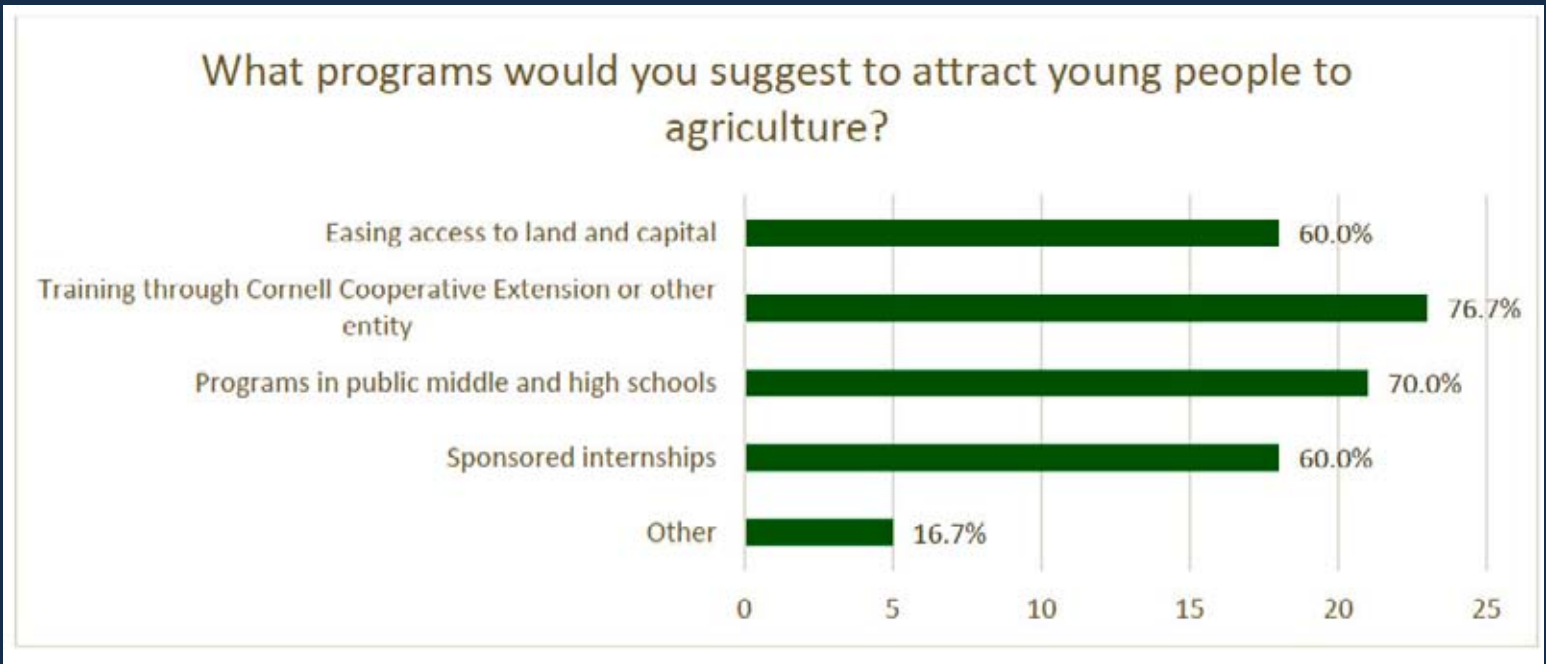


Figure 4 - Programs to attract young people to agriculture

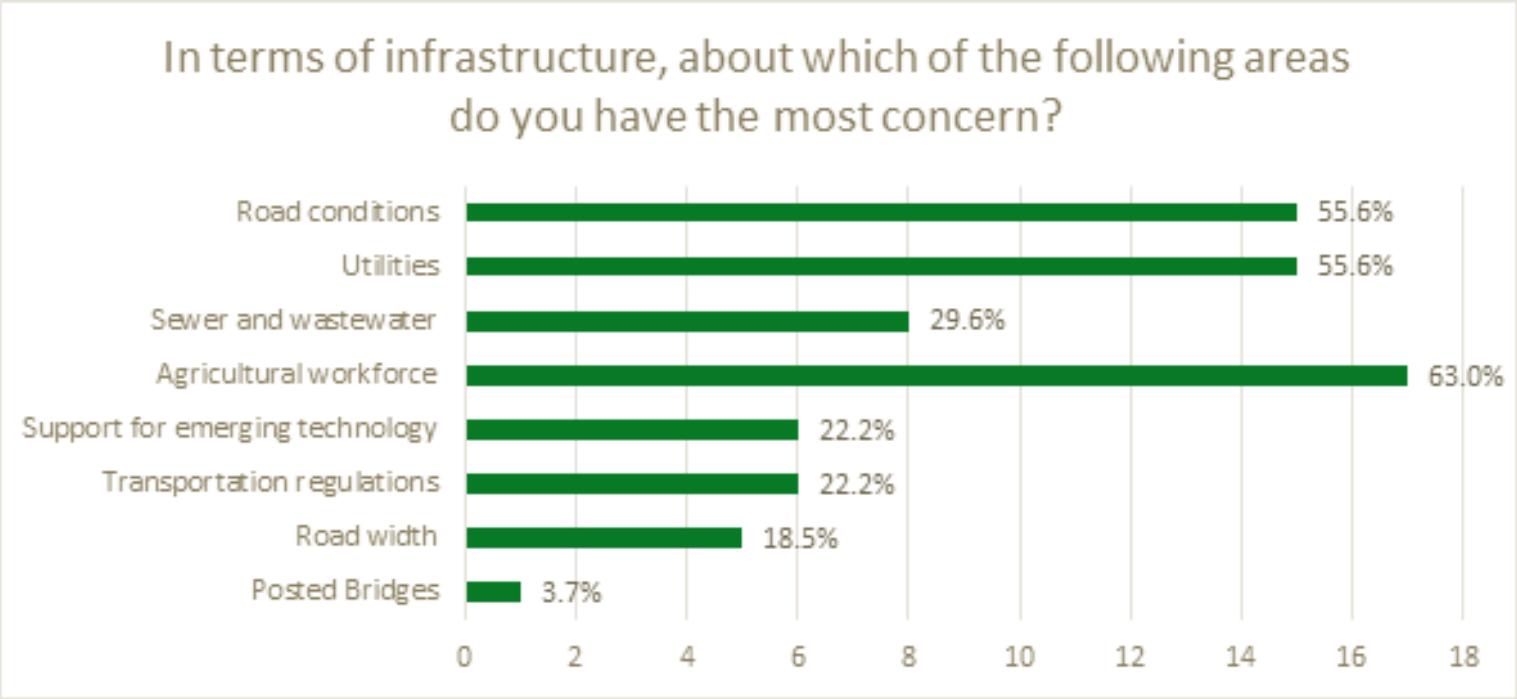


Figure 5 - Infrastructure concerns

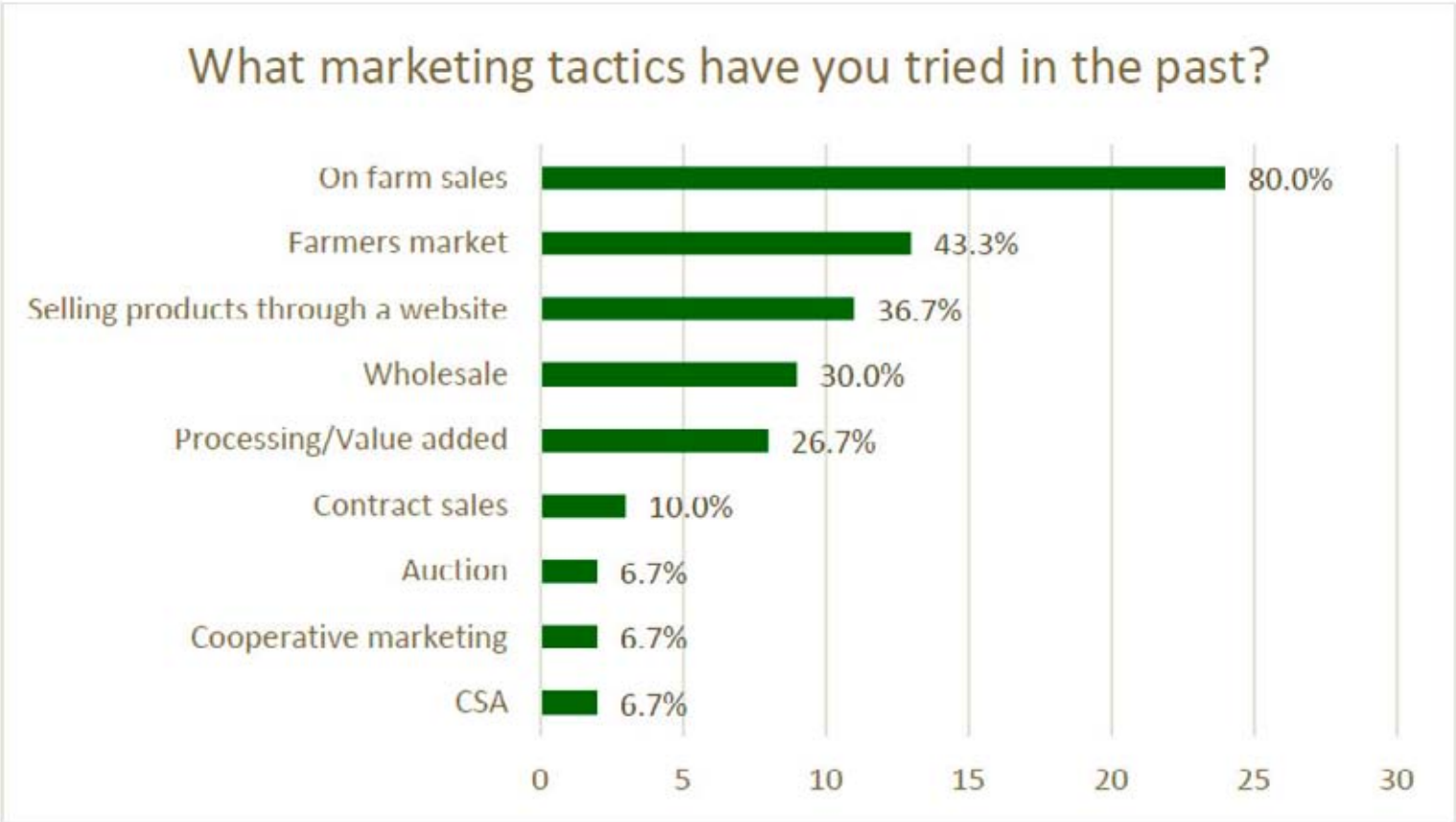


Figure 6 - Types of marketing tactics used

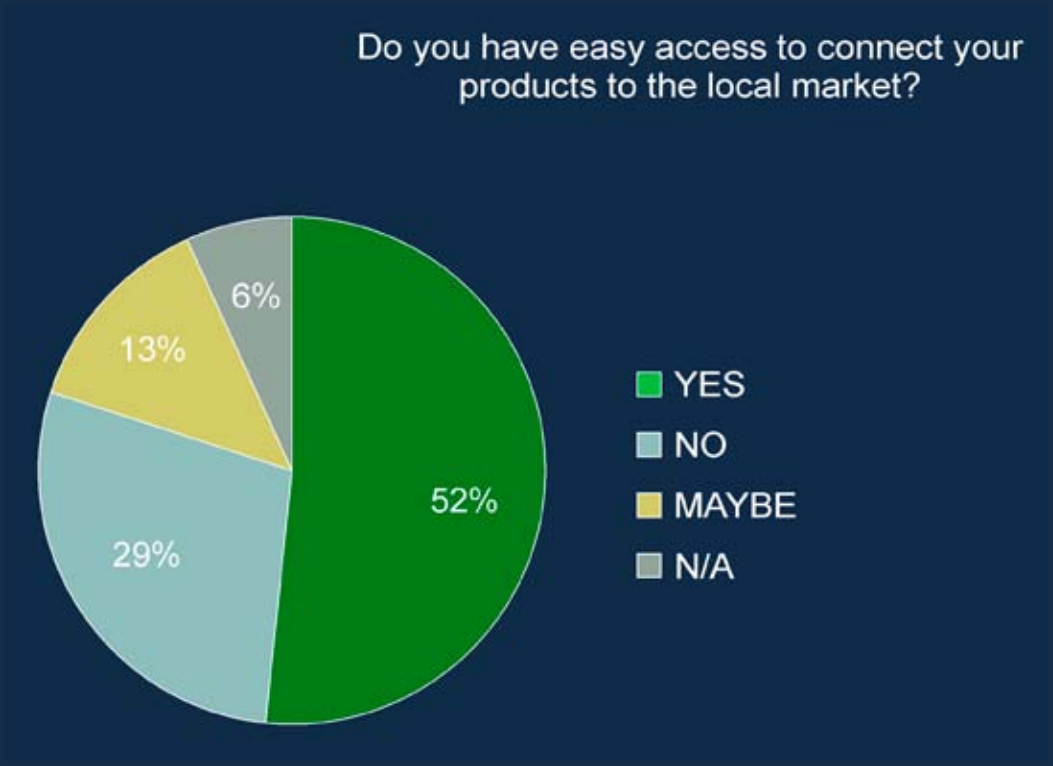


Figure 7 - Ease of Access to local markets

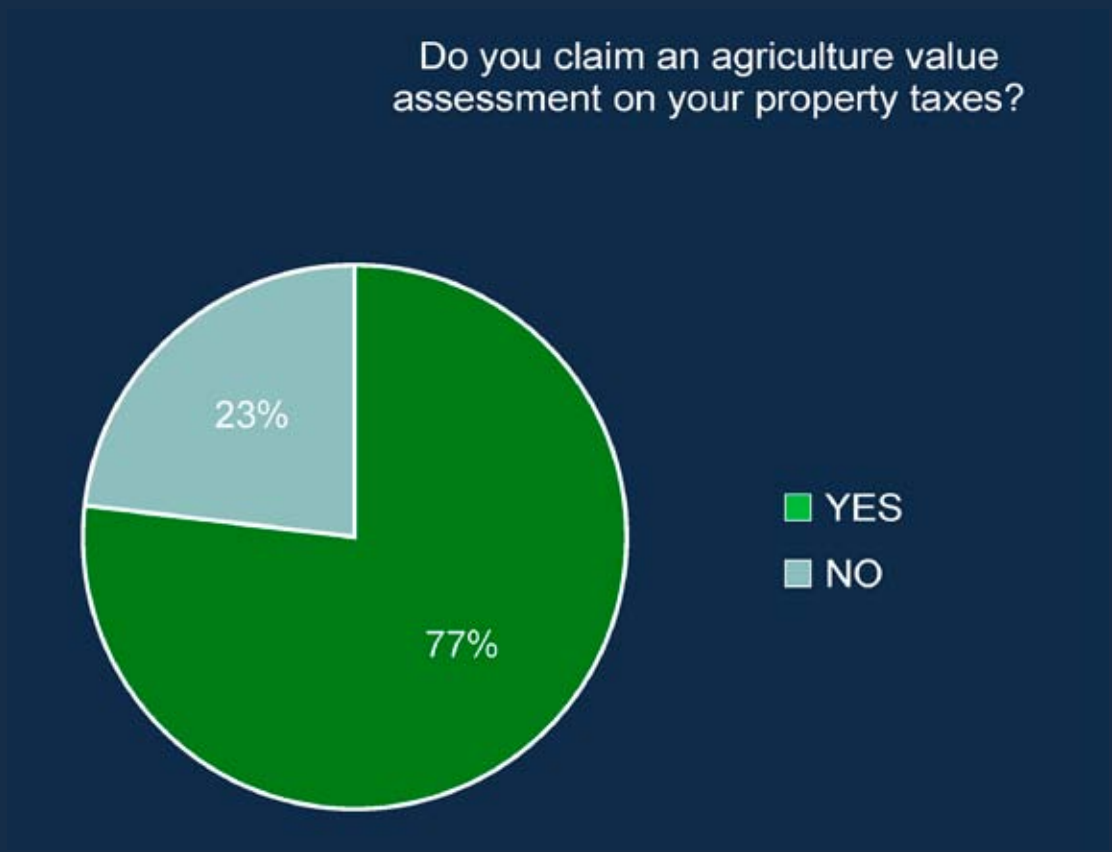


Figure 8 - Agricultural value assessment claims by farmer

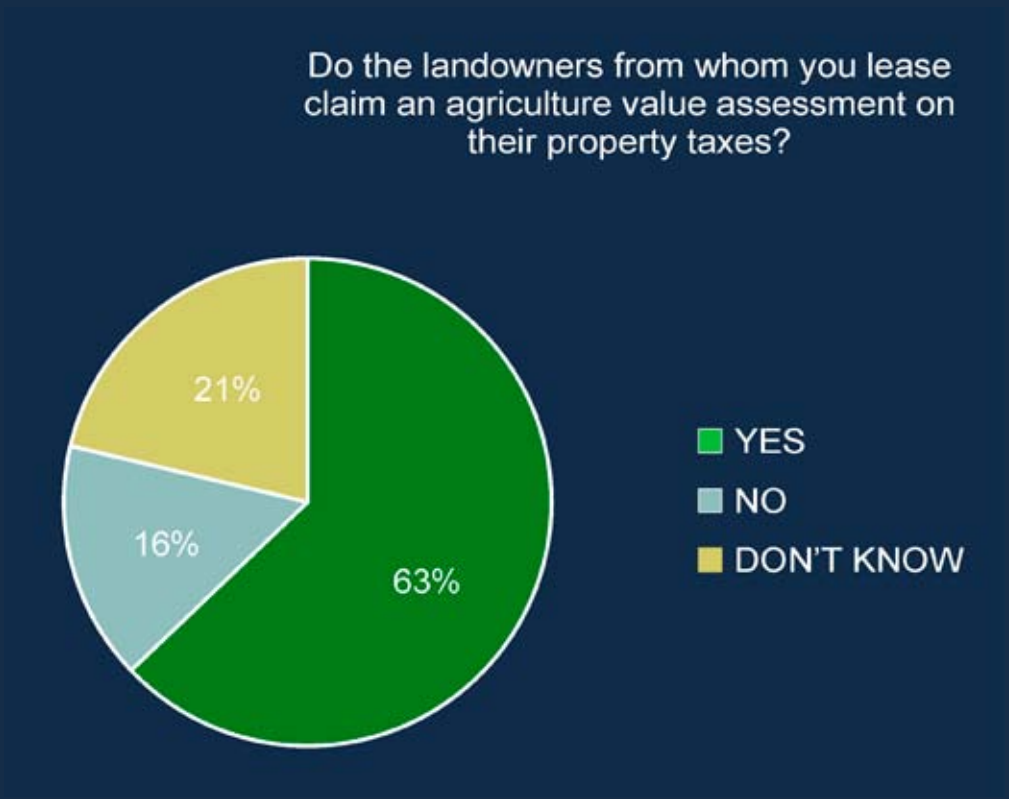


Figure 9 - Agricultural value assessment claims by landowner from whom farmers lease

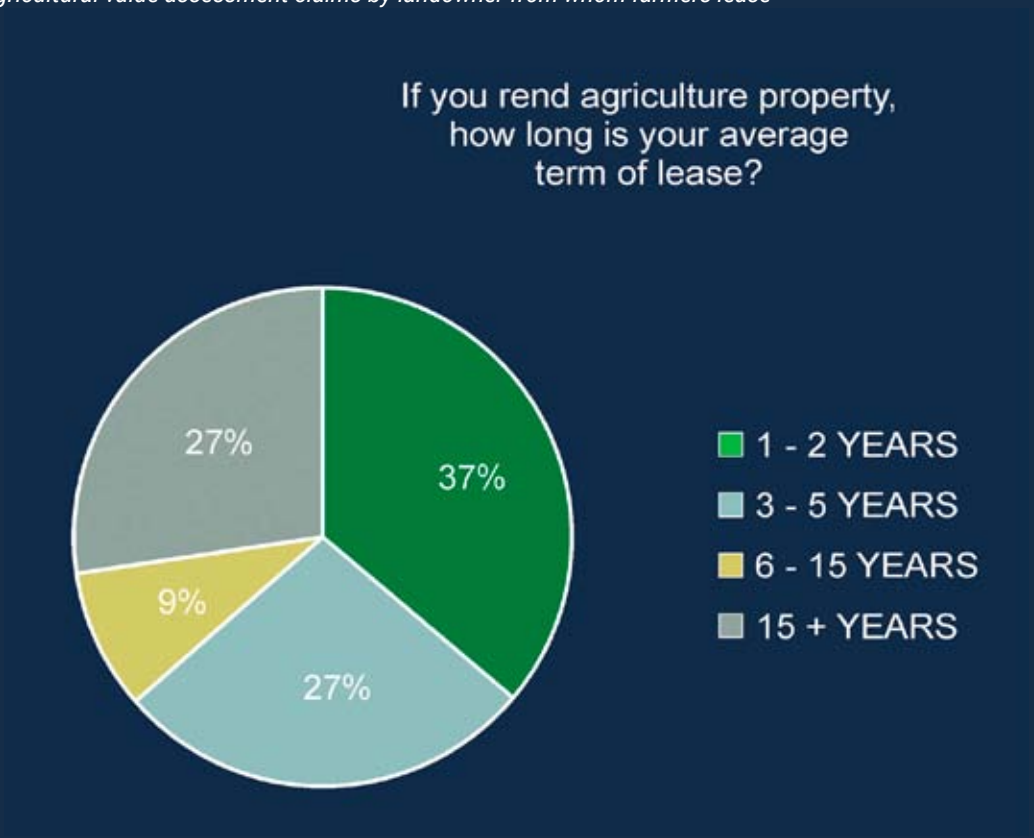


Figure 10 - Average term of lease for farmers that rent farmland

APPendIX A-4: t oWn sPecIAl t AX dIstrIc t s In neW y orK: A sUmmAr y

Town Special Tax Districts in New York: A Summary

New York Consolidated Town Law - TWN §12 authorizes the establishment, financing, and operation of special improvement districts under the power of a town board. There are more than 6,900 town special districts in New York, compared to the 4,200 local governments, including 932 towns in the state. Nearly one-third of New York's 57 counties have over 100 special districts. By definition, a special district is a geographic area within a town established to "address specific needs of the property owners within that district, utilizing charges and, in some cases, user fees paid by taxpayers within the district to finance these services." Therefore, special districts allocate costs of services only to those users who receive their benefits.

Albany County has 53 special improvement districts. These districts account for 17.2 percent of total town-wide revenue. Albany County generates 33.9 percent of their revenue from property taxes through special districts; residents pay, on average, $204 property taxes and assessments per household in special districts, compared to $603 town-wide. These districts were created to address residential needs exacerbated by suburban growth that do not necessarily impact the entire town. Most special districts directly address needs stemming from living in residential areas - 93 percent of all special improvement districts are drainage, fire protection, lighting, park, refuse, sewer, or water districts.

Special districts are funded through real property taxes assessments and user fees. There is no set of standard billing practices, and there are multiple ways of billing residents of special tax districts: through property taxes and assessments, special district user fees, or fees to other entities.

Property taxes are the most common way special districts collect funds. Residents are billed at different rates depending on various factors, such as development growth and the value of property in the community. Sometimes special district apportionments are charged in a separate tax bill, and sometimes the charges from special districts are billed on the residents' main tax bill. Similarly, special district user fees are separate from property tax and assessment charges, but often show up on property tax bills.

These are direct services such as metered water usage and sewer rents. Other times, the town is not tasked with delivering a specific resource to its constituents, such as water or sewage services. In instances such as these, residents are billed directly from the service provider, and not the town or special district. The inconsistencies in billing, authority, and service providers can lead to uncertainty, particularly because there is no uniform billing

special disctrict in Albany county	
drainage	1
Fire Protection	12
lighting	13
Park	0
refuse and garbage	1
sewer	4
Water	13
other	9
t otal	53

APPENDIX A-5: HOUSING TRENDS

Albany County Housing Trends

Housing Occupancy

Total housing in Albany County increased 1.3% from 2012 to 2016. Occupied housing increased 3.5%, and vacant housing has declined 14.5% over the same period. However, this five-year trend differs from housing trends between 2007 and 2011. When comparing the two five-year periods, occupied housing has not changed in the County and vacancies increased by 4%. This increase in vacancies indicates a lack of utilization of existing structures.

Housing Construction Since 2000

While total housing units in Albany County have increased, the rate of housing construction has declined over the years. However, it is important to note that vacancies have increased over these time periods. At the County level, housing construction was 796 structures built per year between 2000 and 2009. Since 2010, housing construction has been 550 structures per year. Given the increase in multiunit housing development (Table 5), construction of total housing units is significantly outpacing population growth and may drive more housing abandonment or a shift in preferred housing stock.

Table 5 demonstrates that residential development is occurring in a wide range of housing types. Still, the greatest number of housing structures in the county are consistently being built as single unit homes. Such units consume the most land per capita and contribute to the decline in open space.

The overall countywide development theme is suburban sprawl. Certain towns are at risk, such as Beth-lehem and Guilderland. Municipalities that have prime and productive soils that face increasing development pressures are of particular concern. It is important to identify the regions at most risk of development pressure with the soils of most significance and implement protective measures to avoid further sprawl

Table 1 - Number of Units in Housing Structures, Albany County

Units in Structure	2012	2013	2014	2015	2016	% Change from 2012
1-unit, detached	69,554	69,099	66,367	66,633	67,732	-2.6%
1-unit, attached	5,525	5,633	5,124	5,504	5,880	6.4%
2 units	22,280	21,113	25,673	22,319	23,011	3.3%
3 or 4 units	13,442	13,852	14,834	15,647	15,400	14.6%
5 to 9 units	9,242	8,619	8,873	10,325	7,386	-20.1%
10 to 19 units	6,963	6,103	6,420	5,819	5,528	-20.6%
20 or more units	9,865	11,154	8,838	10,618	12,309	24.8%
Total housing units	**137,713**	**137,598**	**138,229**	**138,718**	**139,522**	**1.3%**

Source: 2012-2016 ACS 1-Year Estimates

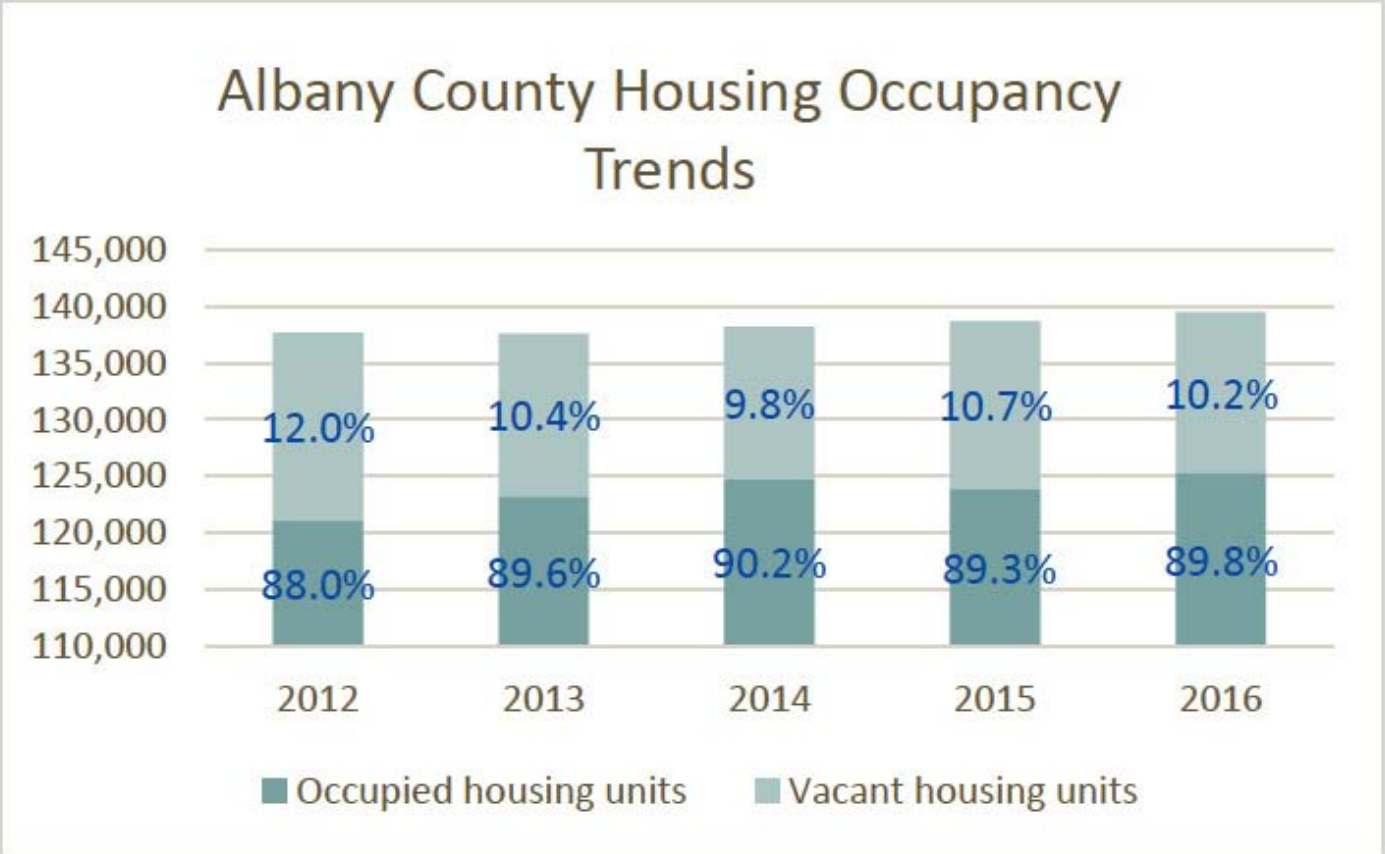


Figure 1 - Housing Occupancy Trends in Albany County, 2012 to 2016; **Sources: Selected Housing Characteristics ACS 1-Year Estimates from 2012 to 2016.**

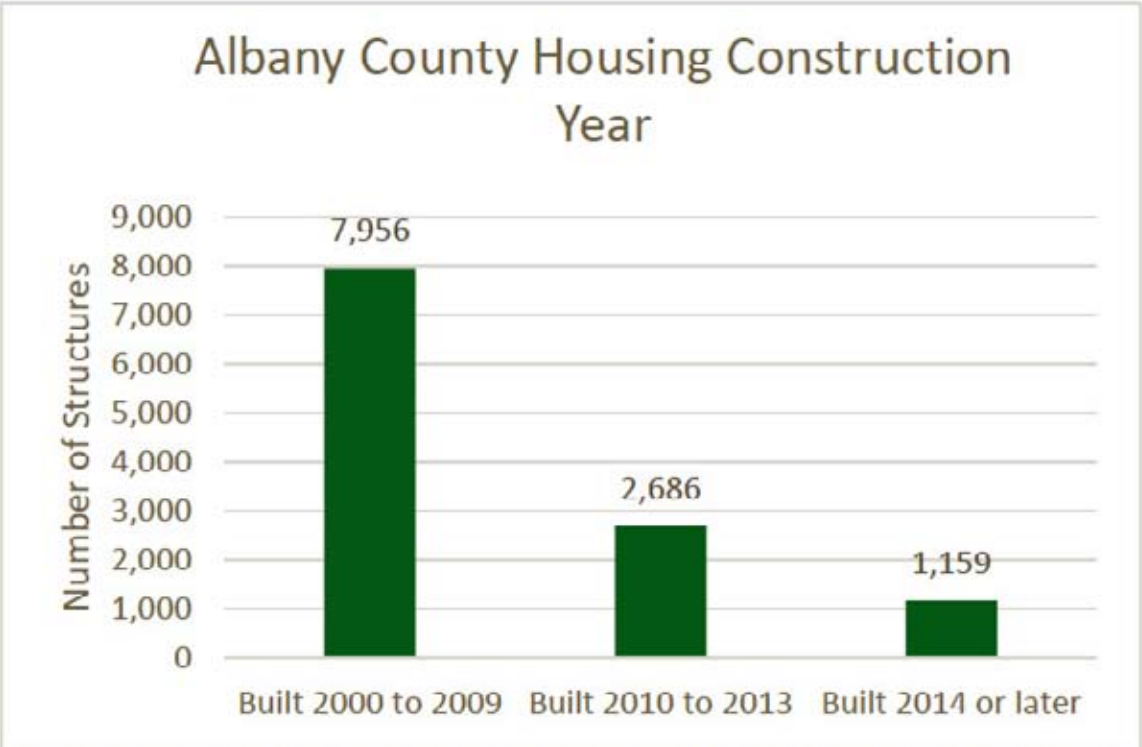


Figure 2 - Housing Structures Constructed by Municipality Since 2000 Based on 5-Year Estimates **Source: 2012-2016 ACS 5-Year Estimates**

APPENDIX A-6: FARM FRIENDLY AUDIT FORM

DOES YOUR COMMUNITY SUPPORT AGRICULTURE?

ASK THIS QUESTION…	YES	NO	Notes:
1. Are farm stands limited to selling just products from that farm or do they need a site plan review or special permit?			
2. Does zoning allow for accessory uses such as greenhouses, barns, garages, equipment storage, etc. permitted as of right?			
3. Do application requirements include asking for submittal of information or maps about farming that might be taking place on or near the project parcel? Whether it is in an agricultural district? What farming activities take place on or near the site? Whether prime farmland soils are present?			
4. Do standards exist that require the PB or ZBA to evaluate impacts of a project on agriculture?			
5. Do any design standards exist to direct building envelopes to areas on a parcel that would still allow farming to occur on remaining open spaces?			
6. Does the regulation define agriculture, ag structures, farmworker housing, agri-tourism, or agri-business?			
7. Are farm-related definitions broad and flexible and not confined to a certain number of acres or income earned?			
8. Are non-traditional or retail-based farm businesses allowed in a district agriculture zoned district? For example, can a farmer set up a brewery on site and sell products on site?			
9. Does the community have a farmer sitting on their planning board?			
10. Is an Ag. data statement as per AML 25-aa required as part of an application for site plan, subdivision, special use or other zoning?			
11. Does the community require placement of an agricultural disclosure statement on plans or plats when development takes place in a NY certified agricultural district?			
12. Are any ag-related uses required to get a special use permit or through site plan review?			
13. Does the regulation define and allow for farm worker housing? Are mobile homes allowed as farm worker housing?			
14. Are silos and other farm structures exempt from height requirements?			
15. Are personal windmills and solar panels allowed for farm? With permits or permitted as of right?			

Audit of Land Use Regulations (Zoning, Site Plan, Subdivision Regulations)

ASK THIS QUESTION...	YES	NO	Notes:
1. Does the plan have a section on agriculture?			
2. Does the plan include maps of agricultural lands, important farmland soils, agricultural districts, etc.?			
3. Was the plan based on public input that included questions or exploration about the role of agriculture in the community? I.e. did a survey include questions about agriculture? Was there anything in workshops about it?			
4. Does the mission statement or goals address agriculture in any way? Is there any visible demonstration of the value of agriculture to the community in the plan?			
5. Does the plan consider agriculture as an important resource in town?			
6. Does the plan recognize or reference a local or county agriculture and farmland protection plan?			
7. Does the plan include any data on farms and farmland? Income or occupa-tions from farming or other demographic data?			
8. Does the plan establish policies towards farmland and farming?			
9. Does it identify the value of farmland and farms to the community?			
10. Does it offer any recommended actions related to farming or farmland or ways to preserve or enhance farming?			
11. Does the plan establish a policy and/ or future actions for the agricultural use of open space that may be created in a conservation subdivision or clustering?			
12. Does the plan discuss ny s Agricultural districts and how the town can be supportive of that?			
13. Does it consider farmland a natural resource and encourage easements or other protections of that land? Is there a policy discussed for PDR, LDR or TDR?			
14. Does the plan recommend growth in areas that are currently farmed? does it recommend extension of infrastructure into core farm areas? Is agriculture a consideration of where growth does or does not take place?			

APPENDIX A-7:

Implementing Local Right-to-Farm Laws

New York State's Agricultural Districts Law (Article 25-AA of NYS Agriculture and Markets Law) provides some right-to-farm protections, including:

- Local Ordinance Provision protects against local laws that unreasonably restrict farm operations, protects farmers against unreasonably restrictive ordinances and zoning codes regarding farm-worker housing, manure management, and other farm practices.

- Notice of Intent (NOI) requires an analysis of a proposed public project that may impact farms in agricultural districts, including a detailed agricultural impact statement before public funds are spent on certain non-farm projects in agricultural districts.

Sound Agricultural Practices offer limited protections from private nuisance claims when the land is in an agricultural district or is used in agricultural production and subject to an agricultural assessment

Similarly, Albany County passed a county-wide Right-to-Farm law in 2007 with broad support from the farming community that demonstrated the importance the county government placed on farmland protection. To extend protection under the county's existing right-to-farm laws, towns should consider enacting their own, more local right-to-farm laws to supplement and strengthen existing state and county laws.

Town right-to-farm laws indicate the importance of farming to a town and alert non-farm rural residents of generally accepted agricultural practices that are expected to occur in farming regions. These laws can also establish dispute resolution processes to mediate conflicts and avoid expensive legal battles if there is a conflict between residents regarding farming operations. Such mediation measures can be conducted by the Albany County Farmland Protection Board, ad hoc dispute resolution committees, or other designated mediators. The New York State Agricultural Mediation Program (NYSAMP) can also be a resource as it can provide mediators trained in resolving agricultural disputes.

Right-to-Farm laws, like many laws, have drawbacks and benefits. The benefits of these laws include the following:

- Help maintain a supportive operating environment for farms, which provides a sense of security for existing farm operators and might attract new farm operators
- Publicly supports agriculture and indicates its importance on a town-wide scale
- Can be used to guide future town policies and decisions, or become an example for other municipalities
- Is relatively inexpensive to implement

Drawbacks of implementing localized Right-to-Farm laws include:

- There may be relatively limited impact unless the law and dispute resolution process are widely promoted
- They do not prevent farmland conversion

Right-to-Farm laws can be used in conjunction with other laws to support farm operations, provide information to non-farm residents, and ensure the protection of municipal farmland.

APPENDIX A-8:

Use of LAND EVALUATION AND SITE ASSESSMENT System in Albany County

The National Resources Conservation Service (NRCS) division of the U.S. Department of Agriculture (USDA) developed a Land Evaluation and Site Assessment (LESA) system that analyzes soil productivity and social, environmental, and economic factors to help in formulating policy and make land-use decisions.

Developing a LESA system for Albany County could help the Agriculture and Farmland Protection Board effectively target land with the highest need for protection, inform zoning ordinances for the long-term continuation of agricultural use, prioritize sites for land conservation programs (such as a Critical Farm Program, conservation easements, etc.), and identify land of lesser agricultural importance for development sites. LESA systems can also be applied to urban and rural development, as well as forestlands in the County.

LESA uses a two-part evaluation system - Land Evaluation (LE), and Site Assessment (SA) - that assigns values and weights to relevant factors in land use and development, such as soil quality and other factors affecting a site's agricultural significance.

The steps for creating a LESA system are outlined below, as outlined by NRCS' LESA Guidebook:

1. Appoint a LESA committee in your jurisdiction
2. Specify one or more factors measuring soil quality for the Land Evaluation component
3. Specify another set of factors relating to non-soil site conditions for the Site Assessment component
4. Develop a rating scale for each factor
5. Assign weights to each of these factors
6. Tally the weighted factor ratings to obtain LESA score
7. Prepare score threshold for decision-making

LESA Committee

While creating the committee, it is imperative to include a wide range of representatives to create a comprehensive LESA system. The committee should include individuals including County officials, farmers, soil and water experts, Agricultural and Farmland Protection Board members and agricultural business owners. Local official support is important for political legitimacy and to inform policy and influence land use decisions. Furthermore, it is suggested that someone with LESA training or at least knowledge be included to support the development and execution of the system.

Once formed, the committee should assess potential users and applications of the system to identify the needs and to understand the applications for which the system will be used. This assessment can inform the funding, staffing, and policy requirements to create a system that benefits all potential users. The committee will also be tasked with defining the factors and weights, conducting a field test of the system to ensure its accuracy, and to propose thresholds for decision-making.

The selection of factors and establishing their respective ratings and weights is an important task for the committee. The factors will depend on policy objectives, user demands identified in the user assessment, and time (and budget) constraints.

Land Evaluation

The land evaluation (LE) portion rates the soil qualities of a site for agricultural use. It needs to be based on the best available data to provide the most accurate depiction of the land. Soils data can be found through NRCS and the Soil and Water Conservation District. These entities should also participate in ranking the data for productivity.

For Albany, the Soil Survey of Albany County, New York published by the USDA's Soil Conservation Service in

cooperation with Cornell University Agricultural Experiment Station in 1992, will be a useful, albeit outdated, tool in providing data to inform Land Evaluation criteria. Additionally, the web soil survey through NRSC has more updated soil data that can be used as a data source.

There are four types of land classification systems commonly used for land evaluation that can be used in the LE component, outlined below in the order of most to least detail:

Soil Potential Ratings

Rate each soil mapping unit based on its yield potential for specified indicator crops and include the costs of overcoming soil limitations. This rating system considers revenues associated with soil's productivity as well as the costs associated with managing soils to achieve desired productivity levels. This system enables planners to consider the economic value of soils to farmers after soil limitations are overcome.

Soil Productivity Ratings

The use of estimated yields for specified indicator crops, as reported in soil surveys, to provide a measure that considers Albany's agricultural industry from a soil productivity standpoint. This system does not consider the costs of soil management.

Land Capability Classification

This USDA classification system groups soils based on risks of damage to soils by agricultural use and identifies the limitations for agricultural use inherent in the soils in each area. Naturally, the fewer the limitations, the more suitable the soil is for agriculture. The Soil Conservation Services used this classification system in Albany's 1992 Soil Survey, attached. This existing resource is an excellent source of information for Albany's LESA system, although more updated information might be beneficial.

Important Farmlands Classification

Using the national criteria for defining prime and unique farmland to consistently compare Albany County's farmland with farmland in other areas and to monitor losses to conversion. These broader categories may result in a loss of distinction between soil types and is not recommended for Albany County.

Factors and Weights

The most important consideration for the LE component is choosing the appropriate factors to assess. Soil productivity ratings and land capability classifications are the most readily available information and are therefore the most useful in a time-sensitive and resource-constrained process. Factors should be assigned correlating weights, between 0 and 1.0, that depict the factor's importance to Albany County. The weights will consider the results from the user assessment, policy objectives from the County, and will take into consideration land use and zoning laws.

Because Albany is a large county with over 130 soil types, a simple LE model, such as the land capability classification system, may be the most effective. Fortunately, there is an existing land capability classification document for Albany County. However, the land capability classification system does not internalize the costs of soil limitations, and should, therefore, be coupled with soil productivity ratings, or, if possible, soil potential ratings, to capture both soil and yield potential. Soil productivity ratings can be developed with the help of NRCS if the Committee can provide yields, gross returns, management costs, and net returns of prominent crops in Albany County, which, according to the 2012 Agricultural Census, include hay, haylage, grass silage, greenchop, corn for grain, and corn for silage.

Once the factors are chosen, the Committee must scale them by assigning values between 0 to 100 to each unit of the land classification system. The Soil and Water Conservation District has likely already compiled a list dividing soils into ten subgroups through their Soil Group Worksheets for property tax purposes. Using this list, it is possible to calculate the net return of each soil group

by subtracting production costs and the costs of initial and continuing limitations from gross returns. Then, the soil with the highest net return would be set to equal to 100 and set against the following scales as a percent-age of the highest net return for each soil subcategory. See Table 1 from the LESA Guidebook as an example.

Site Assessment

Site Assessment (SA) factors are grouped into three categories, below. Like the LE portion, each factor is to be assigned a scale.

• SA-1 measures characteristics other than soil that are related to agricultural productivity or farming practices. Examples include:

- o Size of site
- o Compatibility of adjacent uses
- o Shape of site
- o Percentage of site in agricultural use
- o Percentage of site feasible to farm
- o Environmental limitations on agricultural practices
- o Availability and reliability of irrigation water

• SA-2 factors measure development pressure on a site, such as:

- o Land use policy designation
- o Percent of surrounding land in urban and rural development
- o Distances to public sewers, public water,
- o Distance to urban growth boundary, to urban feeder highway,
- o Distance to protected farmland

• SA-3 factors measure other public values, such as historical, environmental, scenic, or cultural, of a site, such as:

o Open space value of a site
o Wildlife habitat
o Wetlands and riparian areas
o Educational value of site
o Floodplains protection

To create the most informative LESA system, a combination the three-factor groups should be represented. However, including various factors from all three groups is time and labor-intensive. If time and budget constraints require a more direct approach, it is suggested that Albany County uses a combination of LE + SA-1, with

Top Cop Items (acres)	
Forage-land used for all hay and haylage, grass silage, and greenchop	24,768
Corn for grain	3,205
Corn for silage	1,761
Vegetables harvested, all	748
Oats for grain	349

Table 1- Land Evaluation for Latah County, Idaho

Ag. group	capability class	Farmland importance	Productivity index	Percent of ag. soils	thousands of acres	Factor scale
1	IIe	Prime	100-82	2.8	13	100
2	IIIe, IIIw	Prime	82-71	5.4	25	82
3	IIIe	statewide	82-71	21.3	102	76
4	IIIe, IVe	other	71-65	8.8	42	62
5	IVe, IVw	statewide	65-47	8.8	42	52
6	IVe, IVw	other	71-47	16.3	9	49
7	IVe	other	53-47	2.0	9	43
8	IIIw, IIIe, IVe	statewide	39-25	4.0	19	38
9	IVe, VIe	other	39-25	7.8	37	36
10	VII	other	no crop	22.8	107	0

table 2- calculating le Weighted Factor ratings for sites with more then one soil using Land Capability, Soil Productivity, and Important Farmland Groups

soil name	Factor rating (0-100)	x	Factor Weight	=	Weighted Factor rating	x	% Of Site (fraction)	=	site Partial rating
soil A									
land capability	65	x	0.20	=	13.00				
soil Productivity	60	x	0.15	=	9.00				
Important Farmland	75	x	0.15	=	11.25				
soil A subtotal					33.25	x	0.50	=	16.63
soil B									
land capability	92	x	0.20	=	18.40				
soil Productivity	90	x	0.15	=	13.50				
Important Farmland	100	x	0.15	=	15.00				
soil B subtotal					46.90	x	0.50	=	23.45
le subtotal (add partial site ratings)	//////		//////		//////		//////		40.081

the following factors: size of the site, compatibility of adjacent uses, the percentage of the site in agricultural use, environmental limitations to agricultural practices, and percentage of site feasible to farm.

Like the LE component, each SA factor is assigned a correlating weight between 0 and 1.0 to demonstrate its importance. For example, in preserving agricultural land, compatibility of adjacent land uses might be of more importance for this purpose than the availability of water. In this case, the former would have a higher weight than the latter.

Because Albany County has over 100 soil types, each site must represent the average of the soil types by proportionately weighing each soil type on the site, as shown in Table 2.

Fortunately, Albany County has a comprehensive GIS platform that defines soil types, agricultural districts, flood zones, and wetlands, which will be incredibly useful in both defining parcel sizes and identifying soil types, which should aid in this exercise. The committee will still be tasked, however, with defining the rating and weight of each factor, as well as identifying the factors themselves. Again, these factors will be determined by policy objectives, the user assessment, and resource constraints.

Decision-Making Applications

For the system to be useful, the committee must develop thresholds for the results of LESA. For example, thresholds can be established to prioritize land parcels for farmland protection projects. The developers of LESA recommend that multiple thresholds be established: thresholds for individual factors, as well as total LESA scores. If multiple thresholds are established, the LESA system can be more versatile in that it can be applied to multiple end-uses. The specific objectives of Albany County will determine the thresholds.

Using LESA

The proposed LESA system should be tested before being implemented on a wide scale. Special attention should be made to SA factors to ensure the factors play a significant role in the objective of the LESA system, which, among other potential objectives based on the user assessment, should be the preservation and protection of farmland. Furthermore, it is important to eliminate factors that are redundant to ensure the most efficient use of Albany County's resources.

Setting up a LESA system takes three to eight months, and it is advised to have an NRCS staff member to assist with the technical aspects of the Land Evaluation component. Albany's LESA committee would be responsible for decisions about factor selection, scaling, and weighting, as well as identifying costs for overcoming soil limitations.

When developing a LESA system for Albany County, it is important to realize the limited prime and produc-tive farmland that the County has. Table 3 on the next page demonstrates the lack of prime farmland, and therefore of prime and productive soils. A LESA system tailored to Albany County can be an excellent tool in identifying prime and productive farmland to achieve the desired result of protecting farmland in Albany County to ensure the future of agricultural productivity for generations to come. However, it is likely to produce relatively few target properties based on soils criteria and parcel unless other, more subjective, factors are more heavily weighted.

Table 3 – Calculating LE weighted factor ratings

soil t ype for Prime Farmland	Acres in Albany County	% in Albany County
AnA	1,280	0.4
BuA	4.870	1.4
BxA	580	0.2
BxB	1,780	0.5
ceA	650	0.2
ceB	230	less than 0.1
cgB	3,950	1.2
chA	730	0.2
chB	2,000	0.6
clA	280	0.1
clB	780	0.2
coA	1,260	0.4
coB	3,240	1.0
elA	920	0.3
elB	1,380	0.4
enA	5,220	1.5
enB	2,060	0.6
Ha	1,360	0.4
HoA	190	less than 0.1
HoB	170	less than 0.1
loA	360	0.1
loB	5,830	1.7
mk	240	less than 0.1
ra	2,720	0.8
rkA	280	0.1
rkB	630	0.2
sc A	1,910	0.6
sh	1,370	0.4
suA	510	0.2
suB	330	0.1
te	2,670	0.8
t o	280	0.1
UnA	260	less than 0.1
VaB	1,280	0.4
Wa	570	0.2
WcA	380	0.1
WcB	3,510	1.0

Source: Data from Soil Survey of Albany County, New York, 1992

APPENDIX A-9: PRIORITIZING FARMLAND FOR CONSERVATION

Given the expense associated with permanently protect-ing farmland, it is strongly advised that any jurisdiction using public funds to invest in permanent conservation develop a framework evaluating and ranking properties. The results of such a process typically yield a scoring sheet, such as the example provided on the following pages, and a spatial representation of priority target areas (Priority Farmland Map), based on the scoring criteria.

The process of designing the prioritization framework starts uses the NRCS LESA system as the initial guiding principles to ensure that the evaluation is process-oriented and based on quantitative measures. This will allow the Agriculture and Farmland Protection Board to engage in a structured and collaborative process of reviewing applications and assisting the engaged stake-holders in negotiating an outcome that supports the continuation of profitable agriculture in Albany County.

To be successful, the framework should be:

• Simple – Constructed with the minimum criteria to make fast and effective decisions.
• Explicit – Clearly written so that all stakeholders can interpret it.
• Flexible – Sufficiently modular to incorporate site or community features that may need to be substituted within the evaluation to allow proper scoring.
• Adaptive – Subject to periodic review and update to reflect changes in the community structure or agricul-tural industry.

The framework should incorporate sufficient analytical measures to allow the base criteria to be evaluated using available GIS layers to highlight areas that may be under the highest threat. Such criteria may include:

• Measures of conversion pressure
• Protection of environmental areas
• Preservation of highly productive, or unique soils
• Concentrations of preserved areas
• Location of critical infrastructure

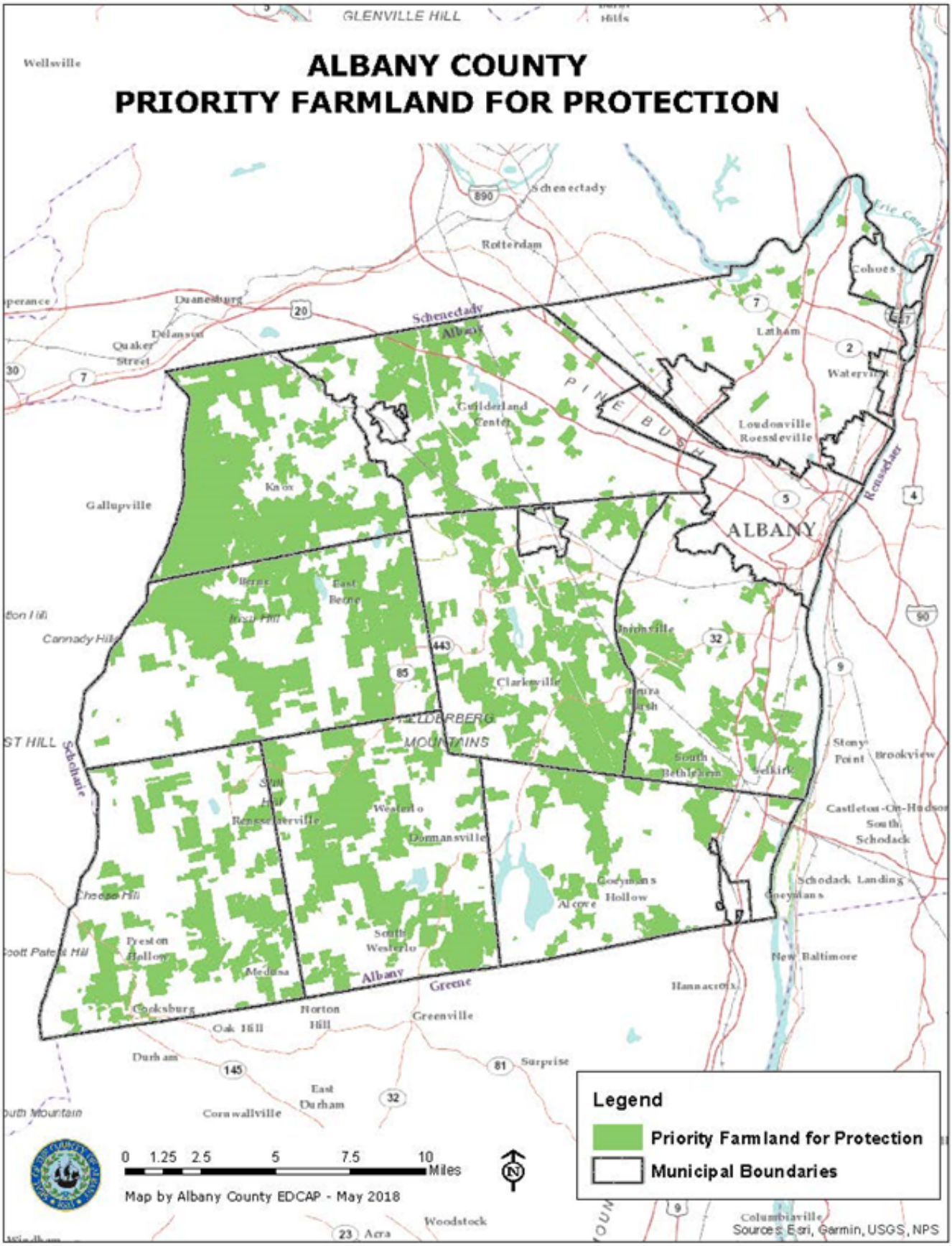
Incorporating these, and other features may allow the AFPB to run scenarios through the County GIS system to determine which areas are under greatest conversion pressure and therefore deserving of conservation fund-ing. The goal, in this case, can be defined as generating the highest value of farmland conservation within the fixed limits of the human and financial capital available.

Albany County Ranking Criteria:

The AFPB advisory committee, through the process of updating AFPP, developed ranking criteria which will inform farmland protection decisions in Albany County. Albany County does not have a history of requesting state funding for preservation and it is not likely that there will be a great deal of competition for such fund-ing. If competition increases, the advisory committee will develop a more comprehensive set of scoring standards. The simple formula is as follows:

1. Any land to be considered for preservation must be in an agricultural district, in agricultural use, and/or be under an agricultural exemption. See map below

2. Scoring will be as follows:
a. Presence of Prime and Productive soils or soils of statewide importance. 0-3 points
b. Existence of pressure from development. 0-3 points
c. Plan to transfer farm to next generation (family or other young farmer). 0-3 points
d. Other factors. 0-1 point•


ALBANY COUNTY
PRIORITY FARMLAND FOR PROTECTION
Legend
Priority Farmland for Protection
Municipal Boundaries
0 1.25 2.5 5 7.5 10 Miles
Map by Albany County EDCAP - May 2018
Sources: Esri, Garmin, USGS, NPS
ALBANY
Schenectady
Rotterdam
Duanesburg
Delanson
Quaker Street
Gallupville
Knox
Berne
East Berne
Cannady Hill
Clarksville
Westerlo
Dormansville
Rensselaerville
Preston Hollow
Medusa
Cooksburg
Oak Hill
Norton Hill
Greenville
Durham
East Durham
Cornwallville
Surprise
Woodstock
Acra
Columbiaville
Hannacroix
New Baltimore
Coeymans
Schodack Landing
Castleton-On-Hudson
South Schodack
Stony Point
Brookview
Selkirk
South Bethlehem
Coeymans Hollow
Alcove
Guilderland Center
Latham
Watervliet
Loudonville
Roessleville
Cohoes
Rensselaer
Albany
Greene
Schoharie
Cheese Hill
Scott Patent Hill
Wellsville
GLENVILLE HILL
PINE BUSH
HELDERBERG MOUNTAINS

APPENDICES - AGRICULTURAL VIABILITY

APPENDIX B-1: ALBANY COUNTY AGRICULTURAL ECONOMY OVERVIEW

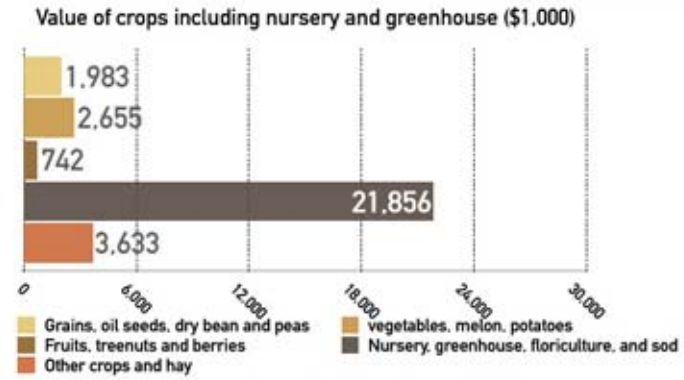
TABLE OF CONTENTS

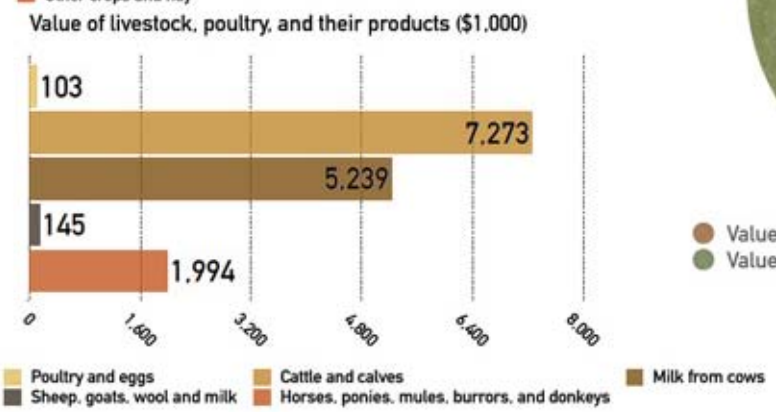
- Albany County Agriculture Summary
  - Agriculture Profile
    - Field Crop Acreage
    - Livestock Inventory
    - Nursery and Greenhouse Industry
- Agriculture Supply Chain
  - Input Industries
  - Output Industries
  - Beef Industry Profile
- Employment and Labor
- Land Use
  - Ag District Map
  - Land Cover
  - Expense Survey
  - Development pressure

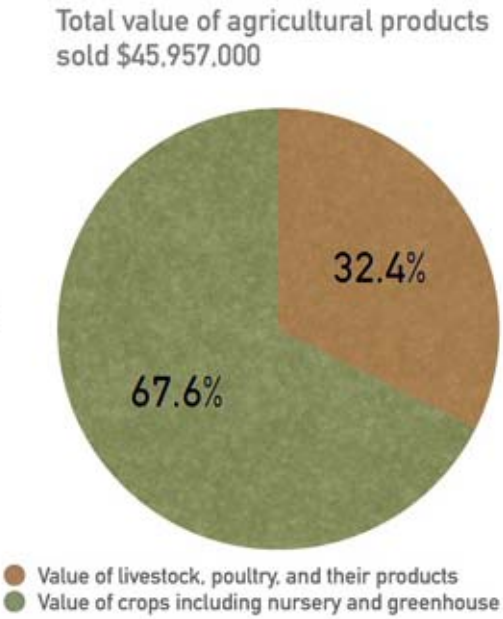
ALBANY COUNTY AGRICULTURE SUMMARY

	2012	2007	% change
Number of Farms	494	498	- 1
Land in Farms	63,394 acres	61,030 acres	+ 4
Average Size of Farm	128 acres	123 acres	+ 4
Market Value of Products Sold	$45,957,000	$22,415,000	+ 105
Crop Sales $31,072,000 (68 percent) Livestock Sales $14,884,000 (32 percent)			
Average Per Farm	$93,029	$45,010	+ 107
Government Payments	$384,000	$270,000	+ 42
Average Per Farm Receiving Payments	$4,622	$2,572	+ 80

ALBANY COUNTY AGRICULTURE PROFILE

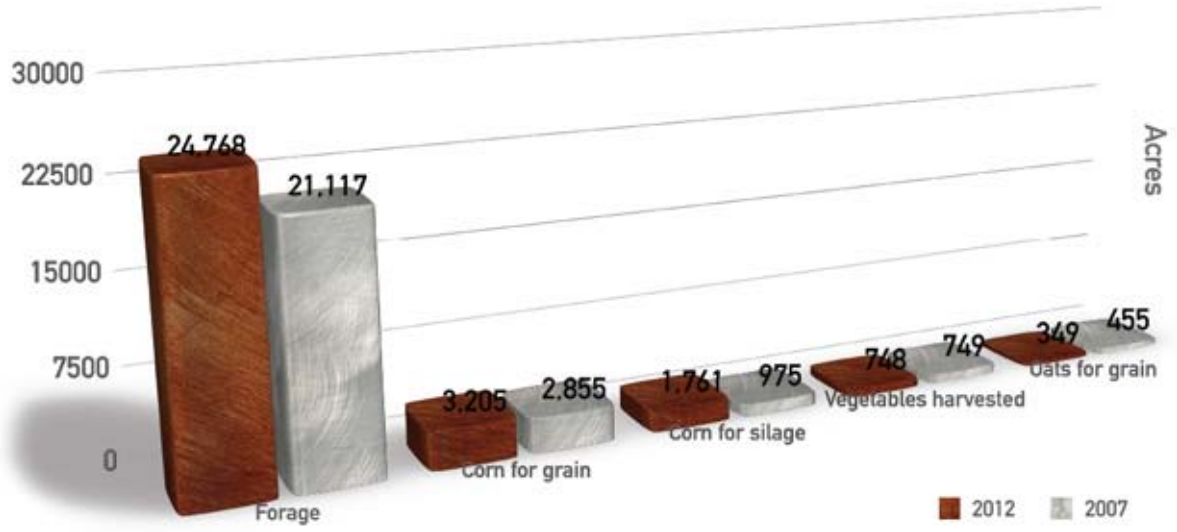






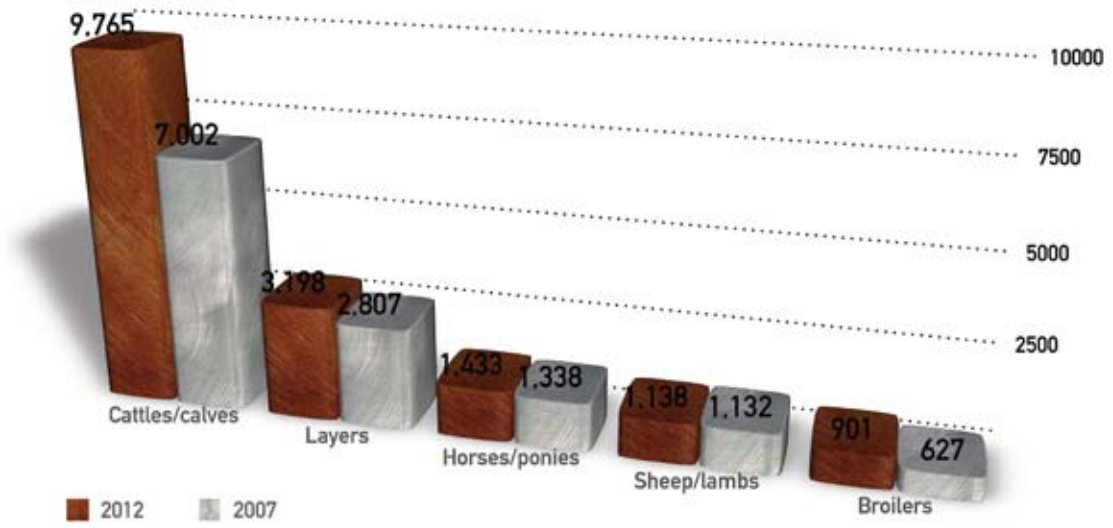
FIELD CROP ACREAGE

Field crop expansion from 2007 to 2012 can be seen primarily in dairy and livestock support uses.



LIVESTOCK INVENTORY

Albany County's agriculture activities are becoming increasingly concentrated in cow and calf operations

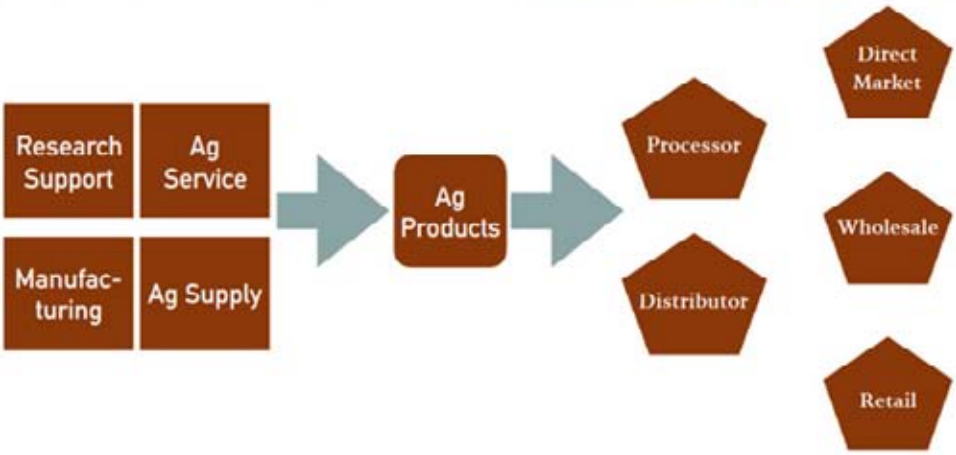


NURSERY AND GREENHOUSE INDUSTRY

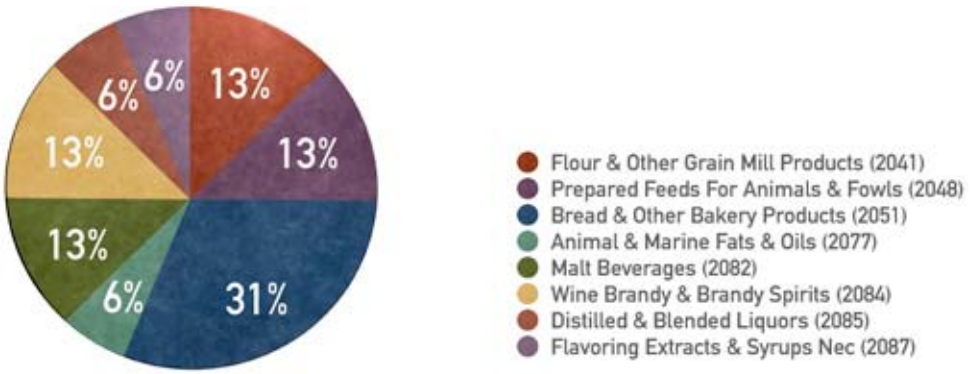
The Capital District has the largest number of nursery and greenhouse operations in New York State. The Capital District is one of the top producers of short rotation woody crops, such as those used by the paper or pulp industry, as well as apples.

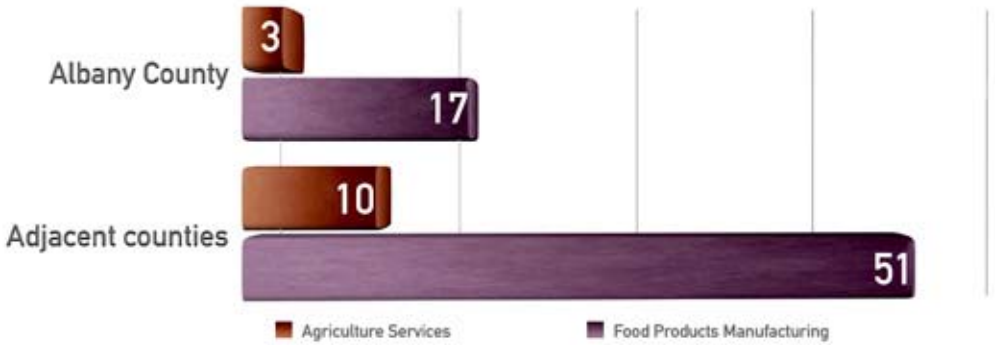
Size	Combined Nursery and Greenhouse	Nursery Stock Only
10 Acres or Less	33	11
11-100 Acres	2	1
Total	35	12
Size	**Combined Nursery and Greenhouse**	**Greenhouse Stock Only**
2,000 SqFt of Glass or Less	9	4
2,001-20,000 SqFt of Glass	22	8
20,001 SqFt of Glass or More	4	4
Total	**35**	**16**

AGRICULTURAL SUPPLY CHAIN

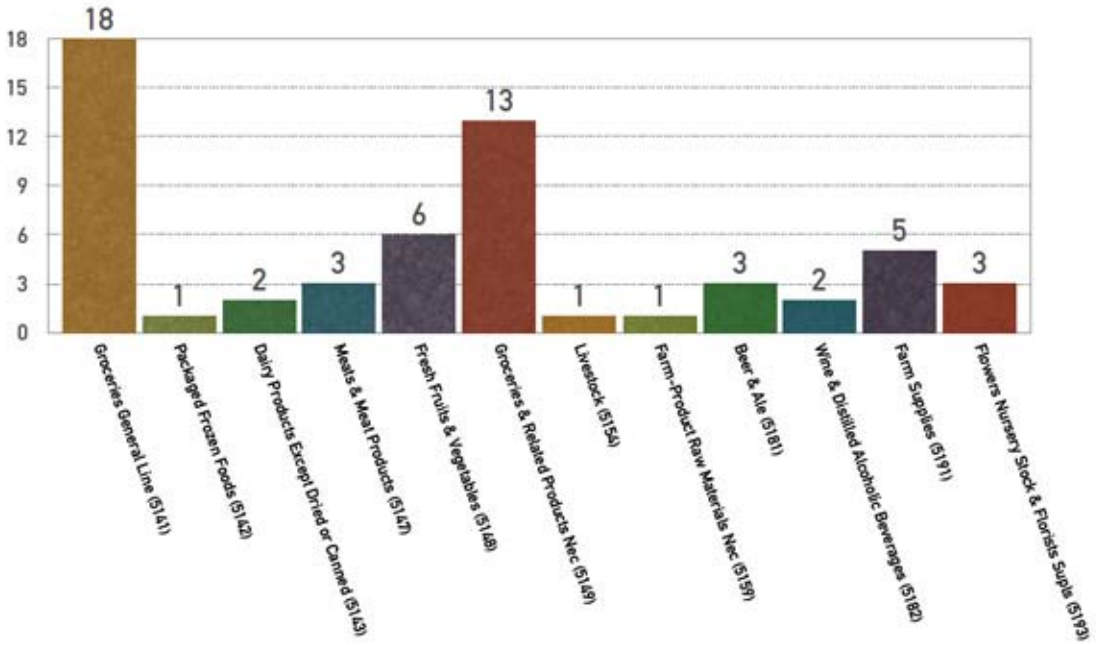


SUPPLY CHAIN INPUT INDUSTRIES





SUPPLY CHAIN OUTPUT

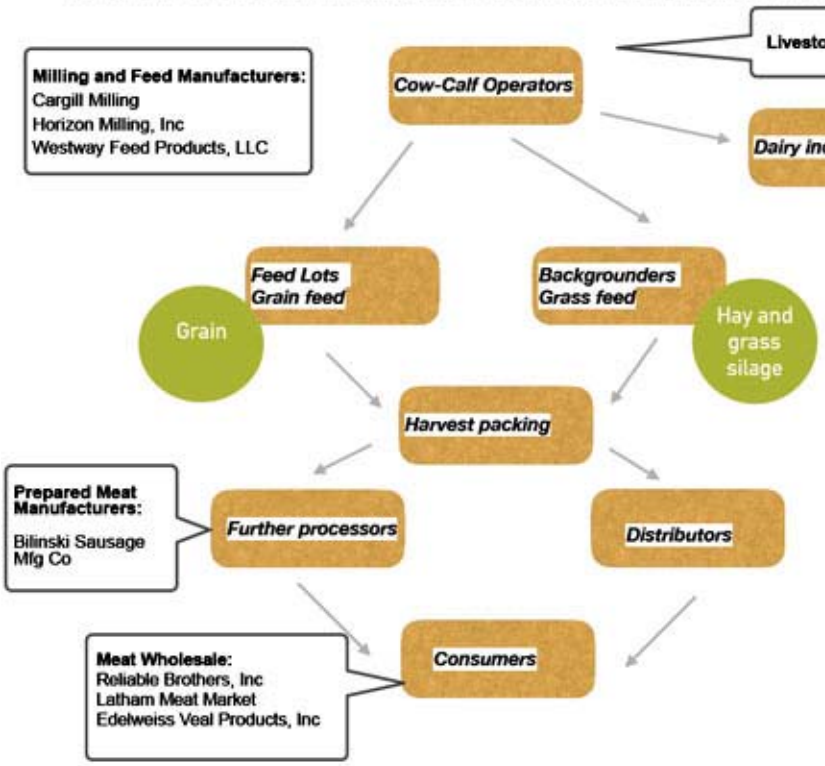


Albany County livestock and meat production supply chain is integrated into a larger regional supply chain that supports wide ranging upstream and downstream economic activities.

PRIMARY SIC	PRIMARY SIC DESCRIPTION	COMPANY NAME	COUNTY	EMPLOYMENT	SALES VOLUME
201398	Sausages / Other Prepared Meat Prod (Mfrs)	Bilinski Sausage Mfg Co	Albany	30	8412000
204102	Milling (Mfrs)	Cargill Milling Inc	Albany	X	129127000
204102	Milling (Mfrs)	Horizon Milling	Albany	X	8609000
204803	Feed - Manufacturers	Westway Feed Products LLC	Albany	X	4150000
204803	Feed - Manufacturers	Westway Feed Products LLC	Albany	X	4150000
514704	Meat - Wholesale	Edelweiss Veal Products Inc	Albany	X	7357000
514704	Meat - Wholesale	Latham Meat Market	Albany	8	4415000
514704	Meat - Wholesale	Reliable Brothers	Albany	8	4415000
514704	Meat - Wholesale	Double L Ranch	Albany	8	NA
515403	Livestock-Dealers (Whls)	Tommell Livestock LLC	Albany	8	3821000
72203	Hay Baling Service	Crosiers Sugar Barn	Albany	6	249000
519115	Hay & Alfalfa (Whls)	Raymond Norton Farm	Rensselaer	1	1598000
751020	Livestock Breeders	MBH Farms Inc	Columbia	2	455000
751020	Livestock Breeders	Sequel Stallions NEW York LLC	Columbia	6	386000
751020	Livestock Breeders	Harrier Field	Renssela	2	489000
751020	Livestock Breeders	Hathaway Farms	Schohari	2	419000
751020	Livestock Breeders	Ox Kill Farm	Schohari	2	419000
515404	Livestock Commission (Whls)	Empire Livestock Marketing	Schoharie	12	18932000
514701	Butchering (Whls)	Primal Your Local Butcher	Saratoga	12	11522000
514701	Butchering (Whls)	Marlow Meat Processing	Schohari e	2	1309000
514704	Meat-Wholesale	Greenville Packing Co Inc	Greene	4	5068000

PRIMARY SIC	PRIMARY SIC DESCRIPTION	COMPANY NAME	COUNTY	EMPLOYMENT	SALES VOLUME
514704	Meat-Wholesale	Boar's Head	Saratoga	4	3841000
519112	Feed-Dealers (Whls)	Agway Farm & Home Store	Columbia	5	7722000
519112	Feed-Dealers (Whls)	Agway Claverack	Columbia	5	7722000
519112	Feed-Dealers (Whls)	Bruno Farms Custom Feed	Columbia	5	7722000
519112	Feed-Dealers (Whls)	Dean's Catskill Valley Mills	Greene	1	1428000
519112	Feed-Dealers (Whls)	Dean's Catskill Valley Mills	Greene	2	1428000
519112	Feed-Dealers (Whls)	Snow's Farm	Renssela	2	3195000
519112	Feed-Dealers (Whls)	Elsworth Family Farm	Rensselaer	3	4792000
519112	Feed-Dealers (Whls)	Mechanicville Country Living	Saratoga	7	12344000
519112	Feed-Dealers (Whls)	Thoro-Bred Feed Sales	Saratoga	8	14107000
519112	Feed-Dealers (Whls)	Agway Village Home & Garden	Saratoga	4	7054000
519112	Eded-Dealers (Whls)	Crewell Brothers & Sons Dairy	Schoharie	1	1448000
519112	Feed-Dealers (Whls)	Feed Bag	Schohari	1	1448000
519112	Feed-Dealers (Whls)	Cold Springs	Schohari	4	5791000
542107	Meat-Retail	Saratoga Primal Your Local	Saratoga	3	516000
201101	Meat Packers (Mfrs)	Hilltown Pork Inc	Columbia	16	4867000
201101	Meat Packers (Mfrs)	Center Road Enterprises	Rensselaer	6	1570000
201104	Meat Products (Mfrs)	Old World Provisions Inc	Rensselaer	20	0
201104	Meat Products (Mfrs)	Parillo Sausage	Saratoga	2	696000

ALBANY LIVESTOCK – BEEF INDUSTRY PROFILE



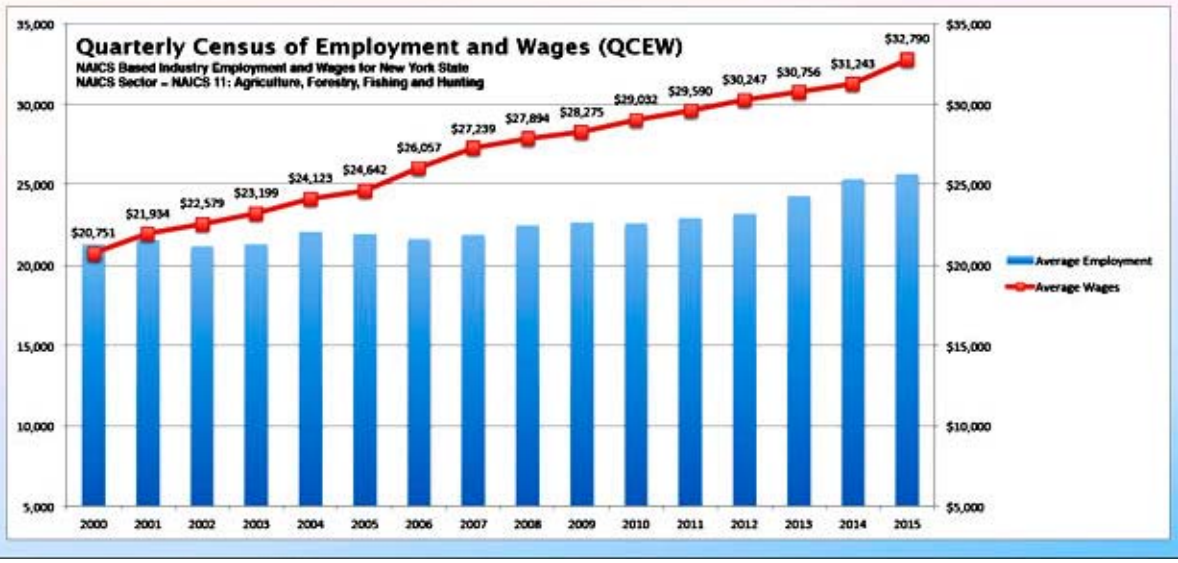
The Port of Albany houses large grain storage and milling capacity which supplies much of the region with livestock feed and grain inputs. This infrastructure supports the County's many small livestock operations. Despite the relative health of the livestock production sector, the County lacks any significant presence of dealers and processors.

	Farms/ Head
Cattle and calves inventory	147/9765
Beef cows	108/1671
Milk cows	21/1431
Cattle and calves sold	107/6926

EMPLOYMENT AND LABOR

EMPLOYMENT AND WAGES FOR AGRICULTURE INDUSTRY

As of 2015, agricultural workers (SOC Code: 45-0000) in the Albany Region (Albany-Schenectady-Troy, NY) have an annual mean wage of $36,330, which is higher than the state average of $32,790. According to the New York State Department of Labors local unemployment data, Albany County maintains a very low unemployment rate (4.4%). From February 2016 to February 2017, the number of non-farm jobs in the Albany-Schenectady-Troy MSA rose 7,200 or 1.6 percent, while the number of private sector jobs jumped 5,800 or 1.6 percent.



EMPLOYMENT AND WAGES FOR AGRICULTURE INDUSTRY

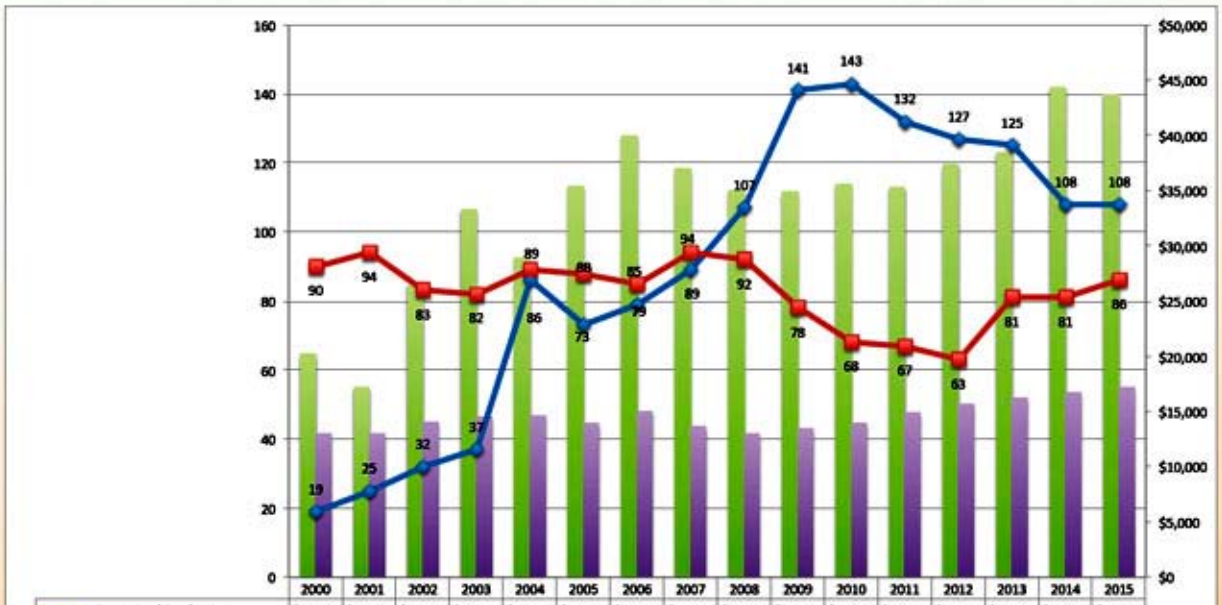
New York State Farming, Fishing, and Forestry Occupations(450000)

Year	Reporting Units	Average Employment	Total Wages	Average Wages
2015	2,590	25,661	$841,433,149	$32,790
2014	2,511	25,320	$791,083,905	$31,243
2013	2,506	24,269	$746,413,219	$30,756
2012	2,460	23,155	$700,360,379	$30,247
2011	2,426	22,891	$677,349,296	$29,590
2010	2,389	22,592	$655,898,409	$29,032
2009	2,373	22,650	$640,417,560	$28,275
2008	2,364	22,463	$626,582,733	$27,894
2007	2,293	21,814	$594,188,739	$27,239
2006	2,227	21,595	$562,709,031	$26,057
2005	2,204	21,928	$540,349,946	$24,642
2004	2,205	22,048	$531,868,532	$24,123
2003	2,225	21,285	$493,782,420	$23,199
2002	2,256	21,151	$477,565,380	$22,579
2001	2,272	21,495	$471,477,615	$21,934
2000	2,264	21,238	$440,701,954	$20,751

Albany County Farming, Fishing, and Forestry Occupations(450000)

Occupation (SIC code)	Employment(1)	Annual mean wage(2)	Hourly median wage	Annual median wage(2)	Employment per 1,000 jobs
Farming, Fishing, and Forestry Occupations (450000)	230	$36,330	$14.03	$29180	0.510

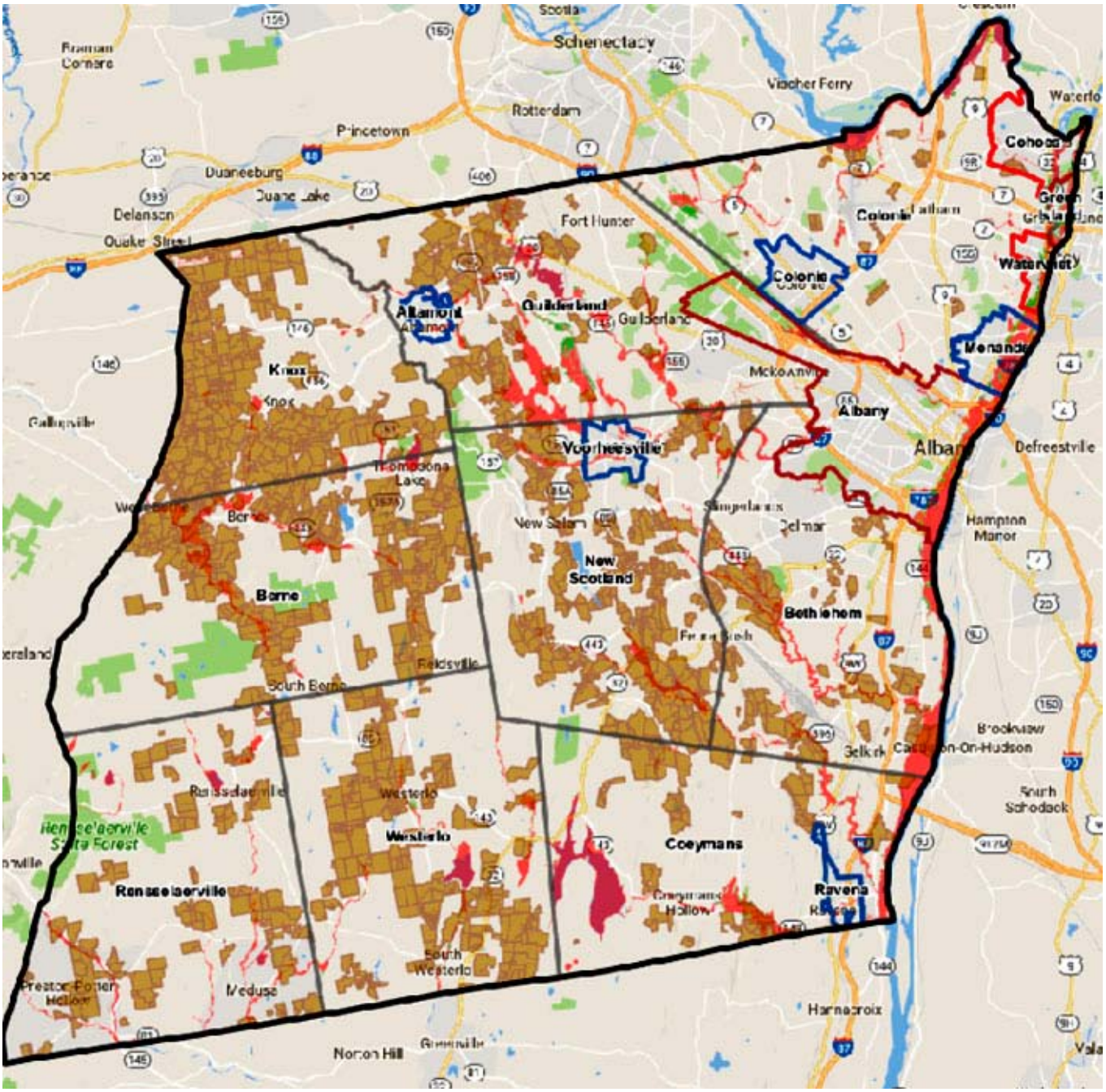
ALBANY COUNTY HISTORICAL LABOR DATA



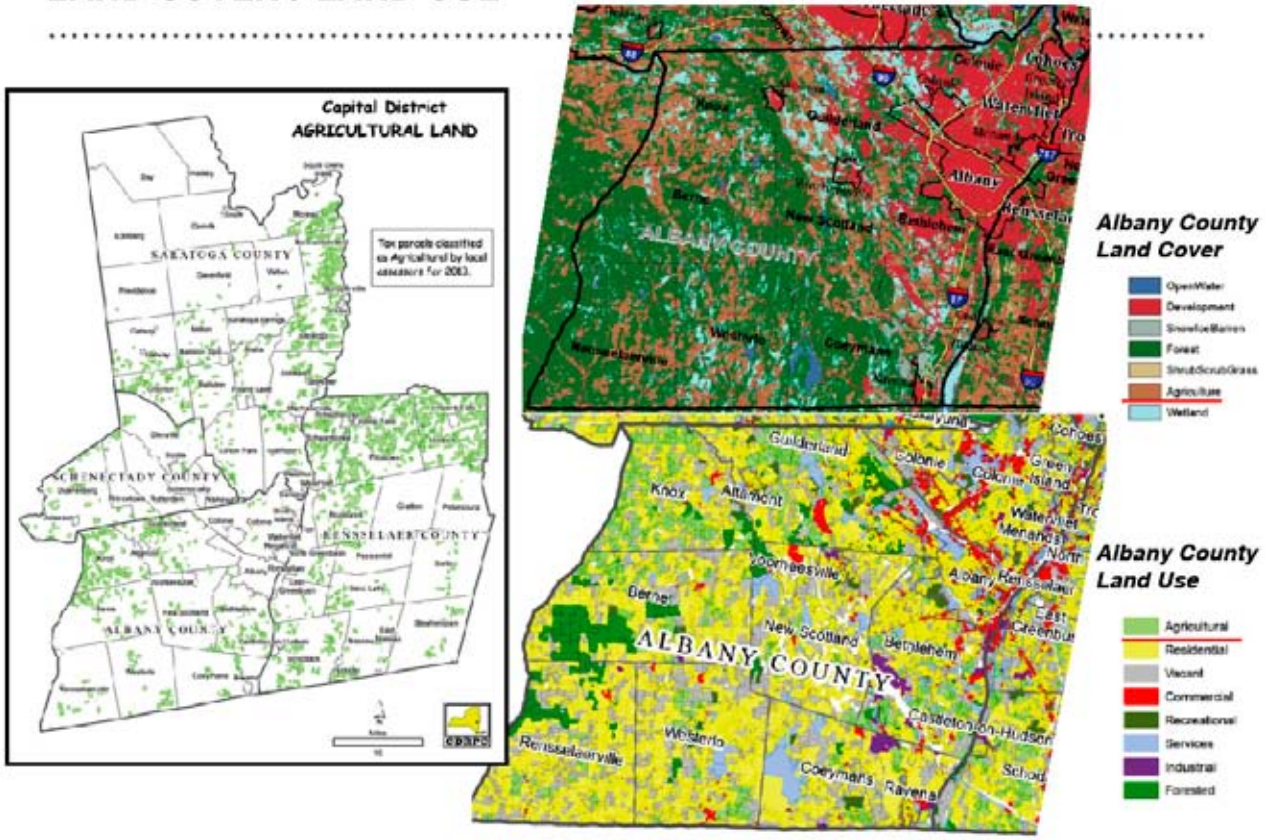
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Avg Pay Animal Production	$20,216	$17,215	$26,465	$33,283	$28,955	$35,347	$39,931	$37,006	$35,046	$34,874	$35,579	$35,279	$37,366	$38,461	$44,324	$43,713
Avg Pay Crop Production	$13,041	$13,017	$14,021	$14,477	$14,605	$13,914	$15,033	$13,621	$12,949	$13,430	$13,959	$14,859	$15,695	$16,226	$16,698	$17,154
Avg Employment Animal Production	19	25	32	37	86	73	79	89	107	141	143	132	127	125	108	108
Avg Employment Crop Production	90	94	83	82	89	88	85	94	92	78	68	67	63	81	81	86

LAND USE

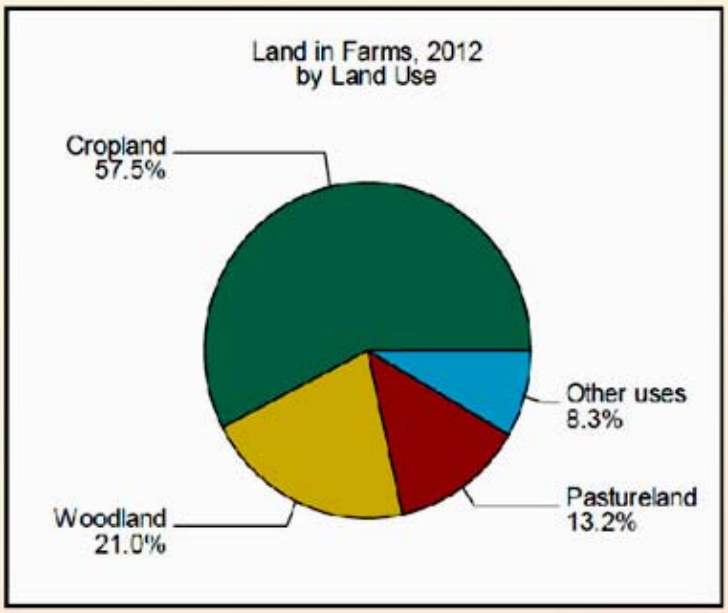
AG DISTRICT MAP



LAND COVER / LAND USE



LAND USE BY TYPE



The total cropland within Albany County was 26,139 acres in 2012, compared to 31,683 acres in 2007.

Of the 26,139 planted acres in 2012, 22,689 acres were harvested.

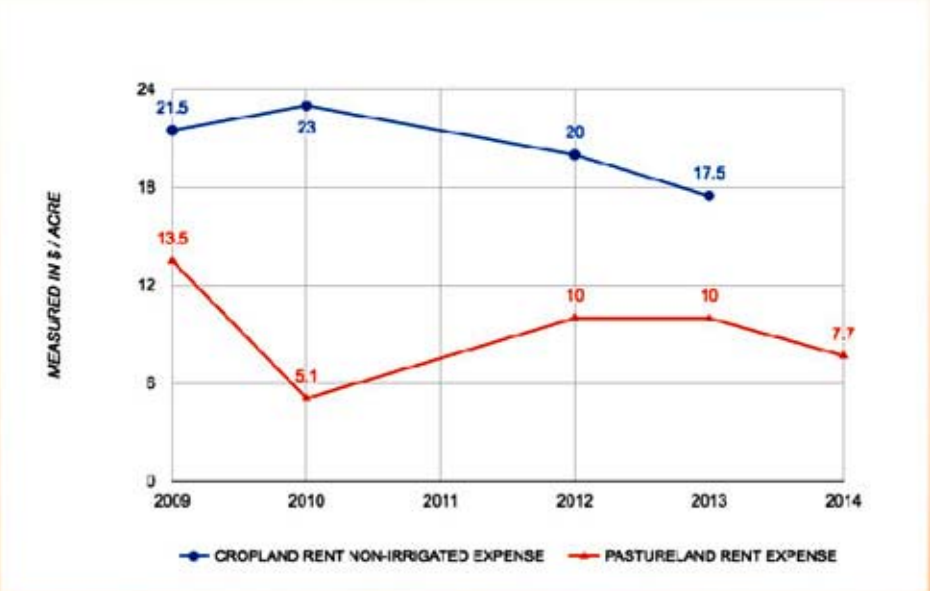
An additional 2,224 acres pasture and grazing land could be used for cropland.

3,281 acres are for

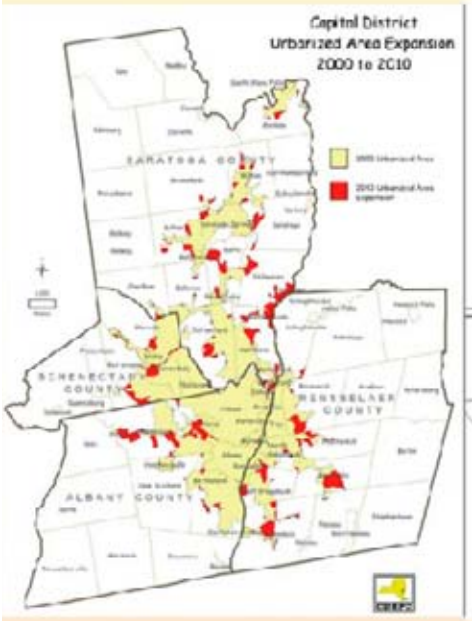
- *Failed crops*
- *Cultivated summer fallow*
- *Idle or used for cover crop*
- *Being managed for soil improvement*

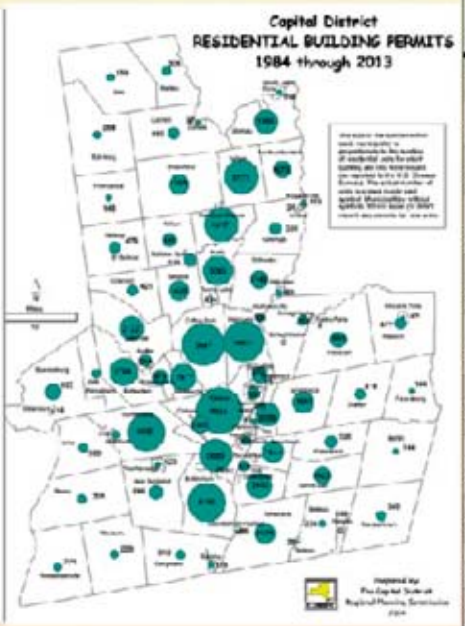
ALBANY COUNTY LAND EXPENSE SURVEY

Farmland in Albany County has an estimated market value about $3,099 per acre, which is higher than the average of $2,600 per acres in New York State. The cost of renting cropland or pastureland went down over the years.



DEVELOPMENT PRESSURE





YEAR STRUCTURE BUILT		VALUE	
Total housing units	138,081	Owner-occupied units	72,000
Built 2014 or later	97	Less than $50,000	2,784
Built 2010 to 2013	1,007	$50,000 to $99,999	4,443
Built 2000 to 2009	8,640	$100,000 to $149,999	9,313
Built 1990 to 1999	10,926	$150,000 to $199,999	17,133
Built 1980 to 1989	13,051	$200,000 to $299,999	22,827
Built 1970 to 1979	17,191	$300,000 to $499,999	12,800
Built 1960 to 1969	15,251	$500,000 to $999,999	2,297
Built 1950 to 1959	17,251	$1,000,000 or more	395
Built 1940 to 1949	9,474	Median (dollars)	208,40
Built 1939 or earlier	45,103		

APPENDIX B-2: SWOT MEMORANDUM

Albany County Agriculture: Strengths, Weaknesses, Opportunities and Threats - Analysis

Introduction:

SWOT analysis is a tool used by strategic planners and marketers to assess the competitive environment of a region, industry, business, or product. It is a very simple technique that focuses on the Strengths, Weaknesses, Opportunities, and Threats (SWOT) facing Albany County agriculture by asking the following questions:

1. What are the advantages of engaging in production agriculture in Albany County?
2. What unique local conditions support the agricultural industry?
3. What do Albany County farmers do well?
4. What do Albany County farmers do poorly?
5. What can be improved in Albany County agriculture?
6. What are key regional/industrial trends?
7. What are the options and obstacles facing Albany County farmers?
8. How does Albany County agriculture fit within the regional context?

For the Albany County Agriculture and Farmland Protection Plan, the strengths, weakness, opportunities, and threats were assessed for the agricultural industry overall to include production agriculture as well as agricultural support industries. The SWOT criteria identified are drawn directly from the study team's interviews with the agricultural industry within the County. As such, this analysis should be considered an industry self-assessment.

Strengths:

Overall, Albany County has strong support for its agricultural sector, particularly because of its dedication to "rural character" throughout its municipalities. Its strengths revolve around existing productive farms, productive soils, and general support from the community. These factors are outlined below:

Agricultural heritage - Albany County has a strong "rural character" that its residents identify with. In the Albany County Farmland Protection Survey for Farmers (Appendix 1), 100 percent of respondents answered that their parents were farmers. There is a longstanding history of agriculture and farmland preservation as a means of protecting this agricultural heritage.

Public support for agriculture - There is substantial public support for agriculture, and concern over loss of agricultural lands in Albany County. Of those who responded to the Albany Farmland Protection

Survey for the Public, nearly 84 percent shop for local food at least once a week. Similarly, over 92 percent of survey-takers were deeply concerned with farmland loss in Albany County (Appendix 2).

existing on-farm value-added processing - With the increased interest in craft beverages, Albany County has seen an increase in its existing on-farm value-added processing. Indian Ladder Farm expanded to include Indian Ladder Cidery and Brewery, and both Nine Pin Cider and Albany Distilling opened asFarmstead operations signaling their intent to purchase exclusively local ingredients. Traditional farms are expanding into more value-added processing as well. Farms such as Kleinke's Farm, Gade Farm, and George's Farm Market, whom all have processing capacity and farmers' markets on-site, and Van Wie's Meadowbrook Farm has bottling processes and home delivery for their dairy operation.

High economic value of agriculture - For every dollar collected in tax and non-tax revenue, agricultural lands receive the least amount of services provided by local government regarding cost compared to residential and commercial zones. Agricultural land is a lower financial drain on government funds and provides additional benefits such as job opportunities, environmental integrity, and economic opportunities, such as on-farm value-added activities. In addition to its fiscal contributions, agriculture's produces output multipliers of 1.93 for livestock operations and 1.67 for crop production respectively.

Agricultural operations well suited to the soils – Albany County has widely varied soil conditions ranging from the highly productive bottomland soil types near the Hudson and Mohawk River Valleys to the rocky and shallow soils of the Helderberg Escarpment. Agriculture has adapted over time to get the highest and best use out of the soils present on a particular piece of ground. As a result, the County has both highly productive crop farms, fruit orchards, large tracts of grazing land. Good forestry soils are also widely distributed across the County, offering many farmers the opportunity to take advantage of long rotation forest product crops.

grain infrastructure - The port of Albany offers regionally significant grain transportation and feed manufacturing infrastructure. Much of the infrastructure is strategically placed to provide feed for dairy and livestock operations in New York and New England. While not directly related to the local crop or livestock production operations, the presence of this infrastructure provides a market for grain and affordable access to feed supplies.

diverse production types - Albany County has seen sustained growth in small beef cattle operations and feedlots, and robust feed grain operations. Although there is only one USDA slaughter facility in the county to process large animals, there are three distributors who specialize in meat and poultry, as well as a rendering plant and hides dealers. Nursery, greenhouse, and floral production are the county's top commodities by value, followed by cow/calf operations, dairy, vegetables, grains, and tree nuts and berries (Appendix 11). Finally, more farms are seeing the appeal of diversifying into sectors such as agritourism and craft beverages.

strong demand for local food - Of the individuals who responded to the Albany Farmland Protection Survey for the Public, nearly 84 percent shop for local food at least once a week. The large number of direct marketing channels in the county contributes to this high market penetration.

existing agritourism - Many of the farm businesses mentioned that have on-farm value-added processing are focused on agritourism, with Indian Ladder Farms leading the way. Agritourism spurs farm diversification increased job opportunities, and consequently increases the economic viability of farms.

Weaknesses:

As with any industry, region, or product, Albany County agriculture has weak elements that must be addressed while planning for the industry's economic future.

cost/availability of leasing land for agricultural production – The availability of high-quality farmland is limited and thus highly sought after and expensive. Parcels with lower quality soils are less expensive, but that lower income discourages improvements by landowners. The high level of parcelization within the county makes it generally difficult for agricultural operations to expand to adjacent or nearby parcels that are of sufficient size to be economically viable. Quality parcels are also dispersed throughout the county, requiring farmers to travel significant distances with farm equipment to reach the properties.

residential development near working farms – In Albany County, areas with high development pressure are often the areas with the most productive agricultural soils. This situation raises costs to farmers by increasing the competition for land and making the costs of ownership higher. It also brings farmers

into conflicts with new homeowners, who are likely unfamiliar with the grittiness of day to day operations of agriculture.

Intermixing of residential, retail, commercial and In neighborhoods where farms and residential or commercial areas are intermixed, use conflicts will arise. Agricultural zoning rules allow significantly different uses than parcels zoned for residential or commercial use. When the different types are adjacent, tension can arise between landowners regarding issues considered as a nuisance to one or the other. Parcelization also adds to this threat, increasing the "zone of conflict" between agricultural uses and potentially incompatible residential, retail, or commercialuses.

limited new farmer recruitment- Proactive economic development and land use planning for agriculture relies on an understanding of the intentions of the next generation of agricultural producers. While some larger operations have planned for succession among family members, small and mid-sized farms have a more difficult time naming the next generation family members that will remain and defining their needs. Many current owners see their farms transitioning to a non-farm use.

Physical and agricultural infrastructure decline – Difficult economic times are reflected in both the publicly funded infrastructure and on the farm. At the production level, this is most noticeable in small and mid-sized firms who might lack the access to capital to make improvements. At the infrastructure level, this manifests itself in deteriorating roads and bridges, which make the transport of farm goods and machinery costly, and increasingly unsafe.

lack of internet access – Approximately 25% of rural homes lack internet access in Albany County. This number is lower than the national average, 35%, but the hilly terrain around in the rural areas of Knox and Berne make it difficult for Internet Service Providers to construct infrastructure to provide access to rural residents. As more and more day-to-day business is conducted through the internet, it is becoming increasingly difficult operate in the economy without access. The Albany County Executive promised in his State of the County Address to provide access to Knox and Berne by the end of 2017.

t ax burden from numerous levels of government - The high carrying cost of agricultural land in New York is a hotly debated topic among academics and policy makers but remains a constant source of concern among farmland owners who feel that they bear an unequal fiscal burden. The issue is exasperated by the cyclical nature of agricultural markets and the generally narrow margins in commodity markets. Whether or not the farmers are making a profit, their primary tax burden is driven by their land holdings.

limited understanding knowledge of/access to preservation programs - The project team found that many farmers had only a limited knowledge about existing land preservation programs and how they might impact their farm operations or be used to facilitate intergenerational transfer. Local policy makers and farmers were similarly unaware of the nuances of programs such as the Purchase of Development Rights, valuable tax assessment advantages, etc, and how these nuances may be effectively employed to more inexpensively conserve Prime and Productive soils.

Opportunities:

The long-term success of the industry is dependent upon its ability to recognize the opportunities presented by changes in the business environment whether they are driven by local, regional or global forces. The opportunities facing most of Albany County's active agricultural operations are driven by regional market improvement and development considerations as noted below.

Demand for regional foods and craft beverages - New markets for agricultural products and production processes are presenting new possibilities for crops and livestock on a regular basis. Key trends leading new market development included the increased demand for regional food and craft beverages. As these new market developments continue to unfold, it will be important to have the flexibility in land use and economic development policies to embrace opportunities that are regionally viable. For example, to successfully respond to the increased demand for local products, it may be necessary to amend land-use regulations/zoning to accommodate on-farm processing capacity and related retailing activities.

Farming for the next generation – As demand for locally grown and processed foods increases, business opportunities enable young people to remain in the area to farm. Beginning farmers are more likely to embrace changes necessary to increase the profitability of their operations by developing value-added products and becoming more vertically integrated developing on-farm processing. These market changes also might attract new entrepreneurs to the area to take advantage of the proximity to large urban markets.

Increasing regional cooperation – The Hudson Valley has excellent potential to build upon its agriculture industry by aggregating its resources and targeting high probability opportunities. Agricultural industry sectors are already well integrated across county lines and are increasingly integrating across commodity lines. The next logical step to foster this regional growth is to create a public-private partnership between growth-oriented agricultural sectors and economic development officials to leverage regional opportunities for the benefit of local farmers. The Hudson Valley Agribusiness Development Corporation is working with the adjacent Counties of Greene, Rensselaer, and Washington to create such programs.

Expansion of on-farm value-added production - Markets are constantly changing and demanding greater value-added in products and services. These changes are driven by the market's need to simplify processes and increase efficiency. Assisting farmers and agribusinesses in developing products, procedures and services that enhance market access such as speculative development of flexible manufacturing platforms and innovative retail technologies may enhance the competitiveness of local agriculture.

Improvements in marketing infrastructure – The existence of local marketing infrastructure such as Capital District Farmers' Market in Menands, grain mills around the Port of Albany and other remaining infrastructure provides ample opportunities for investment to improve market outlets for locally grown products. Redevelopment of existing facilities could provide a less expensive opportunity for returns than building entirely new facilities.

Entrepreneurial training and venture development – Continuing the region's long-standing trend of agricultural entrepreneurship is important to improving the economic viability of the agricultural industry. Providing a structured environment in which such growth and development can occur may significantly alter the rate of success of agricultural entrepreneurs. Businesses that start and grow in an incubator setting improve chances of success from 15% to 85%. HVADC has developed an Incubator Without Walls, which would become accessible to Albany County businesses if the county became a funding partner of the organization.

Increased inter-jurisdictional planning – Local land use regulations, decisions, and enforcement in New York State are constitutionally delegated to cities, towns, and villages, which is a concept referred to as home rule. While inter-jurisdictional and regional planning considerations are not necessarily precluded from local land use decision-making processes, they may not be prioritized or even considered due to

scope and enforcement limitations. Counties and regional planning agencies can serve as important links for coordinating regional land use goals among municipalities, especially with regard to farmland protection. While regional and county agencies do not have the same level of authority over land use as local jurisdictions have, they can serve as important partners and conveners to guide and coordinate comprehensive inter-jurisdictional planning efforts. Examples of existing county-wide efforts that aim to promote inter-jurisdictional farmland protection and agricultural viability in Albany County include:

- Administration of the Agricultural Districts Program, which discourages conversion of productive farm areas into non-agricultural land uses;

- Adoption of the 2004 Albany County Agricultural and Farmland Protection Plan, as well as the 2018 updated plan;

- Review of all site plans, use and area variances, subdivision proposals, special use permits, zoning ordinances and amendments, and adoption of comprehensive plans by the Albany County Planning Board, which includes reviewing any of these actions within 500 ft. of the boundary of a farm operation in a NYS-designated agricultural district. The County Planning Board also enforces submission of Agricultural Data Statements as required by NYS Agriculture and Markets, and requires notice of certain land use actions to adjacent municipalities (when required by regulations outlined in General Municipal Law 239-nn;

- The Capital District Regional Planning Commission (CDRPC), a regional planning and resource center serving Albany, Rensselaer, Saratoga, and Schenectady counties, provides analysis of data, trends, opportunities, and challenges relevant to the Region's economic development and planning communities,including agriculture and food systems.

While these programs and initiatives have been critical in coordinating farmland protection and supporting agricultural viability in the county to date, greater county-wide collaboration should be encouraged to strengthen and sustain these efforts.

Threats:

Although Albany County has a solid foundation for agriculture, there are several factors threatening current and future agricultural productivity and success in the county, including farmland loss, development pressures, and a lack of workforce.

regional F armland loss – Over the past few decades, both the number of farms and land being farmed has decreased. Dairy farms have been especially hard hit, and many have gone out of business or switched to other types of agriculture with dropping milk prices and increasing requirements for scale efficiency.

development Pressure – The remaining farmland in Albany County is facing increasing pressures to develop as households move out of high density urbanized areas into more single family, suburban homes. This growth pattern is often attributed to the families relocating into school districts with higher academic achievement.

speculativ e Holding of land – Developers are known for holding on to tracts of land until temporary conservation easements are lifted in order to be able to build on the land. Speculative holding results in idle agricultural lands being underutilized for agricultural production, and prime and productive soils ultimately being developed for residential and commercial spaces. In Albany, this applies particularly to municipalities such as Bethlehem and New Scotland, which has a substantial amount of rural land and is predicted to have high growth in the coming years. With over 6,000 acres of abandoned farm land in the County, it is possible hat significant tracts of land could be in such a holding pattern.

low commodity Pricing – Farmers receive low profit margins for their labor, and consequently often need to seek supplemental income off-farm. Low commodity pricing emphasizes the lack of economic support for farm products and exacerbates the problem of needing off-farm income to stay afloat and leaves farmers with less time to focus on the development needs of their farming activities.

Suburban Sprawl– Albany County has seen its construction rates outpace its population growth, indicating that development is increasing without necessarily having the population growth to support it. This is demonstrated by a near zero percent growth rate in County population but a 1percent increasing in housing stock. Such sprawl infringes on agricultural lands and open spaces, threatening agriculture in the county.

Workforce decline – There is a substantial decline in the agricultural workforce in Albany County, driven mainly by the increasing age of the average farmer, which in Albany County is 61 (Appendix 11), and the decreasing wages received by laborers, which are 21 percent below state average (Appendix 11). This decline directly threatens the future of agriculture not only in Albany County, but nationwide.

APPENDIX B-3: CLUSTER DEVELOPMENT MEMORANDUM

Draft Research Memorandum

Date: JULY 12, 2017
To: ALBANY COUNTY AGRICULTURE AND FARMLAND PROTECTION BOARD
From: ACDS, LLC
RE: TOP MARKET OPPORTUNITIES FOR VALUE CHAIN DEVELOPMENT

The purpose of this memo is to highlight opportunities to improve markets for locally produced agricultural products by focusing on value chain development opportunities in the region that show positive, long-term growth potential in existing or emerging core industry clusters. In so doing, ACDS reviewed industry growth and concentration in twenty-two sectors represented in the Capital Region, selecting five focused opportunities from among those that have the highest probability of producing strong backward linkages to agriculture, thereby strengthening markets for local agricultural products and increasing the retained value of economic activity in that sector. The focus industries are:

1. **Craft Beverages**
2. **Specialty Dairy Products**
3. **Meat and Poultry Products**
4. **Wood Products**
5. **Online Grocery**

These industry opportunities are described in more detail in the following pages.

I. Craft Beverages

A. Industry Snapshot

Craft beverage firms come from three primary industry segments; brewing (NAICS 31212), distilling (NAICS 31214), and winemaking (NAICS 31213). While large integrated firms like Diageo, Constellation Brands, and AB InBev typically dominate these segments; segment growth has come almost exclusively from the craft segments. For example, the brewing industry saw overall enterprise, employment and revenue growth from 2015 to 2016 increase by 9.1 percent, 5.0 percent, and 5.7 percent respectively while the craft segment grew by 9.5 percent, 11.2 percent, and 13.5 percent. Continuing with the focus on craft brewing, the trend of small domestic firms taking local market share leadership from traditional brand powerhouses continued to be a fixture in most market regions of the US with the craft sector assuming nearly 13 percent of total national market share while representing 91 percent of the establishments and 44 percent of total industry employment.

Annual growth rates for the craft beverage segment have exceeded 17 percent during four of the last five years. The craft beverage sector is expected to outpace overall industry growth nearly fourfold over the next decade. While many new entrants are expected to enter the market, the largest growth in market share will come from the relocation and expansion of regionally known brands into areas like the Northeast and MidAtlantic where they are proportionately underrepresented in both sales and firm numbers.

Relocation and expansion efforts follow many trends including access to infrastructure, a positive regulatory climate, good highway access, strong regional distributor networks, proximity to markets with high disposable income, coarse grain access, and a ready workforce. Key competitive factors such as the water, energy, tax incentives, pad ready sites, and wholesaler/distributor access are the most significant relocation issues.

While growth projections are overwhelmingly positive, all sectors are not expected to be equally robust. The largest opportunities are expected for small firms and young firms with aggressive growth plans for product lines such as beer, hard cider, whiskey, cordials, vodka, and wine.

B. Local Context

Albany County is currently home to 22 beverage firms, 15 of which are part of the alcoholic beverage supply chain. Breweries and cideries represent the largest share of manufacturing firms with six followed by wineries (2), and distilleries (1). The balance of firms in the segment is found in distribution and service/supply. Four firms have revenues under $5 million with another four firms showing revenue over $20 million. The rest of the firms fall in between and includes high growth operations such as Nine Pin Cidery. Despite some level of firm dispersion across the County, there is a center of industry activity within the City of Albany around which firms are aggregating and the area could serve as the nucleus for economic and business development activity moving forward.

Albany County's craft beverage sector has benefited from the expansion of the legal definition of farmlevel alcoholic beverage production with both farmers and processors finding opportunities. Operations such as Albany Distilling, Nine Pin Cidery, Helderberg Brewery, and Indian Ladder rely heavily on local farm based supply to comply with regulatory requirements for New York ingredient content. Furthermore, the Carey Institute for Global Good is currently developing a supply chain mapping program to help processors source local ingredients and consumers identify farmstead beverages.

The counties surrounding Albany support an equally vibrant craft beverage supply chain with 50 total firms in the industry in the Capital District. Brewers make up the largest share of the manufacturing sector at twelve firms. The majority of these firms (9) have annual sales of $5 million or higher. Wineries make up the second largest production cohort at 10, but these firms tend to be smaller with all reporting sales of less than $1 million annually. As with Albany County, this larger industry cluster is made up of many new and emerging firms with 20 of 24 manufacturers opening operations since 2000 and of these 17 have been in operation seven years or less.

For many producers and processors, the promise of continued double-digit growth in this market makes it appealing. But the small, independent nature of businesses in the industry make it difficult to leverage the opportunities to develop an truly localized supply chain. Doing so would capture more of the economic value of the cluster. This serves to restrict development of the cluster as opportunities go elsewhere.

C. Supporting Cluster Formation

Despite its aggressive growth characteristics and solid economic performance since 2010, the craft beverage industry has not been a centerpiece of business retention, expansion, and attraction efforts outside of a few unique communities. Furthermore, the industry has largely been ignored in food sector incubation and accelerator programs despite having many of the favorable characteristics that support aggregated capital and program development support efforts.

If Albany County were to pursue the craft beverage sector as part of a targeted economic development effort, it would distinguish itself among the many competitive choices for places to start and grow a craft beverage business. In so doing, it would build upon an existing cluster that is currently demonstrating industry and firm level growth and is supported by private research and development activities at the processor and non-governmental organization level.

The craft beverage industry also provides solid opportunities for value chain development. It offers agricultural production and raw commodity handling opportunities for grain farmers, hops producers, orchards, and other specialty products producers who are seeking means to diversify farm product marketing at scale appropriate levels.

If the County were to support cluster development, it should target its efforts toward the following:

- **Enhancing local and regional supply chain development;**
- **Asset deployment for start-up and emerging growth firms;**
- **Product development and testing capabilities;**
- **Business attraction and retention efforts for processors, ingredient providers, and marketing firms;**
- **Tourism promotion around the sector's unique assets; and**
- **Workforce development specific to industry needs.**

D. Industry Cost Basis and Competitiveness

The craft beverage industry is one of the most capital intensive on a labor unit basis outside of technology manufacturing. This capital intensity creates a moderate barrier to entry that makes it difficult for the hobby producer to take the next step in business development without graduated support programs.

Perhaps one of the largest advantages of industry clustering is management of overhead costs. The largest components of these costs are ingredients (40%), wages (21%), facility costs (6.5%), marketing (5.5%), and depreciation (4.5%). Building a cluster structured to reduce--or manage the variability--of these costs is therefore critical. It would begin with access to ingredients and inventory management, which can be managed cooperatively through specialized industrial buying clubs for the benefit of the cluster. Currently, small distillers and brewers purchase most ingredients at near retail prices, causing costs to run approximately 2% higher than large beverage manufacturers. The overall effect, with pricing differentials built in, is that craft manufacturers often operate at a 1% to 2% negative profit differential over traditional manufacturers. The advantage of clustering will allow aggregated firms to better manage these costs and increase their competitive positioning.

II. Specialty Dairy

A. Industry Snapshot

Large consumer products companies, like Dean Foods, whose products overwhelm the retail dairy case with commodity products, dominate the dairy industry. This $112 billion industry is segmented into five primary sectors; cheese, fluid milk-based products, dry and evaporated products, ice cream, and butter. While each of these segments has some specialty element, the cheese, fluid products, and ice cream segments have the greatest participation by specialist firms and show the highest growth potential.

Dairy consumption in the United States has undergone enormous structural change driven by demographic, cultural, and dietary trends. Many of the products that provided the foundation of the industry, such as whole milk and ice cream, have seen dramatic declines in sales while health related and premium segments, particularly in yogurt and cheese have picked up the transitional volume. Over the last five years, industry sales have declined nearly one percent annually as industry mergers and acquisitions have been seeking efficiency gains in the face of change. As a result, there has been a consolidation in large commodity production plants, many of which are in the Great Lakes and WesternUnited States.

The transitional pressures on the commodity sectors have opened opportunities for small and emerging growth companies, with the result being an annual increase of one and half percent in establishments operating in the sector. The growth in the specialty sectors is found in cheeses, ice cream, and fluid products, which include milk, yogurt, whey, and other cultured milk products. The Northeastern United States and Great Lakes have seen the largest growth in these firms. These areas have also developed a national reputation for quality and value.

The most important buying segments for the specialty dairy are food service operators, supermarkets, grocery stores, wholesalers, and specialty retailers. The importance of the buyer segments is changing to match the consolidation and growth changes mentioned previously. Large dairy wholesale operations are being replaced through a process known as wholesale bypass as large commodity operators like DFA and Dean Foods contract directly with large institutional buyers and supermarkets, thereby cutting out the wholesale segment. A reduction in the importance of the wholesale sector means that such firms are clamoring for relevance in specialty lines to keep customers in food service, restaurants, grocery stores, and specialty retailers. This is providing new market access opportunities for small firms.

B. Local Context

Milk and milk products (NAICS 31151 & 31152) present a unique development opportunity for Albany County, evidenced by the number of small on-farm bottling operations that exist to service the local market place. The County is already home to several dairy manufacturing and distribution firms, such as Midland Farms and Gillette Creamery. These firms take advantage of the positive logistics infrastructure of the County and its proximity to large dairy production areas to the north and west of the County. Proximity to high value consumer markets in New York area as well as New England is an essential element of the sector's competitiveness.

Within the Capital District context for dairy boasts equally strong growth indicators. The counties immediately surrounding Albany County boasts eleven total dairy firms including two bottling plants, one cheese maker, and three ice cream plants, and five distributors of dairy foods. These firms are distributed across a wide range of sales values, with the smallest having sales of less than $500,000 and the largest having sales over $100 million.

Looking outside of adjacent counties and into the Central New York Region, the industry demonstrates a positive entrepreneurial culture with notable start-up and expansion activities in fluid based products, as well as, yogurt and cheese manufacturing. Expanding these efforts through cooperative and complementary economic development activities offers important growth opportunities for the industry.

Despite the fluid demand created by these industries and positive entrepreneurial culture, the dairy farmers are concerned that the core processing industries need to be strengthened to fortify and strengthen the production center. Competition from outside dairy supply is strong making the commercial ties between local farmers and processors weak. There is a strong interest amongst dairyfarmers to increase the strength of these relationships and to lock down a solid dairy manufacturing base in the region.

C. Cluster Formation

The dairy industry historically has not demonstrated strong clustering effects outside of the cheese manufacturing industry, unless clustering was driven by the handling requirements of raw or finished products. Recent efforts to promote clustering in Vermont, Oregon, Idaho, Colorado, and Nevada, however, demonstrate that concerted efforts to build value-added capacity around existing or emerging farm level milk production can be successful. New York is no stranger to such efforts. Dairy processing has been the centerpiece of early programs such as the SUNY Morristown food-processing incubator and has made NY one of the hottest areas for dairy start-ups in the US.

If Albany County is to build on the lessons learned from prior dairy related cluster development, its focused economic development efforts should begin with supporting and retaining existing dairy businesses while building specialized infrastructure and programs to support emerging growth firms to include:

- **Product development and testing capabilities for cultured and fluid products;**
- **Capital access programs to build specialized production assets;**
- **Market research support to assist producers in identifying and characterizing niche market opportunities;**
- **Distribution and logistics planning support;**
- **Tourism promotion around the sector's unique assets, and**
- **Workforce development specific to industry needs.**

D. Cost Basis and Competition

Effective employment of resources is critical in an industry that has a net profit margin of just 3 percent. There are wide variations in economies of scale from large to small operations in the dairy industry as larger firms are more capable of leveraging the benefits of labor, procurement systems, logistics, capital, and technology.

The largest share of costs in the industry comes from ingredient purchases (69 percent of revenue) and labor (6.3 percent of revenue). Marketing costs represent less than one-tenth of one percent of revenue across the industry, though large firms may allocate ten times this to brand building efforts as a

means to protect market share. Because of its generally low returns, most players in the industry carry relatively high levels of debt to leverage equity returns with current liabilities averaging 40 percent and long-term liabilities 23 percent of liabilities and net worth. Start-up firms will find it difficult to reach this kind of leverage ratio therefore limiting competitiveness. Incubator facilities would help address the issue and help start-ups to be competitive.

III. Wood Products

A. Industry Snapshot

For the purposes of this memorandum, the Wood products industry is narrowly defined to that segment of the industry that is the first receiver of forest products defined to include loggers, timber harvesters, and sawmills (NAICS Codes 1133, 1132, and 3211). These businesses are the primary buyers of standing timber and have the strongest direct correlation to woodlot management. These industries, however, rely on secondary manufacturers and the building trades to provide the liquidity for making timber purchases. Key purchasing industries, like those found in the list below will be discussed as the key drivers of wood product demand. These codes include a wide range of products and processing types such as:

1. **Construction trades,**
2. **Manufacturing of furnishings and home accessories,**
3. **Cabinetry,**
4. **Boxes and pallets,**
5. **Engineered structural components,**
6. **Wood flour,**
7. **Paper and paperboard manufacturing,**
8. **Prefabricated structures,**
9. **Paneling and flooring, and**
10. **Biofuels.**

The core industry functions of timber harvest, management, and sawmilling, accounted for more than $40 billion in sales in 2016 riding a five year growth trend that saw annual value increases of more than three percent. Over the next five-year period, a slowing of building trades and higher dollar will likely cool value growth to approximately two percent. Localized demand fueled by new construction starts in the Northeast and MidAtlantic is expected to keep these regions growing at a rate in excess of the national average.

The core industry segment is made up of small firms with a specialization in product or timber processing type. While large firms such as Georgia Pacific have been aggressively acquiring market share by purchasing regional mills, the Northeast has largely avoided this trend, with Pennsylvania and New York accounting for twelve percent national total of sawmills in the US. According to industry experts, the high quality hardwoods found in the Northern Appalachian Mountains provide the anchor for the forest products industry since hardwood forest stands of this quality are difficult to find elsewhere in the US.

With the advent of forestry practice certification programs, such the Forest Stewardship Council's harvest and management certification program, the industry has renewed its image as an environmentally friendly, renewable resource. This has had the effect of encouraging better management of forests while improving the view of wood products as a competitor to masonry, concrete, and steel which is further augmenting demand.

B. Local Context

More than 21 percent of the farmland in Albany County can be found in woodlots, making woodlots the second largest land use behind cropland. Having healthy wood product markets is therefore essential to the overall economic performance of the farms. The value of these forest resources is predicated on having well managed forest stock, a competitive base of buyers (loggers), and local mills to process the timber.

Albany County has only 2 logging companies, but 8 primary manufacturing companies including one sawmill, one dimension lumber mill, and six millwork operations. Within the Capital District there are only 10 logging companies and 31 primary manufacturers giving Albany County a twenty percent share of logging and a twenty-six percent share of primary manufacturing. Out of the fifteen sawmills in the region, only one remains active in Albany County. The bulk of sawmill activity occurs in Saratoga, Rensselaer, and Schenectady Counties where hardwood resources are higher quality.

Downstream industry demand drives the harvest and primary manufacturing sectors. Albany County is home to twenty-two of these firms. The largest share of secondary manufacturing firms can be found in cabinetry and furniture making followed by paper, paperboard, and packaging, as well as wooden box and pallet manufacturing. These industries will demand a wide range of hard and softwood products ranging from furniture blanks to wood flour. Regionally the secondary manufacturing segments are made up of 47 firms with twenty-eight cabinetry and furniture manufactures comprising the bulk of operations. The remaining firms are broadly distributed across sixteen NAICS codes demonstrating little clustering.

C. Cluster Formation

Better utilization of standing timber industry will be driven by increasing the demand for the type of forest stock that prevails in Albany County. The county has a standing inventory of mixed quality hardwood and softwood stands that are suitable for end uses that range from pulp and fuel wood to cooperage and cabinetry. Improving the value of timber stands means finding outlets for this range of timber types, beginning with low-grade timber resources.

The New York State Department of Environmental Conservation's Forest Utilization Program is charged with working with the industry and local agencies to improve markets for wood products and assistance from this office would be crucial in making the necessary linkages to effectively build a cluster formation strategy. Beginning with the assumption that finding markets for low grade timber is the greatest challenge for land owners, building markets for biofuels to use as feed stock for Combined Heat and Power (CHP) projects, district heating, and micro-grids seems a natural starting point. This could be followed by expanding secondary processing activities like tight and slack cooperage in support of other industries such as horticulture (slack), brewing (tight), wine making (tight) and distilling (tight) appropriate for the scale of the local industry.

Supporting further development of wood products sector will involve an integrated, multi-agency approach to economic development that begins with a regional forest products inventory and market evaluation followed by targeted recruitment of firms that bring the right resource demands to the marketplace. This effort should be coordinated with the Forest Products Utilization to ensure that recruitment activities will effectively improve the value of local forest stands.

Smaller, entrepreneurial project development can be effectively undertaken to expand activities in industries such cooperage, cabinet making, millwork, specialty displays and accessories, veneer export, and custom wooden packaging by:

- **Generalized business counseling;**
- **Increasing the number of third-party certified wood lots;**
- **Capital access programs to build specialized production assets;**
- **Funding of APHIS facilities at the Port of Albany to expand veneer export opportunities;**
- **Distribution and logistics planning support;**
- **Workforce development specific to industry needs.**

D. Cost Basis and Competition

The primary wood products industry operators have very low profit margins at 4.7 percent that have just recently recovered from the extended economic downturn that began in 2008 and lasted through 2012. The industry has suffered from deferred maintenance and low technology adoption during this period meaning that many remaining firms are heavily reinvesting in plant and equipment to modernize and increase processing efficiency. With nearly 60 percent of revenue contributed to log acquisition, even modest efficiency gains can have significant long-term effects on profits. Firms failing to make the necessary investments are not likely to survive.

With largely undifferentiated products, the primary industry is increasing turning to producing using the advantages provided by third-party certification such as the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) to generate Leadership in Energy and Environmental Design (LEED) points to attract buyers. To maximize points, the wood products must come from a fully certified supply chain starting with woodlot management. Other method for small mills to compete is through supply contracts with end users and timber suppliers. These contracts are often tied to particular performance standards and product customization including the use of aforementioned third-party certifications.

IV. Meat and Poultry Products

A. Industry Snapshot

Meat and poultry processing (NAICS 31161) is the segment of the industry that slaughters, processes, and provides additional value added and distribution services. The industry produces $223 billion in sales with expected annual growth of just one-half of one percent. The industry has a high level of concentration in the top four firms, who represent nearly 36 percent of total industry output. As firms have gotten larger and more concentrated, there has been a steady decline in product offerings, particularly in fresh consumer products such as case meat, cured meats, and sausages. Given the industry's consolidation and level of capital intensity, it has seen robust technology adoption in an effort to replace labor as a major component of production. Standardization is a by-product of this technology adoption, and it is creating ever-larger opportunity for small processors to step into the void created for custom processing. An interview with a large broadline distributor revealed that procuring a specialty-butchered item could require many weeks' notice and "extraordinarily" large minimum purchase quantities.

As a result of the restriction in specialty supply, the decline in the number of processors that began in the 1990s began to reverse itself shortly after the recession of 2008. This is a trend that is expected to continue for at least the next five years, as new, custom operators enter the market. Many of these entrants will be focused on serving specialized markets for ethnic specialties, high margin consumer goods, and quality oriented nutritional products.

B. Local Context

Albany County presents an interesting case for development of the meat products industry given the sustained growth in small beef cattle operations and feedlots, as well as its robust feed grains infrastructure supported by large grain operations at the Port of Albany. Currently the County has only one USDA slaughter facility processing large animals, limiting its current development potential. The County does, however, support three distributors who specialize in meat and poultry as well as a rendering plant and hides dealers, all of which are essential to supporting a larger meat-processing cluster. With these assets in place, Albany has all of the key elements necessary to recruit additional meat packing activities and related downstream value-added activities. Like Albany, the Capital District demonstrates some vibrancy in this sector, particularly within agricultural production subsectors. Currently the region has sixteen feed dealers and three animal health products suppliers as well as two livestock auctions. On the output side of agriculture, there are currently six processors of meat and poultry and three specialized meat distributors in the Capital District.

Several processors have investigated facility expansion to accommodate larger demand for locally produced products but are hamstrung by regulatory challenges and uncertain markets.

C. Cluster Formation

The meat and meat products industry is bifurcated. First, firms tend to be either rural or urban in nature, with slaughter and cutting operations favoring rural locations in proximity to agricultural production. Marketing and value-added processing are more often urban centered. Similarly, national firms tend to operate large technical facilities that operate at very high efficiency while many of the local industry's value-added processors tend to be smaller and operate inefficiently in flex real estate environments. Where clusters exist, they are built around assets such as feedlots, skilled workforce, specialized distribution networks, and availability of water and sewer capacity.

Albany County is fortunate to have many positive cluster attributes such as strong local and regional production and feed infrastructure combined with specialized distribution networks and off take markets for by-products like fats, offal, and hides. These factors, combined with the availability of inexpensive flex warehousing and manufacturing inventory, make the attraction or development of a value-added meatpacking cluster a possibility. Land-use code changes and community acceptance of the industry are in question, but the ACDS feels that operations such as meal portioning, smokehouses, aging, case meat preparation, and sausage making could all find a home in the area and provide valuable new markets for farm products.

Cooperating with SUNY Cobleskill, Albany County may find that growing a cluster may come from a committed effort to identify and support local entrepreneurs looking to start new operations in the area. Albany should also focus on recruitment of firms that are being displaced by urban revitalization projects, attracting small firms from nearby metropolitan areas such as Boston, New York, and New Haven.

Given the above, ACDS suggests the economic development efforts focus on recruitment of meatpacking and related businesses to the region with a particular emphasis on:

- **Workforce development particularly in skilled labor positions;**
- **Site certification for animal handling and meat processing use;**
- **Utility assessments to ensure access to adequate water and sanitary sewerage; and**
- **Model municipal codes to allow meatpacking uses.**

While the development of homegrown businesses is a possibility, it is hard to image that the dedication of resources to building entrepreneurial capacity in this sector would result in sufficient business development to warrant the expense with the exception of providing direct expansion and retention support to existing firms.

D. Cost Basis and Competition

The livestock processing sector produces relatively modest net revenue of 3.4 percent. Net returns have been slow to recover after the 2008 recession but began to make gains as firm numbers grew and new products began to reach the market.

The two largest cost drivers in the industry are raw inputs (70 percent of revenue) and labor (8 percent of revenue). For those firms in the pure commodity business, it is essential to manage all operating costs and to maximize the use of both labor and raw materials. Even modest gains in efficiencies in these areas can have a significant effect on the bottom line. As noted earlier, this type of standardization is thought to be reducing some marketing efficiencies and is, in part, responsible for emerging opportunities for small, agile firms.
Constant cost pressures at all levels of the industry means that there are no substitutes for efficiency and solid market intelligence. Improved market intelligence, when translated to new product innovations, will drive the success of small firms in this sector.

V. Specialty Online Grocery

A. Industry Snapshot

While not represented by an official NAICS Code, the online grocery segment is rapidly expanding in both rural and urban areas across the United States. The segment includes firms who market foods exclusively through the Internet and utilize non-traditional delivery methods to reach the customer. Generally, these firms do not have any retail infrastructure.

As of the beginning of 2016, there were an estimated 2,500 online grocers operating domestically. These firms generated more than $12 billion in sales with an expected annual growth rate of more than 10 percent and annual profits of more than $400 million. The industry has several well-known brands including PeaPod, Amazon Fresh, Blue Apron, and HelloFresh, but none of these firms has been able to achieve a market share larger than 6.5 percent in any single market area.

The greatest share of industry sales come from regional firms with strong affiliations with regional supply chains. In fact, many of the firms in this sector bill themselves as having exclusively local or specialty supply chains that cannot be mimicked by the large grocery chains. It is their primary point of differentiation.

Like the general food retail industry, this sector has a highly diverse product mix made up of fresh foods such as fruits, vegetables, and meats; processed goods such as cereal grains, dry goods, and spices; beverages, and nonfood items. Offering such diversity means that these firms must have access to a highly diversified supply chain. Because of this, representative firms are often found in urban centers or near large logistics centers.

Online grocers are significantly different than standard retailers in their product delivery methods. The largest firms in the industry generally deliver products directly to their customers either through their own vehicle fleets (Peapod), contract delivery (Hungry Harvest & Amazon

Fresh), or third-party carriers such as FedEx (HelloFresh & BlueApron). Because of product segregation and temperature management issues, these products require specialized packing materials.

The sector is new and emerging with new entrants and dropouts announced on a near weekly basis.Much is to be learned about the model and its impact on the food industry. Despite its unsettlednature, one thing is certain. Most people in the food industry expect that this sector will continue togrow and annual rates at or near 10 percent for the next five to ten years, making it a prime target for attraction and development. Despite this growth, Business Insider projects than only 15 percent of households will adapt to being online food purchasers for their normal shopping needs.

B. Local Context

New Yorkers are the largest users of Online Grocery services in the US, purchasing more that 14% of all grocery items sold through this supply chain. Albany County as a market is served by a range of options for online home delivery ranging from industry giants like Blue Apron to grocery store affiliated programs such as Hannaford and Shoprite's online sales and home delivery platforms. In addition, businesses such as Butchers Box, Essex Farm, and Field Goods are regional start-ups that fulfill demand for local or source verified products. These local firms remain competitive in the market by selling products identified as coming from a regional "farm to fork" supply chain, often selling products from growers and food processors with known brand identity.

The County's and region's strong agricultural industry and widely diverse manufacturing and distribution sectors are in place to support further development of hyper-local and extra-regional Online Grocery operations. The Capital District, because of its population base and strong Interstate access, houses more than 20 firms engaged in food and beverage distribution and marketing, making it a strong candidate for building online grocery retail infrastructure. For firms wishing to distinguish themselves as having a localized supply chain with cooperative marketing facilities like the Menands Market, and their strong backward linkages to the production sector, add value to Albany as a center of development activity.

C. Cluster Formation

If Business Insider predictions are accurate and 15 percent of households adapt to online food purchasing, then locating in close proximity to large consumer markets in an area with strong logistics systems and existing food distribution assets will be essential to start up and emerging growth firms. Being close to large urban population centers from New York to Boston, Albany County is well placed to be support new venture formation as well as business attraction and expansion in this market.

Firms in this sector require relatively simple support. Much of the technical and professional support requirements are met by existing programs training programs such as the Hudson Valley Agribusiness Development Corporation's Incubator without Walls and the Farm and Food Business Accelerator programs. These programs have supported a number of viable Hudson Valley based online grocers such as Hudson Valley Harvest and Field Goods. Additional support requirements include:

- Access to nimble, start-up capital networks;
- Strong local food purchasing networks;
- Access to distribution and logistics support;
- Flex-warehousing options with rapid expansion opportunity;
- Package design and manufacturing support;
- A technologically savvy work force with app development and ERP experience; and
- Third-party logistics companies to support just-in-time processing models.

Many of these components exist in Albany County and the Capital District but have not been organized to market to this disparate group of operators.

D. Cost Basis and Competition

A solid understanding of the cost basis of this industry and the underlying issues of financial sustainability is just emerging as research is focusing on the sector. With that said, it is generally understood that the industry produces an eight percent profit margin, which is up significantly from a two percent profit margin in 2010. Swift growth in some markets has attributed to this increase inmargins, and many in the industry expect the profit rate to fall as competition increases. The largest components of costs are labor, packing materials, and food, which collectively account for 76 percent of revenue. This leaves a very thin operating margin that is not substantially different than other retail food segments. Because of this, the future of the industry will hinge largely on the adoption of Internet grocery shopping in target segments outside of those who currently engage in the practice

APPENDIX B-4: FARMER TO FARMER EXCHANGE

Farmer-to-Farmer Exchanges

• THE NEED

Albany County's agricultural sector is comprised of many small, resource limited farmers. Access to resources and services at the appropriate time and scale is a factor that limits the success of many such farms, even though many of the needed resources exist in the marketplace. This recommendation seeks to address this need through a farmer-to-farmer exchange.

• THE RESPONSE

In major U.S. cities, industry-specific electronic exchanges or "marts" have emerged as a resource to support growth and development of a variety of industries. Exchanges tend to emerge when an industry is both concentrated, or specialized, within a geographic area and dominated by the presence of many small firms that can benefit from community support. Exchanges are most often simple information hubs created for purposes such as showcasing intra-industry services, offering products for sale and exchange, supporting new business development, and exchanging non-proprietary information.

These exchanges serve as virtual hubs for innovation, interaction, and commerce for an industry sector. In this regard, they are not unlike the design centers that support the construction, architecture, and interior design industries with permanent showrooms for major manufacturers and service providers, revolving displays of the latest research and inventions, and regular conferences to promote inter-profession trade of ideas and research.

Agricultural businesses can benefit from sharing information and resources in much the same way as the building trades, information technology, and medical industries that support such business activities now. As with these industries, most of the services can be offered within the structure of a virtual, or web-based, exchange whose utility will be driven by active engagement by the agribusiness community within Albany County and the broader Capital Region of New York.

The concept of the Albany County Farmer-to-Farmer Exchange is to create an active resource that is managed by a group of peer businesses under an existing association to provide a range of information services and transaction opportunities such as peer reviews of local vendors and service providers, farmland availability, capital resources, farm product trade offers, and discussion forums for relevant current topics.

It is expected that the proposed Farmer-to-Farmer Exchange would include the following minimum elements:

- **a peer-to-peer directory of services, vendors, and resources**
- **a market place to trade agricultural products such as hay, grains, silage, etc.**
- **a forum to share the latest ideas and events by topic or industry sector**
- **a marketplace to sell, trade or "swap" parts, equipment, land, livestock, inputs, soil amendments, and other capital equipment**
- **a connection between landowners and land seekers to facilitate agricultural expansion**
- **an employment and job-sharing board to support workforce development and improve access to farm friendly off-farm employment**
- **a forms library to reduce the cost of legal documents such as food safety forms, employment agreements, crop production contracts, sales agreements, risk management documents, property and equipment lease agreements, transportation contracts, license agreements, service agreements, and others**
- **a blog where farmers can share cost saving and marketing information**
- **a blog for discussion of food safety and regulatory compliance issues that match the scale and scope of farms in the region**

Collection and dissemination of the above referenced information is essential for the development of the industry. Yet collecting this type of information on an ad-hoc basis represents a significant undertaking that is out of the reach of most farms, and thus, many choose to go without. Furthermore, there is little private economic incentive to motivate the creation of such an information exchange and transaction system.

Given the rise of regulatory intervention on small farms, most particularly in food safety, the blog functions of the recommended exchange should be closely managed by qualified topic area specialists to ensure that the information exchanged is both qualified and accurate. As the Food Safety Modernization Act and GAP become a reality for small farmers and agricultural commodity transporters, it will be important to ensure that this information is disseminated and explained. Furthermore, the forms needed to comply can be easily shared and adapted, adding high value to the forms library component of the exchange.

The proposal is to create a virtual farmer-to-farmer exchange using low-cost Internet technologies called wikis and blogs that are often available free as open-source software and usually require little or no programming experience to make operational. These web technologies would capture peer-reviews of vendors and serve as a "swap meet" for equipment, parts, and materials; provide a town hall forum for ongoing concerns; and hopefully serve as an interchange for land, tenant farming opportunities, and information sharing sharing. Further, vendor-to-vendor marketing of agricultural products, such as grains, hay, nutrients, and horticultural products, are also possible via this model or by combining the above exchange with an off-the shelf, online transaction system like Square.

The costs associated with providing a virtual farmer-to-farmer exchange as described above are minimal but not insignificant. Most often paid promotional activities and small transaction fees cover these costs. For example, if an implement vendor one hundred miles away wants to demonstrate the latest in irrigation technology, he or she may pay to host a live video demonstration and conference call on the website. This event would be recorded, saved, and searchable on the web. Such exposure is of great value to the provider and the recipient.

Additional value can be added to the farmer-to-farmer exchange by adding at-place exchange and auction services and third-party services to facilitate IRC 1031 exchanges. * Integration of transaction services may eventually lead to the need for a regionally centered exchange location or auction site. Facilities such as the Menands farmers' market may serve as an ideal location for such activities as they are centrally located and are already a known center of activity.

Given the large number of small livestock operations, affiliating the exchange with a 1031 administrator would allow farmers to trade assets such as equipment, land, and breeding stock in certified "like-kind" transactions that reduce or eliminate capital gain taxes. These exchange mechanisms are commonplace in the real estate market locally but rarely used in livestock and equipment exchanges unlike the Midwest and Western United States. Groups, like the Farmers Legal Action Group, can help establish third-party exchange services as required by the Internal Revenue Service.

*** IRC Section 1031 provides an exception and allows you to postpone paying tax on the gain if you reinvest the proceeds in similar property as part of a qualifying like-kind exchange. Gain deferred in a like-kind exchange under IRC Section 1031 is taxdeferred, but it is not tax-free.** https://www.irs.gov/uac/like-kind-exchanges-under-irc-code-section-1031

Definitions:

Agribusiness – business sector encompassing farming and farming-related commercial activities; businesses that collectively process, distribute, and support farm production

Agricultural District – farmland acreage protected, based on Article 25-AA of New York State Agriculture and Markets Law, to encourage and promote the continued use of said farmland for agricultural production

Agricultural Value Assessment – means the value per acre assigned to land for assessment purposes determined pursuant to the capitalized value of production procedure prescribed by Article 25-AA; provides property tax relief based on non-development assessment values

Agriculture – science of occupation of cultivating land and rearing crops and livestock

Agritourism – agriculturally based operation or activity that brings visitors to a farm or ranch

Capital District – commonly refers to the region including the metropolitan area of Albany and surrounding towns, formalized through the creation of the Capital District Regional Planning Commission to include Albany, Rensselaer, Saratoga, and Schenectady Counties

Community Supported Agriculture (CSA) – food retail system that connects food producers and consumers by allowing the consumer to subscribe the harvest of a farm or group of farms

Confined Animal Feeding Operation (CAFO) – defined by the USDA as a farm in which 1000 animal units are raised in confinement for more than 45 days per year; animal unit is equivalent of 1000 pounds liveweight; 1000 animal units is equivalent to 700 dairy cows, 1000 beef cows, 2500 adult pigs

Cost of Community Services Ratio – the ratio is the relationship between revenue a local government receives to the amount used to provide services to those land uses

Farm Brewery/Cidery – New York law for breweries which lowers license fees, allows for retail sells on site, allows for tastings off premise as long as the brewing/fermenting is done with a certain percentage of New York grown ingredients

Farm operation – practices used to grow crops, produce livestock, and to maintain the viability of the farm

Food Safety Modernization Act (FSMA) – law providing FDA with new authority to regulate the way foods are grown, harvested, and processed, shifting the focus from responding to foodborne illness to preventing it

Good Agricultural Practices (GAP), Good Agricultural Handling Practices (GHP) – voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards.

Land Evaluation and Site Assessment (LESA) – point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features developed by the USDA

Prime and productive soils – land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses

Special Improvement District – defined area in which businesses are required to pay an additional tax to fund projects within the district's boundaries

Suburban sprawl – spreading of developments (such as housing and shopping centers) into suburban

Suburban sprawl – spreading of developments (such as housing and shopping centers) into suburban or rural areas

Value Chain – various processes involved in producing goods (and services), starting with raw materials and ending with the delivered product

Abbreviations:

ACE – Agricultural conservation easements
AFT – American Farmland Trust
AEMP – Agricultural Environmental Management Program
AFPB – Agriculture and Farmland Protection Board
AFPP – Agriculture and Farmland Protection Plan
AML – Agriculture and Markets Law
CCE – Cornell Cooperative Extension
COCS – Cost of Community Services
CSA – Community Supported Agriculture
CDRPC – Capital District Regional Planning Commission
ESCO – Energy service company
ESDC – Empire State Development Corporation
FSC – Forest Stewardship Council
HVADC – Hudson Valley Agribusiness Development Corporation
LDR – Lease of development rights
LEED – Leadership in Energy and Environmental Design
LESA – Land Evaluation and Site Assessment
LTA – Land Trust Alliance
NRCS – Natural Resource Conservation Commission
NYPF – New York Planning Federation
NYSDAM – New York Department of Agriculture and Markets
NYSERDA – New York State Energy Research and Development Authority
NYDEC – New York Department of Environmental Conservation
PDR – Purchase of development rights
SFI – Sustainable Forestry Initiative
SWCD – Soil and Water Conservation District
SWOT – Strengths, weaknesses, opportunities, threats

Agricultural Agencies and Organizations:

Albany County Agricultural and Farmland Protection Board

C/O Cornell Cooperative Extension
24 Martin Road
Voorheesville, NY 12186

Board appointed by the County Legislature to advise the legislature and planning board on issues related to agricultural districts and other matters of agricultural and farmland protection.

Albany County Farm Bureau

P.O. Box 131
Slingerlands, NY 12159
Phone: (518) 872-1290
Fax: (518) 872-1290
http://www.nyfb.org/about/county-farm-bureau/albany-county

A non-governmental, volunteer organization financed and controlled by families, for the purpose of solving economic and public policy issues challenging the agriculture industry.

Albany County Soil and Water Conservation District

24 Martin Road
Voorheesville, NY 12186-9621
Phone: (518) 765-7923
Fax: (518) 765-2490

Public agency providing technical assistance and programs related to soil, water, and natural resources conservation.

American Farmland Trust (northeast

110 Spring Street
Saratoga Springs, NY 12866
(518) 581-0078
http://www.farmland.org
http://www.farmland.org/northeast/index.htm

Nationwide nonprofit organization dedicated to protecting agricultural resources.

Cornell Cooperative Extension of Albany County

Wm. Rice Jr. Extension Center
24 Martin Road
Voorheesville, NY 12186-0497
Phone: (518) 765-3500
Fax: (518) 765-2490
Email: albany@cornell.edu

Educational network with Cornell University linking research based information with community programs in agriculture and food systems, community and economic vitality, environment and natural resources, and nutrition, health, and safety.

USDA Farm Service Agency

108 Holiday Way
Schoharie, NY 12157
Phone: (518) 295-8600
Fax: (855) 862-0831
http://www.fsa.usda.gov

A federal government agency that administers programs for federal assistance programs.

Mohawk Hudson Land Conservancy

425 Kenwood Ave
Delmar, NY 12159
(518) 436-6346
http://www.mohawkhudson.org

A not-for-profit organization dedicated to the protection and stewardship of natural, cultural, and scenic areas in and around Albany County.

Hudson Mohawk Resource Conservation and Development Council

479 NY-66
Hudson, NY 12534
(518) 270-2668

A nonprofit organization promoting regional economic and natural resource development.

Regional Farm and Food Project

148 Central Ave., 2nd Floor
Albany, NY 12206
(518) 426-9331
http://capital.net/~farmfood/index.html

An independent non-profit organization promoting sustainable agriculture and a healthy local food system through farmer education and community development activities.

USDA Natural Resource Conservation Service

61 State Street
Troy, NY 12180
(518) 765-2326
http://www.nrcs.usda.gov

Federal government department offering landowners and farm operators financial, technical and educational assistance to implement conservation practices.

Hudson Valley Agribusiness Development Corporation

507 Warren St., 2nd Floor
Hudson, NY 12534
(518) 432-5360
http://www.hvadc.org

Economic development agency in the Hudson Valley with a specific focus on the viability of the agricultural economy in the region.

Albany County Department of Economic Development, Conservation and Planning

112 State St. Rm. 1006
Albany, NY 12207
Phone: (518) 447-5660
Fax: (518) 447-5662
http://www.albanycounty.com

County government department providing technical assistance for agricultural district review, preparation and implementation of the farmland protection plan and review of development projects.

ADDITIONAL RESOURCES:

Cornell University small farms web page-offering information on small farms, community agriculture, development and agroforestry:
http://www.cals.cornell.edu/agfoodcommunity

NY Farm Link-providing farmers with essential networking, consulting and educational support
http://www.nyfarmlink.org