Jefferson County Agricultural and Farmland Protection Plan

The State of Agriculture in Jefferson County

Adopted April 5, 2016

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The State of Jefferson County's Agricultural Economy

A detailed analysis of Jefferson County farms, farmland, and agricultural economic characteristics is provided in the Appendix A. This information reflects data from the U.S. Census of Agriculture from 2002 to 2012. The following provides a brief summary of recent trends.

Farms

- The 2012 Census of Agriculture reported 876 farms in Jefferson County, a decline of nearly 15% from the number in 2002. Most of the decline, however, occurred between 2002 and 2007.
- Land in farms in Jefferson County totaled 290,811 acres in 2012, an 11% increase from 262,331 acres in 2007. Approximately 36% of the County's total land area is in farming.
- The average farm in Jefferson County in 2012 was 332 acres, an increase from 296 acres in 2007. The New York State average was 202 acres, up from 197 five years earlier. Farms in Jefferson County tend to be larger than those in Lewis and St. Lawrence Counties.

Farm Products

- Jefferson County ranks 4th among NYS counties in Milk Production according to the USDA National Agricultural Statistics Service.

- Jefferson County farms generated $183.6 million in sales in 2012, with the livestock sector accounting for about 75% of the total. The leading agricultural commodities were dairy products ($121.5 million), grain and soybeans ($24.8 million), hay and silage ($17.8 million), and beef cattle ($11.7 million).

- Classified by their principal product, *four out of every five* farms in Jefferson County in 2012 grew mixed crops, produced milk, raised beef cattle, or raised other (or a combination of) livestock.

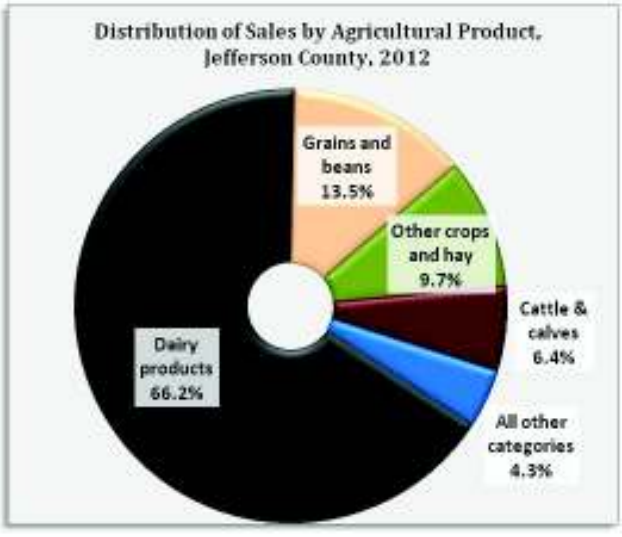


Figure 1- Sales by Agricultural Product, 2012

- Compared to 2002, the County has more farms raising beef cattle, growing fruits and vegetables, and breeding, hatching, and raising poultry for meat or egg production.

However, the number of farms growing fruits and vegetables remains small, comprising less than 4% of all farm operations in Jefferson County.

- The most common crop in the County is forage, which is grown on 595 farms covering 103,320 acres. In 2012, Jefferson County was ranked third of all counties in the state in forage, based on the number of acres grown.

- In Jefferson County, as well as in other top dairy counties in the state, the number of dairy farms has continued to decline, while the average number of cows per farm has steadily increased.

- Between 2007 and 2012, Jefferson County's rank with respect to the sales of cattle and calves declined from 8th to 14th in New York State, although sales were stable. This was due to increased cattle sales in other counties. Its rank increased from 15th to 13th in the value of grain and soybeans, however, as sales in this category more than tripled.

As an industry, agriculture has a relatively high economic impact because farmers purchase supplies and services from many other businesses. According to a statewide study conducted by Cornell Professor Todd Schmidt, for every dollar spent in agricultural output, an additional 43 cents is generated for non-agricultural industries.

- In constant 2012 dollars (i.e., in values adjusted to account for inflation), total farm sales increased by 66%. Sales of livestock and their products rose by 38%, sales of crops by more than 300%. The latter can be attributed to increased production of corn for grain and soybeans.

- In 2007 and 2012, Jefferson County ranked ninth in the state in the total sales of agricultural products and fourth – after Wyoming, Cayuga, and St. Lawrence Counties – in the value of milk and dairy products sold.

- The presence of several major dairy processors in and around Jefferson County is a significant competitive advantage for the dairy industry. The demand for milk is strong and there are multiple opportunities for farmers to sell their milk locally, reducing hauling costs.

- According to the Agricultural Census, 30 farms in Jefferson County were certified organic through the USDA National Organic Program, while 3 farms reported they were transitioning into organic production. Many of these are organic milk producers. Organic product sales in the County totaled nearly $5 million, the 5th highest in New York State.

- An increasing number of Jefferson County farmers are selling their products directly to consumers through such venues as farm stands and farmers markets. At less than $1 million a year, the value of direct-to-consumer sales is quite small relative to *total* farm sales in the County, but it is a growing sector.

Other Farm Characteristics

- Jefferson County farms owned more than $477 million worth of land and buildings in 2012.

- According to the Agricultural Census, 245 farms had on-farm hired labor in additional to their principal operators. These farms accounted for 1,024 employees with $16.6 million in annual payroll.

Jefferson County Compared to Other Leading Dairy Counties and New York State

The following data from the Agricultural Census compares Jefferson County with neighboring Lewis and St. Lawrence Counties and with New York State as a whole. It also benchmarks Jefferson County (which ranked 4th in the state in milk and dairy product sales in 2012) against other leading dairy counties in the state, as listed in the box at right, in a number of key areas.

Figure 2 - New York's Leading Dairy Counties

New York's Leading Dairy Counties, 2012

(Ranked by Milk & Dairy Product Sales):

1. Wyoming County ($199,166,000)
2. Cayuga County ($158,794,000)
3. St. Lawrence ($132,357,000)
4. Jefferson County ($121,480,000)
5. Genesee County ($121,347,000)

The 5 counties accounted for 30% of milk and dairy product sales in New York State.

Some of the highlights below show how Jefferson County compares to New York State as a whole and these other leading dairy counties. See Appendix A for corresponding data tables.

Jefferson County:

- Had one the lowest average production expenses per farm. Jefferson County had slightly higher average production costs compared to all of New York State farms, but much lower than the other big dairy counties. Further, the percent increase in average production costs was much lower in Jefferson County than other locations.
- Lost a slightly higher percentage of farms between 2002 and 2012.
- All locations analyzed lost farmland between 2002 and 2007 with Jefferson County having the highest percentage lost. However, Jefferson gained more farmland than the other locations between 2007 and 2012. Over the entire time frame of 2002 to 2012, Jefferson County lost 12% of farmland compared to 6% for New York State overall.
- Had farms with higher average acreages.
- Had the highest percentage of farms having 500 or more acres – over two times as many large farms as New York State overall.

- Had higher farm sales than Lewis County, but just slightly less than St. Lawrence County.
- Had higher increases in total sales between 2002 and 2012 than New York State overall.
- Had highest increase in the average sales per farm compared to all other locations.
- Had the highest percentage of farms with over $500,000 in sales.
- Had the highest loss in the number of dairy farms with cows. The total number of farms that had dairy cows (not that is not the same as a 'dairy farm') declined in all counties listed between 2002 and 2012. The total number of dairy cows declined in Jefferson and St. Lawrence counties. However, the average number of dairy cows per farm increased uniformly.

Agricultural Resources in Jefferson County

Agricultural Lands

Agricultural land can be found to some degree in every town in Jefferson County. The highest concentration of farmed parcels is found in the towns of Adams, Cape Vincent, Champion, Clayton, Ellisburg, Henderson, Hounsfield, Lyme, Philadelphia, Rodman, and Rutland, all have 40% or more of their land area in agricultural use. The towns of Worth and Wilna have the least amount of farmland, both with less than 5%.

However, the Town of Worth consist of large amounts of forest land (7,732 acres), and Wilna includes a large portion of the Fort Drum military reservation which precludes that area from farming. The graphic above shows the distribution of parcels identified as having some form of agricultural activity on them.

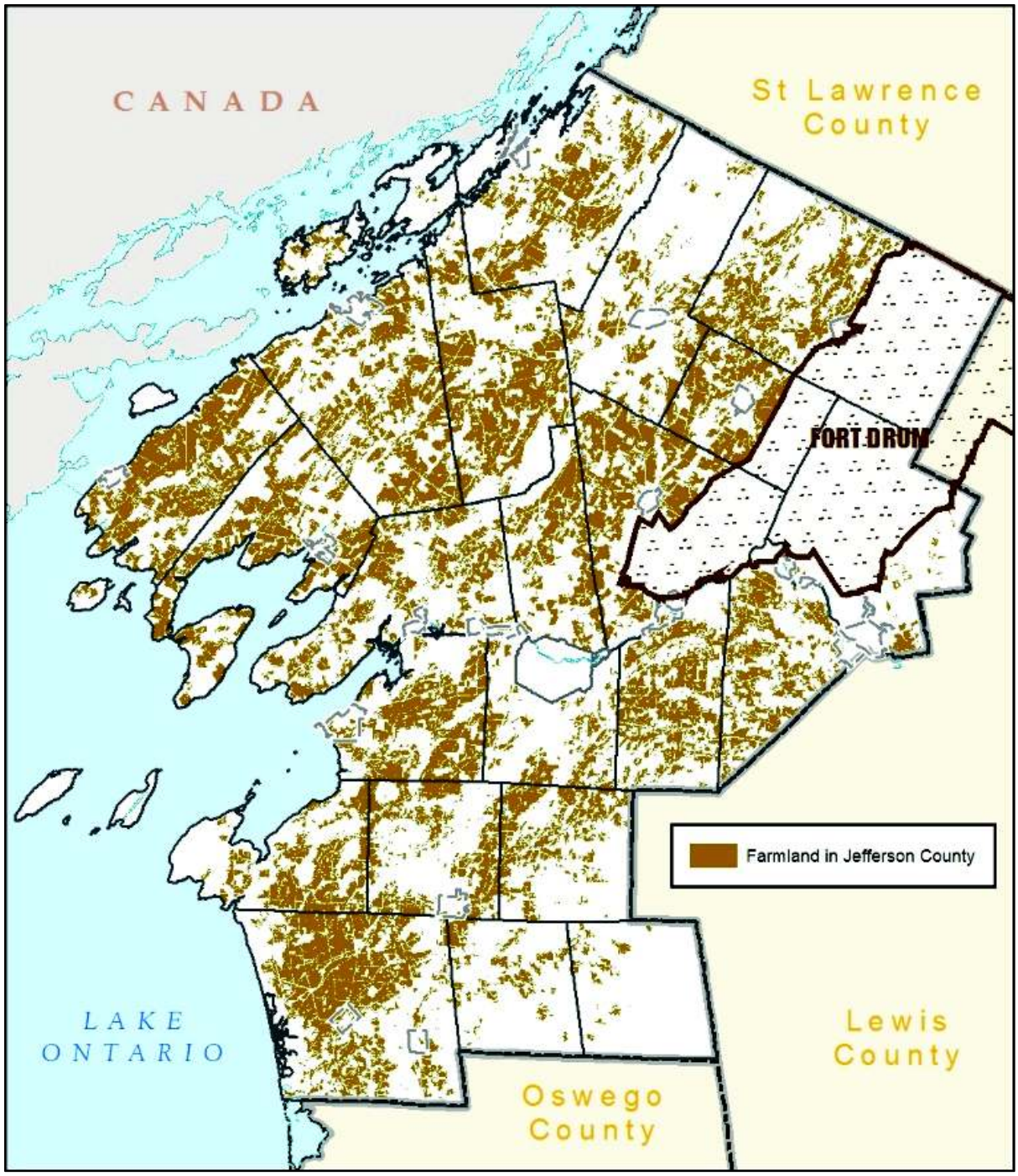
There is a strong correlation between the towns with high percentages of land in farming, and high quality farmland soils. All of the towns mentioned above with at least 40% farmland coverage also have at least 60% coverage of Prime Farmland soils and Soils of Statewide Importance. There are four towns with greater than 60% coverage of these high quality soils that have less farmland. The Town of LeRay contains significant portions of the Fort Drum Military base, which limits the area available for farming. The Town of Watertown has seen a loss of farmland due to development extending out from the City of Watertown. The towns of Brownville and Lorraine have less farmland than other towns with similar amounts of farm soils. In the Town of Lorraine this is due to 7,864 acres of forest land and 2,000 acres of wetlands.

In order to inventory the farmland in Jefferson County, a comprehensive list of farmed parcels was developed using the County's tax parcel database and other sources. This inventory began with all parcels with a property class code in the 100 range (agriculture) or with a code of 241 (Residential parcels with an associated agricultural use). It is important to recognize that many acres of farm land are owned by rural landowners and are rented/leased to farms. These parcels often serve multiple uses. Therefore, in addition to the property class code, all parcels receiving an agricultural land value assessment were added to the inventory, as well as most parcels within one of the three agricultural districts.

The resulting Agricultural Land Map (Map 1) constitutes a nearly complete inventory of farmed parcels in Jefferson County. This will form the basis for additional analysis for this plan, and the identification of the county's priority agricultural area map.

Table 1 describes the farmed parcels found in each of the towns in Jefferson County, and an estimate of the actively farmed areas within these parcels, measured through GIS analysis using the National Land Cover Dataset (NLCD) produced by the USDA. For the purposes of this

chart, forested areas on agricultural, vacant, and larger residential lands within one of the three Agricultural Districts was included as farmland.



Map 1 - Farmland in Jefferson County (Farmland shown includes open land on identified farmed parcels, and woodlands on parcels within an agricultural district)

Table 1 - Farmed Parcels and Farmed Areas

Farmed Parcels and Farmed Areas by Town				
Town	Number of Farmed Parcels	Total Farmed Acres (incl. wooded areas in Ag Districts)	Percent of Town in Farmland	Percent of Non-Fort Drum Land Area in Farmland
Adams	317	11,453	43%	
Alexandria	267	16,517	35%	
Antwerp	217	13,576	20%	37%
Brownville	202	13,033	34%	
Cape Vincent	294	19,173	53%	
Champion	249	13,654	49%	50%
Clayton	291	22,174	42%	
Ellisburg	554	29,065	53%	
Henderson	189	10,718	41%	
Hounsfield	213	13,272	42%	
Le Ray	203	14,851	32%	51%
Lorraine	81	4,712	19%	
Lyme	215	16,313	46%	
Orleans	239	17,584	39%	
Pamelia	145	8,186	37%	
Philadelphia	131	9,592	40%	60%
Rodman	182	10,842	40%	
Rutland	264	14,807	51%	
Theresa	144	8,347	20%	
Watertown	148	22,934	24%	
Wilna	39	1,337	3%	7%
Worth	25	1,120	4%	
Whole County	4,609	275,876	35%	

Area calculations do NOT include the area of towns within Lake Ontario, the St. Lawrence River, and other large bodies of water.

Agricultural Districts

The purpose of the New York State Agricultural District Program is to protect current and future farmland from nonagricultural development. This is a voluntary program to help reduce competition for limited land resources and help prevent local laws which would inhibit farming and raise farm taxes. Predominantly viable agricultural land is eligible to be included in the Agricultural District Program.

Jefferson County has over 230,000 acres of land in three agricultural districts (see Table 2 and Map 2).

Agricultural District 1-southeast, is found south of the Black River and East of Interstate Route 81. It is predominately in the towns of Rodman, Rutland, and Champion, with additional parcels in Adams, Hounsfield, Watertown, Lorraine, and Worth. It includes 1,071 parcels covering 48,677 acres.

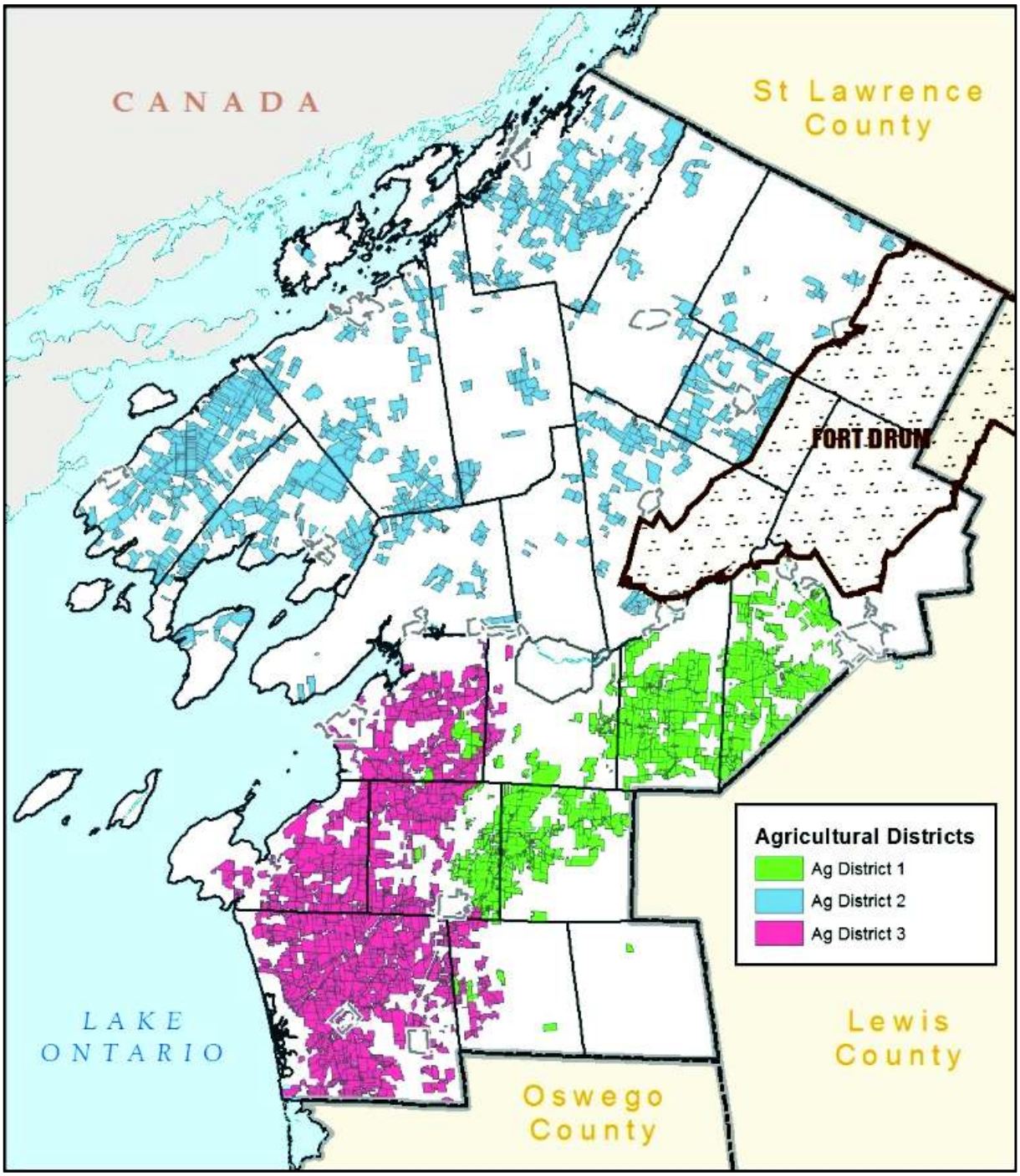
Agricultural District 2-north, is found entirely north of the Black River and City of Watertown. It includes 1,409 parcels covering 112,653 acres.

Agricultural District 3-southeast, is found south of the Black River and West of Interstate Route 81. It is predominately in the towns of Ellisburg, Henderson, Hounsfield, and Adams, with additional parcels in Lorraine and Watertown. It includes 1,447 parcels covering 74,560 acres.

The following table describes these three districts in more detail. The data used is from the latest district reviews; district #1 in 2013, district #2 in 2016, and district #3 in 2010. (The number of parcels and acreage in an ag district changes over time).

Table 2 - Agricultural Districts

Characteristics of Jefferson County Agricultural Districts					
Agricultural District	Total Acres	Acres in Farms	Acres Cropped	Acres owned by farmers	Acres rented by farmers
#1 Southeast	48,677	34,670	15,383	27,963	6,707
#2 North	80,648	50,055	28,028	45,030	5,025
#3 Southwest	74,566	41,945	23,399	30,617	11,328



Map 2 – Agricultural Districts in Jefferson County

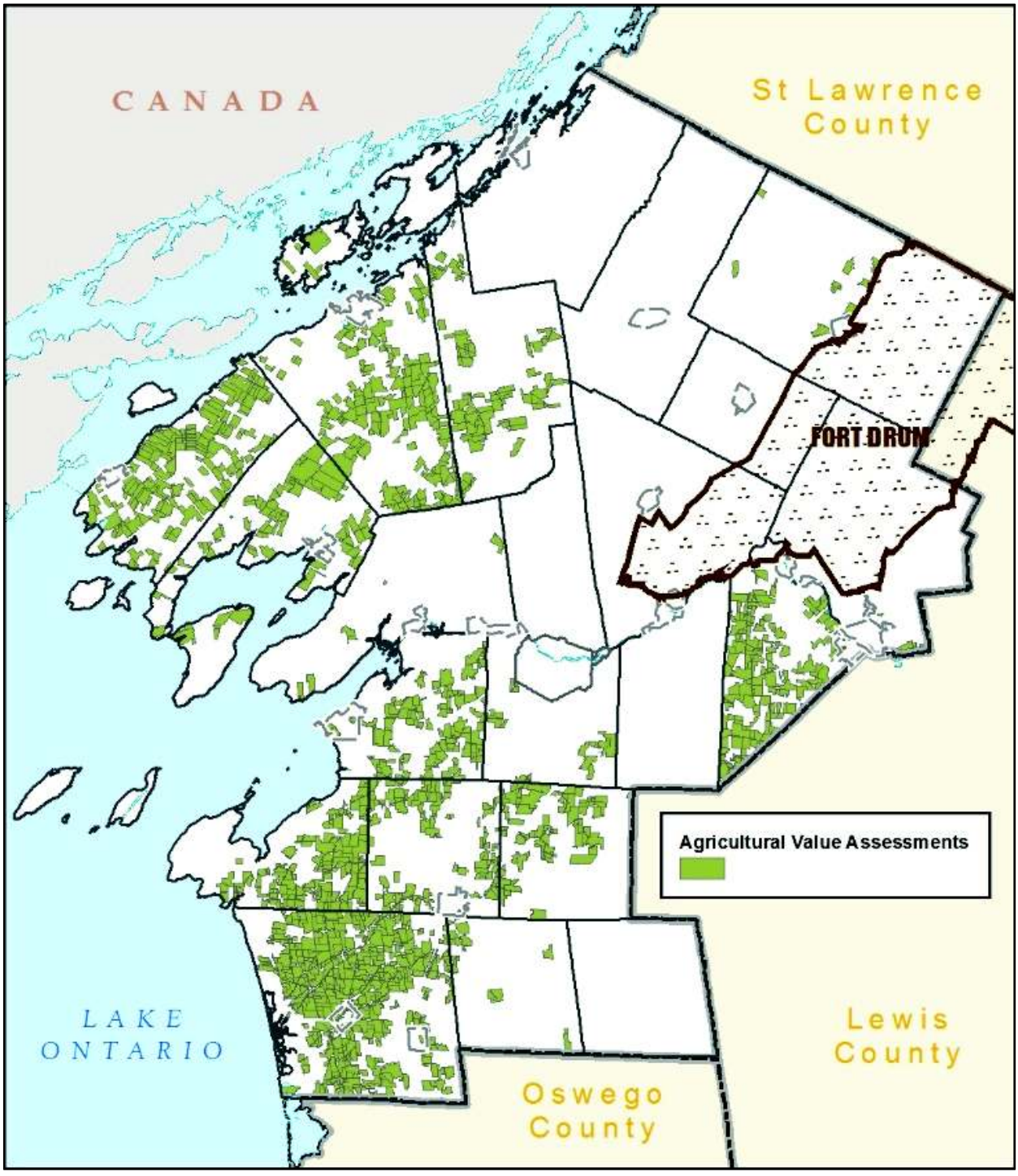
Parcels Receiving Agricultural Assessments

Farmers and farmland owners can take advantage of reduced tax assessments through the New York Agricultural Assessment Program. Generally, farmland that receives a reduced assessment must be actively farmed and show a commitment on the part of the farmer and/or landowner to continue farming.

There are 1,193 parcels in Jefferson County currently enrolled in the Agricultural Land Value Assessment program (Table 3). This is about 26% of all of the farmed parcels in the county. The Agricultural Value Assessment Map (Map 3) illustrates the parcels identified as farmland that either receive or do not receive agricultural value assessments.

Not all farmland qualifies to participate in the Agricultural Value Assessment Program. However, it appears there may be some eligible farmland that is not taking advantage of the lower tax rates offered. There are entire towns in the county that, despite having significant amounts of farmland, have no parcels enrolled in the assessment program. (The towns of Alexandria, LeRay, Pamelia, Philadelphia, Rutland, and Theresa, all have between 19 and 49% land coverage as farmland, but not a single parcel enrolled in the Ag Assessment program.)

The towns of Antwerp and Brownville also have significant areas of farmland, but Ag Assessment participation rates of only 3-5%. The reason for this is probably due to the small difference between the assessed market value of farmland and the agricultural value assessment in these towns. The effort required to join the Agriculture Assessment program is not worth the small amount of property tax savings the farmer would receive. The County Real Property Department believes another reason for the discrepancy is due to the revaluation process. Those towns with recent property revaluations have higher participation rates. There will likely be an increase in Agricultural Value Assessment participation after these towns go through the revaluation process due to a larger property tax savings for the farmers.



Map 3 - Location of farmed parcels that receive agricultural value assessments

Table 3 - Agricultural Land Value Assessments

Agricultural Land Value Assessment program participation rates by town:		
Town	Number of parcels enrolled in Ag Assessment program	Percent of Ag parcels enrolled in Ag Assessment program
Adams	90	28%
Alexandria	0	0%
Antwerp	11	5%
Brownville	6	3%
Cape Vincent	145	50%
Champion	115	47%
Clayton	116	40%
Ellisburg	326	59%
Henderson	106	56%
Hounsfield	75	36%
LeRay	0	0%
Lorraine	12	15%
Lyme	61	29%
Orleans	58	24%
Pamelia	0	0%
Philadelphia	0	0%
Rodman	54	30%
Rutland	0	0%
Theresa	0	0%
Watertown	11	8%
Wilna	7	19%
Worth	0	0%
County Total	1193	26%

Soils

Successful agriculture depends on quality soils. High quality soils require less fertilizer and nutrients for growing crops. Farms with higher quality agricultural soils typically have lower costs and higher production rates. Prime Farmland Soils and Soils of Statewide Importance are defined by the USDA and New York State. These are considered the most productive soils for farming.

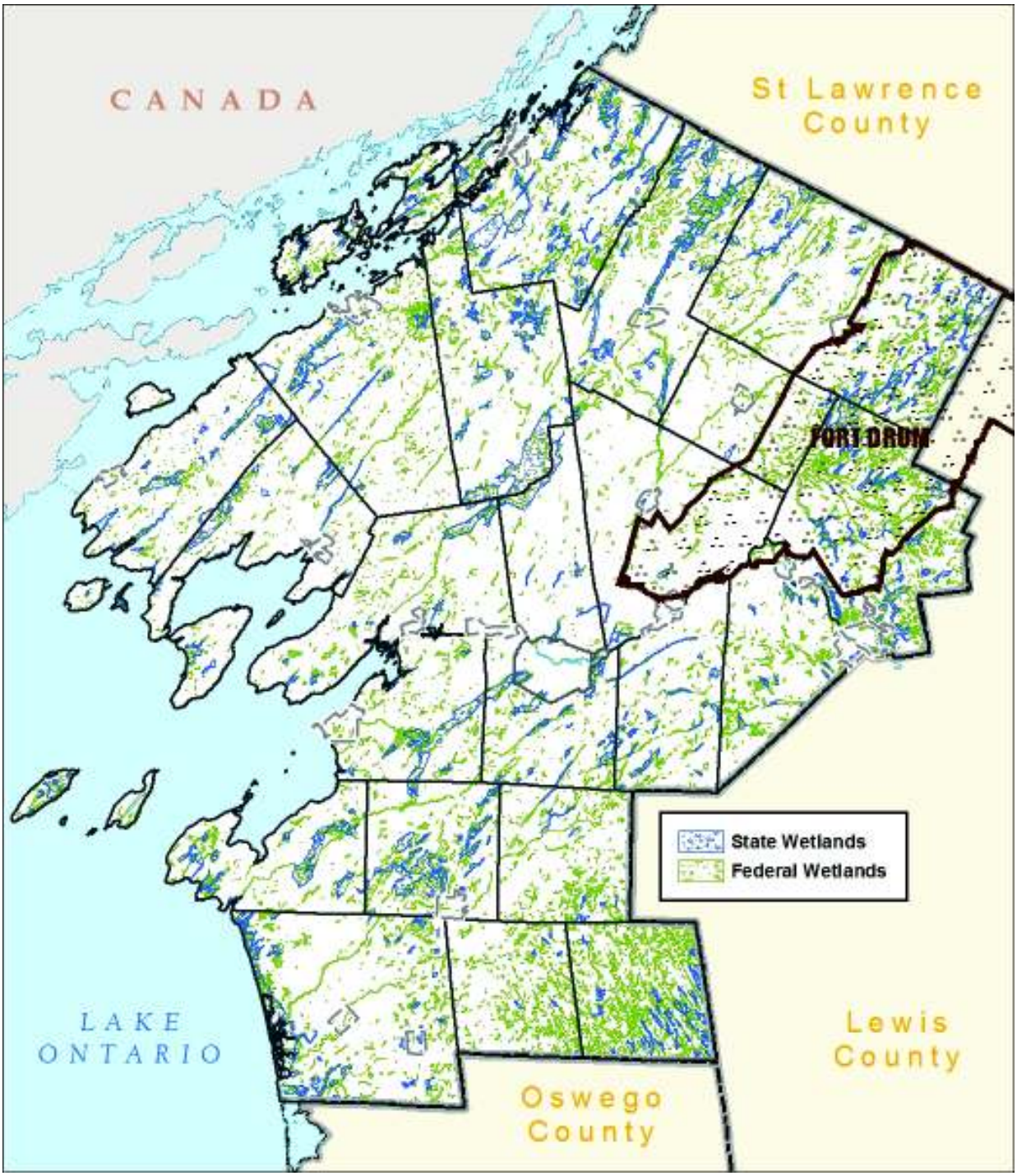
The highest concentration of contiguous prime farmland in Jefferson County is found to the South of the Black River and the City of Watertown. The ten towns in this area contain 60% of the prime farmland soils found within Jefferson County (Table 10).

The twelve towns north of the Black River contain over 65% of all the Soils of Statewide Importance, and soils classified as "Prime Farmland If Drained" in the County. The highest concentrations of soils classified as "Prime farmland if Drained" occur in the northern towns of Antwerp and Philadelphia. This is an indication that there are probably drainage problems on farmland in this area. The Wetlands Map (Map 4) also shows high concentrations of both State and Federal wetlands in the southern towns of Worth, Lorraine, and Adams. While Worth and Lorraine do not currently have as high a concentration of farmland as some other towns, they do have significant amounts of Prime and State Important Farmland soils. These wet areas may limit the possibility of expansion of farming into these towns.

Table 4 - Major Soil Types

Major Soil Types in Jefferson County			
Soil Class	**Soil Characteristic**	**% of County Soils**	**Crops Soils Are Suited to Produce**
I	Soils developed from clay and silt loams with medium lime soil and very high potash suppliers. Drainage from somewhat poor to very poorly drained. Some areas shallow, others with rock outcrops.	45%	Hay crops (limited to grasses), cultivated crops (limited to summer annual grains and forages.
III	Glacial till silt loams and sandy loams. Low lime soils with medium to low potash supply. Well to moderately well-drained. Moderately deep, some with underlying hardpans.	20%	All cultivated crops, legume, grass, and hays.
IV	Silts and silty clays with pockets of outwash sands and gravels with medium lime and medium potash supply. Generally, moderately drained and moderately deep with a few areas of wet or shallow soils.	15%	All cultivated crops, legume, grass, and hays.
V	Outwash sands and gravels, very acid, low lime, very low potash supply, somewhat excessively drained and droughty to very poorly drained and wet. Most of these soil types are found in Fort Drum.	10%	Not suited to cultivated crops, limited grass and hay production
O	Glacial till acid soils, low potash supply, rocky and highly variable drainage	10%	Cultivated crops limited to selected fields. Hay crops limited to selected fields

Major soil types, from 2002 Jefferson County Agricultural and Farmland Protection Plan



Map 4 - Wetlands in Jefferson County

Table 5 - High Quality Farm Soils

High Quality farm soils - percentage of land area by town: (these percentages do not take into account urban development that has occurred on farm soils)					
Town	Land Acres (non-water)	Percent Prime Farmland	Percent Prime Farmland if Drained	Percent Soils of Statewide Importance	Total Percent All Farm Soils
Adams	26,933	31%	11%	23%	65%
Alexandria	46,543	8%	9%	27%	45%
Antwerp	68,692	9%	18%	11%	38%
Brownville	37,902	9%	7%	46%	62%
Cape Vincent	36,004	11%	11%	47%	69%
Champion	28,123	29%	9%	26%	64%
Clayton	52,894	12%	8%	42%	62%
Ellisburg	54,339	35%	10%	26%	72%
Henderson	26,358	25%	12%	18%	55%
Hounsfield	31,303	19%	21%	28%	68%
LeRay	46,990	22%	12%	30%	65%
Lorraine	24,826	23%	6%	33%	63%
Lyme	35,756	2%	2%	62%	67%
Orleans	45,555	10%	12%	39%	61%
Pamelia	22,266	12%	10%	44%	66%
Philadelphia	23,894	29%	33%	16%	78%
Rodman	26,955	31%	11%	32%	74%
Rutland	28,831	36%	6%	26%	68%
Theresa	41,418	9%	11%	20%	40%
Watertown	22,880	24%	13%	30%	68%
Wilna	50,140	10%	7%	22%	39%
Worth	27,428	25%	0%	31%	56%
County Totals	806,029	18%	11%	30%	59%

Natural Characteristics

Location: Jefferson County is located in the northern part of New York State, at the east end of Lake Ontario, in what is referred to as the "North Country". It has a total area of 1,253 square miles or 801,878 acres (Census of Agriculture).

Picturesque shoreline extends more than 150 miles along the St. Lawrence River, Lake Ontario and their offshore Islands. The St. Lawrence River and Lake Ontario make up the St. Lawrence Seaway, which connects the Great Lakes to the Atlantic Ocean.

There is a significant amount of public land in Jefferson County. The Fort Drum Military Base consists of approximately 107,000 acres of land. The New York State Department of Environmental Conservation manages nearly 16,000 acres of forest and almost 39,000 acres of

wildlife area, coastal lands and wetlands. The NYS Department of Parks and Recreation operates 13 NYS Parks in the County.

Water Resources: Jefferson County, except for some isolated areas, has adequate potable water resources. The ground water for individual use is obtained principally from wells drilled in bedrock. Surficial deposits are generally too thin to support a water table. Shallow dug wells supply some water, but usually run dry when the water table is low. In some instances, domestic water supplies are obtained from springs. Several artesian wells in the Watertown area provide an excellent source of high quality drinking water.

Water is scarce in the areas where thin clay and silt deposits overlie limestone bedrock. These areas are mainly in the towns of Cape Vincent, Lyme, Brownville, Hounsfield, Henderson, Watertown, Rutland, and Pamelia. Jefferson County has numerous streams and lakes. They include the Black River, Lake Ontario, the St. Lawrence River, and the Indian River.

Lake Ontario and the St. Lawrence River receive all of the drainage waters from Jefferson County. The Black River enters the County at Carthage, flowing westward through the City of Watertown and emptying into Lake Ontario at Black River Bay in Dexter. In the southern part of the County, Lake Ontario receives drainage from a number of small streams. The largest of these are Sandy Creek, South Sandy Creek, Mill Creek, Skinner Creek, and Stony Creek.

Physiology and Geology: Jefferson County lies within three physiographic regions in the northern part of New York. They are the St. Lawrence River Basin, in the northwestern part of the County along the St. Lawrence River; the Erie-Ontario Plain, in the southwestern part of the County, east of Lake Ontario; and the Tug Hill Plateau, in the southeastern part of the County.

The St. Lawrence Valley and the Erie- Ontario Plain comprise most of the total land area in the County. Together, they are called the “lowlands”. The topography varies from nearly level to rolling and broken, commonly with steep rock ledges. Elevations range from 246 feet mean sea level (m.s.l.), near Lake Ontario and the St. Lawrence River to 650 feet m.s.l.. on the beach of glacial Lake Iroquois, south of Watertown.

The uplands are the Tug Hill Plateau. The elevations range from 650 to 700 feet m.s.l. just south of Black River near West Carthage and Champion to 1,700 feet m.s.l. east of Worth Center. The topography is rolling to hilly. Some features include gorges or gulfs where streams have cut deep narrow channels 100 to 250 feet deep in the underlying shale leaving almost perpendicular cliffs or sidewalls.

Some conspicuous features of the lowlands are the “Clay Plains”; prairie like areas of clayey soils which are almost level, and the “Pine Plains”; an area of extensive, sand delta in the Black River Valley, which is the location of part of the Fort Drum Military Reservation. In Plessis, where flat areas and ledges of almost bare sandstone are exposed, marks in the rocks

indicate a northeast – southwest movement of the glaciers. In the town of Henderson near Lake Ontario, extensive flat areas and ledges of almost bare limestone occur.
Glacial till serves as one of the parent materials for the County. The glacial till varies in composition, but is generally characterized by sharp-edged stone, gravel, sand, silt, and clay. As the glaciers melted from south to north, they filled low-lying areas with water. These areas became inundated with silt and clay soils. Glacial streams carried huge amounts of sand into these glacial lakes, forming areas like Pine Plains.

Protected and Government Lands

The "Conservation Easement and Government Owned Land" Map (Map 5) shows the lands in Jefferson County that are preserved for natural resource protection purposes, or for public use, through ownership or conservation easement by a not-for-profit organization, Jefferson County, New York State agency, or Federal government agency. The majority of preserved lands are government-owned lands.

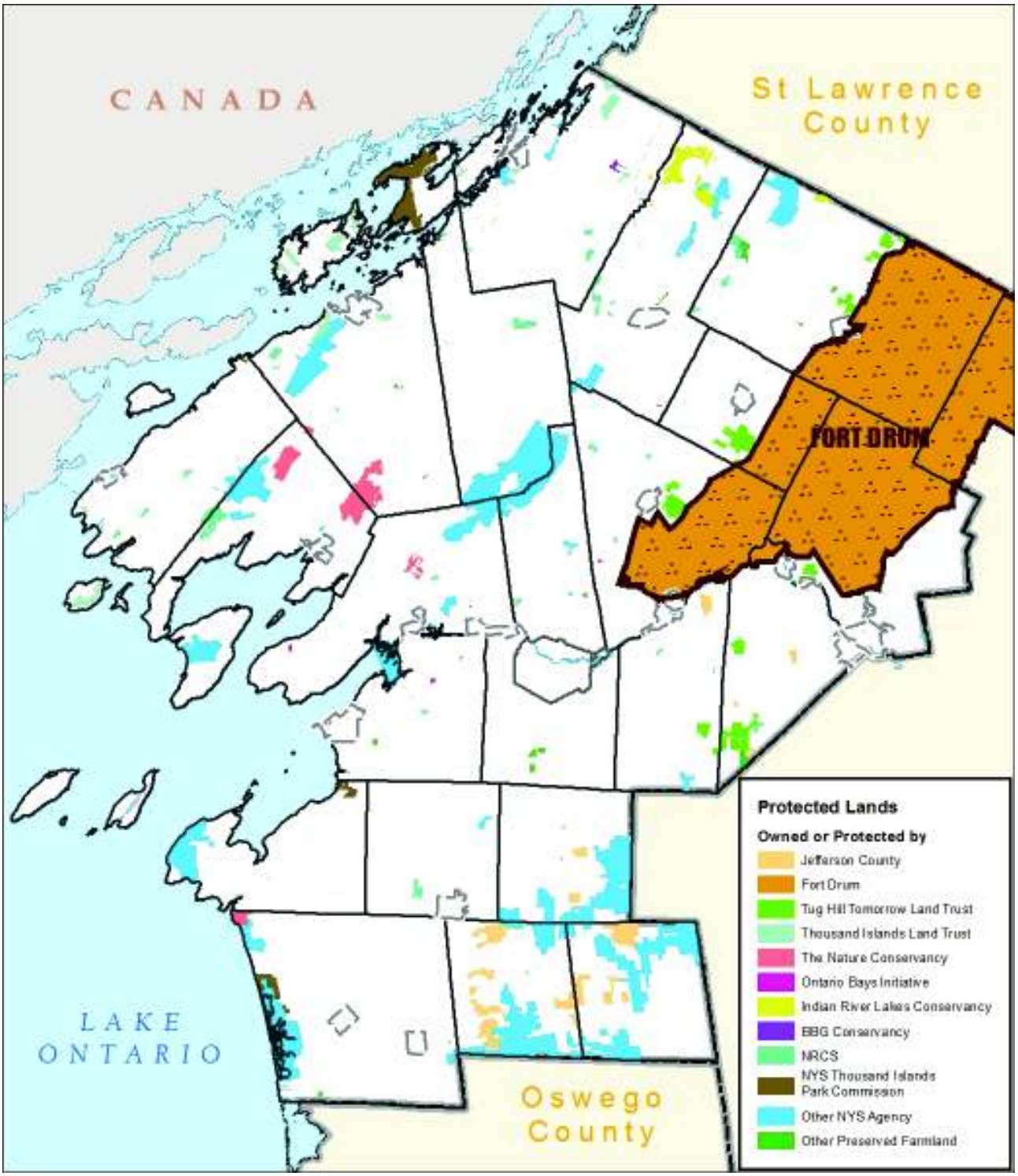
There are currently seven land trusts that work in the County to preserve lands (Table 6 and Map 5). These include:

- BBG Conservancy, Inc.
- Ducks Unlimited
- Indian River Lakes Conservancy
- The Nature Conservancy
- Ontario Bays Initiative
- Thousands Islands Land Trust
- Tug Hill Tomorrow Land Trust

The largest land trust working in Jefferson County on agricultural land preservation is the Tug Hill Tomorrow Land Trust (THTLT). Like all land trusts in the County, THTLT is a non-profit, non-governmental organization working to protect the Tug Hill area's working farm and forest lands, its wild lands, and its natural and cultural heritage, for the benefit of present and future generations. Together with Ducks Unlimited, THTLT has been a significant partner in carrying out the Army Compatible Use Buffer (ACUB) at Fort Drum. The scope of THTLT is oriented to the ACUB program although it works throughout a four-county region.

Since 2009, the ACUB program has been working to establish buffer areas of farmland and natural lands around Fort Drum to limit the effects of encroachment on the base so as to maximize areas inside the installation that can be used for training and support. ACUB is listed as one of 137 priority open space conservation projects in the 2014 New York State Open Space Plan.

Working with the U. S. Army through the Army Compatible Use Buffer (ACUB) program, and using grants from New York State, 20 easements are part of the ACUB program covering 4,705 acres of land. Most of the land included in the easements is working land of small, family farms.



Map 5 - Protected lands in Jefferson County

The largest conservation land owner in Jefferson County is New York State, with nearly 45,000 acres dedicated to natural resource protection, wildlife preservation, public access, and recreational activities. Jefferson County owns 5,472 acres of forest land in the southeastern portion of the county.

The 107,000-acre Fort Drum military base is by far, the largest area of contiguous undeveloped land in Jefferson County. While not considered primarily conservation land, the base has been recognized for its efforts to preserve some of the unique natural and wildlife resources found within its borders and is the largest Fish & Wildlife Management Act (FWMA) Cooperator Area in New York State. To ensure sound natural resources management, an Integrated Natural Resources Management Plan (INRMP) was developed in partnership with NYS DEC and the U.S. Fish and Wildlife Service, and implemented in 2001.

Table 6 - Conservation and Public Access Lands

Conservation and Public Access lands in Jefferson County			
Organization	**Own or Easement**	**Acres of Land**	**Description**
Tug Hill Tomorrow Land Trust	Conservation Easements	4,697 acres	48 parcels primarily farmland, adjacent to, or near Fort Drum
Thousand Islands Land Trust	Own	2,954 acres	95 parcels within the towns bordering the Saint Lawrence River
The Nature Conservancy	Own	3,568	27 parcels in Lyme, Clayton, Brownville, and Ellisburg
Ontario Bays Initiative	Own	77 acres	5 parcels in Brownville, LeRay, and Hounsfield
Indian River Lakes Conservancy	Own	1,706 acres	14 parcels near the lakes and rivers in Theresa, Antwerp, and Alexandria
B. B. G Conservancy	Own	85.6 acres	1 parcel in Alexandria
Natural Resource Conservation Service	Permanent and term easements	3,054 acres	Wetlands Reserve Program, throughout the county, but predominantly in the Northern towns
NYS Thousand Islands Park Commission	Own	3,782 acres	17 parcels along the St. Lawrence River, Lake Ontario, and bays
Other NYS Agencies	Owned by OPRHP, DEC, and other state agencies	41,070 acres	116 parcels throughout the county, including campgrounds, fishing access, State forests, recreational facilities, and wildlife preserve lands
Jefferson County	Own	5,472 acres	Forest land in the 5 towns south and east of the City of Watertown

Priority Farmlands and New York State Priority Farmland Criteria

Development of this county agricultural and farmland protection plan is guided through New York State's Circular 1500. This document outlines the major components to be included in such a plan. One of those requirements is for the County to evaluate and identify critical farmlands proposed to be protected.[1] Identification of priority farmlands is of further importance because landowners wishing to participate in the New York State Farmland Protection Program must now show how their property is consistent with the location of any land or areas proposed to be protected in a county's or a municipality's agricultural and farmland protection plan.

The New York State Farmland Protection Implementation Project is governed by the most recent, Request for Proposals for State Assistance for Farmland Protection Implementation Projects. This is the source of funding for State-sponsored purchase of development rights (PDR) and term easement monies. This funding source now requires a strong connection to be proven between any farmland proposed to be protected using state funds with farmland identified as priority agricultural areas in the county's Agricultural and Farmland Protection Plan.

The current Round 13 RFP states: "To be eligible for funding under this RFP, the location of each proposed project must, at a minimum, be consistent with the location of any land or areas proposed to be protected in a county's or a municipality's agricultural and farmland protection plan." Further, on the Conservation Easement Proposal Rating Sheet, one of the criteria to be measured is: "Illustrate (in a mapped or other visual form) where the subject property is located within a portion of one or more local jurisdictional areas designated as a priority for protection."

Identification of important farmlands is important not only to support landowners in Jefferson County interested in participating in the State PDR program, but it is essential information upon which many important projects and planning decisions can be made.

Jefferson County conducted a thorough process to define priority farmlands, and to map these areas to aid in future planning.

Step 1: Identify Current farmland

A comprehensive geographic database of farmed parcels was assembled from a variety of sources. Beginning with tax parcels with agricultural property class codes, additional farmland was identified through landowners' use of agricultural land value assessments, and their property's location in agricultural districts. Additional verification was performed using

[1] The state has elevated the importance of county-level priority farmland identification because NYSDAM provides funding to farmland protection projects that are consistent with local agricultural and farmland protection plans.

recent aerial photo interpretation. The results of this process are shown on the Agricultural Lands Map (see Map 6).

Step 2: Evaluate the 2008 Jefferson County PDR program framework criteria

In 2008, Jefferson County developed a Purchase of Development Rights program framework that included a system for prioritizing farmland for protection. The original effort, led by the Agricultural and Farmland Protection Board, and a working group of stakeholders from numerous government agencies, not for profit organizations, and private individuals, determined that the following criteria were those that defined priority farmlands in Jefferson County.

- Quality of Soils
- Percent of farm available for agricultural production
- Level of demonstrated farm management
- Public road frontage
- Proximity to public water
- Proximity to public sewer
- Proximity to a public drinking water source
- Stream and water frontage
- Other significant natural resources (wetlands and public parks)
- Presence of buffers around significant natural resources
- Surrounding protected farmland
- Surrounding non-protected farmland
- Presence in an Ag District
- Number of acres to be protected
- Number of times applied for the PDR program

This working group felt these criteria were not equal in weight however, as some were deemed to be more important than others in determining where priority farmlands are. Therefore, each criteria was given a ranking. Application of these criteria and their rankings result in some farmed parcels scoring higher and thus in the context of a PDR program, should be given preference when multiple applications are received for PDR funds.

JEFFERSON COUNTY FARMLAND PROTECTION PROGRAM
2008 Ranking Criteria: Score Sheet

RANKING CRITERIA	Measurable	Thresholds	Weight	MAX Weight
FARMLAND VIABILITY (SUBJECT PROPERTY)	Quality of Soils	Based on RPS Agricultural Assessed Value of Soil Associations	1-40	40
	% Total Farm Available for Ag Production	Greater than 90%	10	10
		75-90%	5	
		<75%	0	
	Level of Demonstrated Farm Management	Owner participates in farm management programs, BMPs	5	5
		Owner has not invested in farm, does not participate in programs	0	
DEVELOPMENT PRESSURE	Public Road Frontage	Greater than 20 LF/acre	10	10
		15 – 20 L.F/acre	7	
		Between 10-15 L.F/acre	5	
		< 10 L.F/acre	0	
	Proximity to Public Water	Located within ¼ mile	10	10
		Located between ¼ - ½ mile	7	
		Located between ½ - 1 mile	5	
		Located > 1 mile	0	
	Proximity to Public Sewer	Located within ¼ mile	5	5
		Located between ¼ - ½ mile	3	
		Located between ½ - 1 mile	2	
		Located > 1 mile	0	
ENVIRONMENTAL IMPACT	Proximity to Public Drinking Water Source	Located within watershed of public drinking water source	10	10
	Stream and Water Frontage	> 5000 L.F stream frontage, > 200 L.F. lake frontage	5	5
	Other Significant Natural Resources	< 5000 L.F. stream frontage; wetlands (5+ acres); proximity to public parkland	5	5
	Buffers Significant Natural Resource	e.g. Maintenance of vegetative buffer strips or setbacks; buffers parkland; etc.	5	5
FARMLAND VIABILITY (EXTERNAL FACTORS)	Buffers Protected Farmland	Within ½ mile of protected farmland	20	20
		Within 2 miles of protected farmland	15	
		Within 5 miles of protected farmland	10	
	Percentage of farmland within 2-mile radius	Greater than 75%	30	30
		50 – 75%	5-30 pts	
		< 50%	0	
	Located within an Ag District	Farm is located within a certified agricultural district	5	5
ACREAGE IMPACT	Number of acres to be protected	Greater than 500	10	10
		200-500	7	
		Between 50-200	5	
		Less than 50 acres	0	
PROPERTY OWNER COMMITMENT	Number of times applied to program	More than once	5	5
		First time	0	0

Figure 3 - Jefferson County 2008 Ranking Criteria Score Sheet

The County PDR criteria were compared to the requirements in New York State Ag and Markets Circular 1500, and the Conservation Easement Proposal Rating Sheet. These documents include general criteria for measuring and assessing the importance of farmland. This comparison, shown in Table 7 below, provides an evaluation of the County PDR criteria to determine whether they are comprehensive, covering all of the elements described in Circular 1500 and the Proposal Rating Sheet, or if adjustments should be made. These general criteria include the following measurable elements for each farmland parcel:

- Value to the agricultural economy of the county
- Level of conversion pressure
- Consequences of possible conversion

- Open space value
- Serve as a buffer for a significant natural public resource containing important ecosystems or habitat characteristics
- Long-term potential for the agricultural land to remain in viable agricultural production
- Level of commitment for farmland protection demonstrated by the local project partners
- Cost of the proposal in relation to the acreage to be protected

Table 7 - New York State and Jefferson County PDR Criteria

Comparison of State and Jefferson County PDR Criteria	
State Criteria Category	**Jefferson County 2008 PDR Framework Measurable Criteria**
Value to the agricultural economy of the county	Quality of Soils % Total Farm Available for Ag Production
Level of conversion pressure	Public Road Frontage Proximity to Public Water Proximity to Public Sewer
Consequences of possible conversion	Buffers Protected Farmland Percentage of farmland within 2-mile radius Located within an Ag District
Open space value	Other Significant Natural Resources (The following criteria could fit here, too, but I would recommend adding something like: Percentage of preserved open space within a 2-mile radius)
Serve as a buffer for a significant natural public resource containing important ecosystem or habitat characteristics	Proximity to Public Drinking Water Source Stream and Water Frontage Buffers Significant Natural Resource
Long-term potential for the agricultural land to remain in viable agricultural production	Level of Demonstrated Farm Management
Level of commitment for farmland protection demonstrated by the local project partners	Number of times applied to the program
Cost of the proposal in relation to the acreage to be protected	Number of acres to be protected

Step 3: Make adjustments to the list of criteria, and the weights given to each criteria

Based on the comparison between the State and County criteria as well as through evaluation of the 2008 PDR Criteria, adjustments were made to the list of criteria and ranking scores. Specifically:

- Quality of Soils - Based on RPS Ag Assessed Value of Soil Associations
    - The method to measure this should be defined more specifically. The score should be based on the percentage of 1a-5a soils on the parcel. If the parcel is 100% covered by these soils, it should get a score of 40. If it is 50% covered by these soils, it should get a score of 20.
- % Total Farm Available for Ag Production
    - The amount of open land available for planting of crops should be used.
- Level of Demonstrated Farm Management
    - Although the data to use this criterion for mapping is not available, it is an important criterion to include in a PDR program. It should include participation by the farmer in one or more farm management or technical assistance programs.
    - Although the mineral soils group was used as a measure of farmland value, the committee also felt soils quality relates directly to the long term viability of a farm. Therefore, an additional measurement using Prime Farmland and Soils of Statewide Importance should be added to the list of criteria.
- Public Road Frontage
    - Road frontage is a popular method to measure development pressure, however, all roads are not created equal. It was decided that State and County roads provide easier access to land, and therefore result in higher levels of development pressure. Local road frontage should not be included in this criteria.
- Proximity to Public Water
    - This is a good measure of conversion pressure, and the weight for this criteria should be increased.
- Proximity to Public Sewer
    - This is a good measure of conversion pressure, and the weight for this criteria should be increased.
- Proximity to Public Drinking Water Source - Located within watershed of public drinking water source
    - Public Drinking Water source should be defined in this context as a municipal water supply. The watersheds should be defined as any areas surrounding these water supplies identified by the municipality as needing protection.
- Stream and Water Frontage
    - A good measurement for providing a natural resource buffer.
- Other Significant Natural Resources
    - Measuring wetlands needed some clarification. The criteria used should be - If the parcel contains 5 acres or more of wetland.

- Buffers Significant Natural Resource – relating to open space value
    - Buffers parkland, etc. should be more specifically defined as – The percentage of preserved or public open space within a 2-mile radius.
    - Parkland should include all preserved lands, including County owned forest lands, properties owned or preserved by a land trust, and lands enrolled in the Conservation Reserve Program.
- Buffers Significant Natural Resource – relating to resource protection
    - Maintaining vegetative buffers is a good environmental practice, and parcels using them should be scored higher than those without. However, the data is not available to map them. Although they are included as a score for PDR evaluation, they are not included as a criterion for mapping the farmland priority areas.
- Buffers Protected Farmland
    - This is a good measurement, but the 5-mile radius is a bit large. It should be reduced to a ½ mile radius.
- Percentage of farmland within 2-mile radius
    - This is a good measurement. But the weight should be reduced in relation to development pressure.
- Located within an Ag District
    - This is a good and obvious measure.
- Number of acres to be protected
    - This is a good and obvious measure. The larger the parcel, or the larger the total area of a farm operation, the bigger the benefit is in relation to the effort and expense of protection.
- Level of commitment – Number of times applied to program
    - It was decided that this is not the best measurement to use, and doesn't reflect the measurement of commitment described in the Ag and Markets documents.
    - The Round 13 Proposal Rating Sheet evaluates "Evidence of local support…" and asks for documentation within policy documents of other local partners. This score should include criteria that measure the commitment of the municipality and any sponsoring organizations toward farmland preservation. Elements such as: if the municipality has a Right to Farm Law, the parcel has been identified for preservation in any other plans, or the parcel is in a farm friendly zoning district.

Step 4: Delineate and map the agricultural priority areas

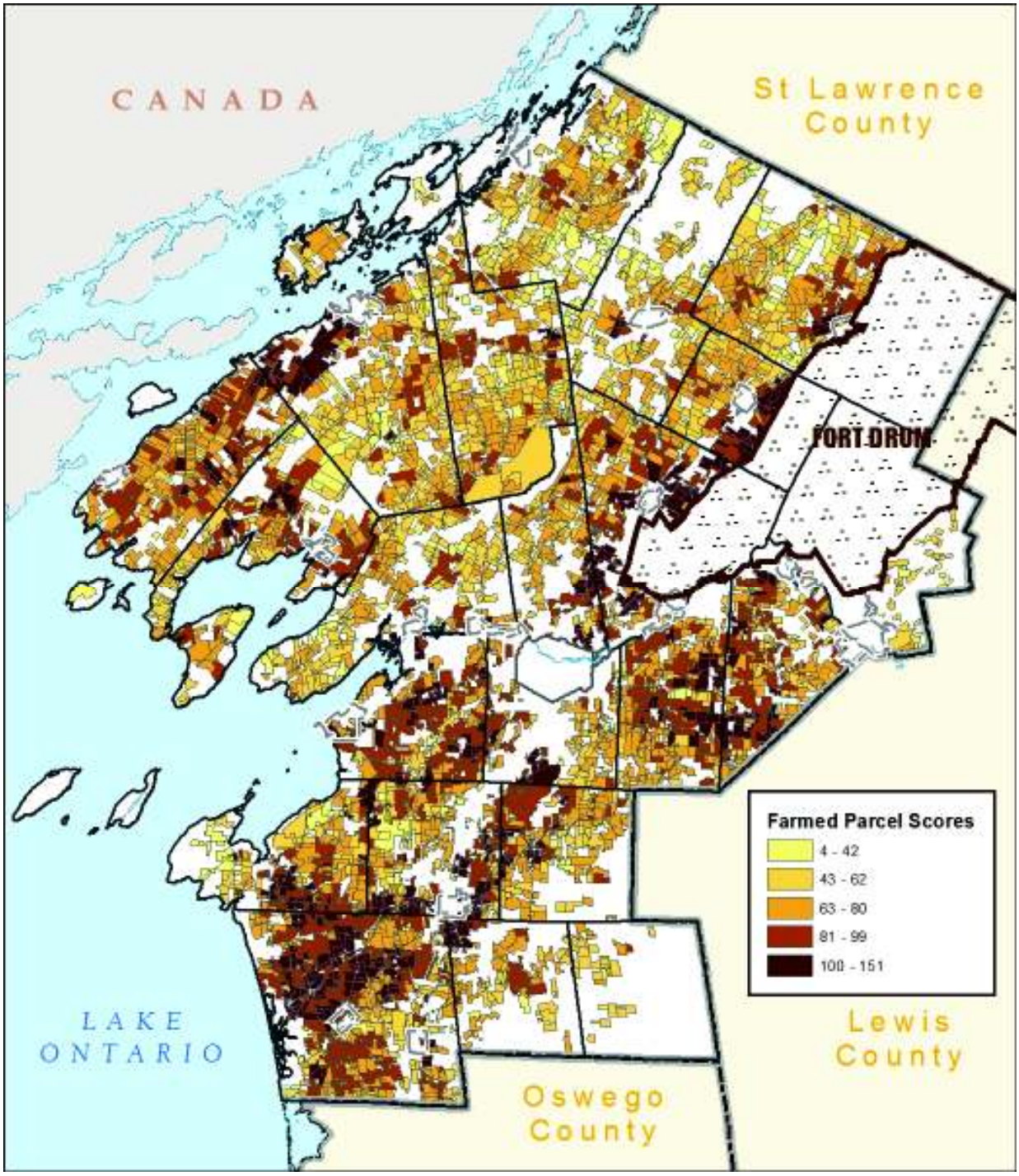
The final list of criteria and scores are applied to the identified farmland parcels, added together, and the parcels mapped with their score. Table 8 describes the new scores after the adjustments agreed upon by the committee.

Table 8 - Adjusted Jefferson County PDR Criteria

Adjusted Jefferson County PDR Criteria			
Category	**Criteria**	**Measurement**	**Score Range**
Value to the agricultural economy of the county	Quality of Soils	Based on the percentage of mineral soils groups 1a-5a on the parcel	1-40 (100% coverage = 40, 50% coverage = 20, etc.)
	% Total Farm Available for Ag Production	Based on the percentage of open land available for crops	75-90% = 5 >90% = 10
Level of conversion pressure	Public Road Frontage	Based on the linear feet of State or County Road Frontage per acre	>20 linear feet/acre = 10 15-20 feet/acre = 7 10-15 feet/acre = 5
	Proximity to Public Water	Based on distance from a municipal water district or water main	< ¼ mile = 10 ¼ - ½ mile = 7 ½ - 1 mile = 5
	Proximity to Public Sewer	Based on distance from a municipal water district or water main	< ¼ mile = 10 ¼ - ½ mile = 7 ½ - 1 mile = 5
Consequences of possible conversion	Buffers Protected Farmland	Any adjacent protected farmland	Any protected farmland within ½ mile = 20
	Buffers other farmland	Based on percentage of farmland within a 2-mile area	0-10 (100% surrounding = 10, 50% surrounding = 5, etc.)
	Located within an Ag District	Farm is located in a certified agricultural district	Yes = 5
Open space value	Percentage of Public Parkland and other preserved open space within a 2-mile radius	Based on percentage of Parkland and preserved open space within a 2-mile area	0-10 (100% surrounding = 10, 50% surrounding = 5, etc.)

Adjusted Jefferson County PDR Criteria			
Category	**Criteria**	**Measurement**	**Score Range**
Serve as a buffer for a significant natural public resource containing important ecosystem or habitat characteristics	Proximity to Public Drinking Water Source	Based on distance from a municipal water supply and any adjacent protection area	Located within a municipal drinking water protection area = 10
	Stream or water frontage	Based on linear feet of stream bank or open water edge	> 5,000 feet of stream frontage or 200 feet of water = 5
	Maintenance of vegetative buffers	Based on existence of such buffers along stream banks, water, and wetlands	Yes = 5
	Wetlands	Based on amount of wetland on the parcel	5 acres or more of any wetland = 5
Long-term potential for the agricultural land to remain in viable agricultural production	Level of Demonstrated Farm Management	Participation in one or more County sponsored technical assistance or farm management programs	Yes = 5
	Percentage of Prime Farmland and Soils of Statewide Importance (NOT including Prime Farmland if drained)	Based on the percentage of Prime Farmland or Soils of Statewide Importance found on the parcel	1-40 (100% coverage = 40, 50% coverage = 20, etc.)
Level of commitment for farmland protection demonstrated by the local project partners	Municipality has adopted a Right to Farm Law	The municipality has a RTF Law	Yes = 5
	The parcel is in a farm-friendly zoning district	The parcel is in a farm-friendly zoning district	Yes = 5
	The parcel has been identified for, or is in an area identified for, preservation in another farm or open space plan	The parcel or area has been identified in another State or local plan	Yes = 5
Cost of the proposal in relation to the acreage to be protected	Number of acres to be protected	Based on the size of the parcel, or total area to be protected	> 500 acres = 10 200-500 acres = 7 50-200 acres = 5

Using these adjusted criteria and the farmed parcels identified in this plan, each farmed parcel was given a score, and mapped. The results of this evaluation are shown in the following map.

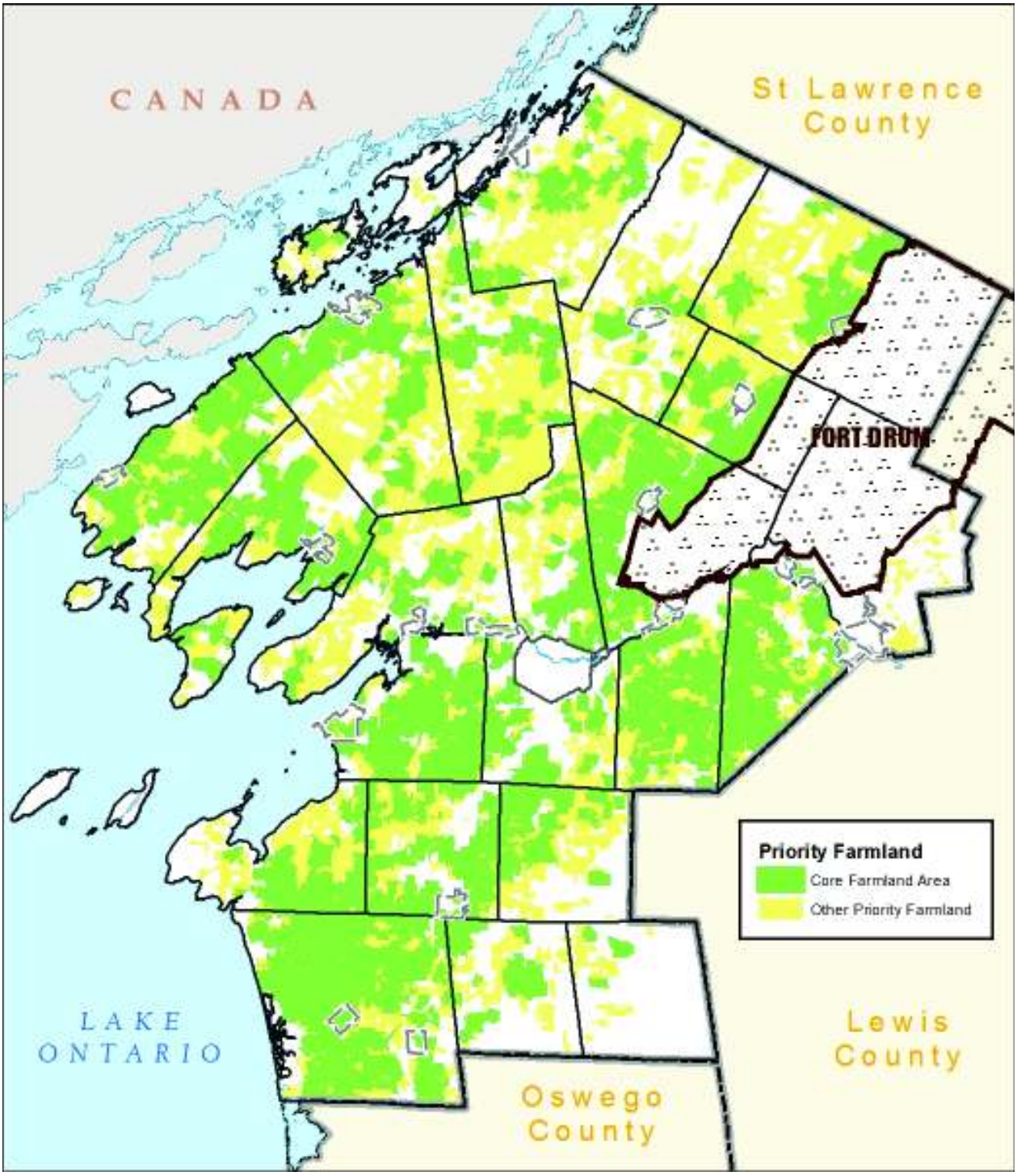


Map 6 - Agricultural Lands Map

While all of the farmland identified in this plan should be considered a priority, as far as preservation efforts are concerned, there is a select, core area that is of special concern. The following map shows the Priority Farmland Area described in this plan, and a special Core Area that the committee considers critical to the continued economic vitality of the agricultural industry in Jefferson County. These core areas, symbolized in green on the following map, deserve extra attention beyond preservation efforts, especially when local or regional projects will have a significant impact on their continuation as farmland.

The farmed parcel inventory and some of the data used to calculate individual scores will change from year to year. Given the fluid nature of this data, we feel it is important to note that:

> *The Priority Agricultural Areas Map should not be interpreted to mean other areas not included do not have viable farmland that deserves protection. Due to the dynamic nature of some of the data used to produce this map, it will change over time. For example, farmed parcels can be added to the agricultural districts during the annual enrollment period, and the 8-year review. As farmland conversion and farmland preservation occurs, development pressure will increase in some areas, while decreasing in others. This map and the scores applied to the individual farm parcels should be updated as new information becomes available.*



Map 7 - Priority Farmland Area Map (Core areas in green and other farmland areas in yellow)

Agriculture and Local Plans/Regulations

Why Review Zoning and Plans?

A comprehensive plan is the foundation for local land use regulation and is important because it also establishes the policies, vision, and strategies desired by a community. Land use regulations, including zoning, flow from the plan to meet those community objectives.

Both can affect agriculture in many ways. Zoning can create opportunities or place barriers to farming practices. One of the goals of the Agricultural and Farmland Protection Plan is to identify barriers to agricultural viability including those related to land use regulations and make recommendations concerning farm friendly zoning.

Certain regulations can place challenges and barriers towards establishing or expanding a farm operation. Zoning laws sometimes regulate where farms can operate and at what intensity farmland could be developed for other, non-farm uses. Zoning identifies whether a farm use is permitted as of right, needs no further planning board review, or if it requires a more involved review process such as a site plan or special use permit approval. Some zoning laws go beyond these requirements and regulate setbacks, or height. Others establish minimum acres required in order to be considered a farm or regulate the number of animals a farmer could have.

In some areas, choices made by local communities in their zoning can affect land values, make farm expansion or start-ups difficult, cause fragmentation of viable farmland, and hasten conversion to other uses. When local laws restrict agriculture, a sense of impermanence for farming can develop which in turn, can foster disinvestment in farm operations, and ultimately lead to sale of the land for development. This effect, coupled with non-farm growth pressures such as residential and commercial development, can make selling land for non-farm development appealing. As such, it is an important aspect of agriculture and farmland protection to understand the regulatory climate in the County.

A review of local comprehensive plans and zoning laws was done by the County Planning Department to gauge the level of support given to agriculture at the local town-level and to identify opportunities where regulations could be improved to promote farming land uses. This review included 22 towns including those that have land both in and out of New York State Agricultural Districts.

The results of this review are translated into specific recommendations about changes that can be made locally to improve the farm-friendliness of plans and zoning laws. These recommendations are also informed by guidance offered by the New York State Department of Agriculture and Markets through their “Guidelines of Review of Local Zoning and Planning Laws” and “Local Laws and Agricultural Districts: Guidance for Local Governments and Farmers.

The results are summarized below (Table 9 and 10) to give an overall picture of ‘farm-friendliness’ of municipalities in the County. Each table includes the farm-friendly criteria used in the review.

Summary of the Comprehensive Plan Review

Table 9 - Farm Friendliness of Comprehensive Plans

Comprehensive Plan Farm-Friendly Criteria	Yes - Total # Towns USING this Farm Friendly Practice Wholly or Partly	No = Total # Towns NOT using this Farm Friendly Practice or Does Not Address it	% of all Towns USING This Farm Friendly Practice
Does the plan have a section on agriculture?	10	4	66.67
Does the plan include maps of agricultural lands, important farmland soils, agricultural districts, etc.?	9	5	60.00
Does it explore the role of agriculture in the community? I.e. did a survey include questions about agriculture? Was there anything in workshops about it?	4	10	26.67
Does the vision statement or goals address agriculture in any way? Is there any visible demonstration of the value of agriculture to the community in the plan?	14	0	93.33
Does the plan consider agriculture as an important resource in Town?	14	0	93.33
Does the plan recognize or reference a local or County Agricultural and farmland protection plan?	0	14	0.00
Does the plan include any data on farms and farmland? Acreage? Income or occupations from farming or other demographic data?	7	7	46.67
Does the plan establish policies towards farmland and farming?	8	6	53.33
Does it identify the value of farmland and farms to the community?	7	7	46.67
Does it offer any recommended actions related to farming or farmland or ways to preserve or enhance farming?	7	7	46.67
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?	5	9	33.33
Does the plan discuss NYS agricultural districts and how the town can be supportive of that?	7	7	46.67
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?	5	9	33.33
Is agriculture a consideration of where growth does or does not take place?	7	7	46.67
TOTALS	**104**	**92**	

Note - Seven towns in the County either did not have a comprehensive plan, or plans were developed prior to 1980 and were not available to County planning staff for review.

For the most part, those towns that were included in the review do have comprehensive plans that address agriculture in some way. This is shown primarily by the fact that 93% of the towns have plans establishing a long-term vision that includes agriculture and that identify agriculture as an important resource to the community. About 2/3 of the town plans have a section devoted to agriculture and includes agriculturally related maps. About ½ establish policies towards farms and farmland. A general comparison of 'scores' in the table above shows that overall, slightly more farm-friendly planning practices are incorporated locally than not, but it the results are mixed.

The farm-friendly criteria most often excluded from local planning where less than 1/3 of the towns use the practice are:

- Exploration of the role of agriculture in the community through public input such as through the survey or workshop.
- Recognition or reference of the County Agricultural and farmland protection plan.
- Consideration of farmland as a natural resource and encouragement of use of easements or other protections of those land. Establishment of policies such as PDR, LDR or TDR.
- Establishment of a policy and/or future actions for the agricultural use of open space that may be created in a conservation subdivision or clustering?

The other criteria in the table above that have less than 50% of the Towns using them relate to more detailed planning for farmland protection and incorporation of specific recommendations to protect farmlands and promote agriculture.

Overall, long-range planning via comprehensive plans in Jefferson County shows much support for agriculture and this is an excellent starting place. However, agriculture is treated differently in different locations. Some towns don't emphasize agriculture very much but place value on farms for their contribution to desired rural character. The plans generally lack detail on what strategies, programs, and policies are desired to reach the goals established in the vision statements.

Summary of the Zoning Review

Table 10 – Farm Friendliness of Zoning Laws

Zoning Farm-Friendly Criteria	Yes - Total # Towns USING this Farm Friendly Practice Wholly or Partly	No = Total # Towns NOT using this Farm Friendly Practice or Does Not Address it	% of all Towns USING This Farm Friendly Practice
Does the regulation's purpose statement include a discussion of agriculture, or promoting or preserving agriculture specifically?	11	11	50.0
Does zoning allow agriculture as a permitted use by right in any district?	20	1	90.9
Zoning does not prohibit agriculture in any district other than hamlet centers or commercial areas?	15	7	68.2
Zoning does require special use permits for agriculture or ag-related uses in any district?	14	8	63.6
No higher density or commercial growth are allowed in core farm areas or where a NYS Ag District exists?	17	4	77.3
Does the zoning establish a local agricultural zoning district, ag overlay district, or special use district for agriculture?	18	3	81.8
Does the zoning allow farms to have more than one business or offer flexibility to accommodate the needs of agricultural businesses?	12	9	54.5
Are buffer zones between farmland and residential uses required for new construction or subdivision?	7	15	31.8
Are innovative development patterns that preserve farmland encouraged, allowed, or mandated (conservation subdivision, clustering, TDR)?	9	13	40.9
Are off-site or on-site signs allowed to attract and direct people to farm stands?	19	3	86.4
Are farm stands, farm retail markets, agri-tourist businesses, breweries, etc. allowed?	19	3	86.4
Are farm processing facilities such as community kitchens, slaughterhouse, etc. allowed?	15	7	68.2
Are farm stands limited to selling just products from that one farm?	11	11	50.0
Farm stands do not need a site plan review or special use permit.	18	3	81.8
Does zoning allow for accessory uses such as greenhouses, barns, garages, equipment storage etc. permitted as of right?	18	3	81.8

Zoning Farm-Friendly Criteria	Yes - Total # Towns USING this Farm Friendly Practice Wholly or Partly	No = Total # Towns NOT using this Farm Friendly Practice or Does Not Address it	% of all Towns USING This Farm Friendly Practice
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 ag district? What farming activities take place on or near the site? Whether prime farmland soils are present?	2	20	9.1
Do standards exist that require the PB or ZBA to evaluate impacts of a project on agriculture?	1	20	4.5
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?	0	22	0.0
Does the regulation define agriculture, agricultural structure, farm worker housing, agri-tourism, agri-business?	13	7	59.1
Are farm-related definitions broad and flexible and not confined to a certain number of acres or income earned?	20	0	90.9
Are non-traditional or retail based farm businesses allowed in a district or ag zoned district. For example, can a farmer set up a brewery on site and sell products onsite?	11	9	50.0
Is an agricultural data statement as per AML 25-aa required as part of an application for site plan, subdivision, special use or other zoning?	7	15	31.8
Does the community require placement of an ag disclosure statement on plans or plats when development takes place in a NY certified ag district?	0	22	0.0
No ag-related uses required to get a special use permit or go through site plan review?	11	9	50.0
Does the regulation define and allow for farm worker housing? Are mobile homes allowed as farm worker housing?	4	18	18.2
Are silos and other farm structures exempt from height requirements?	9	4	40.9
Are personal wind mills and solar panels allowed for farms? With permits or permitted as of right?	3	19	13.6
Zoning does not regulate farms by acreage or number of animals	17	2	77.3
TOTALS	**321**	**268**	

Of the 22 towns, eight incorporated a majority of the farm-friendly practices. Most incorporated some of the practices, however. A disconnect between adopted plans and laws is shown: The towns that have the most supportive comprehensive plans do not have the same level of support in their zoning law.

Table 10 illustrates the farm-friendly practices that were incorporated into local zoning laws most frequently in the majority of towns are:

- Many agricultural operations are allowed in most places as a permitted by right use (no planning board review needed).
- Towns do not direct more growth or higher density in core agricultural areas.
- Local agricultural districts or special ag-related districts are established to address farming.
- Off-site signs allowed in many places to advertise farm uses.
- Farm stands and farm retail uses are allowed, often without requiring site plan or special use permits.
- Zoning allows for agricultural-related accessory uses.
- Definitions of agriculture are broad and flexible so many different types of agriculture can be included.
- Towns do not usually regulate farms by acreage of number of animals.

Table 10 also illustrates those practices that <u>were not</u> incorporated very frequently. These include:

- Use of buffer areas between non-agricultural uses and farms.
- Use of techniques such as conservation subdivisions, transfer of development rights, or other innovative land use practices that allow development as well as preservation of open space.
- Requiring development applications to include information about on-site and adjacent agricultural activities.
- Specific requirement that the reviewing board evaluate impacts of a development proposal on agriculture. This is especially important for both SEQR and when a proposal is within a NYS Agricultural District.
- Lack of design standards directing buildings to be placed in a manner that protects or allows farming to take place.
- Lack of incorporation of use of the NYS required Agricultural Data Statement.
- Lack of using the agricultural disclosure notice when a project is in a NYS Agricultural District to inform future landowners that agricultural activities are taking place nearby.

- Lack of defining farm worker housing and offering a wide variety of housing options for farm workers such as mobile homes.
- Lack of addressing farm use of wind mills and solar panels.

The remaining farm-friendly practices showed mixed implementation by towns – where about half the towns use them and half do not.

From these results, a variety of general zoning and planning related recommendations are made to improve the farm friendliness of towns in Jefferson County (See Recommendation Section).

Right to Farm Law in Jefferson County

Jefferson County has adopted a local law recognizing the right to farm. It includes a legislative findings and intent that recognizes agriculture as an important industry in the County that contributes to the economy, maintains open space, enhances the quality of life, promotes environmental quality, and places minimal demands on services provided by local governments. It also recognizes that when non-agricultural land uses extend into agricultural areas, agricultural operations may become threatened due to high land values and nuisance law suits. The law is designed to help maintain and enhance the agricultural industry of the County, to permit the continuation of acceptable agricultural practices, to protect the existence and continued operation of farms, to encourage the initiation and expansion of agricultural businesses, and to promote new ways to resolve disputes concerning agricultural practices and farm operations. It accomplishes this by limiting the circumstances under which farming may be deemed to be a nuisance and to allow agricultural practices inherent to and necessary for the business of farming to proceed and be undertaken free of unreasonable and unwarranted interference or restriction. It also establishes a voluntary mediation program and includes notification of real estate buyers and neighbors through use of a disclosure notice.

Farmland Conversion Pressure

Given the critical role agriculture plays in the economy and quality of life in Jefferson County, loss of farmland is of great concern. Farmland can be lost when it is converted to urban uses, abandoned, or converted to protected, but non-farmed open spaces. In Jefferson County, conversion to urban and suburban uses (commercial and residential) is the primary concern. There is little evidence that much farmland has been recently abandoned. Farmland conversions for other open space uses are not common although there is concern that farmland converted to restrictive wildlife habitat preserve lands under federal programs may become an issue in the future.

However, a significant issue in Jefferson County involves concerns about increasing land prices and competition for farmland. That competition is both between farmers for farmland, and with others for conversion to residential or commercial use. Farmers, especially dairy

farmers, are increasingly concerned about the availability of land to expand operations and manage manure. Competition for land between both farmers and non-farmers, and increasing land costs are other concerns.

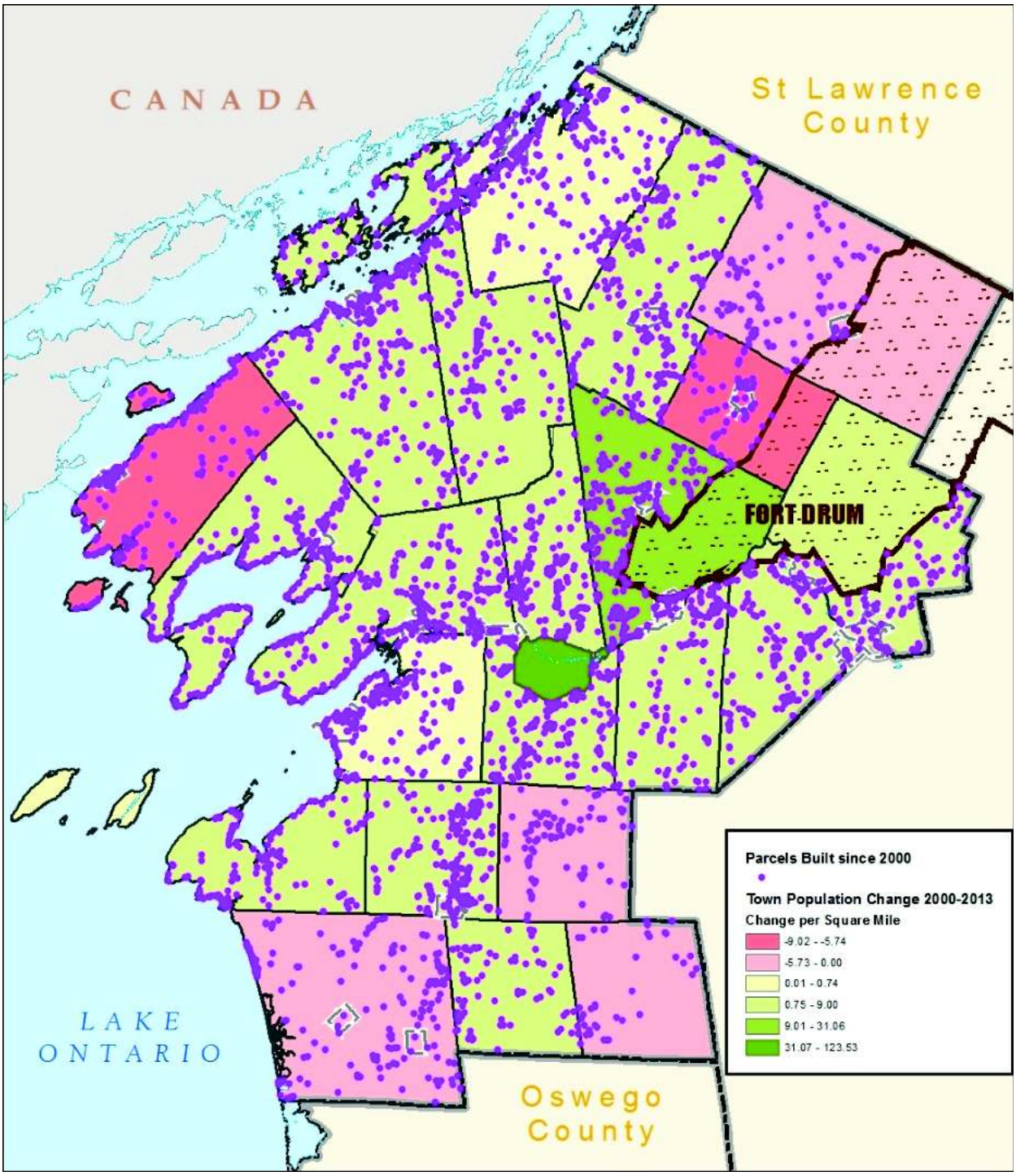
Conversion pressure on farmland can be measured in several direct and indirect ways:

- Population Change – Where and how much is taking place?
- Housing Changes – Where and how much additional housing is being built?
- Infrastructure (Water, Sewer, Roads) Changes – Where is infrastructure located in relation to population and housing growth and farmland?
- Farmland Costs – are land prices increasing so that it becomes more profitable to sell land to non-farm users?
- Critical Mass of Farmland – where is the critical mass of priority farmland in Jefferson County and are these areas under conversion pressure?

Population changes
Since 2000, the County as a whole grew four percent in population, from 111,738 to 116,229 – about 4,500 people. The US Census population estimate for 2013 for the County was 118, 073 people – or about a 5.6% population increase since 2000. For an upstate New York County, that is a relatively high rate of increase.

At the town level, some towns lost population, some showed a very small change, and others had significant increases as shown in Map 8 and as follows:

- The highest population increases were in the towns of LeRay, Theresa, Brownville, Adams, Clayton, Lyme, Orleans, and Pamelia. LeRay had the highest population increase. (See Map 8 below). These seven towns account for about 77% of the total county-wide population increases. LeRay, which contains most of the on-base housing on the Fort Drum military base, had a population of 21,782 in 2010 and an estimated population of 22,116 in 2013. This is seven times the average population of all the other towns in Jefferson County, and nearly as high as the City of Watertown.
- Some towns had a stable population or saw a small decrease (some of which may be in the margin of error) and included Cape Vincent, Philadelphia, Ellisburg, Antwerp, Alexandria, Rodman, Ellisburg, and Worth.
- The remaining towns had small to moderate levels of growth.



Map 8 - Population changes in Jefferson County 2000 to 2013 and identification of newly built parcels

Population changes can have a direct or indirect impact on farms and farmland. As population increases, the pressure for converting land for housing and commercial businesses increases. Population increases can also negatively affect farms by increasing traffic, creating farm/non-farm conflicts, raising property values, and inducing other kinds of growth such as water and

sewer infrastructure. In Jefferson County, increasing population levels are most likely related to the expansion of Fort Drum and much of the population growth is concentrated around and to the west of Fort Drum.

Housing Changes

- Each town has seen increased numbers of housing units. Map 8 shows the changes in population by location of parcels built on since 2000. Between 2000 and 2010, the number of housing units in the County increased by 3,860 units (7%). This level of housing growth outpaces population growth.
- All locations added housing units – even in those locations where the population was stable or decreased in that same time period.
- The highest increase in the total number of housing units were in LeRay, followed by Hounsfield, Clayton, Theresa and Brownville. LeRay's increase of 31% likely includes some on-post housing within Fort Drum, which would not directly impact farmland conversion.
- LeRay had the highest percent increase – about 31%. Lorraine, Hounsfield, Pamelia and Theresa all had 15% or more increase in housing units.
- In 2000, Jefferson County had about 14,002 vacant housing units (about 25.9% of all houses), of which 71% were classified as seasonal dwellings. In 2010, there were slightly more vacant dwellings (14,515), of which almost 76% were considered seasonal dwellings. Over 90% of all vacant housing units were considered seasonal dwellings in Alexandria, Cape Vincent, Henderson, Lyme, Orleans, Worth, and Theresa. Brownville, Clayton, Ellisburg, Henderson, Lorraine, Lyme, Orleans, Theresa, and Worth. In these communities it is likely that a large share of the new housing development is for seasonal use. This can be compared to Pamelia, with 12.4% of vacant units being seasonal, Philadelphia (8.3%), Rutland (11.1%) and Wilna (8.9%). In those communities, housing starts were more oriented towards year-round residences.

Infrastructure Changes

Growth in both population and housing, and in infrastructure tend to go hand in hand. Non-farm growth usually demands more water, sewer and road infrastructure – all of which will exert pressure to convert farmland to non-farm uses. When these infrastructures are built with excess capacity, they further serve as growth inducing facilities. Thus, future growth tends to follow the facilities that are available to service it.

Public decisions on the size, character and location of major public facilities become a major determinant of future patterns of urban development. When these facilities are built in agricultural areas, long-term viability of farmland can be at risk as a result. This is because the very high initial cost of providing such facilities often forces the urbanization of the area in order to provide the underlying economic value to pay for the facilities. This is especially true given current practices to pay for infrastructure through assessment districts or other value-capture mechanisms rather than general public revenues.

Map 9 shows the location of infrastructure in Jefferson County. The infrastructure in Jefferson County is not currently targeted to high density areas (hamlets, villages, city), but is more widespread and follows major road corridors such as Route 11 and large portions of the corridor from Watertown to Fort Drum. Interstate 81 interchanges offer highway access – which can benefit farmers but also serve as a growth inducing infrastructure for agricultural processing industries and non-agricultural development. Similarly, railroad sidings are currently used by agricultural industries for commodity transport. Like Interstate 81, this can be both positive and negative for agriculture. Given these potential growth inducers, it is not unexpected that the highest levels of growth are also those locations in the County with the most infrastructure including water, sewer, natural gas, railroad, and highway access.

Analysis of Map 9, along with the results of the farmland prioritization shows that many of the core farmland areas also have water and/or sewer infrastructure and higher population growth. Some towns, such as Antwerp and Philadelphia have village areas with sewer. Others core farmland areas such as Ellisburg and Adams have more extensive water districts coincident to highways. The overlap seen between core farmland areas and presence of water and/or sewer infrastructure means that these important areas could be facing additional development pressure in the future.

Farmland Costs

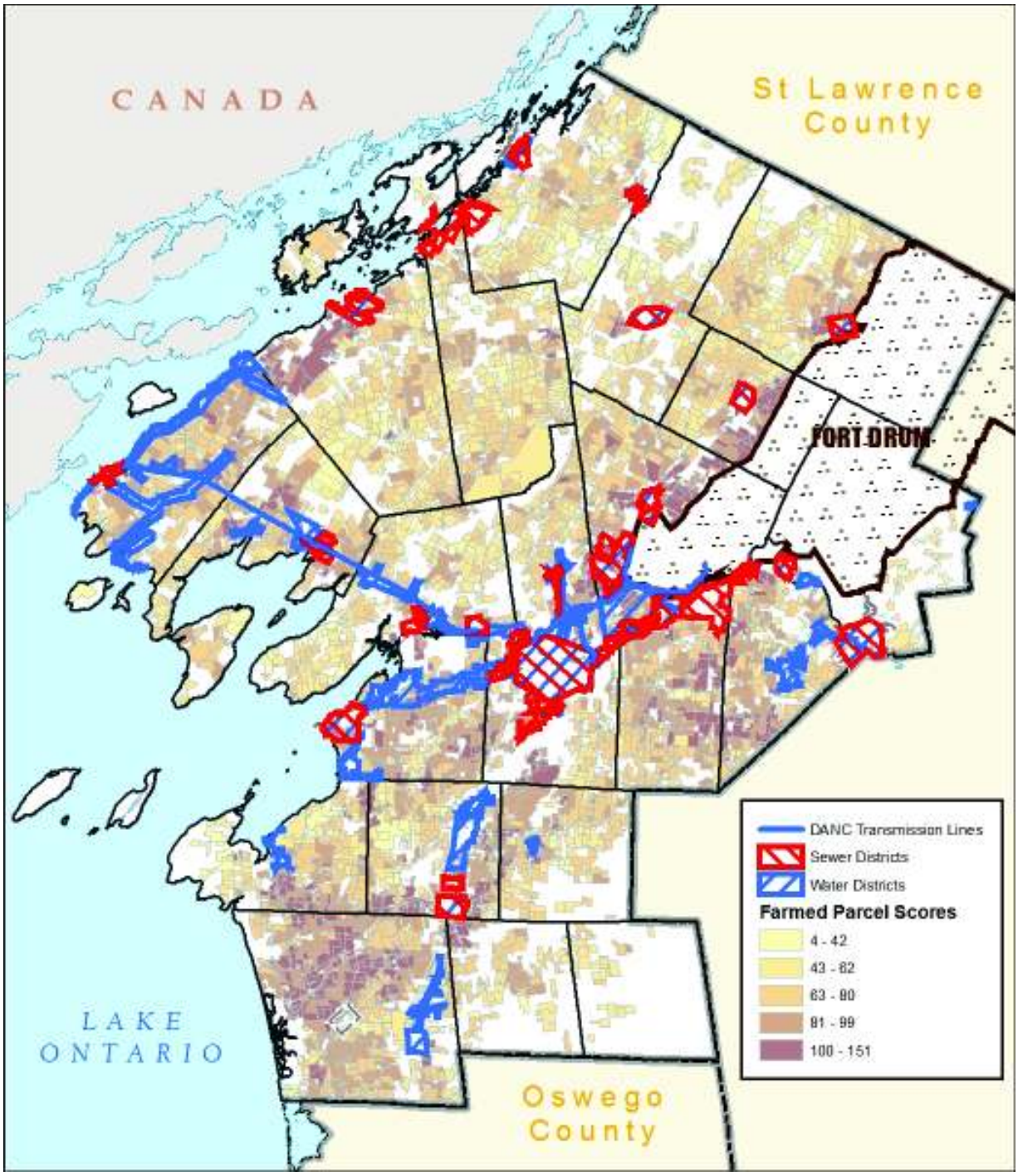
New York State has seen increases in farmland costs with land values rising about 8% each year between 1997 and 2014. Values have increased on a statewide average from $1020 per acre in 1997 to $2,600 per acre in 2012.[2]

In Jefferson County, land prices have been increasing as competition for land has risen and as the price of commodity crops has increased. Dairy farmers often compete with those farming cash-crops for land. In some places in the County, land prices have doubled over the past decade – partly influenced by out-of-area farmers purchasing land for cash crops.

Information from farmers indicates that land in the southern half of the County that sold for $1000 to $1500 per acre now sells for $2000 to $3000. Similarly, land in the northern half of the County which was less desirable for farmland has doubled in price. A recent look at farmland on the market in early 2015 showed farmland prices ranging from $1500 per acre in Brownville to $4900 in LeRay. Most land values for properties currently on the market for farming were between $1500 and $2000 per acre.

Because of these trends, more marginal farmland in the northern half of the County has been purchased for farmland. Tight competition for farmland has encouraged remaining farmers to acquire farmland while they still can. Despite higher land prices in Jefferson County, land remains more affordable for farming than other locations in New York State.

[2] From the 2013 and the 2014 New York Economic Outlook Handbook. Cornell University Agribusiness Economic Outlook Conference.



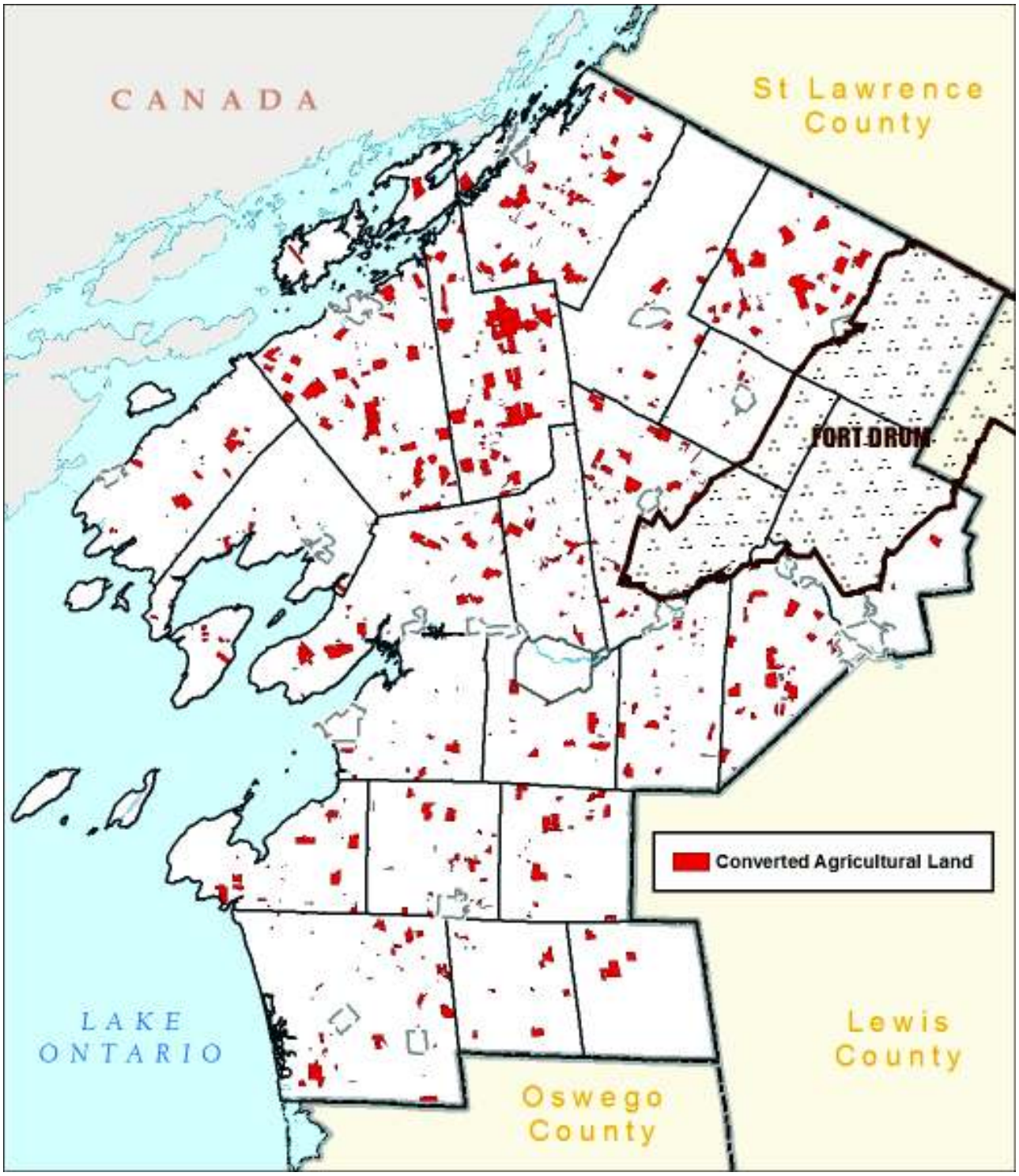
Map 9 - Comparison of farmland and water/sewer locations. (Blue are water districts, red are sewer districts)

Converted Farmlands

The Agricultural Land Conversion Map (Map 10) shows lands within Jefferson County that have been converted from agriculture to non-farm uses as measured by changes in property class assessment. Consistent with the data for population and housing growth, this map illustrates that farmland conversion is taking place throughout Jefferson County. As shown on the map, much of the conversion has taken place on lands formerly contained within New York State certified agricultural districts.

Table 11 - Population and Housing Trends

Population and Housing Trends by Town, Jefferson County											
Town	Population						Population Density (Persons/square mile)	Housing Units			
	2000 Census	2010 Census	2013 ACS Estimate	2000 to 2010 % Change	2000 to 2010 Change	2000 to 2013 Change		2000 Census	2010 Census	% Change	2000 to 2010 Change
LeRay	19,836	21,782	22,116	10%	1946	2280	297	5,245	6,871	31%	1,626
Theresa	2,414	2,905	2,935	20%	491	521	45	1,646	1,863	13%	217
Brownville	5,843	6,263	6,376	7%	420	533	106	2,857	3,048	7%	191
Adams	4,782	5,143	5,122	8%	361	340	122	2,019	2,126	5%	107
Clayton	4,817	5,153	5,230	7%	336	413	62	3,337	3,561	7%	224
Orleans	2,465	2,789	2,822	13%	324	357	39	2,084	2,191	5%	107
City of Watertown	26,705	27,023	27,823	1%	318	1118	3003	12,450	12,562	1%	112
Pamelia	2,897	3,160	3,198	9%	263	301	91	1,144	1,288	13%	144
Wilna	6,235	6,427	6,497	3%	192	262	82	2,658	2,620	-1%	-38
Lyme	2,015	2,185	2,318	8%	170	303	39	2,183	2,317	6%	134
Hounsfield	3,323	3,466	3,359	4%	143	36	71	1,839	2,113	15%	274
Champion	4,361	4,494	4,581	3%	133	220	102	1,906	1,967	3%	61
Lorraine	930	1,037	1,094	12%	107	164	27	400	461	15%	61
Rutland	2,959	3,060	3,101	3%	101	142	68	1,178	1,280	9%	102
Antwerp	1,793	1,846	1,730	3%	53	-63	17	717	772	8%	55
Rodman	1,147	1,176	1,114	3%	29	-33	28	455	476	5%	21
Worth	234	231	188	-1%	-3	-46	5	259	247	-5%	-12
Watertown	4,482	4,470	4,556	-0.30%	-12	74	125	1,502	1,657	10%	155
Henderson	1,377	1,360	1,595	-1%	-17	218	33	1,557	1,657	6%	100
Alexandria	4,097	4,061	4,131	-1%	-36	34	56	3,247	3,419	5%	172
Ellisburg	3,541	3,474	3,513	-2%	-67	-28	41	1,781	1,902	7%	121
Philadelphia	2,140	1,947	1,926	-9%	-193	-214	52	823	820	-0.40%	-3
Cape Vincent	3,345	2,777	2,838	-17%	-568	-507	49	2,783	2,712	-3%	-71
County	111,738	116,229	118,073	4%	4491	6335	92	54,070	57,930	7%	3,860



Map 10 - Lands converted from farming to other land uses between 2005 and 2013

Cost of Community Service Studies

Communities often evaluate the impact of growth on local municipal budgets. Many municipalities believe that residential development benefits the fiscal health of the community and that it will lower property taxes. Others view farmland as a land use that should be developed to a higher and best use as residences or commercial property. However, a variety of fiscal impact studies done throughout New York State have shown that residential development is a net fiscal loss and that maintaining land in farming is fiscally beneficial.

A Cost of Community Service Study (COCS) is a form of fiscal impact analysis that helps communities measure the contribution of agricultural lands to the local tax base. Farmlands may generate less tax revenue compared to residential, commercial, or industrial properties, but they also require little infrastructure or public services.[3] Multiple studies done throughout the State show farmlands actually generate more public revenue than they receive back in public services. COCS not only show that there is a high cost of residential development, but that agricultural land uses offer fiscal benefits similar for commercial and industrial land uses. "In nearly every community studied, farmland has generated a fiscal surplus to help offset the shortfall created by residential demand for public services. This is true even when the land is assessed at its current, agricultural use." [4] The median cost per dollar of revenue raised to provide public services is $0.29 for commercial and industrial land uses, $0.35 for farmland and open lands, and $1.16 for residential land uses.

The following chart illustrates some of the COCS studies done in the Hudson Valley of New York State. These numbers show that for every $1 collected in taxes by a municipality from a particular type of land use, it costs either a larger or smaller amount to provide public services back to that same land use. For example, in Amenia, for every $1 collected in taxes it costs the Town $1.23 to provide municipal services back to residential uses. But for farmland, the cost was only 17 cents.

There have been no COCS done in Jefferson County to compare. While the exact dollar figures change from location to location, studies both within New York State as well as other locations in the United States show a great amount of consistency in the general results: agricultural land uses are important to the fiscal health of a community.

[3] Adapted from the American Farmland Trust, Farmland Information Center Fact Sheet on Cost of Community Service Studies, August 2010.

[4] American Farmland Trust, Farmland Information Center Fact Sheet on Cost of Community Service Studies, August 2010.

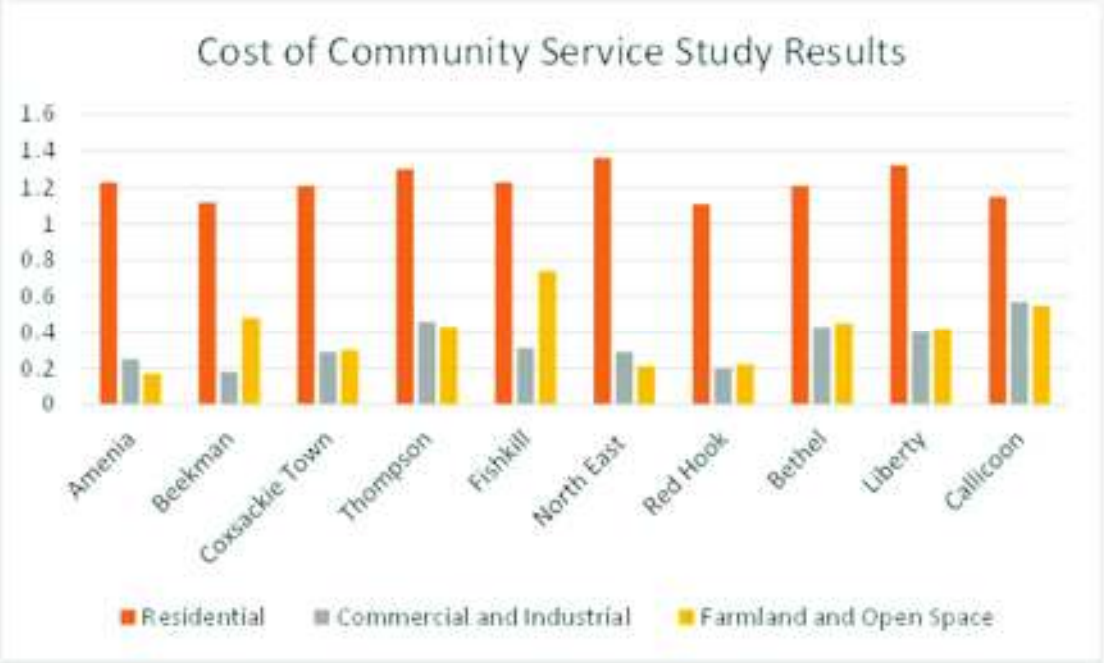


Figure 4: Cost of Community Service study results from other NYS towns

Conclusions of Conversion Pressure Analysis

The discussion presented above shows increasing pressure and increasing risk of conversion of farmlands to non-farm uses. Critical contributing factors include farmer to farmer competition for land, dispersed non-farm development that fragments farmland and increases risks for adverse farm/non-farm interactions, increased housing development, Fort Drum-related growth, and public infrastructure along major routes that could be growth inducing.

The implications of this include rising land prices, use of more marginal soils for farmland and farm operations, increased adverse farm/non-farm interactions, fragmentation of critical farm areas, and additional housing and commercial pressure along the major highways in the County. Strong planning at the local level that recognizes these changing patterns can address some of these conversion issues, but education, good landowner relations efforts, and limited expansions of water and sewer into critical farmlands are all tools that could be used in Jefferson County.

Appendix A. Agricultural Economy

Farms and Farmland

According to the most recent Census of Agriculture, there were 876 farms in Jefferson County in 2012, a marginal decline from the number in 2007. Over the last 10 years, the number of farms in Jefferson County decreased by 14.8%, a net reduction of 152 farms. (As a point of comparison, between 2002 and 2012, the number of farms declined by 12.1% in Lewis County, by 10.2% in St. Lawrence County, and by 4.6% statewide.) For purposes of the Census, the USDA defines a farm as an entity with sales (or potential sales) of $1,000 or more in agricultural products in the census year.[5]

Land in farms in Jefferson County totaled 290,811 acres in 2012, an 11% increase from 262,331 acres in 2007. Approximately 36% of the County's total land area is in farming. The proportion was as high as 50% in the late 1960s. It should be noted that a decline in the amount of land devoted to agriculture does not necessarily mean that the land has been converted to residential, commercial, or other more intensive uses; rather, it simply indicates that the land is no longer in active production.

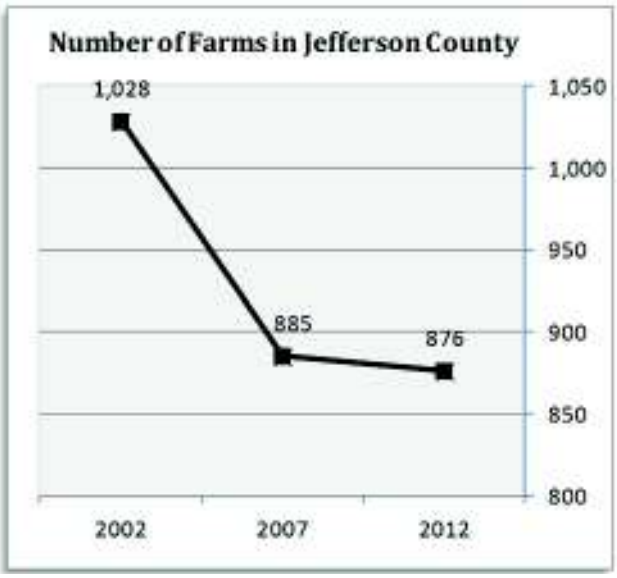


Figure 5 - Number of Farms in Jefferson County

Table 12 - Farms and Farm Acreage

Farms and Farm Acreage in Jefferson County, 2002 - 2012				
	2002	2007	2012	% change, 2002-2012
Number of farms	1,028	885	876	-14.8%
Total acreage in farms	330,561	262,331	290,811	-12.0%
% of land area in agricultural production	40.6%	32.3%	35.8%	-
Cropland (acres)	218,727	166,233	173,519	-20.7%
Harvested cropland	181,484	147,726	158,317	-12.8%

Source: Census of Agriculture, 2002, 2007, and 2012.

[5] Conducted every five years, the Census of Agriculture is a leading source of information on farm operations at the state and county levels. It is, however, based on data collected from farmers themselves, and participation by Amish farmers is believed to be limited. This may impact the extent to which the analysis reflects Amish farm activity in Jefferson County.

Total cropland in Jefferson County in 2012 was 173,519 acres, comprising approximately 60% of all farmland acreage. Despite some fluctuations, the amount of cropland has been declining.

Farms by Size

The average farm in Jefferson County in 2012 was 332 acres, an increase from 296 acres in 2007. The New York State average was 202 acres, up from 197 five years earlier. Jefferson County farms are relatively diverse in terms of size, however: 20.6% of the farms in the County in 2012 had fewer than 50 acres, while 20.1% were in the 100- to 179-acre range. Approximately 17% of the farms had at least 500 acres.

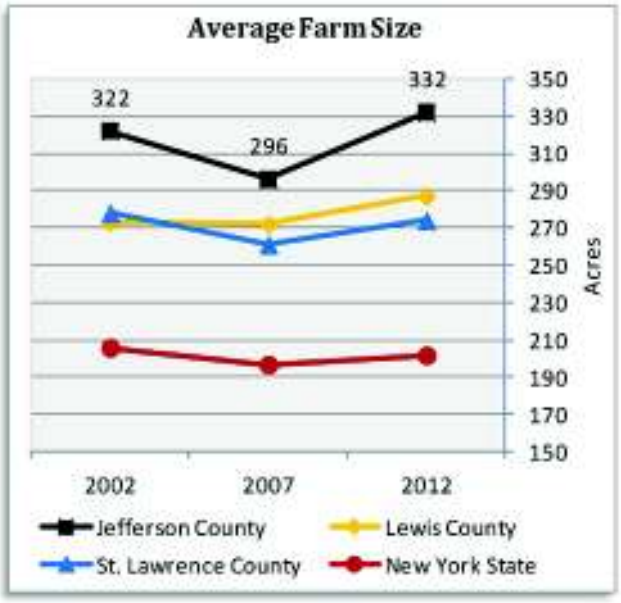


Figure 6 - Average Farm Size

Between 2002 and 2012, the total number of farms in Jefferson County declined by nearly 15%. Most of the farms lost from the inventory were in the 260- to 499-acre range. It is not clear whether these farms sold off some of their acreage and became smaller or ceased operations altogether. The limited growth among the largest farms in Jefferson County – those with 1,000 acres or more – suggests these mid-size farms did not increase in size.

The County has added more small farms, however. The number of farms with less than 100 acres increased 12% from 2002 and 2012. Most of the growth was among farms of 10 to 49 acres.

Table 13 - Farms by Size

Farms by Size in Jefferson County								
Acreage	2002		2007		2012		% Change, 2002-12	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-9	34	3.3%	42	4.7%	42	4.8%	8	23.5%
10-49	117	11.4%	146	16.5%	138	15.8%	21	17.9%
50-99	106	10.3%	105	11.9%	108	12.3%	2	1.9%
100-179	210	20.4%	176	19.9%	176	20.1%	-34	-16.2%
180-259	115	11.2%	114	12.9%	127	14.5%	12	10.4%
260-499	261	25.4%	172	19.4%	134	15.3%	-127	-48.7%
500-999	133	12.9%	85	9.6%	93	10.6%	-40	-30.1%
1,000 or more	52	5.1%	45	5.1%	58	6.6%	6	11.5%
TOTAL FARMS	**1,028**	**100.0%**	**885**	**100.0%**	**876**	**100.0%**	**-152**	**-14.8%**

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

Farms by Product

The figure below shows the classification of farms in Jefferson County by principal product. *Principal product* refers to the crop or animal accounting for at least 50% of the farm's agricultural production; farms that produce a combination of crops or animals, with no single category accounting for most of its agricultural production, are listed under "Other Crops" or "Other Animals."

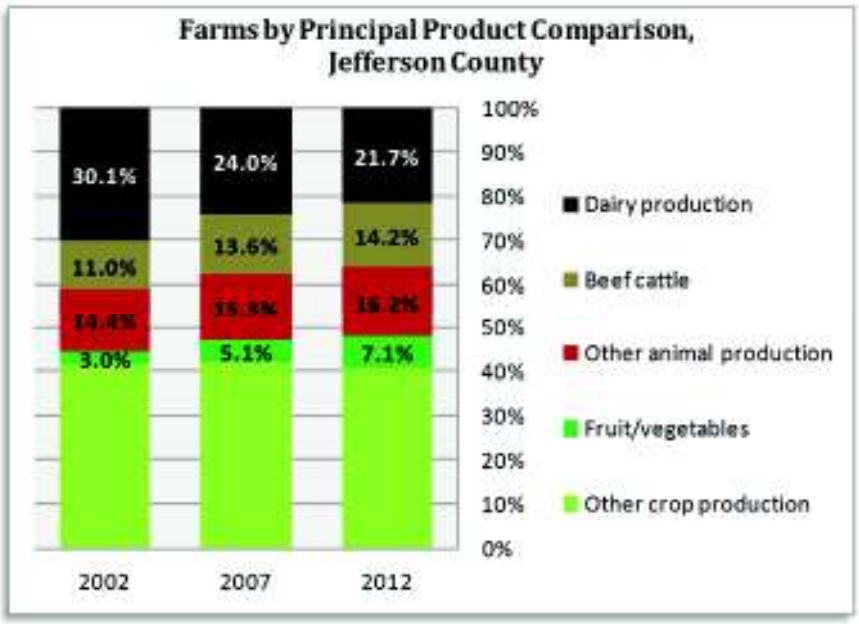


Figure 7 - Farms by Principal Product

Table 14 - Farms by Product

Farms by Principal Product (NAICS Classification) in Jefferson County								
	2002		2007		2012		% Change, 2002-12	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Other crops	335	32.6%	325	36.7%	286	32.6%	-49	-14.6%
Dairy cattle and milk production	309	30.1%	212	24.0%	190	21.7%	-119	-38.5%
Beef cattle ranching and farming	113	11.0%	120	13.6%	124	14.2%	11	9.7%
Other animals	78	7.6%	85	9.6%	97	11.1%	19	24.4%
Oilseed and grain farming	53	5.2%	22	2.5%	42	4.8%	-11	-20.8%
Vegetable and melon farming	18	1.8%	31	3.5%	33	3.8%	15	83.3%
Greenhouse, nursery, and floriculture production	40	3.9%	25	2.8%	31	3.5%	-9	-22.5%
Fruit and tree nut farming	12	1.2%	14	1.6%	29	3.3%	17	141.7%
Poultry and egg production	3	0.3%	22	2.5%	19	2.2%	16	533.3%
Sheep and goat farming	32	3.1%	16	1.8%	12	1.4%	-20	-62.5%
Hog and pig farming	8	0.8%	11	1.2%	8	0.9%	0	0.0%
Cattle feedlots	27	2.6%	2	0.2%	5	0.6%	-22	-81.5%
Total	**1,028**	**100.0%**	**885**	**100.0%**	**876**	**100.0%**	**-152**	**-14.8%**

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

As the table indicates, one-third of the farms in Jefferson County in 2012 grew mixed crops, 22% were engaged in milk production, and 14% raised beef cattle; 11% raised other (or a combination of) livestock. Together, these four categories alone accounted for *four out of every five* farms in Jefferson County.

Compared to 2002, Jefferson County has more farms raising beef cattle, growing fruits and vegetables, and breeding, hatching, and raising poultry for meat or egg production. With the exception of farms raising beef cattle, the number of farms in these categories remains relatively small. Nevertheless, beef cattle, vegetable, fruit, and poultry and egg farms accounted for virtually all of the growth in the number of farms between 2002 and 2012. The result has been an increasing share of farms in categories *other* than dairy, as reflected in the chart below.

Livestock Inventories

Livestock raised in Jefferson County includes milk and beef cows, chickens, pigs, sheep, horses, ducks and geese, and goats, as well as bee colonies. Many farms have livestock whether or not those animals represent their principal product.[6] As shown in the table below, 205 farms in the County had dairy cows and 192 had beef cattle in 2012, although the number of milk and beef cows has declined. The County's 2002 Agricultural and Farmland Protection Plan theorized that the lack of local processing and packaging facilities restricted growth in beef production despite the availability of land resources for grazing. In 2012, Jefferson County was ranked sixth in New York State in the inventory of cattle and calves and seventh in bee colonies.

Table 15 - Farms with Livestock

Farms with Livestock Inventory in Jefferson County								
Livestock	2002		2007		2012		% Change, 2002-12	
	Farms	Number	Farms	Number	Farms	Number	Farms	Number
Milk cows	325	32,736	231	30,065	205	28,430	-36.9%	-13.2%
Beef cattle	195	3,427	165	3,165	192	2,935	-1.5%	-14.4%
Layers*	48	NA	67	NA	126	NA	162.5%	NA
Hogs and pigs	39	569	56	448	46	658	17.9%	15.6%
Sheep and lambs	60	1,219	39	1,212	29	1,743	-51.7%	43.0%
Horses and ponies	207	1,318	221	1,490	212	1,575	2.4%	19.5%
Colonies of bees	15	4,428	16	1,410	17	1,540	13.3%	-65.2%
Ducks and geese	21	220	25	181	36	361	71.4%	64.1%
Goats	33	NA	51	505	45	367	36.4%	NA

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.
* Layers refers to poultry raised for egg production.

Crops Harvested

Crops grown in Jefferson County include hay and forage, grain and beans, vegetables, and fruit. In 2012, the most common crop in the County in terms of acreage was forage, which includes dry hay, haylage, grass silage, and greenchop. Hay production is strong because of the prevalence of dairy and livestock farms in the County. In 2012, Jefferson County was ranked third in New York State in forage, based on the number of acres grown, and fifth in corn for silage.

Fruits and vegetables make up only a small component of the crops harvested in Jefferson County. Although the number of farms growing these crops has increased, just 315 acres support vegetable production, while 301 acres are in fruit orchards. The latter includes the production of grapes for local wineries. Jefferson County's first winery opened in 2004 and five others have since been added; three more wineries are in development.

[6] This explains why the numbers of farms may be different in various tables included in this Plan.

Table 16 - Farms with Crops

Farms with Crops Harvested in Jefferson County								
	2002		2007		2012		% Change, 2002-12	
	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
Forage	781	141,878	642	103,127	595	103,320	-23.8%	-27.2%
Corn for silage	236	26,372	163	20,953	149	22,542	-36.9%	-14.5%
Corn for grain	100	10,693	104	17,566	136	19,590	36.0%	83.2%
Vegetables harvested for sale	33	254	49	330	60	315	81.8%	24.0%
Land in orchards	13	48	32	78	55	301	323.1%	527.1%
Soybeans for beans	29	2,397	23	3,059	48	7,012	65.5%	192.5%
Oats for grain	62	1,757	41	1,406	35	1,329	-43.5%	-24.4%
Wheat for grain	9	392	10	552	18	1,552	100.0%	295.9%
Barley for grain	16	637	11	649	10	335	-37.5%	-47.4%

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

Maple syrup is another important agricultural product in Jefferson County. In 2012, 41 local farms produced 5,493 gallons of maple syrup. This was an increase from 26 farms with 3,855 gallons in 2007; however, data from the 2002 Agricultural Census suggests that maple syrup production has fluctuated, perhaps due to weather conditions.

Dairy Farms in Jefferson County

Given the size and importance of the local dairy industry, it is worth taking a closer look at dairy farms and milk production in Jefferson County.

Jefferson County had 205 farms with 28,430 dairy cows in 2012. (At its peak in the modern era, 1969, the County had 1,072 dairies with 42,527 dairy cows.) While the number of dairy farms continues to decline, their *size* has steadily increased; as the chart below indicates, the average number of dairy cows per farm went from 101 in 2002 to 139 in 2012. Similar trends occurred in the state's other leading dairy counties as well as in Lewis and St. Lawrence Counties.

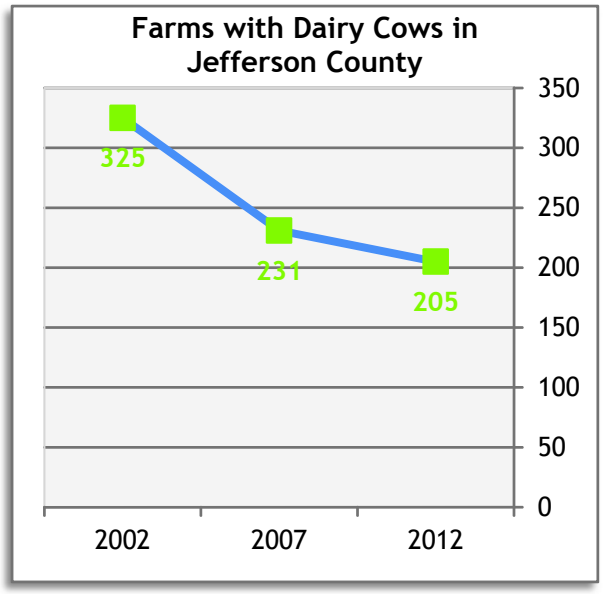


Figure 8 - Farms with Dairy Cows

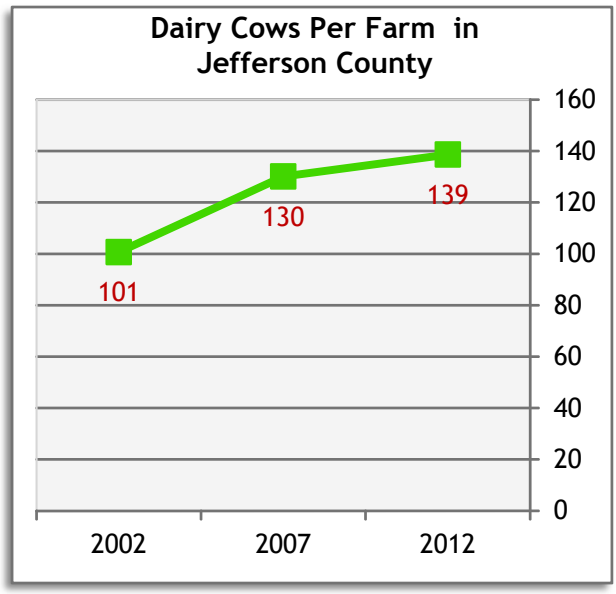


Figure 9 - Dairy Cows per Farm

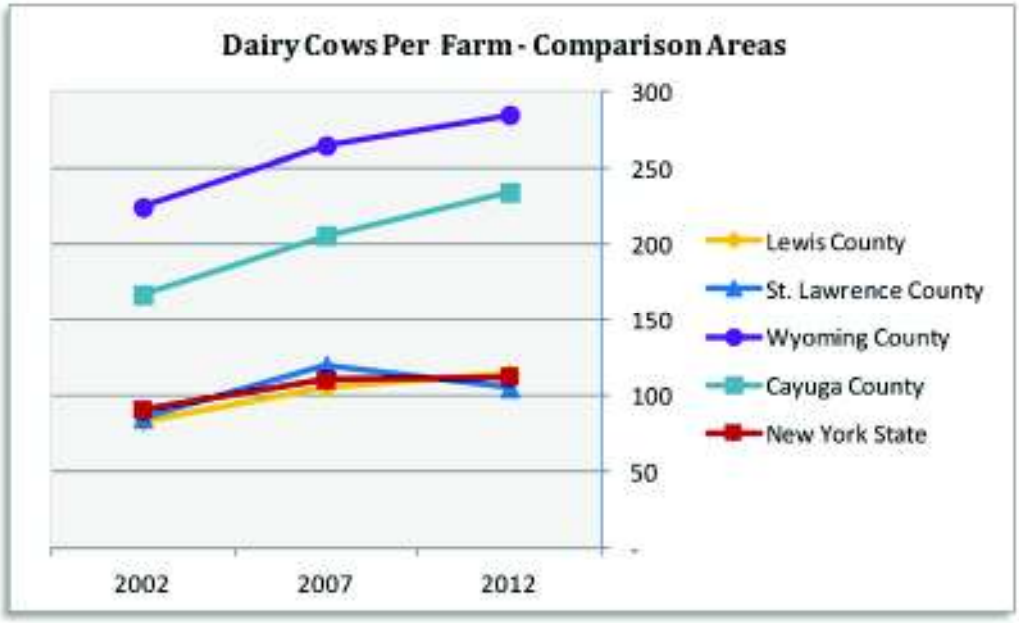


Figure 10- Dairy Cows per Farm, Comparison

As indicated by the data in the table below, milk production has also increased. In 2013, there were 184 dairy farms in Jefferson County selling 671.0 million pounds of milk for the year, compared to 328 dairy farms selling 582.1 million pounds of milk in 2002. Average milk production grew from 1,755,000 pounds per farm in 2002 to 3,667,000 pounds in 2013, as the annual milk yield per cow increased from 18,190 pounds to 22,746 pounds. The Federal Milk Marketing administrator indicated that for 2013, the total estimated value of milk sold by Jefferson County farms was $134,470,404.

Table 17 - Milk Market Statistics

Milk Market Statistics for Jefferson County					
Year	**Number of Farms**	**Volume of Milk (1,000 lbs.)**	**Average Milk Production Per Farm (1,000 lbs.)**	**Average Price Received Per Cwt.***	**Est. Gross Value of Milk Sold (millions)**
2002	328	582,084	1,775	$12.64	$73.6
2003	314	570,888	1,818	$13.01	$74.3
2004	265	492,614	1,859	$16.50	$81.3
2005	278	597,082	2,148	$15.65	$93.4
2006	265	598,152	2,257	$13.54	$81.0
2007	252	583,601	2,316	$19.86	$115.9
2008	229	556,117	2,428	$18.62	$103.5
2009	231	596,811	2,584	$13.03	$77.8

Milk Market Statistics for Jefferson County					
Year	Number of Farms	Volume of Milk (1,000 lbs.)	Average Milk Production Per Farm (1,000 lbs.)	Average Price Received Per Cwt.*	Est. Gross Value of Milk Sold (millions)
2010	218	613,502	2,814	$16.89	$103.6
2011	210	630,039	3,000	$20.62	$129.9
2012	187	653,849	3,497	$18.63	$121.8
2013	183	671,010	3,667	$20.24	$135.8

Source: Northeast Milk Marketing Area, Federal Order #1, The Market Administrator's Annual Statistical Bulletins, 2002 through 2013.
** Composite Annual Weighted Average Price.*

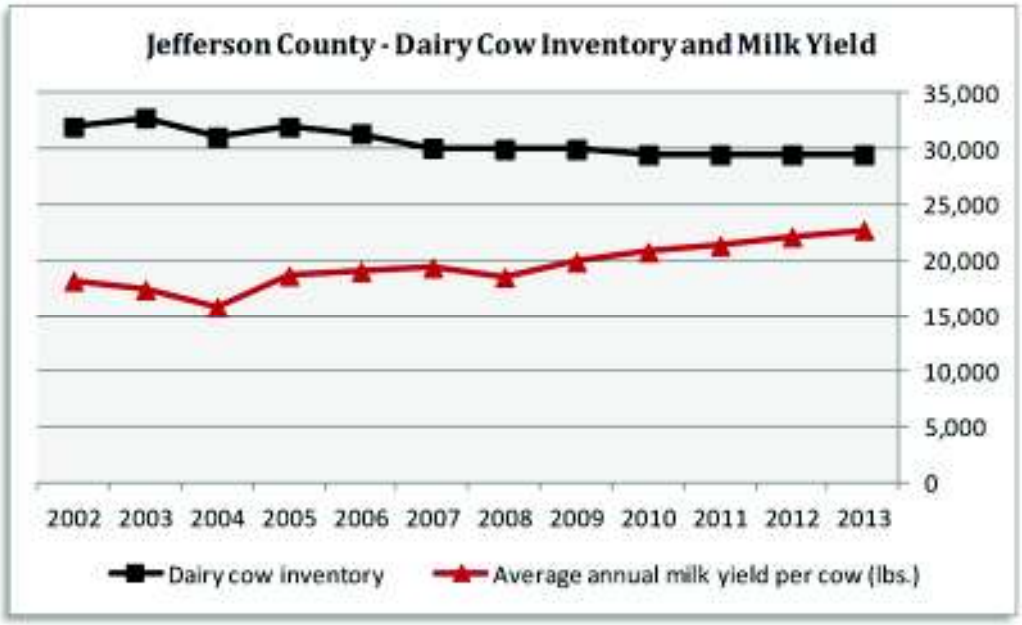


Figure 11 - Dairy Cow Inventory and Milk Yield

There are currently 2 major dairy processors in Jefferson County: Crowley Foods, Inc., a division of HP Hood, in LaFargeville, and Great Lakes Cheese of New York in Adams. Most dairies in the southern half of the County sell to Great Lakes Cheese, while those in the northern half sell their milk to Crowley. The Kraft Foods plant in Lowville, Lewis County, also uses local milk for cream cheese production. The presence of these companies offers a significant competitive advantage for the local dairy industry, as demand is strong and there are multiple opportunities for farmers to sell their milk locally, reducing hauling costs. Organic milk producers in Jefferson County sell their supplies to Horizon and Organic Valley.

Great Lakes Cheese, whose principal product is cheddar cheese, has been a big success for the County. The Ohio-based company purchased a former Borden plant in the 1980s to produce New York cheddar. The company expanded the plant in 2007, turning it into a

modern manufacturing facility that currently has about 130 employees. According to the plant manager, Great Lakes Cheese processes about 2.5 million gallons of milk per day, producing 87 million pounds of cheddar annually. An estimated 50-60% of the milk is from Jefferson County farms; the remainder is from other farms within a 70-mile radius of the plant.

Farm Sales

Jefferson County farms generated $183.6 million in sales in 2012, with the livestock sector accounting for about 75% of the total. Sales from livestock production totaled $138.3 million, while receipts from crops totaled $45.3 million.

Milk production generated $121.5 million, comprising two-thirds of total farm sales in 2012. Other leading agricultural commodities included grain and soybeans ($24.8 million), hay and silage ($17.8 million), and beef cattle ($11.7 million).

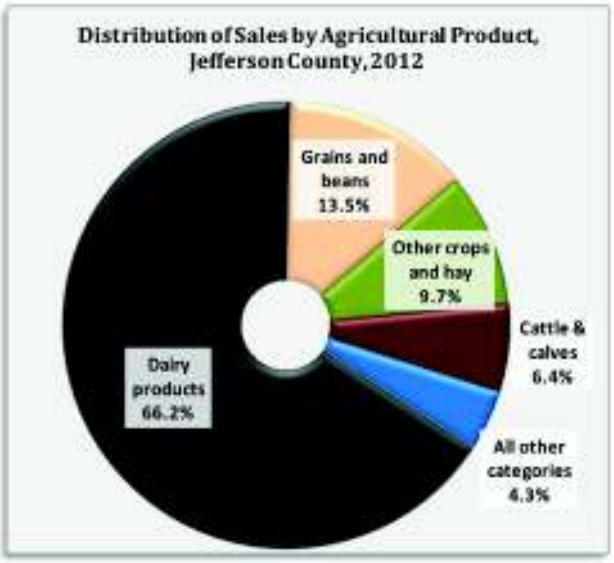


Figure 12 - Sales by Agricultural Product

In 2007 and 2012, Jefferson County ranked 9th in the state in the total sales of agricultural products, and 4th in dairy products sold. (The top 3 dairy counties in New York State are Wyoming, Cayuga, and St. Lawrence.) Jefferson County also ranked 2nd in sales of other crops and hay, after St. Lawrence County.

Table 18 - Agricultural Product Sales

Sales of Agricultural Products in Jefferson County					
	2007		2012		% Change in Sales, 2007-2012
	Sales (millions)	County Rank	Sales (millions)	County Rank	
Milk and dairy products	$109.0	4	$121.5	4	11.5%
Grains, oilseeds, dry beans/peas	$6.6	15	$24.8	13	274.9%
Other crops and hay	$7.8	2	$17.8	2	128.3%
Cattle and calves	$11.7	8	$11.7	14	0.2%
Vegetables/melons/potatoes	$0.7	42	$0.8	44	19.6%
Horses, ponies, mules, donkeys	$0.2	41	$0.3	39	50.9%
Honey from bees	NA	NA	$0.2	NA	NA
Sheep, goats, wool, mohair	NA	NA	$0.1	41	NA
Hogs and pigs	$0.1	40	$0.1	29	90.0%
Subtotal - Livestock & poultry	***$122.3***	***4***	***$138.3***	***5***	***13.1%***
Subtotal - Crops	***$17.0***	***24***	***$45.3***	***18***	***166.4%***
TOTAL SALES	**$139.2**	**9**	**$183.6**	**9**	**31.8%**

Source: U.S. Census of Agriculture, 2007 and 2012. Categories for which no data is available are not shown.

Between 2007 and 2012, Jefferson County's rank with respect to cattle and calves declined from 8th to 14th in the state, although sales were stable. This was due to increased cattle sales in other counties. Its rank increased from 15th to 13th in the value of grain and soybeans, however, as sales in this category more than tripled.

An increasing number of Jefferson County farmers are selling their products directly to consumers through such venues as farm stands and farmers markets. As indicated in the table below, 138 farms reported sales directly to consumers in 2012, up from 111 in 2007. At less than $1 million a year, the value of direct-to-consumer sales is quite small relative to *total* farm sales in Jefferson County, but it is a growing sector.

Table 19 - Direct Sales of Agricultural Products

Direct Sales of Agricultural Products in Jefferson County				
	2002	2007	2002	Change, 2002-2012
# of farms selling products directly to individuals	108	111	138	27.8%
% of all farms	*10.5%*	*12.5%*	*15.8%*	-
Value of products sold directly to individuals	$460,000	$511,000	$921,000	100.2%
% of total farm sales	*0.5%*	*0.4%*	*0.5%*	-

Source: U.S. Census of Agriculture, 2002, 2007 and 2012.

The Agricultural Census reports that in 2012, 42 Jefferson County farms, or 5.4%, marketed their products direct to retail outlets; 37 (4.2%) produced or sold value-added commodities, and 21 (2.4%) had an on-farm packing facility. Again according to the Census, only 5 farms in the County used community-supported agriculture, or CSAs, to distribute their products, suggesting a potential opportunity.

Thirty (30) farms were certified organic through the USDA National Organic Program, while three (3) farms reported they were transitioning into organic production. Organic product sales in Jefferson County totaled $4,967,000, the 5th highest in the state. According to JCLDC, much of this can be attributed to organic dairy farms.

Like other counties in upstate New York, Jefferson County has many small farms with limited earnings from the sale of agricultural products. As the table below indicates, 48% of the farms grossed less than $10,000 in 2012. This is slightly lower than that in New York State as a whole (50.8%)

To qualify for an agricultural assessment in New York State, farms must earn at least $10,000 annually from the sale of farm products; thus from this data, it appears that less than half of the farms in Jefferson County are eligible to receive a partial tax exemption.

There has been a 5% increase in the number of farms in the County earning more than $100,000 in gross sales. Most of the agricultural sales come from a relatively small number of farms. In 2012, farms with $500,000 or more in sales accounted for less than 8% of all Jefferson County farms, but they produced fully three-quarters of the County's agricultural output.

Table 20 - Farms by Gross Sales

Farms by Gross Sales in Jefferson County					
Farm Size	2007		2012		% Change, 2007-2012
	Number	Percent	Number	Percent	
Less than $2,500	298	33.7%	247	28.2%	-17.1%
$2,500 to $4,999	71	8.0%	64	7.3%	-9.9%
$5,000 to $9,999	63	7.1%	113	12.9%	79.4%
Subtotal – Less than $10,000	***432***	***48.8%***	***424***	***48.4%***	***-1.9%***
$10,000 to $19,999	92	10.4%	90	10.3%	-2.2%
$20,000 to $24,999	21	2.4%	21	2.4%	0.0%
$25,000 to $49,999	73	8.2%	39	4.5%	-46.6%
$50,000 to $99,999	16	1.8%	32	3.7%	100.0%
Subtotal - $10,000 to $99,999	***252***	***28.5%***	***241***	***27.5%***	***-4.4%***
$100,000 to $249,999	78	8.8%	81	9.2%	3.8%
$250,000 to $499,999	63	7.1%	62	7.1%	-1.6%
$500,000 or More	60	6.8%	68	7.8%	13.3%
Subtotal - $100,000 or More	***201***	***22.7%***	***211***	***24.1%***	***5.0%***

Farms by Gross Sales in Jefferson County					
Farm Size	2007		2012		% Change, 2007-2012
	Number	Percent	Number	Percent	
ALL FARMS	885	100.0%	876	100.0%	-1.0%

Source: U.S. Census of Agriculture, 2007 and 2012.

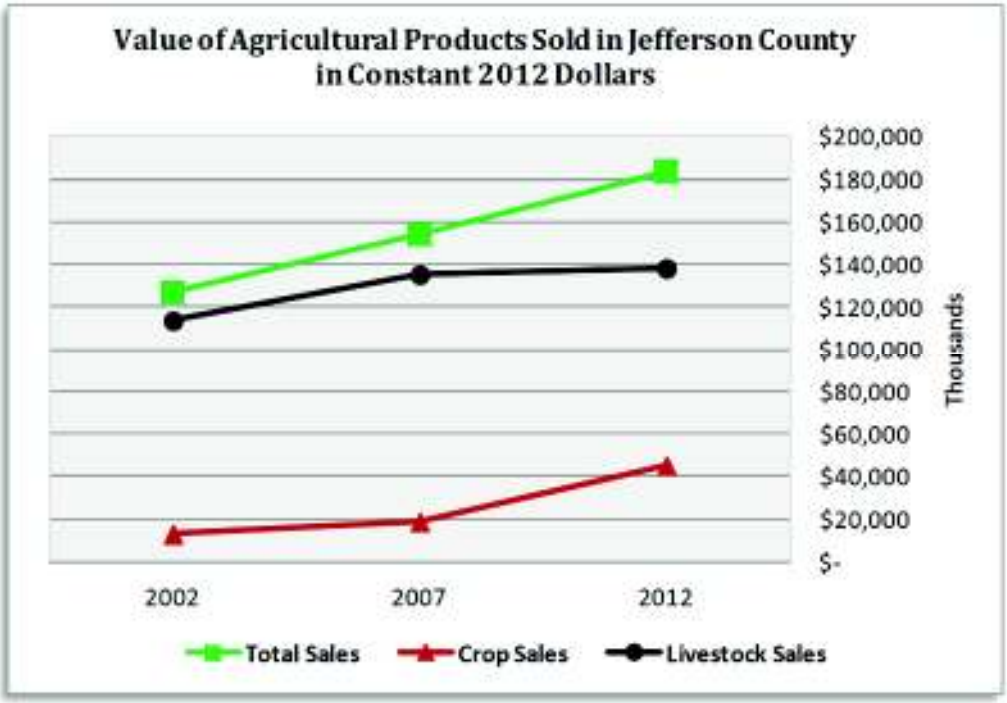


Figure 13 - Value of Agricultural Products Sold

Jefferson County's first Agricultural and Farmland Protection Plan in 2002 observed that "the total value of agricultural products sold… has been stagnant since a high in 1982. Considering inflation, Jefferson County has been moving backwards in total value of agricultural products sold." This has not been the case since 2002, however. In fact, between 2002 and 2012, total farm sales in constant 2012 dollars increased by 45%. Sales of livestock and their products rose by 22%, sales of crops by more than 240%. The latter can be attributed to increased production of corn for grain and soybeans.

Gross Farm Income

Gross farm income includes income from the sale of agricultural products, rental of farmland, custom farm work (e.g., planting, plowing, spraying) provided to others, agritourism and recreational services, crop and livestock insurance payments, government payments, and "other sales and services closely related to the principal functions of the farm business" before taxes and expenses. The chart below shows the components of average gross farm income in Jefferson County, from 2002 through 2012, in constant 2012 dollars.

Jefferson County farms averaged $227,242 in gross income in 2012. Not only did average gross farm income rise in nominal dollars from $110,304 in 2002, it also increased by 61.5% in inflation-adjusted dollars over the ten-year period.

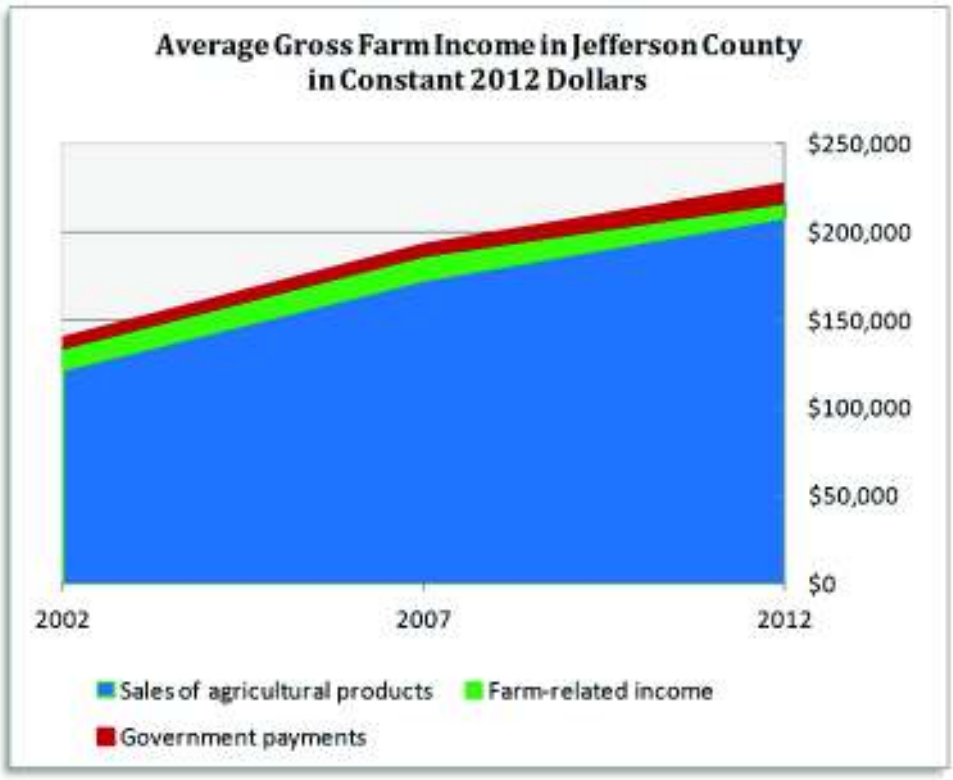


Figure 14 - Average Gross Farm Income

More than a third of farms in the County reported income from farm-related sources (other than product sales) in 2012. Only ten farms had income from agri-tourism and recreational services, while well over 100 farms received patronage dividends and refunds from cooperatives. Other important sources included rental income and custom farm work. Not counted in the Agricultural Census are employment and business earnings from other family members, which often help farm operators support their households.

Farm Production Expenses

Farm production expenses include electricity, feed, gasoline and fuel, labor, livestock, property taxes, seed, and fertilizer, soil conditioners, and chemicals. According to the Census of Agriculture, Jefferson County farms incurred more than $132 million in production expenses in 2012. As indicated in the table below, feed for animals was the largest single production expense, comprising 26.6% of total farm expenses. Other significant expenses

included labor (12.7%) and repairs and maintenance (10.0%). From 2002 to 2012, overall production costs increased by 54%.

The average production cost per farm in 2012 was $150,702 in Jefferson County, compared to $127,617 in New York State overall. This was higher than in St. Lawrence County ($108,053), but lower than in Lewis County ($166,454).

It is important to note that the figures in the table below reflect the expenses of Jefferson County farms in the aggregate, and may obscure differences in the cost structures exhibited by different types of farms.

Table 21 - Farm Production Expenses

Farm Production Expenses in Jefferson County ($000s)							
	2002		2007		2012		% Change, 2002-12
	Number	Percent	Number	Percent	Number	Percent	
Electricity	$3,376	3.9%	$4,039	4.0%	$3,948	3.0%	16.9%
Feed	$23,749	27.7%	$26,902	26.7%	$35,115	26.6%	47.9%
Fertilizer & Chemicals	$3,158	3.7%	$5,486	5.4%	$9,595	7.3%	203.8%
Gasoline & Fuel	$3,532	4.1%	$6,503	6.4%	$8,441	6.4%	139.0%
Labor	$10,686	12.5%	$12,465	12.4%	$16,812	12.7%	57.3%
Livestock and Poultry	$4,878	5.7%	$2,958	2.9%	$2,474	1.9%	-49.3%
Property Taxes	$4,308	5.0%	$4,012	4.0%	$4,215	3.2%	-2.2%
Repairs & Maintenance	$10,085	11.8%	$11,922	11.8%	$13,171	10.0%	30.6%
Seeds, Plants, & Trees	$1,707	2.0%	$2,682	2.7%	$4,439	3.4%	160.0%
Other*	$20,281	23.6%	$23,874	23.7%	$33,805	25.6%	66.7%
Total farm production expenses	**$85,760**	**100.0%**	**$100,843**	**100.0%**	**$132,015**	**100.0%**	**53.9%**
Average costs per farm		*$83,344*		*$113,946*		*$150,702*	*80.8%*

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.
** Other expenses include cash rent for land, buildings, and grazing fees; depreciation expenses claimed; interest expense; custom work and custom hauling; rental expenses for machinery and equipment; etc.*

Fixed Assets

Farms are capital-intensive businesses that require significant investments in land, buildings, machinery, and equipment. In 2012, Jefferson County farms owned more than $477 million in land and buildings. They also owned machinery and equipment such as trucks, tractors, and hay balers valued at $116.9 million.

Table 22 - Farm Property and Equipment Values

Farm Property and Equipment Values in Jefferson County				
	2002	2007	2012	% Change, 2002-12
Market Value of Land & Buildings	$280,266,000	$363,564,000	$477,013,000	70.2%
Average Per Farm	*$272,367*	*$410,806*	*$544,536*	*99.9%*
Average Per Acre	*$872*	*$1,386*	*$1,640*	*88.1%*

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

Farm Operators

In 2012, there were 1,411 farm operators in Jefferson County (the majority of farms have one or two operators, but a few have three or more). The average age of a *principal* farm operator – i.e., the person primarily responsible for day-to-day operation of the farm – was 57.5 years; statewide, the average age of a farmer was 57.1. Many large farmers in the County, especially dairy farms, are owned by families and are multigenerational. Nevertheless, as state and national farm advocacy organizations have noted, many experienced farmers are reaching retirement age; the question is whether new and younger farmers, including family members, will be available to take their place. According to the Census of Agriculture, 37 principal farm operators in Jefferson County, or 4.2%, were under age 35 in 2012.

Table 23 - Farm Operator Characteristics

Selected Characteristics of Principal Farm Operators in Jefferson County								
	2002		2007		2012		% Change, 2002-12	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Occupation: Farming	663	64.5%	482	54.5%	503	57.4%	-160	-24.1%
Occupation: Other	365	35.5%	403	45.5%	373	42.6%	8	2.2%
Under Age 35	41	4.0%	42	4.7%	37	4.2%	-4	-9.8%
35 to 44 Years	203	19.7%	131	14.8%	102	11.6%	-101	-49.8%
45 to 54 Years	329	32.0%	232	26.2%	227	25.9%	-102	-31.0%
55 to 64 Years	240	23.3%	275	31.1%	249	28.4%	0	3.8%
65 Years and Over	215	20.9%	205	23.2%	261	29.8%	46	21.4%
Average Age	*53.9*		*55.3*		*57.5*		*3.6*	*6.8%*

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

More farm operators in Jefferson County reported their primary occupation as farming in 2012 (57.4%) than in 2007 (54.5%), but this was less than in 2002 (64.5%).

The majority of Jefferson County farmers own at least some of the land that they farm. These numbers have been relatively consistent over the last 10 years, with approximately 69% farming only the land that they own, 29% farming land they owned as well as land owned by others, and less than 2% operating farms as tenants.

Table 24 - Farm Tenure

Farm Tenure in Jefferson County								
	2002		2007		2012		% Change, 2002-12	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Full Owners	678	66.0%	598	67.6%	603	68.8%	-75	-11.1%
Part Owners	313	30.4%	263	29.7%	256	29.2%	-57	-18.2%
Tenants	37	3.6%	24	2.7%	17	1.9%	-20	-54.1%

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

Farm Labor

According to the 2012 Census of Agriculture, 245 farms -- about 28% of all farms in Jefferson County – had hired labor in addition to their principal operators (data are for total hired farm workers, including paid family members, by number of days worked). These farms accounted for 1,024 employees with $16.6 million in annual payroll. Twenty farms reported having 10 or more workers, and they accounted for nearly half of the County's total farm employment.

Table 25 - Hired Farm Labor

Hired Farm Labor in Jefferson County								
	2002		2007		2012		% Change, 2002-12	
	Farms	Workers	Farms	Workers	Farms	Workers	Farms	Workers
Farms w/ 1 worker	59	59	72	72	82	82	39.0%	39.0%
Farms w/ 2 workers	70	140	63	126	53	106	-24.3%	-24.3%
Farms w/ 3 or 4 workers	63	202	47	154	61	202	-3.2%	0.0%
Farms w/ 5 to 9 workers	26	147	20	119	29	179	11.5%	21.8%
Farms w/ 10 or more workers	18	396	29	468	20	455	11.1%	14.9%
Total farms with hired labor	**236**	**944**	**231**	**939**	**245**	**1,024**	**3.8%**	**8.5%**

Source: U.S. Census of Agriculture, 2002, 2007, and 2012.

Between 2002 and 2012, the total number of farm workers in Jefferson County increased by 8.5%, corresponding to a 64% increase in annual payroll.

Agriculture-Related Industry

Farming in Jefferson County is supported by a large and diverse agribusiness base that includes milk haulers, feed and seed dealers, hoof trimmers, farm equipment dealerships, agricultural lenders, and veterinarians. Data from Cornell Cooperative Extension indicates that there are approximately 75 such establishments serving local farms.

Agriculture is also linked to "downstream" sectors engaged in food and beverage manufacturing and the production of farm chemicals, machinery and equipment. These companies provide hundreds of jobs in Jefferson County. Not all of these manufacturers rely on local agricultural inputs, however. Only the dairy processors – Great Lakes Cheese and Crowley Foods – might not exist in Jefferson County were it not for the abundant supply of milk from local farms.

Table 26 - Agriculture Related Industries

Agriculture-Related Industry in Jefferson County			
	Firms	**Estimated Employment**	**Businesses without Employees***
Support Activities for Crop Production (NAICS 1151)	3	11	15
Support Activities for Animal Production (1152)	2	7	18
Animal Food Manufacturing (3111)	2	18	0
Grain and Oilseed Milling (3112)	1	<5	0
Sugar and Confectionery Product Manufacturing (3113)	1	<5	NA
Dairy Product Manufacturing (3115)	2	275	0
Bread and Bakery Product Manufacturing (3118)	3	25	NA
Beverage Manufacturing, Including Wineries (3121)	4	65	0
Fertilizer and Agricultural Chemical Manufacturing (3253)	1	15	0
Dairy Product Merchant Wholesalers (42443)	2	25	NA
Livestock Merchant Wholesalers (42452)	1	<5	NA
Other Farm Product Raw Material Merchant Wholesalers (42459)	1	<5	NA
Farm Supplies Merchant Wholesalers (42491)	2	25	NA
Nursery, Garden Center, and Farm Supply Stores (44422)	5	40	NA
Fruit and Vegetable Markets (44523)	2	7	NA
Veterinary Services (54194)	9	105	4

Source: County Business Patterns and Nonemployer Statistics, 2012.
* A nonemployer is a business that has no paid employees, has annual business receipts of $1,000 or more ($1 or more in the construction industry), and is subject to federal income taxes. Most operate as sole proprietorships.

The following tables detail information comparing Jefferson County to New York State and other significant dairy counties in the State.

Table 27 - Number of Farms

Total Number of Farms				
	2002	2007	2012	% Change, 2002-12
Jefferson County	1,028	885	876	-14.8%
Lewis County	721	616	634	-12.1%
St. Lawrence County	1,451	1,330	1,303	-10.2%
New York State	37,255	36,352	35,537	-4.6%

Table 28 - Land in Farms

Land in Farms (Acres)				
	2002	2007	2012	% Change, 2002-12
Jefferson County	330,561	262,331	290,811	-12.0%
Lewis County	196,774	167,249	181,741	-7.6%
St. Lawrence County	403,364	347,246	356,909	-11.5%
New York State	7,660,969	7,174,743	7,183,576	-6.2%

Table 29 - Acres per Farm

Average Acres Per Farm				
	2002	2007	2012	% Change, 2002-12
Jefferson County	322	296	332	3.1%
Lewis County	273	272	287	5.1%
St. Lawrence County	278	261	274	-1.4%
New York State	206	197	202	-1.9%

Table 30 - Large Farms

Large Farms: % of Farms with 500 Acres or More				
	2002	2007	2012	% Change, 2002-12
Jefferson County	18.0%	14.7%	17.2%	-4.4%
Lewis County	13.5%	12.0%	12.5%	-7.4%
St. Lawrence County	14.8%	12.1%	10.8%	-27.0%
New York State	9.4%	8.4%	8.4%	-10.6%

Table 31 - Total Farm Sales

Total Farm Sales in Constant 2012 Dollars				
	2002	2007	2012	% Change, 2002-12
Jefferson County	$126,966,837	$154,199,336	$183,567,000	44.6%

Total Farm Sales in Constant 2012 Dollars				
	2002	2007	2012	% Change, 2002-12
Lewis County	$92,063,776	$124,727,575	$137,040,000	48.9%
St. Lawrence County	$127,187,500	$155,205,980	$187,363,000	47.3%
New York State	$3,976,829,082	$4,893,282,392	$5,415,125,000	36.2%

Table 32 - Average Farm Sales

Average Sales Per Farm in Constant 2012 Dollars				
	2002	2007	2012	% Change, 2002-12
Jefferson County	$123,508	$174,236	$209,551	69.7%
Lewis County	$127,689	$202,480	$216,152	69.3%
St. Lawrence County	$87,656	$116,697	$143,794	64.0%
New York State	$106,746	$134,608	$152,380	42.7%

Table 33 - Farms with $500,000 or More in Sales

% of Farms with $500,000 or More in Sales				
	2002	2007	2012	% Change, 2002-12
Jefferson County	2.9%	6.8%	7.8%	169.0%
Lewis County	1.4%	7.5%	5.8%	314.3%
St. Lawrence County	2.5%	4.4%	4.1%	64.0%
New York State	2.9%	4.8%	5.5%	89.7%

Table 34 - Farms with Dairy Cows

Farms with Dairy Cows				
	2002	2007	2012	% Change, 2002-12
Jefferson County	325	231	205	-36.9%
Lewis County	318	257	237	-25.5%
St. Lawrence County	445	262	319	-28.3%
Wyoming County	218	181	163	-25.2%
Cayuga County	173	156	147	-15.0%
Genesee County	98	68	79	-19.4%
New York State	7,388	5,683	5,427	-26.5%

Table 35 - Total Number of Dairy Cows

Total Number of Dairy Cows				
	2002	2007	2012	% Change, 2002-12
Jefferson County	32,736	30,065	28,430	-13.2%
Lewis County	26,440	27,120	27,235	3.0%
St. Lawrence County	38,018	31,525	33,604	-11.6%
Wyoming County	49,010	47,970	46,483	-5.2%
Cayuga County	28,939	32,158	34,489	19.2%
Genesee County	23,089	24,610	28,938	25.3%
New York State	670,003	626,455	610,712	-8.8%

Table 36 - Dairy Cows per Farm

Average Number of Dairy Cows Per Farm				
	2002	2007	2012	% Change, 2002-12
Jefferson County	101	130	139	37.7%
Lewis County	83	106	115	38.2%
St. Lawrence County	85	120	105	23.3%
Wyoming County	225	265	285	26.8%
Cayuga County	167	206	235	40.3%
Genesee County	236	362	366	55.5%
New York State	91	110	113	24.1%

Table 37 - Production Expenses per Farm

Average Production Expenses Per Farm in Constant 2012 Dollars				
	2002	2007	2012	% Change, 2002-12
Jefferson County	$106,306	$126,186	$150,702	41.8%
Lewis County	$103,216	$135,939	$166,454	61.3%
St. Lawrence County	$84,255	$89,082	$108,053	28.2%
Wyoming County	$252,429	$278,422	$378,608	50.0%
Cayuga County	$159,853	$196,167	$257,516	61.1%
Genesee County	$215,014	$270,680	$348,031	61.9%
New York State	$95,767	$106,724	$127,617	33.3%

Appendix B. Resources and Programs That Support Agriculture

- **Jefferson County Agricultural Development Council (JCADC)** – http://www.comefarmwithus.com
  Facebook: Jefferson County Ag Economic Development
  Twitter: @jeffersonagdev

    - Led by the Jefferson County Agricultural Coordinator who "assists in the stabilization, growth and promotion of the agricultural industry of Jefferson County." The duties of the Ag Coordinator include identifying agricultural needs and developing solutions, agricultural financing, agricultural marketing, education and public relations. Serves as spokesperson for Jefferson County's agricultural industry.
    - Maintains the Come Farm With Us website which serves as the central information and marketing source for agriculture in Jefferson County.
    - Provides technical and financial assistance to farms, agribusinesses and agricultural manufacturers working to maintain or grow their businesses in Jefferson County.
    - Lead the Jefferson County Agricultural Agency Round Table which helps to coordinate the efforts of all the agricultural agencies in Jefferson County.
    - Identify needs of Jefferson County's agricultural industry and facilities identifying resources to address the industries concerns.
    - Maintain the Jefferson County Agricultural News Flash Network which is an information resource that provides an immediate form of communication within agriculture and between the industry and community.
    - Produce and host The Home Grown Show which is an agricultural radio talk show started by the Jefferson County Agricultural Coordinator in 2002 to improve awareness and support of the community for agriculture.
    - Identifies agricultural workforce development needs and brings resources to bear to resolve those needs.
- **Jefferson County Soil & Water Conservation District** – http://www.jeffersoncountyswcd.org
    - The District offers a wide variety of conservation related services and programs. Their goal is to work with landowners; federal, state, and local agencies and organizations, and units of government to protect Jefferson County's natural resources and to keep the County's waters clean.
    - *Agricultural Environmental Management (AEM):* This program is a voluntary, incentive-based program that helps farmers make common sense, cost effective and science based decisions to help meet business objectives while protecting and conserving the County's natural resources.
    - *Soil Group Worksheets:* These are completed for landowners that qualify for the Agricultural Assessment Program.

- *Best Management Practices (BMPs):* Technical assistance is provided to landowners for planning and design to protect natural resources and water quality.
- *Permit assistance:* The District helps landowners with CAFO, mined land, streambank and stormwater permits.
- *Equipment rental program:* no till drill and tree/grapevine planter.
- *Grant writing:* The District develops funding proposals for landowners for the installation of BMPs to protect natural resources and water quality.
- *Comprehensive Nutrient Management Planning.*
- The District provides technical assistance for Development Authority of the North Country's Farmland Drainage Program.

- **Cornell Cooperative Extension Association of Jefferson County** – http://www.ccejefferson.org
  - Educates youth, families, farmers and communities using research-based knowledge for practical application and life-long learning.
  - Agricultural outreach, field crops program, dairy and livestock program, farm business management and planning winter, dairy management, horticulture.
  - *Grow Local, Buy Local Program* - Connects producers with consumers; trains farmers on marketing and branding meat and vegetable products to increase profitability and make healthy food available to consumers.
  - Publishes an annual Local Food Guide that lists farmer's markets and producers.
  - *Northern NY Dairy Institute* – Dairy education series combining classroom, hands-on and on-farm activities to enhance farm owner and employee skills.
  - *Northern NY Water Quality Project* to increase awareness of livestock drinking water quality and quantity.
  - *Farm Business Management* – one-on-one assistance and workshops.
  - Involved in local foods – Farm to School, Farm to Institution, 20C Kitchen, Bonus Bucks Program.
  - *AgVentures Programming* – Workshops on various topics, such as social media marketing, small scale vegetable production, poultry 101, beef 101, etc.
  - *Ag-Extravaganza* – program for fourth graders in Thompson Park.
  - *Meat the Market Initiative* – A USDA-funded initiative across Jefferson, Lewis and St. Lawrence Counties. It aims to help livestock farmers identify opportunities to partner with meat processors and end-users, such as restaurants and grocery stores to sell products.
  - Dairy Prospects Program – A one-year program for students in grades 9-12 who are interested in discovering opportunities in the dairy industry. Through a year-long series of hands-on workshops and travel experiences, participants are exposed to leaders in the dairy industry who serve as examples of the exciting future the dairy industry can provide.

- **Jefferson County Planning Department** – www.co.jefferson.ny.us
- The Department manages administration of the County Agricultural Districts Program, which includes over 204,000 acres of land in three separate Districts in

the County. These Districts offer a number of benefits to agricultural landowners to encourage continued agriculture production and activities. Local landowners have a 30-day period during the month of June each year to request addition of viable agricultural property to any of the County's three consolidated Districts.

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    - Through administrative support to the County's Agricultural and Farmland Protection Board, the Department also assists with maintenance and implementation of the County's Agricultural and Farmland Protection Plan.
    - The County has an adopted Right to Farm Law, updated in 1998.

- **Jefferson County Farm Bureau** - http://www.facebook.com/JeffersonCountyNYFarmBureau

- **Tug Hill Tomorrow Land Trust** – http://tughilltomorrowlandtrus.org
    - Works with private landowners to protect the working farms and forestlands, wildlands, and natural and cultural heritage for the benefit of current and future generations.
    - Uses Army Compatible Use Buffer Program to protect farmland around Fort Drum from development; has completed 19 projects covering over 4,500 acres.
    - Conservation easements to protect land and limit development around the Tug Hill region; has protected 86 properties covering 15,000 acres.
- **Development Authority of the North Country** – http://www.danc.org
    - *North Country Value-Added Agriculture Fund* – Recently-created program offering gap financing for projects that establish, maintain, or expand an agricultural operation, or that provide facilities for the production, manufacturing, processing, warehousing, distribution or sale of crops, livestock, and livestock products. Available to applicants in Jefferson, Lewis, St. Lawrence, Franklin, Essex, Clinton, and Hamilton Counties. Loans of up to $250,000 or 40% of the total project cost, whichever is lower. Minimum 10% of the total loan amount in owner/cash equity.
    - *Development Authority Value-Added Agriculture Program* – Demonstration program available to producers in Jefferson, Lewis, and St. Lawrence Counties that create value-added products for retail consumption; provides low-interest loans for expansion. The first round of applications targets maple producers to increase the production of syrup for sale in the marketplace. Loans of up to $40,000. Minimum cash equity of 20% of the project amount.
    - *Farmland Drainage Program* – Low-interest loans to the farming community (in Jefferson, Lewis, and St. Lawrence Counties) in order to increase crop production yields through farmland drainage. Loans of up to $20,000. Minimum cash equity of 50% of the total loan amount.
- **Farm Credit East** – http://www.farmcrediteast.com
    - Financial services cooperative for the agricultural industry in the northeastern U.S.

        - *Note:* The main farm lenders in Jefferson County are Farm Credit East; and the USDA Farm Service Agency (especially for producers unable to get commercial credit – offers loan guarantees and subsidy programs).
- **NNY Agricultural Development Program** – http://www.nnyagdev.org
    - A farmer-led research, technical assistance, and outreach program for the agricultural industry in the six-county North Country Region.
    - Works with multiple organizations and funding agencies, including Cornell Cooperative Extension and Cornell University's Agricultural Experiment Station.
- **Madison Barracks Shared Use Kitchen** – http://www.MadisonBarracksKitchen.com
    - Jefferson County's premier commercial NYS-licensed 20C kitchen rental facility, fully equipped.
    - Provides shared space where small food artisans, commercial processors, and other local food entrepreneurs can efficiently manufacture their products.
    - Located in Sackets Harbor.
- **Adirondack Harvest** – http://www.adirondackharvest.com
    - A nonprofit community organization that aims to 1) increase opportunities for production and sale of high-quality food and farm products, and 2) expand consumer choices for locally produced healthy food.
    - Has developed and copyrighted a logo to identify products grown or made in the Adirondack region.
    - Maintains a Farm Fresh Foods Map showing farm stands, farmers markets, restaurants and stores in the Adirondack region.
    - Hosts workshops and trainings for farmers.

New York State

- **NYS Tug Hill Commission** – http://www.tughill.org
    - Works with local governments and partner organizations to support both the economy and the environment.
    - Has assisted the Land Trust in securing additional funding for purchase of development rights from farms surrounding Fort Drum.
- **NYS Department of Agriculture and Markets** - http://www.agriculture.ny.gov
    - Division of Agricultural Development aims to strengthen the viability and consumer awareness of New York's food and agricultural industry; includes activities and services in market development, business development and support.
    - *Specialty Crop Block Grant Program:* Funding to enhance the competitiveness of specialty crops, defined as "fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture)."
    - *Organic Farming Development/Assistance:* Guidance in locating resources on organic agriculture and organically produced foods.
    - Additional funding opportunities announced periodically.
- **Pride of New York Program** - http://www.prideofny.com/PONY/consumer/viewHome.do
    - NYSDAM website with information on over 3,000 "Pride Of New York" members and their products.

- **New York State Energy Research and Development Authority (NYSERDA)** – http://www.nyserda.org
    - Offers objective information and analysis, innovative programs, technical expertise, and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels.
    - Programs and funding opportunities for the agricultural sector - http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/Sectors/Agriculture.aspx
- North Country Regional Economic Development Council
    - One of ten regional economic development councils in the state.
    - A partnership between state government, private businesses, higher education, and communities responsible for the development and implementation of regional economic development strategies.
    - Managed by the regional office of Empire State Development.

Federal Government

- **USDA Agricultural Marketing Service** – www.rd.usda.gov
    - Administers programs that facilitate the efficient, fair marketing of U.S. agricultural products, including food, fiber, and specialty crops; provides the agricultural sector with tools and services that help create marketing opportunities.
- **USDA Farm Service Agency** - http://www.fsa.usda.gov/FSA
    - *Farm Loan Programs:* Direct loans and loan guarantees to help family farmers start, purchase, or expand their farming operation; includes Farm Ownership Loans, Farm Operating Loans and Microloans, Emergency Farm Loans, Land Contract Guarantees, Loans for Beginning Farmers, etc.
    - *Biomass Crop Assistance Program:* Financial assistance to owners and operators of agricultural and non-industrial private forest land who wish to establish, produce, and deliver biomass feed stocks.
- **USDA Natural Resources Conservation Service** - http://www.nrcs.usda.gov
    - *Agricultural Management Assistance:* helps agricultural producers use conservation to manage risk and solve natural resource issues through natural resources conservation.
    - *Conservation Stewardship Program:* helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns.
    - *Environmental Quality Incentives Program:* provides financial and technical assistance to agricultural producers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat.
    - *Agricultural Conservation Easement Program:* provides financial and technical assistance to help conserve agricultural lands and wetlands and their related

benefits. *(Note: This is a new program under the 2014 Farm Bill that consolidates three former programs – the Wetlands Reserve Program, Grassland Reserve Program and Farm and Ranch Land Protection Program.)*

- **USDA New Farmers Website** - http://www.usda.gov/wps/portal/usda/newfarmers?navid=getting-started
- **USDA Rural Development, New York Office** – http://www.rurdev.usda.gov/NYHome.html
  - *Value-Added Producer Grants:* provides agricultural producers with matching funds for value-added ventures that will increase the return on their agricultural commodities; can be used for planning (e.g., feasibility studies, business plans) and/or working capital.
  - *Renewable Energy for America (REAP):* grants and guaranteed loans to help agricultural producers purchase and install renewable energy systems and make energy efficiency improvements.
  - *Farm Labor Housing Program:* Direct loans and grants for new construction or substantial rehabilitation of safe, affordable rental housing for farm workers.

Other Ag Initiatives in and Around Jefferson County

- **ReEnergy Project** – biomass cogeneration project at Fort Drum
  - Began operation in early 2013.
  - Uses wood chips.
  - "Can serve as a catalyst to develop additional biomass energy projects…"
- **Biomass Production Research Plot** – SUNY ESF research plot on Belleville-Henderson School District property; growing willow for biomass production and added switchgrass trials.
- **Farmers' Markets**
- **Agri-Tourism**
  - *1000 Islands Agricultural Tour* brochure – 1000 Islands International Tourism Council.
  - *Ag Tour website* (www.agvisit.com) – agri-tourism attractions in Jefferson County, through the Thousand Islands Regional Tourism Development Corp.
  - *Wine Trail* - Established an 87-mile wine trail with five wineries.

- ***Jefferson County Community College***
  Offers several college degrees related to agriculture including the Agri-Business AAS, Hospitality and Tourism AAS in Winery Management, Hospitality and Tourism AAS Marketing Concentration and the Culinary Arts AAS. The college also offers an online entrepreneurial course through the Small Business Development Center, and related business skills courses in the Ed2Go program. Course offerings related to agriculture and that support the goals and actions identified in this plan include:

  Northern NY Agriculture
  Grow Prepare Eat: Farm to Table
  Horticultural Industry Applications
  Agri-business Technologies

Marketing and Sales of Agricultural Products
Trends in Agriculture
Agriculture Laws and Regulations
Introduction to Winery Operations
Viticulture
Enology
Winery Marketing and Management
Internships in Agri-business and in Hospitality

BEGINNING/TRANSITIONING FARMER RESOURCES FOR VETERANS:

Sign up for our New York State Veterans in Agriculture Listserve: From the email address you'd like to use for your list subscription, send an email to NYVETSAG-L-request@cornell.edu and type the word "join" (without quotations) in the body of the message. The Small Farms Program and our partners will be using this forum to publicize events, resources, and opportunities related to veterans interested in farming in NYS.

Veteran-specific Resources in NYS. Go to our website for more information about our project and resources that may be helpful to veterans seeking careers in agriculture: http://www.nebeginningfarmers.org/projects/farmer-veterans/

The Farmer Veteran Coalition. National non-profit organization "mobilizing veterans to feed America": http://www.farmvetco.org/

GENERAL RESOURCES FOR BEGINNING FARMERS

Get Local Help: It's always best to first ask questions to your local small farm agent since they are familiar with local zoning issues and regulations for your county. You can find your local Small Farms Cooperative Extension Agent by checking the county-by-county listing at: http://smallfarms.cornell.edu/contact/local-contacts/

Getting Started? Visit the Beginning Farmers Online Resource Center. It can be overwhelming to start a farm, but this website helps you find answers to common questions, watch production videos and interviews with farmers, work through planning tutorials, find local people to help, and much more! http://nebeginningfarmers.org

Looking for local events/trainings? We highly recommend subscribing to our bi-monthly e-newsletter. It brings you statewide events, ag funding opportunities, new resources, and small farm related job or career opportunities every two weeks. Subscribe at http://smallfarms.cornell.edu/contact/e-news-sign-up/

Financing/Grants/Loans. Everyone is looking for funding to help build and grow their small farm. We've created a section on the Small Farms Program website to feature a library of funding opportunities. Visit http://smallfarms.cornell.edu/resources/funding/

Guide to Farming in NYS. This Guide is an essential resource for new and existing farmers alike, providing answers to questions about taxes, business planning, labor law, zoning, regulations, marketing, funding opportunities and many other topics that farmers need to know. We update the Guide each year. To access the Guide, visit: http://nebeginningfarmers.org/publications/

ENERGY EFFICIENCY AND REWABLEABLE ENERGY PROGRAMS FOR AGRICULTURE

1. NYSERDA assistance to identify electric and natural gas energy efficiency measures for eligible farms and on-farm producers, including but not limited to: dairies, orchards, greenhouses, vegetables, vineyards, grain dryers, and poultry/egg. Farms must be a customer of a New York State investor-owned utility and contribute to the System Benefits Charge (SBC). This can be verified by checking the farm's current utility bills. Farms can request an energy audit. NYSERDA will assign a FlexTech Consultant to perform an energy audit at no cost for audits up to $2,500. For more complex energy audits, exceeding $2,500, cost-sharing by the applicant will be required. NYSERDA also has the Anaerobic Digester Gas-to-Electricity Program, where up to $2 million in funding is available for the installation of anaerobic digester gas-to-electricity systems with a power generation capacity of 50 kW or greater fueled by digester gas from manure, agricultural waste, food waste and other wastes. Other funding programs include the Existing Facilities Program, Solar-Electric (PV) System and Solar Thermal Incentive Program (funding is available for the installation of solar PV and solar thermal (for hot water) system on farms, the On-Site (Small) Wind System Incentive Program, and the New Construction Program. The Commercial New Construction Program provides technical support to design teams and financial incentives to commercial and industrial building owners who are planning the construction of new and substantially renovated buildings in New York State.

2. The Cornell Small Farms program has the "NY Small Farm Energy Innovators: Energy Conservation and Renewable Energy Ideas for Your Farm" guide. The "Small Farm Energy Innovators" booklet describes how farmers can save energy and decide which renewable systems are right for their farm. Profiles detail the cost of installation, any grants or incentives available, amount of energy saved or produced, and where to go for further information. In addition to this guide produced by Northeast SARE, there are many other programs and information sources from Cornell on use of renewable energy on farms.

3. USDA NRCS EQIP On-Farm Energy Initiative. "NRCS provides the nation's agricultural producers with technical information and financial assistance that: Quantifies how energy can be used more efficiently to reduce input costs; Increases productivity per unit of energy consumed by equipment and lighting; and reduces air pollutants and greenhouse gas emissions caused when energy is generated for agricultural use. Through the EQIP National On-Farm Energy Initiative, financial assistance is available for site-specific energy analysis of eligible farmsteads and irrigation systems. With a completed AgEMP or other qualifying energy audit, eligible producers can apply for EQIP assistance for the purchase and installation of improvements for lighting, plate coolers, ventilation and fans, irrigation pumps, grain dryers, greenhouse improvements, maple syrup evaporators, heating and refrigeration units, insulation and building envelope sealing, and motor controls and variable speed drives."