

Land Use and Agriculture in Ulster County, NY: Interim Report

August 2024

Agricultural Land Use Statistics and Maps



This interim report was prepared as part of the process to update Ulster County's Agricultural and Farmland Protection Plan.

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The data in this section are from the U.S. Department of Agriculture’s Census of Agriculture, a complete count of U.S. farms and the people operating them. It is the most comprehensive source of information on agriculture at the state and county as well as national levels. Conducted once every five years, the Census of Agriculture asks questions about land use and ownership, producer characteristics, production practices, income, and expenditures. The data is collected from the agricultural producers who are closest to the information. The USDA uses an accepted statistical methodology to correct for nonresponse, misclassification, and other issues, and it has extensive quality control measures in place to provide the most accurate data available.

Farms and Farmland

A farm is defined by the U.S. Department of Agriculture (USDA) as a place that produces and sells or normally would sell at least \$1,000 of agricultural products during a given year. The Census of Agriculture reports that Ulster County had 486 farms in 2022, the same number reported in 2012 and 9% fewer than the 530 farms reported in the 2002 Agricultural Census. Farmland covered about 10% of the County’s total land area.

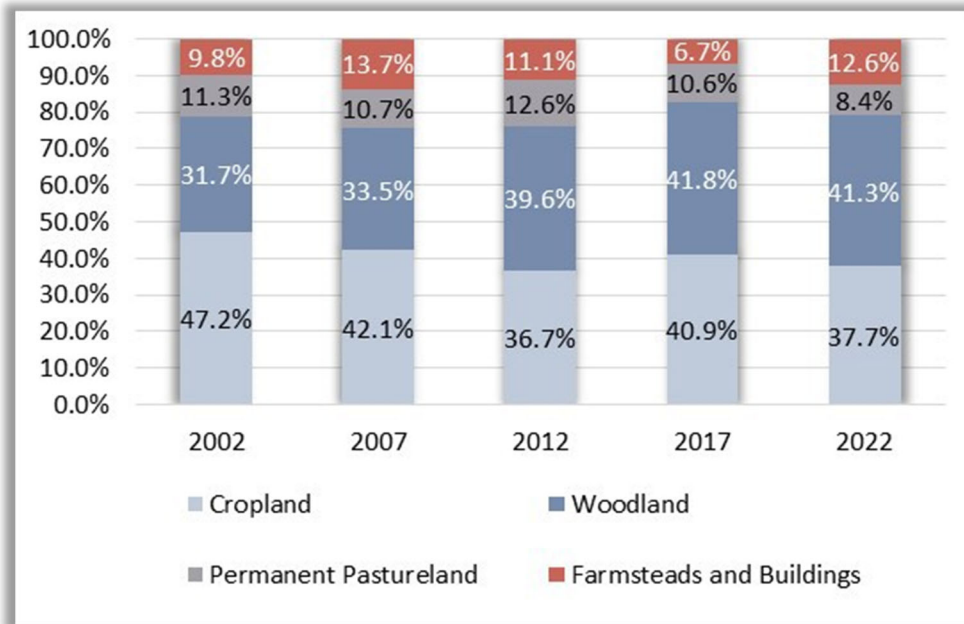


Figure 1. Land in Farms According to Use, Ulster County
Source: U.S. Census of Agriculture

Of the total farmland acreage, about 41% was woodland associated with the farm operation, 38% was cropland, and 8% was permanent pasture; land in farmsteads and buildings covered the remainder. Among the changes to the composition of farmland in Ulster County between 2002 and 2022 were the loss of nearly 12,000 acres of cropland, a 30% decline, and the addition of about 3,700 acres of woodland acreage, a 14% increase.

Farm Size

The average size of farms in Ulster County declined from 157 acres per farm in 2002 to 150 acres in 2022. Both figures are below the New York State averages of 206 and 212, respectively.

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In terms of the distribution of farms by size class, the largest grouping in 2022 was farms of 10 to 49 acres (38%), followed by those with 50 to 179 acres (36%). Since 2002, Ulster County has experienced the fastest rates of decline among mid- and large-sized agricultural operations: farms with 500 acres or more (-51%) and those with 180 to 499 acres (-42%). In fact, the only growth over the past 20 years was in the number of small farms with 10 to 49 acres.

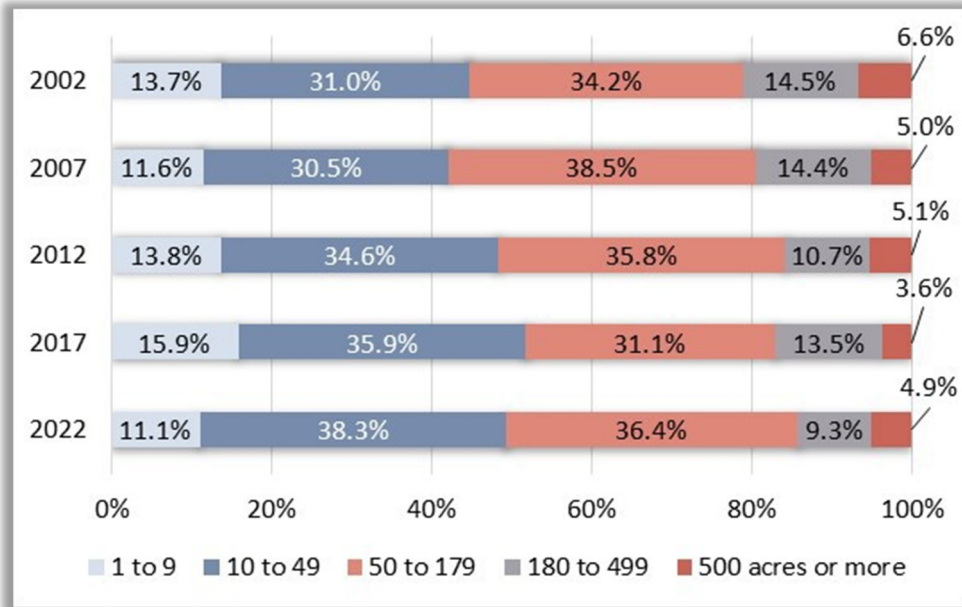


Figure 2. Distribution of Farms by Acreage, Ulster County
 Source: U.S. Census of Agriculture

Crops

More than 30 different crops are grown in Ulster County. The top crops based on acreage are apples (7,990 acres), forage (7,932), vegetables harvested for sale (1,282), soybeans (979), and corn for grain (866), according to the 2022 Census of Agriculture. Sweet corn, pumpkins, and tomatoes were the vegetables with the most acres in production; other vegetables included snap beans, broccoli, carrots, cucumbers, lettuce, bell peppers, potatoes, and squash. Most of the vegetables are grown for the fresh market rather than processed uses.

U.S. apple growers harvested 9.5 billion pounds in 2022, with 14% or 1.35 billion pounds of apples produced in New York. Of utilized production in New York, 668 million pounds were for the fresh market and 677.5 million pounds were for processing. Fresh apples receive a higher price per pound than apples sold for processing. (Source: USDA, National Agricultural Statistics Service.)

Between 2002 and 2022, Ulster County experienced a steady reduction in the number of acres dedicated to vegetable production, with a net loss of 62%. Acreage devoted to forage crops and corn for grain also declined over the period.

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Following a large decline between 2007 and 2017, the County saw an increase in acreage used for growing apples. Total land in orchards was down 42% from about 15,000 acres in 1969 but is reported to have increased since the 2017 Census. Ulster County was #3 in the state in 2022 in both the number of orchards and land in orchards, after the counties of Wayne and Chautauqua.

According to the Hudson Valley Research Lab, which supports fruit and vegetable production in the region, the fruit growers in Ulster County are all family farms, multigenerational enterprises that are often vertically integrated, with their own cold storage facilities and distribution channels.

Some are entirely wholesale establishments that supply retailers twelve months a year; others sell to consumers at on-farm markets and through “pick-your-own” operations. Aside from apple cider, there is not much processing of the fruit, as the money is in the fresh product (this is reflected in the price per pound paid to the farmer: fresh, unblemished fruit commands a higher price than fruit for processing).

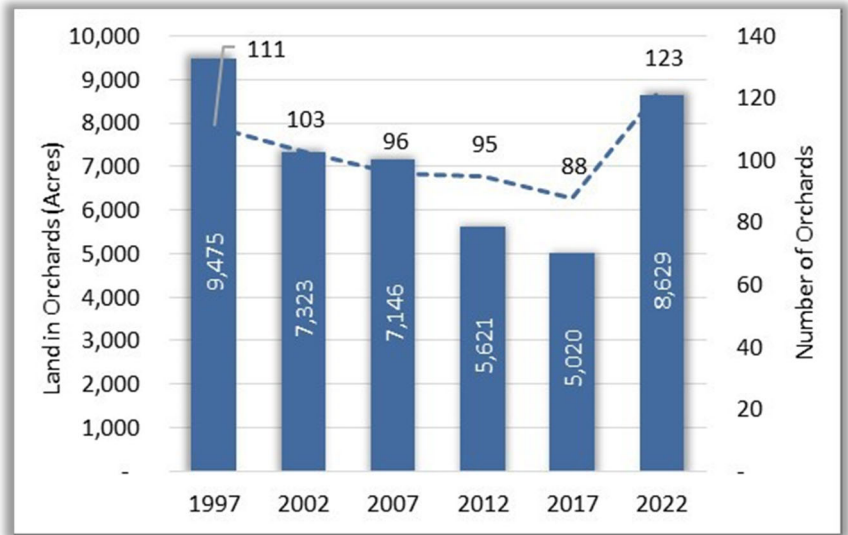


Figure 3. Land in Orchards, Ulster County

Source: U.S. Census of Agriculture

Table 1. Top Crops in Acreage, Ulster County

	2002	2007	2012	2017	2022	Change, 2002-22
Apples	6,365	6,388	4,819	4,604	7,990	26%
Forage (all)	17,581	12,973	11,063	8,708	7,932	-55%
Vegetables for sale (all)	3,381	3,097	2,678	1,978	1,282	-62%
Soybeans	NA	NA	279	405	979	NA
Corn for grain	1,559	1,316	1,392	1,218	866	-44%
Grapes	319	171	202	187	333	4%
Cultivated Christmas trees	187	340	130	302	222	19%
Nursery stock crops	78	765	NA	NA	240	208%

Source: U.S. Census of Agriculture

Over 90% of the land in orchards in Ulster County is devoted to apple production. Grapes and peaches are grown on 333 and 133 acres, respectively. Other orchard fruits produced in the County are plums, pears, and sweet cherries. In addition to the orchards, about 80 acres in the County support the production of berries, mainly strawberries, blueberries, and raspberries.

Other crops with additional acreage in production since 2002 included grapes, cultivated Christmas trees, and nursery stock crops (e.g., ornamentals, shrubs, shade trees, flowering trees, evergreens, and fruit and nut trees grown outdoors).

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Plants, Flowers, and Greenhouse Products

The Census of Agriculture reports that 50 farms and greenhouses in Ulster County produced annual bedding/garden plants, cut flowers, potted flowering plants, perennials, foliage plants, and other related products in 2022. These operations had 56 acres in the open and nearly 234,000 square feet under glass or otherwise protected. The square footage used to grow bedding and garden plants declined by about 28% between 2002 and 2022. Other notable trends in the County include an increase in cut flower operations (from 14 to 25) and growth in the square footage devoted to producing greenhouse vegetables, fresh-cut herbs, and vegetable transplants.

The 2022 Commercial Floriculture Survey conducted by the USDA ranks New York #6 in the U.S. in floriculture sales and #2 in the country in the number of floriculture operations.

As of January 2024, Ulster County had 78 nursery growers and greenhouses licensed by the NYS Department of Agriculture and Markets. Some operations grow nursery stock only (typically trees and shrubs), some grow only greenhouse crops (such as flowers, plants, and vegetables grown indoors), and others are combined nursery and greenhouse operations.

Livestock

Top livestock on farms in Ulster County in number of head in 2022 were horses and ponies (1,693), beef cows (1,021), sheep and lambs (559), broilers and other meat-type chickens (520), goats (433), and ducks (340). With very few dairy farms left, milk cows dropped to 181 head from 984 in 2002. Virtually all types of livestock and poultry except ducks experienced a net reduction in head between 2002 and 2022.

Table 2. Top Livestock in Head, Ulster County

	2002	2007	2012	2017	2022	Change, 2002-22
Horses and ponies	1,816	1,754	2,502	1,594	1,693	-7%
Beef cows	1,260	1,753	1,350	774	1,021	-19%
Sheep and lambs	664	471	488	993	559	-16%
Broilers and other meat chicken breeds	NA	2,655	1,547	1,395	520	NA
Goats, all	815	569	330	566	433	-47%
Ducks	265	576	788	296	340	28%

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GIS-Based Agricultural Land Use Data: An Explanation

GIS mapping and analysis of land use and parcel data in Ulster County offers additional information about the current status of agriculture in the County. The data presented below are correlated with the maps that follow. These maps will be included in the full draft/final Plan and included on the GIS Hub for online viewing.

To determine the amount of land in agricultural use within the county we performed a GIS-based land classification analysis. The identification of active farmland was a multistep process. We first used Esri's Deep Learning tools to identify "low vegetation" in the 2022 0.6-meter resolution USDA NAIP imagery for the county. The imagery was clipped to areas that included obvious agricultural activity to expedite the analysis time, for example, areas in the Catskill Mountains were not included as it is almost entirely forested.

However, we did not ignore these areas and included USDA Cropland 2022 data for the county, excluding the codes for developed areas, forested areas, and wetlands for areas outside of our imagery analysis. We also utilized the Cropland data, in combination with parcel data and farmland soils to screen out "low vegetation" which was unlikely to be agricultural-related (lawns, golf courses, ball fields, etc.). We also removed all potential farmland that was under an acre as it was likely lawns, grass road buffers, or minimally productive agricultural land. We further refined the farmland layer by intersecting it with the county parcel layer and then removing "fields" less than an acre for properties coded as vacant, and less than 3 acres for parcels with non-vacant uses (residential, commercial, industrial, etc.) that did not specifically include agriculture.

Finally, we did some manual checking to modify farmland boundaries, add missing farmland, and delete areas that were clearly not farmland. The exception to the above methodology was for the Town and Village of New Paltz, where we had recently created a detailed farmland layer, modified from the county's 2013 1-meter landcover data. Thus, we merged the data from the 2021 New Paltz NRI with the rest of the county data created for this project.

Using the derived active farmland layer, in combination with Ulster County parcel data, we were able to identify the majority of parcels in the county that have an agricultural use, as summarized in Table 3, below. "Primarily" agricultural parcels are those that are classified by the local tax assessor as being an agricultural use (100 class codes in the assessment manual). "Secondary" agricultural parcels are those coded by the assessor as something other than an agricultural use or vacant, typically a residential use.

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Agricultural Parcels and Types

Based on our analysis, there are 3,222 parcels, comprising 110,693 acres, with 41,095 acres of farmland, having some level of agricultural activity. Of those, there are 852 primary agricultural parcels (those parcels coded as agriculture by the assessor) totaling 38,336 acres with 20,075 acres of active farmland (49% of the county total). Forty-seven of those parcels are considered protected via an easement or fee-simple owned. There are more parcels (1,345) considered secondary agricultural parcels (those parcels having agricultural uses but coded as something other than agriculture) than those having primary agricultural uses. Secondary agricultural parcels total 50,976 acres, and have approximately 16,500 acres of active farmland, or 40% of the active farmland in the county. Approximately 10% of the active farmland in the county is on the 850 agricultural parcels coded as vacant.

Table 3. Parcels Classified as Agriculture in Ulster County

(See also Agricultural Districts and Agricultural Parcels Map)

	Parcels	Parcel Acres	Farmland Acres	Protected Parcels
Primarily Farming	170	5,753	2,236	5
Primarily Farming with Agricultural Assessment	682	32,583	17,839	42
Farming Listed as a Secondary Land Use	516	19,315	7,651	25
Farming Apparent Secondary Land Use	829	31,661	8,873	46
Vacant with Agricultural Assessment	260	6,385	979	20
Vacant with Apparent Agriculture	590	11,195	3,177	19
Apparent Minor Agricultural (less than 3 acres)	175	3,802	340	5
Total	3,222	110,693	41,095	162

Source: Ulster County Tax Parcel Data, Ulster County Real Property 2023 and land classification by Upstate GIS, 2024

Based on an analysis of the ownership of the secondary and vacant agricultural parcels, 1,541 parcels (13,472 acres), or 48% of all agricultural parcels are estimated to be rented lands (33% of all farmland acres). Locations of these potential rented lands are shown on the Potential Rented Land map.

Parcel data also offers insight into the type of agricultural uses taking place in Ulster County (See Agricultural Types map). Table 4, below, reiterates Agricultural Census data showing the diversity of agricultural crops grown in Ulster County. In both acres and number of parcels, orchards are the crop with the most parcels and acreage in the County. This is followed, in order, by field crops, horses, truck crops, and cattle/pigs. Less than 1,000 acres are devoted to dairy cattle. While there is a diversity of agricultural land uses, other types shown in Table 4 have small acreages and few parcels devoted to them.

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Table 4. Agricultural Types (see also Agricultural Types Map)

	Farmland Acres	Parcel Acres	# of Parcels
Christmas Trees	20.9	42.4	4
Vineyard	191.8	305	14
Truck Crops	1,408.8	2,727.7	50
Sugar Bush	0	8.4	3
Specialty Farm	45.3	252.4	7
Sheep	55.9	115.9	2
Poultry	29.9	38.4	1
Other or Unknown	2,221.2	7,189.8	201
Other Livestock	116.5	308.5	7
Orchard-Fruit	6,948.3	12,157.6	383
Orchard	950.1	2,090.1	53
Nursery and Greenhouse	91.4	499.3	30
Livestock	118.8	290.1	7
Horses	1,868.2	3,609.4	75
Honey/Beeswax	0	8.6	1
Field Crops	6,867.9	11,893.3	229
Dairy	953.3	1,518.4	22
Cattle/Pigs	1,370.2	4123.8	46
Other/Unknown Agricultural Uses	17,854.2	63,503.3	2,083

Source: Ulster County Tax Parcel Data, Ulster County Real Property, 2023, local knowledge and imagery interpretation

Farmland Soils

Most of the farming activities in the County take place in locations where soils best support agriculture. These areas are located along the Route 209 corridor and the Wallkill River valley (see Soils Map). Both prime farmland soils (including prime farmland if drained) and farmland of statewide importance can be found in the farming areas of the County but there are almost twice as many acres in farmland of statewide importance than prime farmland. Areas of prime farmland are found primarily along river valleys. According to our data on active farmland, and as shown below, 25% or less of the farmland soils are currently in production.

- 47,680 acres of prime farmland soils in the county, of which 12,006 acres are in production (25%)
- 93,123 acres of farmland soils of statewide importance, of which 13,968 acres are in production (15%)
- 25,870 acres of prime farmland soils if drained, of which 6,469 acres are in production (25%).

Agricultural Districts

The Agricultural Districts Map shows lands that are protected, and those lands included in the NYS Certified Agricultural District. Protected lands include those that are protected by both fee simple (owned by State, County, or Local Government, or a land trust) and those protected by an easement. There are 230,250 acres of fee simple land protected, and 16,212 acres having permanent conservation easements. There are 93 parcels with an

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agricultural use that has a conservation easement, totaling 5,345 acres, with 2,044 acres of active farmland. Easements are held by five known entities as summarized in Table 5 below.

Table 5. Agricultural Easement Holders

	Farmland Acres	Parcel Acres	# of Parcels
Open Space Institute	406.5	1,317	24
Scenic Hudson Land Trust	537	1,040	23
Rondout-Esopus Land Conservancy	156.6	610	14
Wallkill Valley Land Trust	178.6	434	9
Mohonk Preserve	91.8	205	4
Unknown	674.3	1,739	19

The four Agricultural Districts, covering approximately 70,000 acres, show good, but not full correlation to where farming is taking place. 84% of the primary agricultural parcels are located within an agricultural district. 41% of the secondary agricultural parcels are located within an agricultural district. There are 954 parcels, covering approximately 8,800 acres within an agricultural district that do not have an apparent agricultural use.

Conversion Pressure

Significant development pressure exists in Ulster County (see the Change 2014-2023 map and the Recent Development map). An analysis of parcel and assessment data shows that between 2014 and 2023:

- 2,083 new homes were built in Ulster County on 13,577 acres based on year-built data within the tax parcel database.
- The number of parcels coded as having a residential use increased from 59,840 to 61,416 (222,087 acres and 227,2936 acres, respectively).
- The number of parcels assessed or “site used” for agriculture rose from 814 parcels to 839 parcels (37,744 acres and 38,456 acres, respectively).

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Table 6. Change in Primary Assessment, 2014-23

	Parcels	Acres	Current Active Farmland Acres	Parcels Currently with an Agricultural Use
Agriculture Converted to Residential	86	1,620	569	32
Agriculture Converted to Vacant	18	357	164	12
Agriculture Converted to Other	7	445	236	4
Total Ag Conversions	111	2,422	969	48
Converted to Agriculture	67	2,990	1,063	54
Other Converted to Residential*	1,818	12,694	431	59

* Several parcels with homes and DEP easement coded as Water Supply in 2023

Another way to look at changes is by comparing land classification data from different years. The land classification data is based on 30-meter resolution satellite imagery that is classified based on the dominant spectral signature of each pixel. By comparing 2016 to 2021 land cover data, we see a decrease in agricultural land area and an increase in developed land area (Table 7). Specifically, there have been:

- A loss of herbaceous land cover (33%)
- A small decrease in agricultural land cover types (-2.5%)
- A slight increase in developed land acreage (+0.3%)
- Little change in forested, or wetland acreage
- A more significant change in barren land (23%) and shrub/scrub lands (12%)

Table 7. 2016 to 2021 Changes in Land Cover

	2016	2021	Change
Herbaceous	3,845	2,570	-33.2%
Hay/Pasture	47,570	47,430	-0.3%
Cultivated Crops	7,204	7,181	-0.3%
All Agricultural Land	58,618	57,181	-2.5%
Developed, Open Space	39,585	39,248	-0.9%
Developed, Low Intensity	16,150	16,307	1.0%
Developed, Medium Intensity	7,366	7,712	4.7%
Developed, High Intensity	2,517	2,579	2.5%
Developed, All	65,617	65,845	0.3%
Deciduous Forest	357,435	357,863	0.1%
Evergreen Forest	28,759	28,815	0.2%
Mixed Forest	156,959	157,284	0.2%
Forest, All	543,153	543,962	0.1%
Woody Wetlands	48,862	48,724	-0.3%

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Table 7. 2016 to 2021 Changes in Land Cover

	2016	2021	Change
Emergent Herbaceous Wetlands	2,328	2,848	22.3%
Wetlands, All	51,190	51,572	0.7%
Open Water	21,564	21,787	1.0%
Barren Land	1,832	1,419	-22.6%
Shrub/Scrub	1,744	1,952	11.9%

Since land rented from non-farm owners is an important resource for farms in Ulster County, we evaluated changes in the ownership of agricultural lands to identify if there have been significant changes taking place. About 26% (716) of all parcels identified as having a primary or secondary agricultural use have non-local owners; that includes 8,066 acres of farmland or 20% of all active agricultural acres in the County. Within Ulster County Agricultural Districts, there are 433 parcels with non-local landowners, 292 of which have an agricultural use, with 5,573 acres of active farmland.

Table 8 illustrates changes in land ownership patterns in the County. Between 2014 and 2023, there was a 1% increase in the total number of parcels with owners outside Ulster County. Among parcels coded as agricultural, non-local ownership decreased; it also decreased among vacant parcels, many of which are likely now coded as residential. Residential parcels, on the other hand, experienced an increase in non-local ownership. Although the County has seen an increase in non-local land ownership, it appears that the growth has occurred largely on residential parcels rather than on farmland.

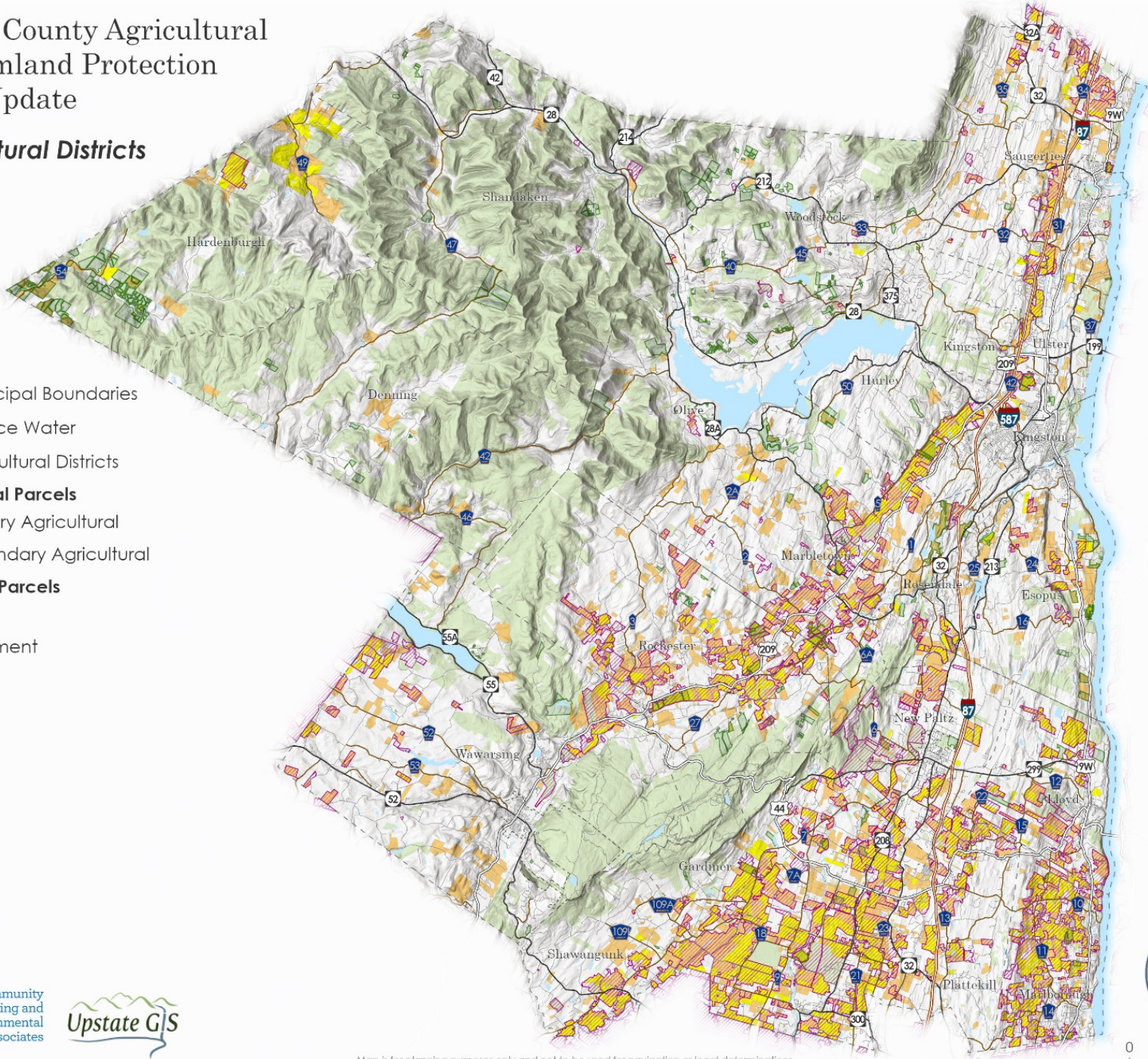
Table 8. Changes in Land Ownership Patterns, 2014-23

	2014	% of Total	2023	% of Total	% Change, 2014-2023
Changes in Land Ownership Patterns, 2014-23	15,945	18%	16,071	19%	1%
Owners Outside Ulster County – All Acres	139,788	19%	137,849	19%	-1%
Owners Outside Ulster County – Parcels Coded as Agricultural	170	20%	164	20%	-4%
Owners Outside Ulster County – Acres Coded as Agricultural	8,363	22%	8,111	21%	-3%
Owners Outside Ulster County – Parcels Coded as Residential	9,721	16%	10,596	17%	9%
Owners Outside Ulster County – Acres Coded as Residential	68,233	30%	71,271	31%	4%
Owners Outside Ulster County – Parcels Coded as Vacant	6,054	42%	5,311	36%	-12%
Owners Outside Ulster County – Acres Coded as Vacant	63,192	46%	58,467	43%	-7%

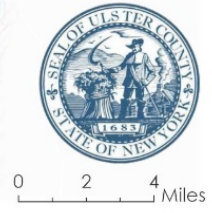
Ulster County Agricultural & Farmland Protection Plan Update

Agricultural Districts

- Municipal Boundaries
- Surface Water
- Agricultural Districts
- Agricultural Parcels**
 - Primary Agricultural
 - Secondary Agricultural
- Protected Parcels**
 - Fee
 - Easement



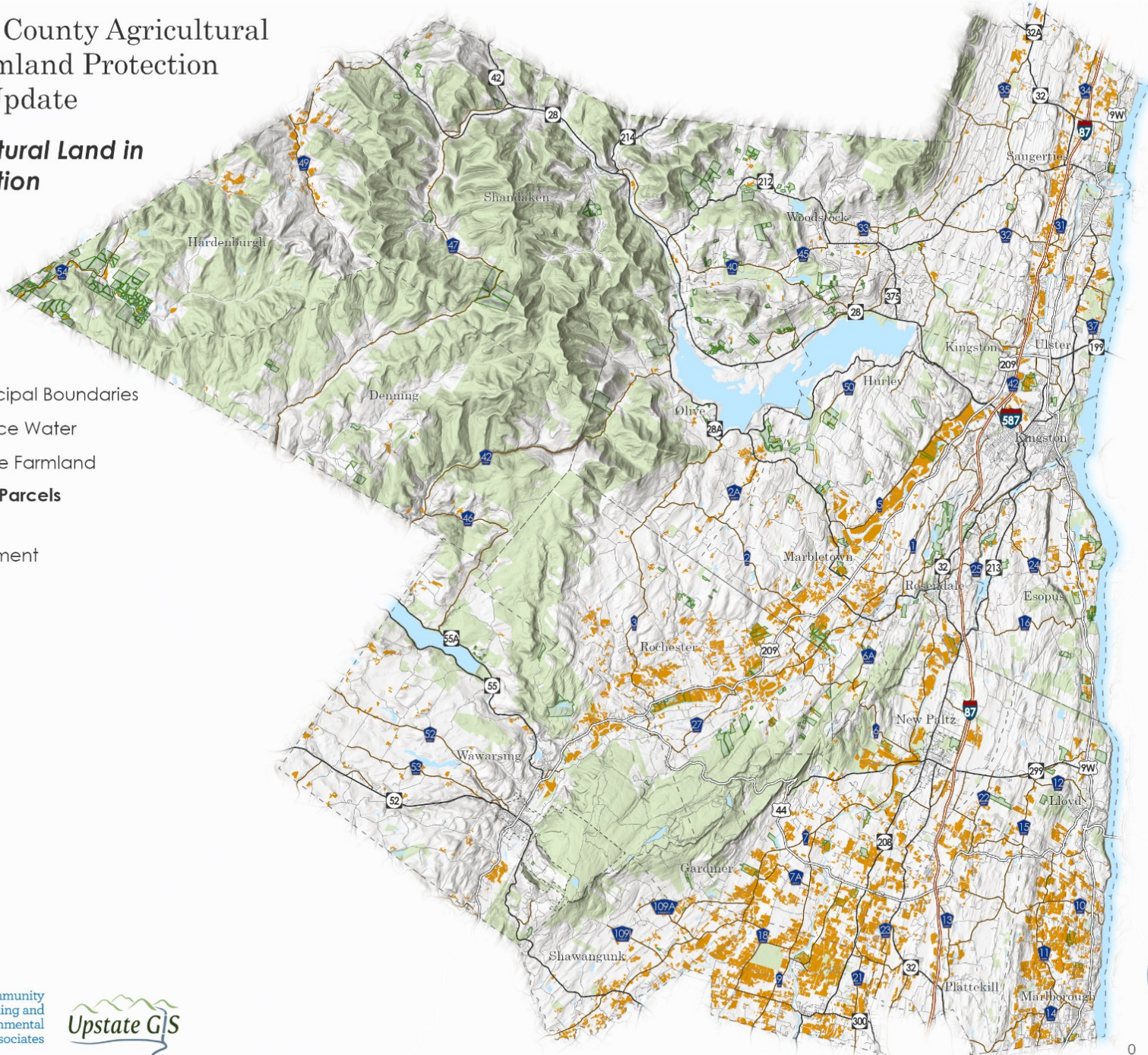
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Ulster County Agricultural & Farmland Protection Plan Update

Agricultural Land in Production

- Municipal Boundaries
- Surface Water
- Active Farmland
- Protected Parcels**
 - Fee
 - Easement



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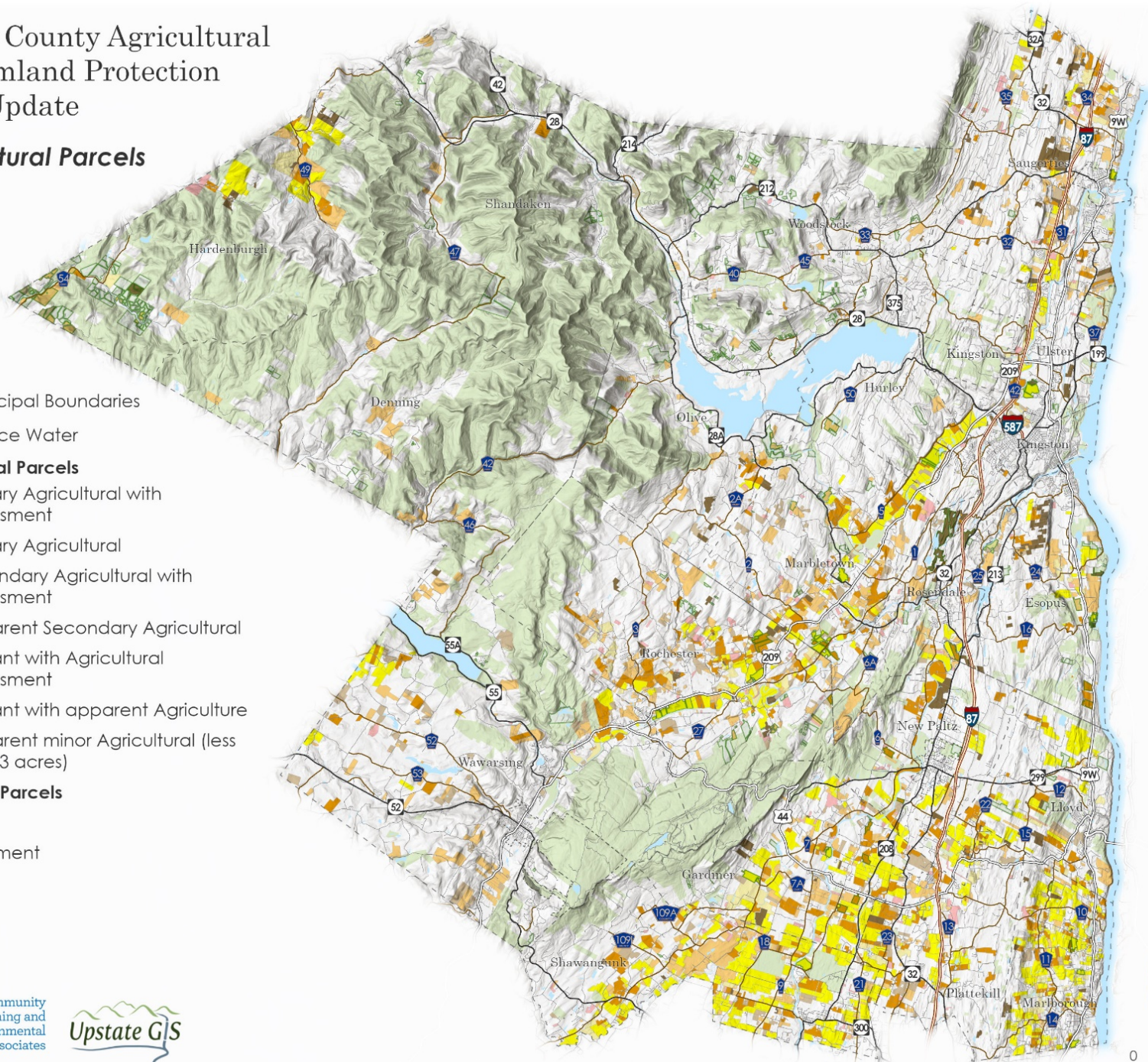


0 2 4 Miles

Ulster County Agricultural & Farmland Protection Plan Update

Agricultural Parcels

- Municipal Boundaries
- Surface Water
- Agricultural Parcels**
 - Primary Agricultural with Assessment
 - Primary Agricultural
 - Secondary Agricultural with Assessment
 - Apparent Secondary Agricultural
 - Vacant with Agricultural Assessment
 - Vacant with apparent Agriculture
 - Apparent minor Agricultural (less than 3 acres)
- Protected Parcels**
 - Fee
 - Easement



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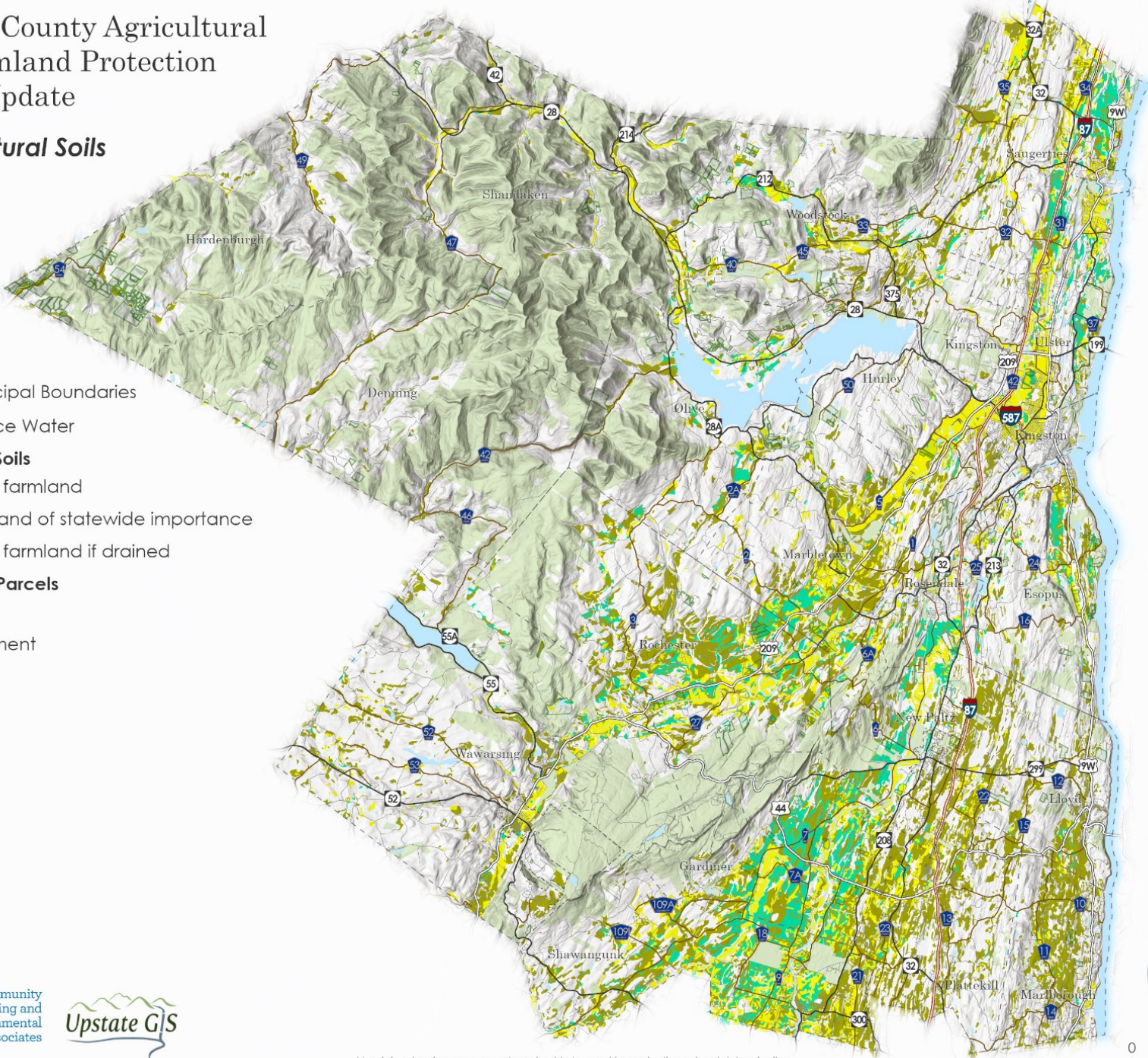


0 2 4 Miles

Ulster County Agricultural & Farmland Protection Plan Update

Agricultural Soils

- Municipal Boundaries
- Surface Water
- Farmland Soils**
 - Prime farmland
 - Farmland of statewide importance
 - Prime farmland if drained
- Protected Parcels**
 - Fee
 - Easement



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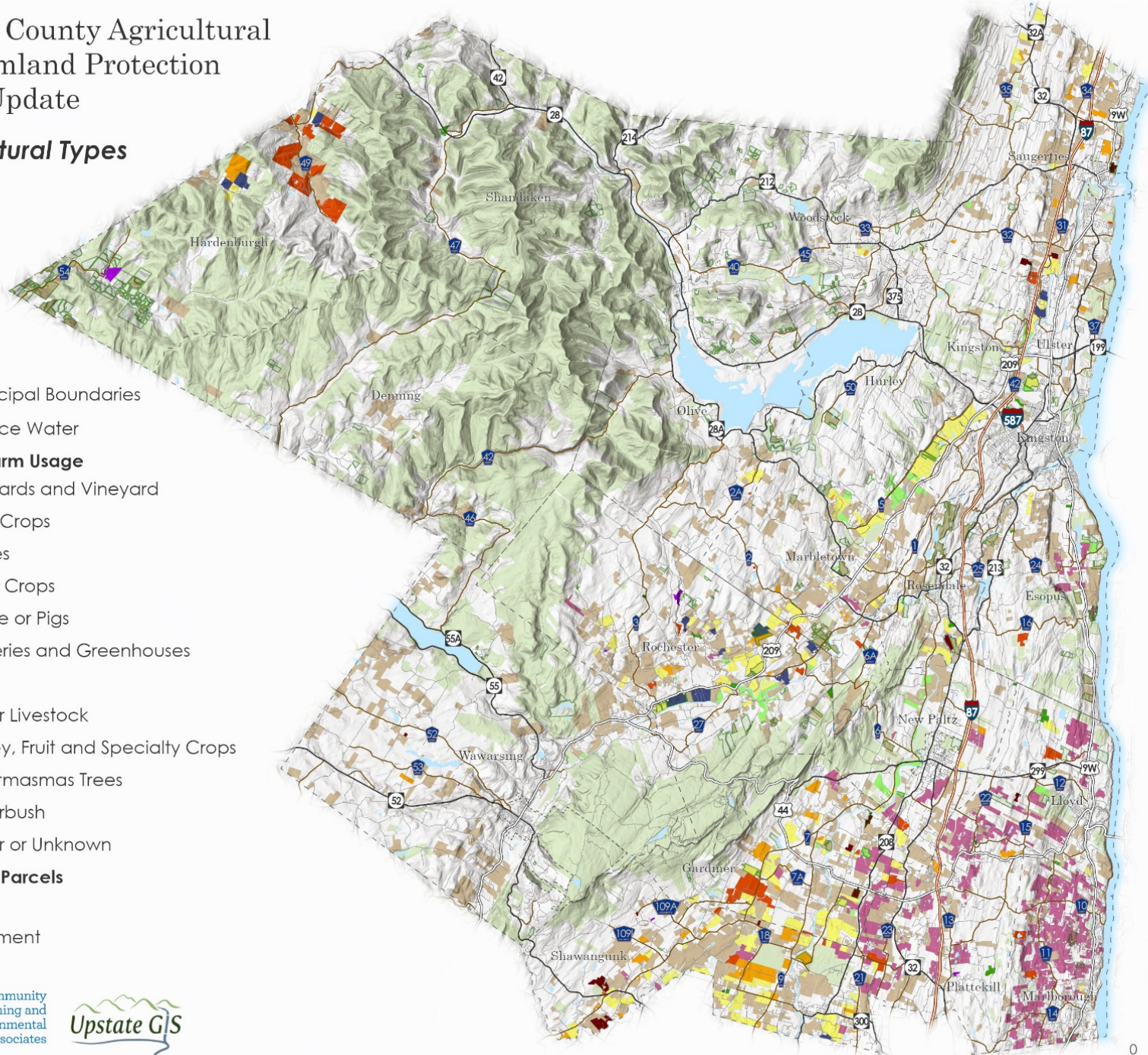
Ulster County Agricultural & Farmland Protection Plan Update

Agricultural Types

- Municipal Boundaries
- Surface Water

- Primary Farm Usage**
- Orchards and Vineyard
 - Field Crops
 - Horses
 - Truck Crops
 - Cattle or Pigs
 - Nurseries and Greenhouses
 - Dairy
 - Other Livestock
 - Honey, Fruit and Specialty Crops
 - Christmas Trees
 - Sugarbush
 - Other or Unknown

- Protected Parcels**
- Fee
 - Easement

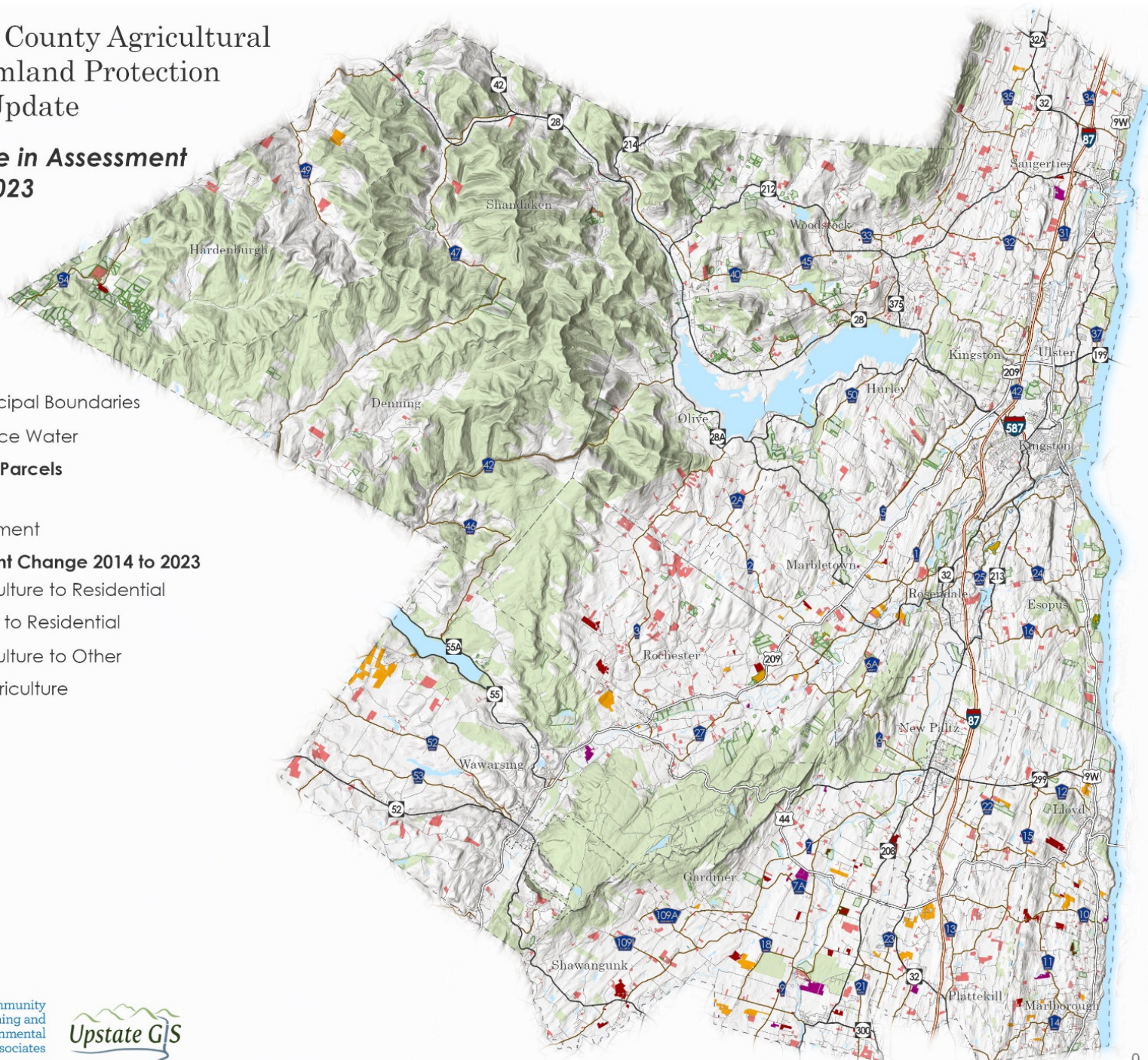


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Ulster County Agricultural & Farmland Protection Plan Update

Change in Assessment 2014-2023



--- Municipal Boundaries

Surface Water

Protected Parcels

Fee

Easement

Assessment Change 2014 to 2023

Agriculture to Residential

Other to Residential

Agriculture to Other

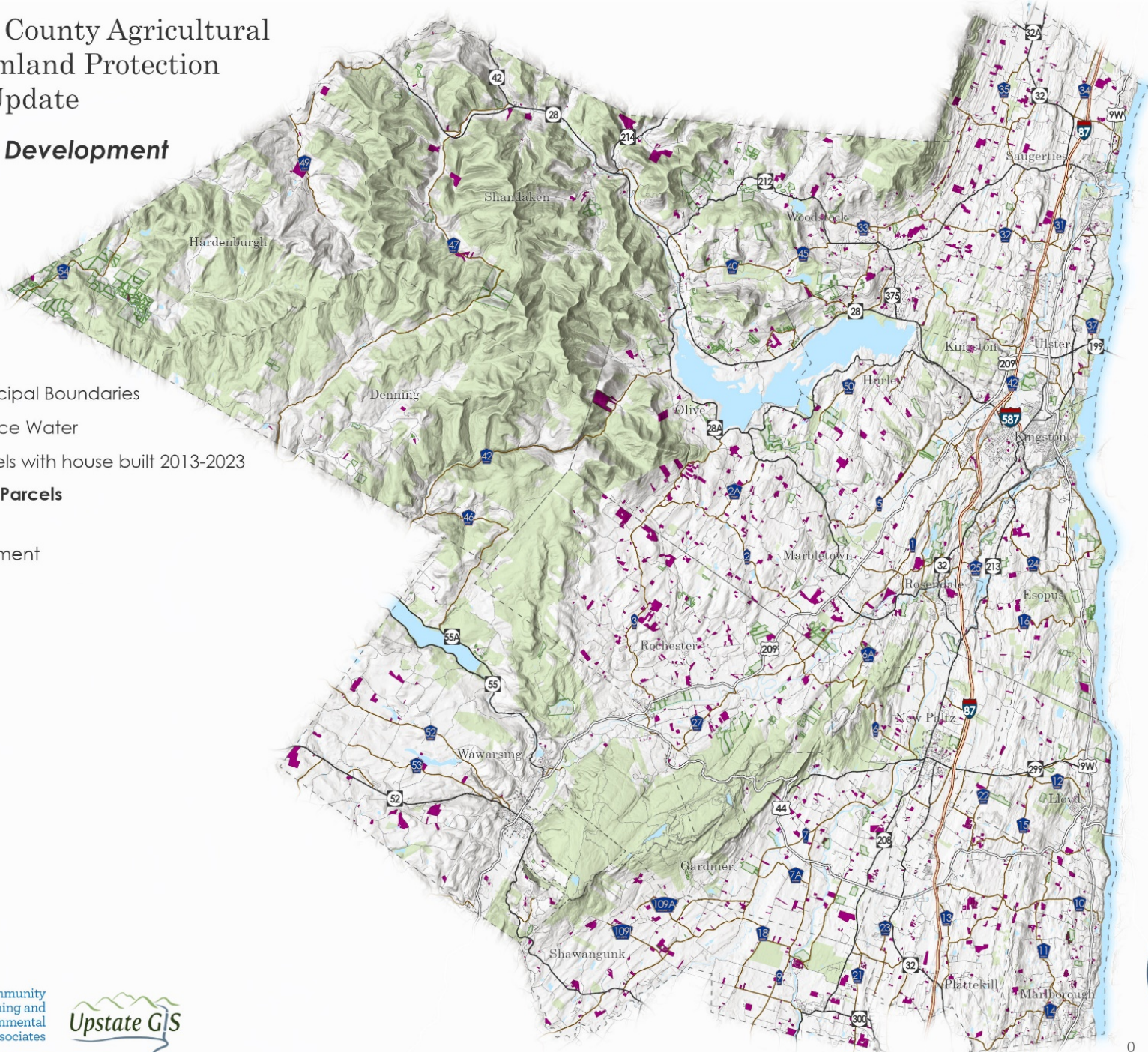
To Agriculture



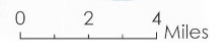
Ulster County Agricultural & Farmland Protection Plan Update

Recent Development

- Municipal Boundaries
- Surface Water
- Parcels with house built 2013-2023
- Protected Parcels**
 - Fee
 - Easement



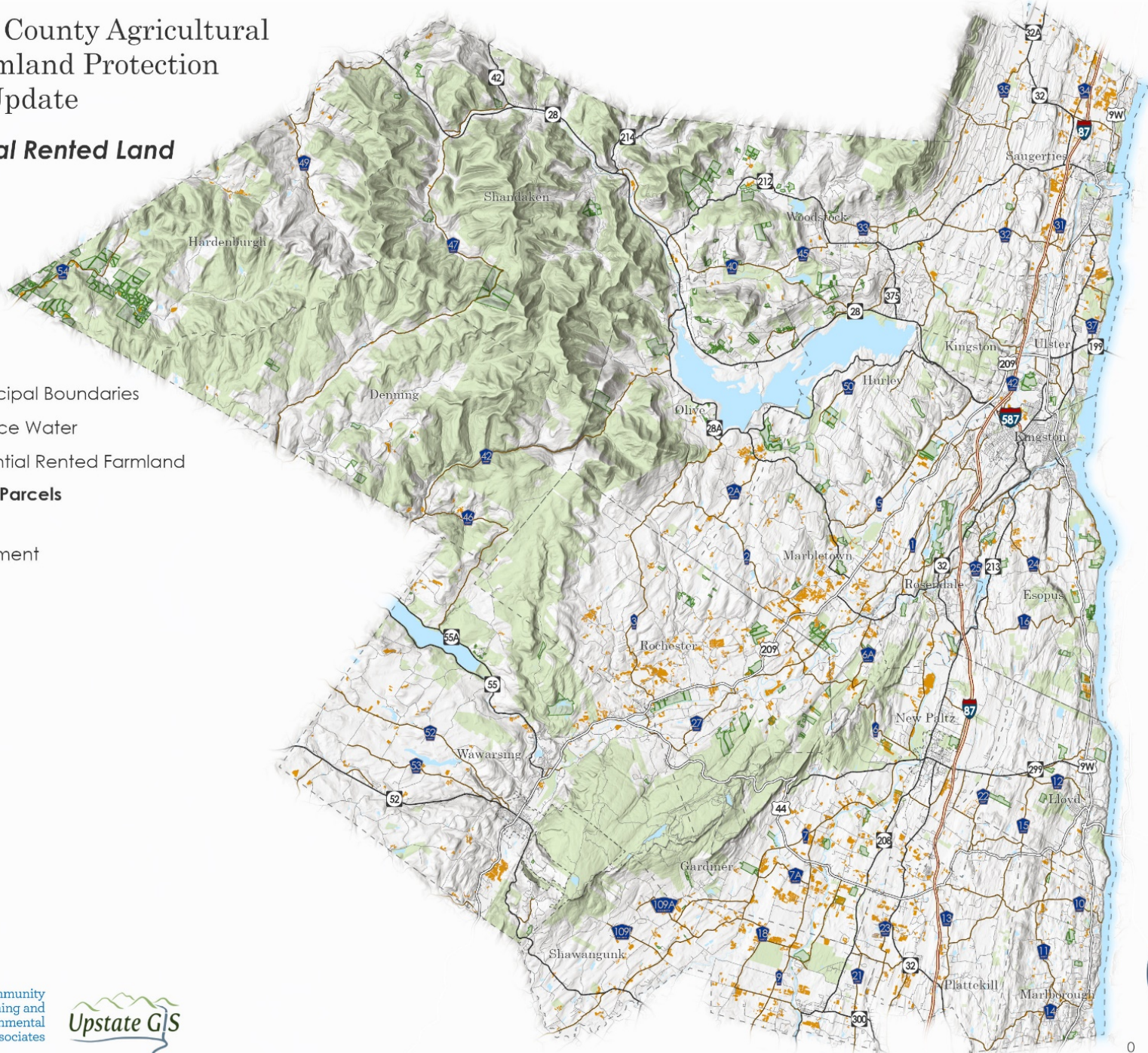
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Ulster County Agricultural & Farmland Protection Plan Update

Potential Rented Land

- Municipal Boundaries
- Surface Water
- Potential Rented Farmland
- Protected Parcels**
 - Fee
 - Easement



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