Introduction & Vision Statement

The main objective of the 2020 Millstone Township Comprehensive Farmland Preservation Plan is to guide Millstone Township's continuing efforts to preserve its remaining farmland and maintain a viable agricultural industry. Farming is a significant component of the Township's economy, and farmland is an irreplaceable natural resource. The plan identifies project areas to target for preservation and sets preservation goals in 1-, 5- and 10-year increments.

The Millstone Township Master Plan was last adopted in 2017 and includes a section on farmland preservation. This Farmland Preservation Plan serves as a comprehensive update to the 2008 Farmland Preservation Plan and the 2016 Master Plan. This Plan reflects the current state of farmland within the Township and also meets the State Agriculture Development Committee's (SADC) requirements for the municipal Planning Incentive Grant (PIG) program.

The following vision statement is based on the Statement of Principle for open space and farmland preservation that was adopted as part of the 2016 Master Plan, with new additional language to emphasize the importance of maintaining the economic viability of agriculture.

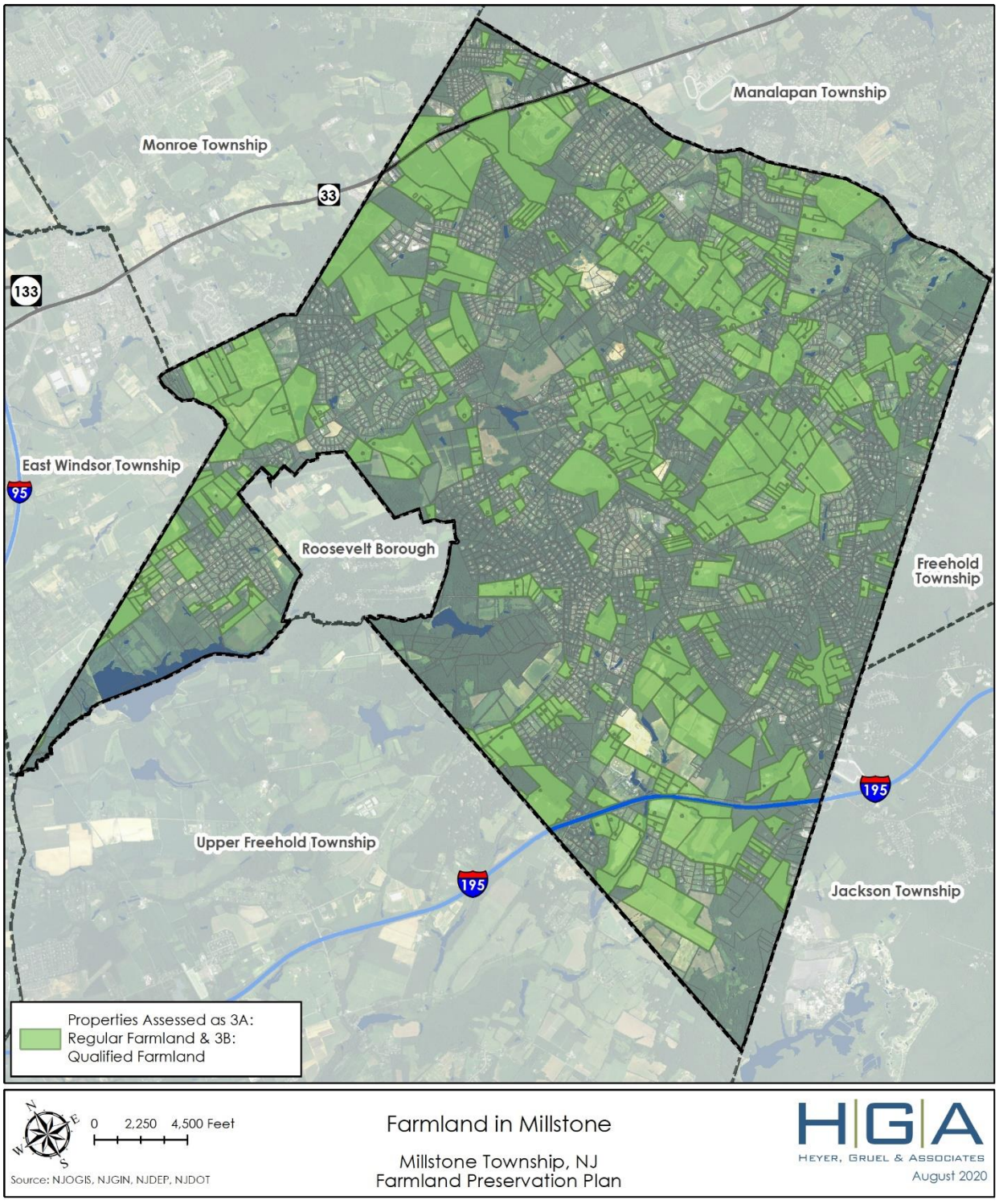
> In 2020, Millstone is a thriving agricultural community, unique and identifiable by the extensive areas of farmland, open space, and environmentally sensitive features that have been preserved for future generations to use and enjoy. These natural, agricultural and environmental features give Millstone its rural aesthetic, which is highly valued by both residents and visitors alike. Millstone maintains these unique qualities by emphasizing "green" infrastructure over "grey" infrastructure. The Township accommodates development, but manages its location, intensity, and character through growth management techniques that preserve natural and rural areas from the extension of inefficient infrastructure systems and overdevelopment. A Township network of permanently preserved open spaces and farmland is needed to provide public recreation, to maintain biodiversity, to protect water quality, to support farming operations, to control flooding and to conserve the significant scenic, cultural and natural features. Efforts should be made to maintain the economic viability of the agricultural industry.

SECTION I. Agricultural Land Base of Millstone Township

Millstone Township is a rural community with a rich agricultural heritage. Preservation of farmland is a priority for the Township because maintaining a highly dense land area within the Township that is dedicated to agriculture will support the sustainability of farming within the community. Agricultural lands are found throughout Millstone Township, including significant acreage devoted to crop production, equine farms, and nursery operations.

Millstone Township is geographically situated within the heart of central New Jersey and in the western portion of Monmouth County. The Township contains approximately 37.4 square miles, or 23,936 acres, of land area. Despite tremendous growth pressure from the suburban expansion of both the Philadelphia and New York metropolitan areas, Millstone has retained its rural character. Regional growth and Millstone's attractive natural surroundings and bucolic environment continue to attract new residents. Pressure to develop residential dwellings and warehousing facilities remains high and threatens the loss of existing agricultural land, as does the often-associated friction between residential development and farmland.

The Township has over 7,800 acres of assessed farmland within the Township. As shown on the following map, "Farmland in Millstone", farms are located throughout the Township, often abutting more developed areas. These properties are either assessed as 3A: Regular Farmland or 3B: Qualified Farmland.



A significant portion of the Township is environmentally constrained, as shown on the "Environmental Constraints" map and efforts have been put into place to protect these resources. Preserving the steep slopes is particularly important in Millstone, since several regional streams have their headwaters in the central, hilly portion of the Township.

A. Location and Size of Agricultural Land Base

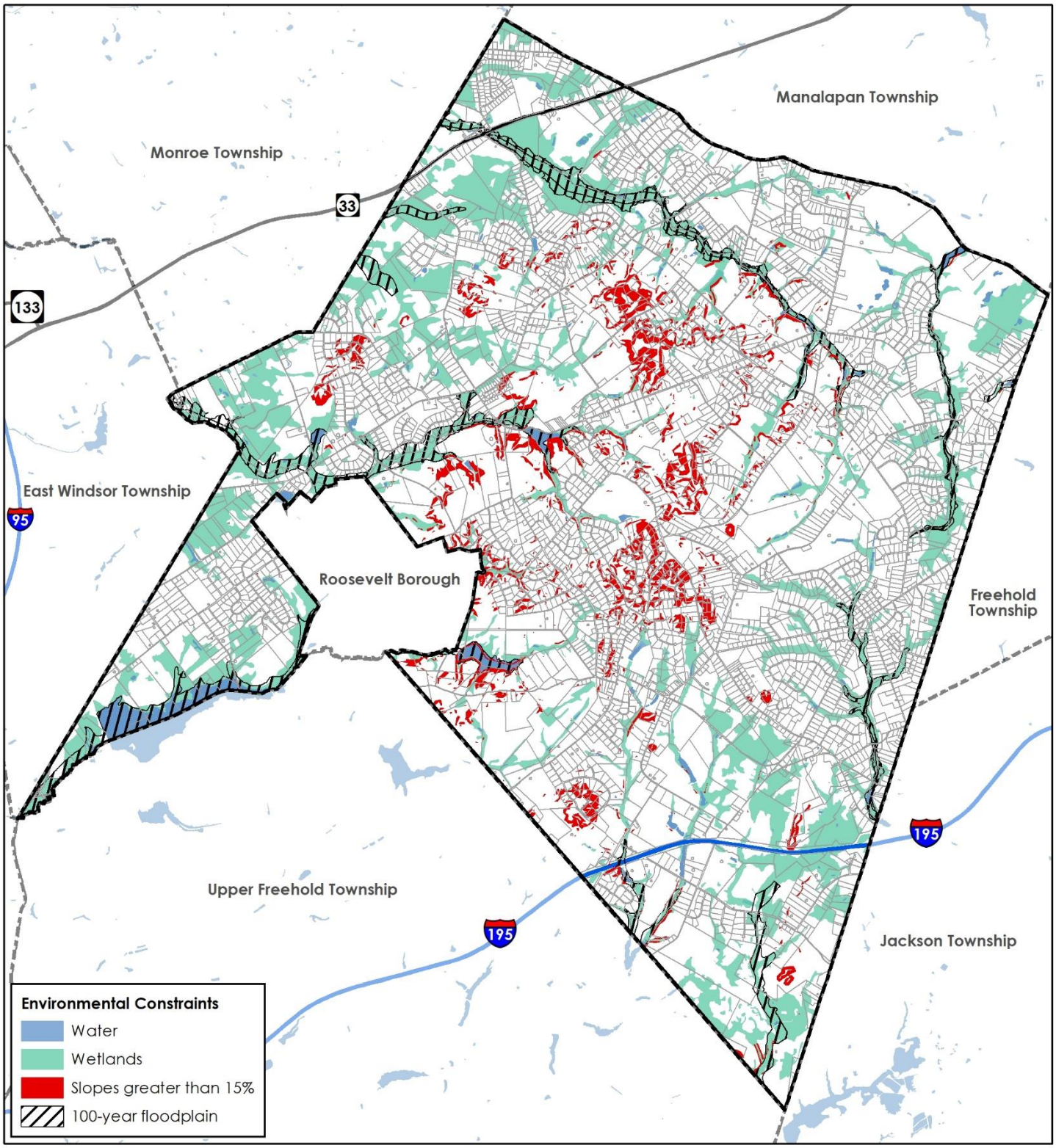
Farmland contributes significantly to the economic base of Millstone Township, is essential to the open rural landscape that characterizes much of the community and is important to maintain the community as a rural environmentally sensitive planning area. According to tax records, roughly 7,800 acres of the Township continues to be farmed, representing 32 percent of the Township's entire area. Millstone Township currently has approximately 1,430 acres of preserved farmland. To maintain its rural environment and landscape, the Township needs to preserve as much farmland as possible.

Agricultural lands are found throughout the Township as shown on the map entitled "2015 Land Use/Land Cover". The NJDEP's 2015 Land Use/Land Cover GIS layer indicates a total of 4,968 acres of agricultural land. The NJDEP considers woodland to be a separate land use category from agricultural land, accounting for some of the differences in the calculation of total farmland acreage.

Along the perimeters of the Township, ponds, streams, forests and woodlands are the primary natural features. Millstone contains a small section of the Pine Barrens in the southeastern portion of the Township. The Assunpink Watershed, a drainage area, is situated in the northwestern corner and south-central portion of Millstone. Assunpink Lake, located in the northwestern corner of Millstone, is the Township's largest lake. There are several additional smaller lakes scattered throughout the Township.

Land use is directly affected and limited by the steep slope conditions which occur in portions of the Township. Millstone is situated on a major divide which separates the major bodies of water that flow into the drainage basins.

There are three primary drainage basins in Millstone Township: the Raritan River Drainage Basin located to the north, the Delaware River Drainage Basin located to the west, and the Atlantic Coastal Drainage Basin located to the east. Within these three major drainage basins, there are seven sub-drainage basins which account for approximately 45 percent of the total land area in Millstone.



Environmental Constraints

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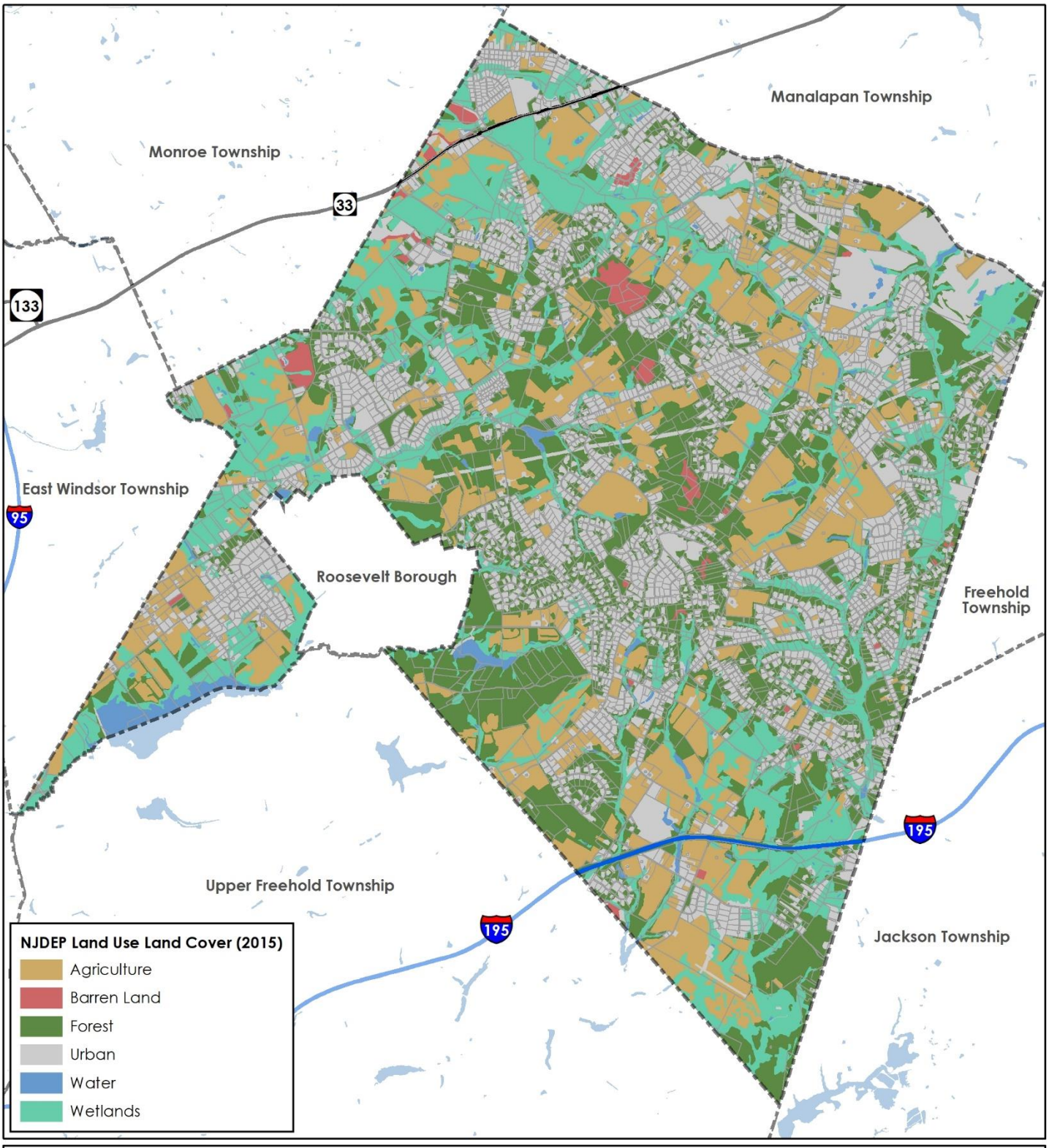

Land Use Land Cover

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B. Soil Types & Their Agricultural Capability

Millstone Township is noted for its topographic features, with some of the highest hills in the central New Jersey area. The highest point in the Township is Pine Hill, which is situated in the east central portion of Millstone, west of Stillhouse Road. Pine Hill is 372 feet above sea level. The lowest points in Millstone are along the streams along the perimeter of the Township, with the lowest being found in the Assunpink Creek at an elevation of 98 feet. The remaining land in Millstone has gently rolling hills and a relatively level landscape.

In the central portion of Millstone, there are a series of steep slopes, or "cuestas", which dominate the overall landscape of the Township. A cuesta is a ridge or hill with a steep slope on one side and a gentle slope on the other side. The steep land in Millstone generally is located in the area of Pine Hill Road, surrounding Perrineville Lake, and near the intersection of Sweetman's Lane and Backbone Hill Road, near Roosevelt Borough and Upper Freehold Township.

Slope of the land is a critical factor in agricultural productivity. Steep slopes are prone to erosion while little to no slope has poor drainage. Generally, farm equipment can operate on slopes up to 5%, while steeper slopes can accommodate pastureland, nurseries, or field crops that are cultivated by hand.

The 2019 Soils Map of Millstone Township identifies eighty-five specific soil types. The primary soil type in Millstone Township is sandy loam. Soils in the Township also include sand deposits with some clay, silt and gravel. The wide range of soil types can be attributed to the Township's varied topography. An important soil type in Millstone is hydric soil, which is distributed throughout most of the Township. This soil type is usually associated with the presence of freshwater wetlands. Slow drainage, frequent flooding, and a shallow water table are characteristic traits of hydric soils.

An important factor for agriculture is the productivity of the soil. The Natural Resources Conservation Service (NRCS) classifies certain soils as "Prime", of "Statewide Importance", or "Unique" based on their agricultural productivity.

Prime farmland soils rest on land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. They have the quality, growing season and moisture supply needed to produce sustained high yields of crops when treated and managed according to acceptable farming methods. Prime soils are not excessively erodible or saturated with water for a long period of time, and they either flood infrequently or are protected from flooding.

Farmland soils of Statewide Importance produce high yields of crops when treated and managed according to acceptable farming methods but have yields that are not as high as prime soils. Unique soils exhibit specific qualities that may be favorable to the production of specialized crops such as blueberries.

Prime, Statewide, and Unique farmland soils cover 74 percent of Millstone Township. As shown on the "Agricultural Soils" map, these agricultural soils are found in abundance throughout the Township. These soils are less common within wetland areas and bordering the Township's principal waterways.

Knowledge of soil types, characteristics, and their geographic distribution can inform planning and policy processes. It can also influence the smart growth and development of a community.

Data on soil depth, permeability, water table and other physical properties are useful when determining the suitability of soils for foundation construction, location of septic fields, landscaping, and construction of roads, athletic fields, and parks.

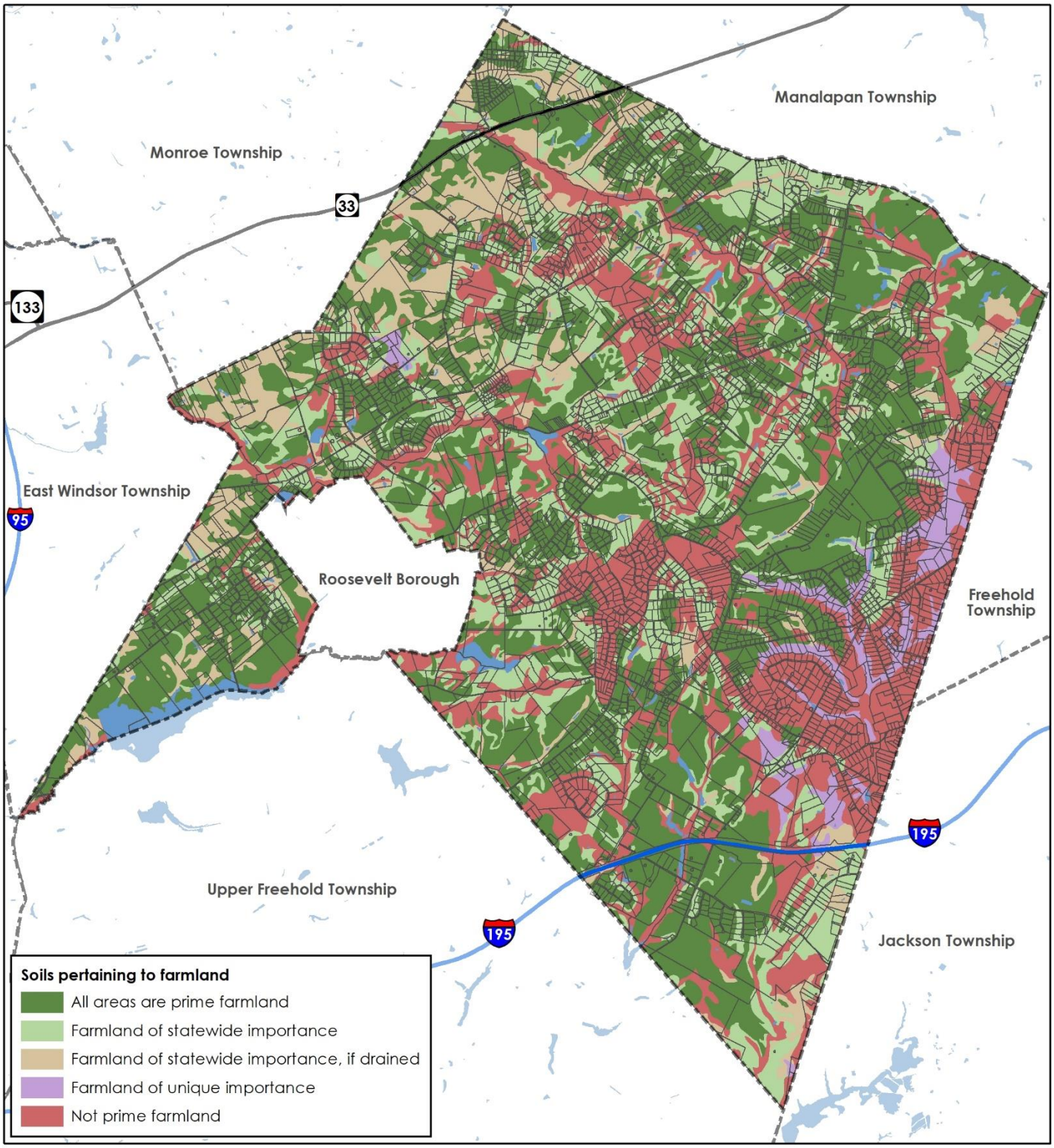
An important consideration in farmland preservation is the quality of soils for agricultural production. The major advantages of prime agricultural soils are their fertility and lack of limitations for crop production purposes. Prime soils will support almost any type of agriculture common to this region. Soil limitations include steep slopes, extreme stoniness or wetness, shallow depth to bedrock and poor percolation properties, all of which may hinder cultivation. Prime agricultural soils produce superior crop yield on a consistent basis due to this high fertility content, when measured against those soils not rated as prime.

The soil data provided in this report is provided by the Natural Resource Conservation Service (NRCS) of the United Stated Department of Agriculture (USDA), which started conducting national soil surveys in 1935 and continues today. The farmland classification prescribed by SADC identifies map units as prime farmland soils, farmland soils of statewide importance, farmland soils of unique importance, or other soils that are not suitable for agriculture. Farmland classification identifies the location and extent of most suitable soils for producing food, feed, fiber, forage, and oilseed crops. This identification is useful in the management and maintenance of the resource base that supports the productive capacity of American agriculture.

Millstone Township has some of the best soils in the state for agriculture. The following table compares the total acreage of soil in the Township to that of the active farmland within the Township. The active farmland was derived from using the NJDEP's 2015 Land Use Land Classification. As shown below, approximately 36 percent of the agricultural land consists of prime farmland soils and about 5 percent of agricultural land is considered "not prime" for agriculture.

Active Farmland by Category			
Soil Classification	**Total Acres**	**Active Farmland**	**% of Total Acres**
Prime Farmland Soils	9,580	3,462	36.1%
Statewide Importance Soils	5,032	1,206	24.0%
Statewide Importance Soils, if drained	2,382	156	6.5%
Soils of Unique Importance	628	6	0.9%
Not Prime Farmland Soils	6,182	300	4.9%
Total	**23,803**	**5,130**	**21.6%**

Source: USDA NRCS WSS, NJDEP LULC 2015, Acreage calculated in GIS



Agricultural Soils

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SADC Prime Farmland Soil

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. SADC Prime Farmland Soils include all those soils in the USDA Land Capability Class I and selected soils from USDA Land Capability Class II. USDA Class I soils have slight limitations that restrict their use. USDA Class II soils have moderate limitations that reduce the choice of plants or require moderate limitations that reduce the choice of plants or require moderate conservation practices. SADC Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses.

The criteria for prime farmland designation include: an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges from 0 to 6 percent.

According to the NRCS, some areas of prime farmland may require measures that overcome a hazard or limitation, such as flooding, wetness, and drought. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. In Millstone Township, the following SADC Prime Farmland Soils are found:

SADC Prime Farmland Soils		
Soil Description	**Acreage**	**Percent**
Adelphia loam, 0-2% slopes	232.30	2.4%
Adelphia loam, 2-5% slopes	326.13	3.4%
Collington loam, 0-2% slopes	119.52	1.2%
Collington sandy loam, 2-5% slopes	932.19	9.7%
Colts Neck sandy loam, 2-5% slopes	87.90	0.9%
Downer sandy loam, 0-2% slopes, Northern Tidewater Area	6.46	0.1%
Freehold loam, 0-2% slopes	236.75	2.5%
Freehold loamy sand, 0-5% slopes	171.61	1.8%
Freehold sandy loam, 2-5% slopes	3,070.49	32.1%
Holmdel sandy loam, 0-2% slopes	144.44	1.5%
Holmdel sandy loam, 2-5% slopes	831.32	8.7%
Keyport sandy loam, 0-2% slopes	1.34	0.0%
Keyport sandy loam, 2-5% slopes	127.93	1.3%
Marlton loam, 2-5% slopes	421.86	4.4%
Matapeake loam, 0-2% slopes	<0.01	<0.01%
Sassafras gravelly sandy loam, 2-5% slopes	33.34	0.3%
Sassafras loam, 0-2% slopes	362.07	3.8%
Sassafras sandy loam, 2-5% slopes, Northern Coastal Plain	1,864.29	19.5%

Soil Description (continued)	Acreage	Percent
Woodstown loam, 0-2% slopes, Northern Coastal Plain	139.83	1.5%
Woodstown sandy loam, 2-5% slopes, Northern Coastal Plain	469.82	4.9%
Total Prime Soils	**9,579.61**	**100.0%**

Source: United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey

Unique Soils

Unique soils are soils other than prime farmland soils that are used for the production of specific high value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and other fruits and vegetables. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

SADC Unique Soils		
Soil Description	**Acreage**	**Percent**
Atsion sand, 0-2% slopes, Northern Coastal Plain	249.38	39.7%
Atsion sand, 0-2% slopes, Northern Tidewater Area	134.51	21.4%
Manahawkin muck, 0-2% slopes, frequently flooded	244.21	38.9%
Total Unique Soils	**628.09**	**100.0%**

Source: United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey

SADC Soils of Statewide Importance

SADC Soils of Statewide Importance include those soils in the USDA Land Capability Class II and Class III that do not meet the criteria as SADC Prime Farmland Soils. USDA Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices. Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. These soils can economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce yields as high as SADC Prime Farmland if conditions are favorable. Criteria for defining and delineating this land are to be determined by the appropriate State agency or agencies. In some States, additional farmlands of statewide importance may include tracts of land that have been designated for agriculture by State law.

SADC Soils of Statewide Importance		
Soil Description	**Acreage**	**Percent**
Collington sandy loam, 5-10% slopes, eroded	261.81	5.2%
Colts Neck sandy loam, 5-10% slopes	20.91	0.4%
Colts Neck sandy loam, 5-10% slopes, eroded	41.70	0.8%
Downer loamy sand, 0-5% slopes, Northern Coastal Plain	30.90	0.6%
Downer loamy sand, 5-10% slopes, Northern Coastal Plain	20.02	0.4%
Downer loamy sand, 5-10% slopes, Northern Tidewater Area	2.17	<0.01%
Freehold loamy sand, 5-10% slopes	218.57	4.3%

Soil Description (continued)	Acreage	Percent
Freehold sandy loam, 5-10% slopes	207.22	4.1%
Freehold sandy loam, 5-10% slopes, eroded	525.08	10.4%
Hammonton loamy sand, 0-5% slopes	33.77	0.7%
Keyport sandy loam, 5-10% slopes	52.87	1.1%
Klej loamy sand, 0-5% slopes	133.64	2.7%
Klej loamy sand, clayey substratum, 0-5% slopes	4.42	0.1%
Marlton sandy loam, 5-10% slopes	133.81	2.7%
Mattapex and Bertie loams, 0-5% slopes	0.01	<0.01%
Pemberton loamy sand, 0-5% slopes	328.06	6.5%
Sassafras gravelly sandy loam, 5-10% slopes	9.42	0.2%
Sassafras sandy loam, 10-15% slopes	258.90	5.1%
Sassafras sandy loam, 5-10% slopes, Northern Coastal Plain	576.85	11.5%
Tinton loamy sand, 0-5% slopes	1,440.19	28.6%
Tinton loamy sand, 5-10% slopes	731.90	14.5%
Total Statewide Importance Soils	**5,032.21**	**100.0%**

Source: United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey

The following chart indicates the soils of statewide importance if drained. These soils can be capable of producing yields as high as Prime Farmland when drained.

SADC Soils of Statewide Importance if Drained		
Soil Description	**Acreage**	**Percent**
Elkton loam, 0-2% slopes, rarely flooded	237.61	10.0%
Fallsington loams, 0-2% slopes, Northern Coastal Plain	464.48	19.5%
Kresson loam, 2-5% slopes	30.47	1.3%
Shrewsbury sandy loam, 0-2% slopes	1,649.48	69.2%
Total Statewide Importance Soils if Drained	**2,382.04**	**100.0%**

Source: United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey

Soils of Local Importance

Soils of local importance include those soils that are not prime or of statewide importance and are used for the production of high value food, fiber or horticultural crops. In some local areas, certain farmlands are not identified as having national or statewide importance. Where appropriate, these lands are identified by the local agency or agencies concerned as important to local agricultural production. These may also include tracts of land that have been designated for agriculture by local ordinance.

Not Prime Farmland Soils

Not Prime Farmland Soils include those soils that are not prime farmland, of statewide importance, unique, or of local importance. These soils lack the physical and chemical which allow for agricultural crops to thrive. The following table shows the SADC Soils of Not Prime Farmland:

SADC Not Prime Farmland Soils		
Soil Description	**Acreage**	**Percent**
Colemantown loam, 0-2% slopes, occasionally flooded	407.45	6.6%
Collington sandy loam, 10-15% slopes, severely eroded	112.12	1.8%
Colts Neck sandy loam, 10-15% slopes, eroded	56.11	0.9%
Colts Neck sandy loam, 15-25% slopes, eroded	26.47	0.4%
Evesboro sand, 0-5% slopes	853.60	13.8%
Evesboro sand, 10-15% slopes	247.73	4.0%
Evesboro sand, 15-25% slopes	381.83	6.2%
Evesboro sand, 5-10% slopes	414.00	6.7%
Fluvaquents, loamy, 0-3% slopes, frequently flooded	0.97	<0.01%
Freehold sandy loam, 10-15% slopes	18.69	0.3%
Freehold sandy loam, 10-15% slopes, eroded	328.66	5.3%
Freehold sandy loam, 15-25% slopes, eroded	329.80	5.3%
Holmdel-Urban land complex, 0-5% slopes	1.14	<0.01%
Humaquepts, 0-3% slopes, frequently flooded	935.10	15.1%
Keyport sandy loam, 10-15% slopes	21.46	0.3%
Lakehurst sand, 0-5% slopes	154.49	2.5%
Lakewood sand, 0-5% slopes	479.64	7.8%
Lakewood sand, 5-10% slopes	92.59	1.5%
Phalanx loamy sand, 10-25% slopes	10.78	0.2%
Phalanx loamy sand, 5-10% slopes	65.36	1.1%
Sassafras sandy loam, 15-25% slopes	202.13	3.3%
Tinton loamy sand, 10-25% slopes	404.27	6.5%
Udorthents, 0-8% slopes	97.03	1.6%
Udorthents-Urban land complex, 0-8% slopes	16.29	0.3%
Pits, sand and gravel	230.02	3.7%
Water	293.78	4.8%
Total Not Prime Farmland Soils	**6,181.51**	**100.0%**

Source: United States Department of Agriculture Natural Resource Conservation Service Web Soil Survey

C. Number of Irrigated Acres & Available Water Resources

Irrigation is a technique used by farmers to create viable agricultural land in areas previously unsuited for intensive crop production. Irrigation transports water to crops to increase yield, keeps crops cool under excessive heat conditions, and to prevent freezing.

According to the 2017 SADC Farmland Assessment data, the Township had a total of 53 irrigated acres. Approximately 18 acres are irrigated for field crops, 22 acres are ornamental irrigated acres, 7 acres are fruit irrigated acres, and 6 acres of vegetable irrigated acres. This represent a drastic reduction to the Township's 2004 SADC Farmland Assessment data, where 226 acres were reported as irrigated.

The "Groundwater Recharge Areas" map shows the ground water recharge areas, determined by the New Jersey Geological Society. As shown on the map and the table below, more than half of the Township is classified as having a groundwater recharge rank of B which provides 15 to 16 inches of recharge annually. It is important to note that over 27% of the Township is classified as wetlands, open water areas and hydric soils and does not provide any recharge utilizing this data set.

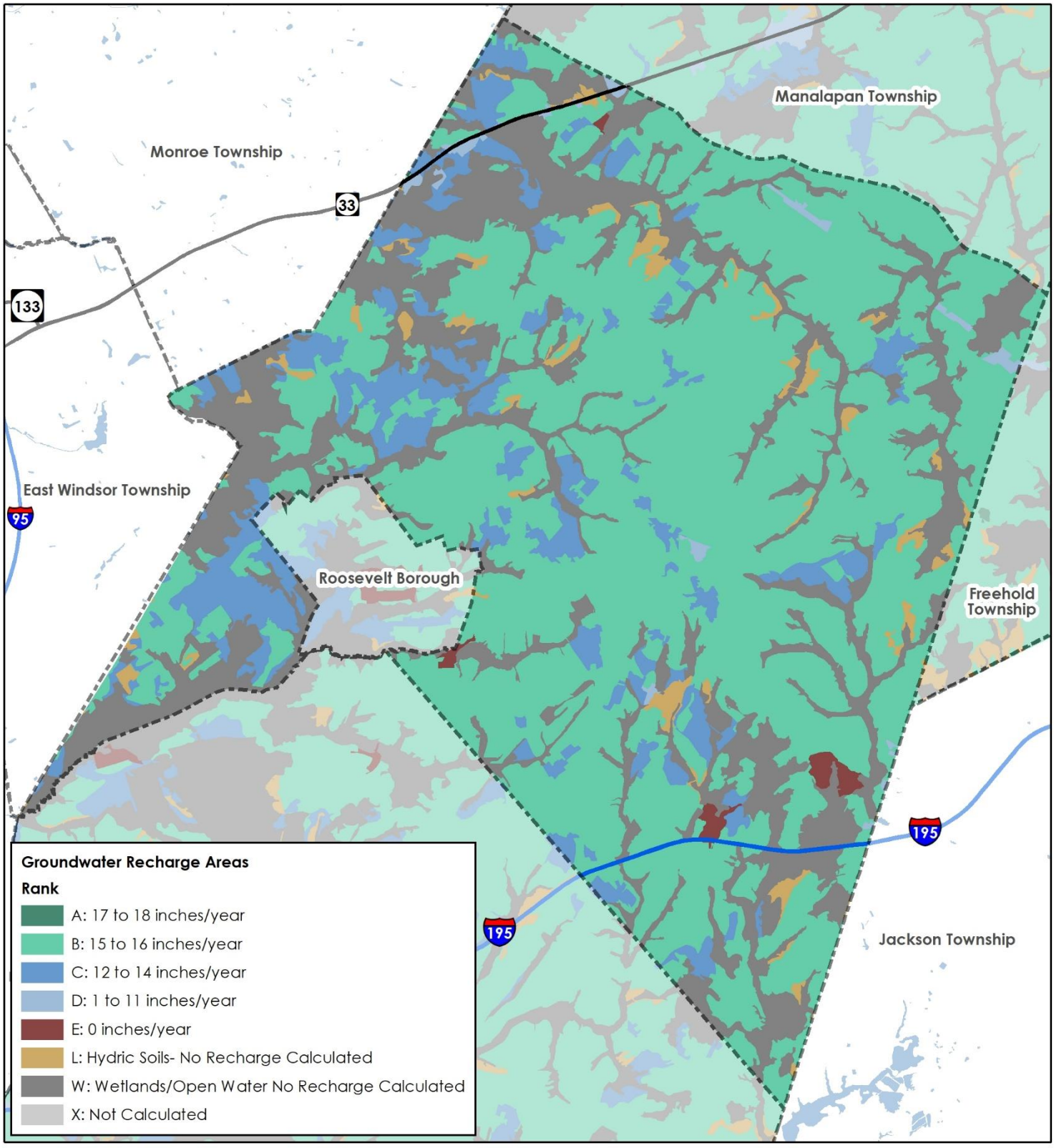
Groundwater Recharge		
Rank	**Acres**	**Percent**
A: 17 to 18 inches/year	0.0	0.0%
B: 15 to 16 inches/year	14,375.4	60.5%
C: 12 to 14 inches/year	2,465.2	10.4%
D: 1 to 11 inches/year	164.8	0.7%
E: 0 inches/year	126.4	0.5%
L: Hydric Soils- No Recharge	486.0	2.0%
W: Wetlands/Open Water	6,134.7	25.8%
X: Not Calculated	1.5	0.0%
Total	**23,754.0**	**100.0%**

Source: New Jersey Geological Survey

The 2008 Farmland Preservation Plan notes that farmers in the Township rely upon precipitation to nourish their crops during the growing season, while others have man-made ponds that assist with irrigation.

The 2017-2022 New Jersey Water Supply Plan notes that the Agriculture, Aquaculture and Horticulture Water Usage Certificate govern the water usage by the agricultural community. Certification holders are required to submit a record of the amount of water withdrawn annually to the NJDEP to ensure consistency with the irrigated acreage and previously reported totals. However, it is often difficult to determine if the amount of water reported as most of the agricultural diversions are not metered as the Township does not have the potable water infrastructure.

However, the State Water Supply Plan also notes that based upon agricultural water use data reported in 2015, agricultural users are using only about 30% of their allocation. The NJDEP is continuing to work with the State Agriculture Development Committee, the Department of Agriculture, Rutgers Agricultural Agents, and other agricultural stakeholders to obtain a solution for gathering better agricultural water use data.



Groundwater Recharge Areas

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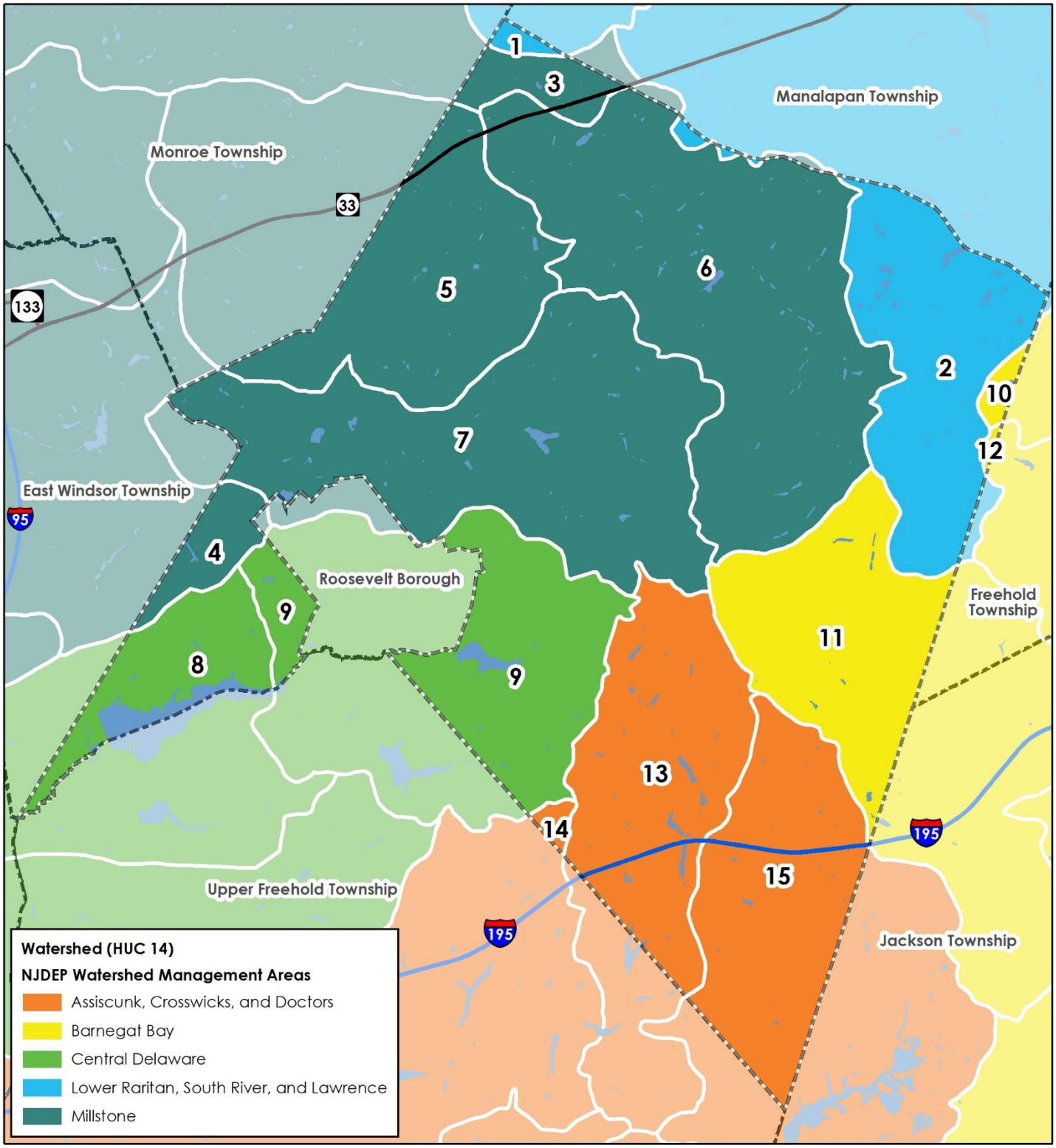
Watersheds and Hydrology

A watershed is an area that drains into a common waterway such as a stream, lake, estuary, wetland, or, ultimately, the ocean. The watershed includes both the waterway itself and the entire land area that drains into it. Geographic features such as hills and slopes separate distinct watershed systems. Watershed Management Areas (WMAs) are the regulatory units of the NJDEP's Division of Watershed Management for categorizing, managing and protecting watersheds throughout the State. Millstone is split between five watershed management areas: Lower Raritan, South River, and Lawrence WMA, Millstone WMA, Central Delaware WMA, Barnegat Bay WMA and Assiscunk, Crosswicks, and Doctors WMA.

There are 15 sub watersheds within the Township: Manalapan Bk (incl LkManlpn to 40d16m15s), Cranbury Brook (above NJ Turnpike), Rocky Brook (below Monmouth Co line), Millstone R (Applegarth road to Rt 33), Manalapan Brook (above 40d 16m 15s), Millstone River (above Rt 33), Rocky Brook (above Monmouth Co line), Assunpink Ck (NewSharonBr to/incl Lake), Assunpink Ck (above Assunpink Lake), Metedeconk R NB(above I-195), Doctors Creek (above 74d28m40s), Toms River (above Francis Mills), Metedeconk R SB (above I-195 exit 21 rd), Doctors Creek (Allentown to 74d28m40s) and Lahaway Creek (above Prospertown). These sub watersheds are shown on the following "Watershed Management Areas & Subwatersheds" Map.



Watershed Management Areas & Subwatersheds
Millstone Township, NJ
Farmland Preservation Plan

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The table below details each of the subwatersheds' acreage within Millstone Township:

Watershed Management Areas in Millstone					
Watershed Management Area	**Watershed**	**Sub-watershed**	**Acres**	**Percent**	**Map Key**
Lower Raritan, South River, and Lawrence WMA	Manalapan Brook	Manalapan Bk(incl LkManlpn to 40d16m15s)	67.2	0.3%	1
		Manalapan Brook (above 40d 16m 15s)	2219.4	9.3%	2
Millstone WMA	Millstone River (above Carnegie Lake)	Cranbury Brook (above NJ Turnpike)	359.8	1.5%	3
		Rocky Brook (below Monmouth Co line)	364.5	1.5%	4
		Millstone R (Applegarth road to Rt 33)	2264.0	9.5%	5
		Millstone River (above Rt 33)	4707.1	19.8%	6
		Rocky Brook (above Monmouth Co line)	4022.9	16.9%	7
Central Delaware WMA	Assunpink Creek (above Shipetaukin Ck)	Assunpink Ck (NewSharonBr to/incl Lake)	978.8	4.1%	8
		Assunpink Ck (above Assunpink Lake)	2071.3	8.7%	9
Barnegat Bay WMA	Metedeconk River NB	Metedeconk R NB (above I-195)	91.6	0.4%	10
	Toms River (above Oak Ridge Parkway)	Toms River (above Francis Mills)	2071.5	8.7%	11
	Metedeconk River SB	Metedeconk R SB (above I-195 exit 21 rd)	19.3	0.1%	12
Assiscunk, Crosswicks, and Doctors WMA	Doctors Creek	Doctors Creek (above 74d28m40s)	2347.2	9.9%	13
		Doctors Creek (Allentown to 74d28m40s)	66.0	0.3%	14
	Crosswicks Ck (Doctors Ck to New Egypt)	Lahaway Creek (above Prospertown)	2149.9	9.0%	15

D. Farmland Assessment Statistics & Trends

The Township's agricultural land has been decreasing since 1983. In 1983, the acreage of total agricultural land was 13,941 acres, decreasing to 7,105 acres in 2017. The figure below shows the trends of farmland by type as well as the total acreage of agricultural lands.

Agricultural Land in Millstone Township												
Year	Cropland		Woodlands		Pastureland		Equine		Renewable Energy		Total Agri-cultural Land	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	% Change
1983	8,978	64.4%	3,947	28.3%	1,005	7.2%	0	0.0%	0	0.0%	13,941	-
1990	8,499	67.0%	3,337	26.3%	880	6.9%	0	0.0%	0	0.0%	12,684	-9%
2000	6,388	61.9%	3,125	30.3%	703	6.8%	107	1.0%	0	0.0%	10,323	-19%
2004	5,254	57.2%	3,104	33.8%	740	8.1%	84	0.9%	0	0.0%	9,182	-11%
2017	3,655	51.4%	2,695	37.9%	694	9.8%	60	0.8%	1	0.0%	7,105	-23%

Source: Farmland Assessment Report via SADC

The chart above shows the agricultural land in the Township by type, acreage, and percentage for the years 1983, 1990, 2000, 2004, and 2017. The table reiterates that woodland has remained around 30 percent since 1983, with a recent spike to 37.9 percent in 2017. Cropland has consistently comprised most of all agricultural land in the Township since 1983, but the total acreage has declined in recent years, reaching 51.4 percent as of 2017. Additionally, between 2004 and 2017, the total agricultural land decreased by 6,836 acres, representing an overall loss of 23%. The total acreage of agricultural land in 2017 is the lowest it's been since 1983.

Although no data is available on the Township level, the number of farms in Monmouth County was on the rise until 2007. Between the years 1992 and 1997, the number of farms increased by 22.2%. However, the number of farms has decreased significantly between 2007 and 2012, by 13.6%, or 30 farms. The table below shows the number of farms within Monmouth County over the past thirty years.

Number of Monmouth County Farms		
Year	Number	Percent Change
1987	179	-
1992	180	0.6%
1997	220	22.2%
2002	228	3.6%
2007	221	-3.1%
2012	191	-13.6%
2017	199	4.2%

Source: Census of Agriculture

The average size of farms has been decreasing over the last thirty years. The decrease was significant from 1987 to 2007. In 1987, the average size of farms was 78 acres. That number

dropped steadily throughout the subsequent years until it reached 47 acres in 2007. The average size of farms has remained at 47 acres through 2017.

Monmouth County Average Farm Size		
Year	**Acres**	**Percent Change**
1987	78	-
1992	69	-11.5%
1997	68	-1.4%
2002	53	-22.1%
2007	47	-11.3%
2012	47	0.0%
2017	47	0.0%

Source: Census of Agriculture

The median farm size fluctuated between as high as 15 acres and as low as 11 acres from 1997 to 2017. In 1997, the median farm size was 13 acres, which spiked in 2002 to 15 acres. Since 2002, however, the median size of farms has decreased. In 2007, the median farm size dropped it its lowest point of 11 acres. In 2012 and 2017, the median farm size has remained at 12 acres.

For farms between one to 49 acres, 1987 to 1997 was a period of growth, reaching a total of 181 farms. The number of farms under 50 acres began to decline in 1997, with the most significant decrease occurring between 2007 and 2012, when over 80% of the farms were lost. As of 2017, there were 36 farms under 50 acres within Monmouth County.

Farms between 50 and 499 acres decreased between 1987 and 1997, shrinking from 53 to 41 farms. The number of farms within this category peaked in 2002 with a total of 58 farms. Since 2002, the number of farms between 50 and 499 acres has declined significantly; in 2017, there were only a total of 4 farms remaining.

The number of farms larger than 500 acres have fluctuated since 1987. The total number of farms over 500 acres dropped from 12 in 1987 to 8 in 1992, rising slightly in 1997 to 10 total farms. From 2002 to 2007, there were 11 farms larger than 500 acres. The most significant decrease was seen from 2007 to 2012, when the number of 500+ acre farms dropped from 11 to three, representing an approximately 73 percent decrease. Since 2012, there have been only three farms larger than 500 acres within the County.

Overall, the most significant losses in farmland occurred between 2007 and 2012, where farms of all sizes significantly declined and between 70-80 percent of those farms were lost.

Monmouth County Irrigated Farms by Farm Size						
Year	**1-49 acres**		**50-499 acres**		**500+ acres**	
	Number	**Percent Change**	**Number**	**Percent Change**	**Number**	**Percent Change**
1987	114	-	53	-	12	-
1992	128	12.3%	44	-17.0%	8	-33.3%
1997	181	41.4%	41	-6.8%	10	25.0%
2002	159	-12.2%	58	41.5%	11	10.0%
2007	174	9.4%	36	-37.9%	11	0.0%
2012	34	-80.5%	7	-80.6%	3	-72.7%
2017	36	5.9%	4	-42.9%	3	0.0%

Source: Census of Agriculture