

Comprehensive Farmland Preservation Plan
Tewksbury Township
Hunterdon County, NJ

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Introduction

This Comprehensive Farmland Preservation Plan is prepared as a result of recent rule changes under N.J.A.C. 2:76-17A. The criteria under this regulation require Farmland Preservation Plans to include a description of:

- Municipality's Agricultural Land Base
- Municipality's Agricultural Industry – Overview
- Land Use Planning Context
- Municipality's Farmland Preservation Program – Overview
- Future Farmland Preservation Program
- Economic Development
- Natural Resource Conservation
- Agricultural Industry Sustainability, Retention and Promotion

The Plan also contains all the necessary criteria set out in Paragraph (13) of section 19 of P.L. 1975, c.291(C.40:55D-28), which requires:

1. an inventory of farm properties in the entire municipality and a map illustrating significant areas of agricultural lands;
2. a detailed statement showing that municipal plans and ordinances support and promote agriculture as a business;
3. a plan for preserving as much farmland as possible in the short-term by leveraging monies made available by the Garden State Preservation Trust Act, N.J.S.A. 13:8-1 et seq., P.L. 1999, c. 152 through a variety of mechanisms including but not limited to utilizing:
 - i. Option agreements;
 - ii. Installment purchases; and
 - iii. Encouraging donations for permanent development easements.
4. a statement of farming trends, characterizing the type(s) of agricultural production in the municipality; and
5. a discussion of plans to develop the agricultural industry in the municipality.

Tewksbury's Farmland Preservation Plan Element identifies the Township's agricultural resources and outlines efforts and funding opportunities to ensure that farming, both traditional and non-traditional, has a continued place in the community. Land preservation efforts will strive to preserve strategically located parcels utilizing local funding to leverage available funding from the county and state. In order to maintain and expand the viability of agriculture in Tewksbury, the Township government shall work to lessen the burden of onerous land use and development regulations which continue to hold back the agricultural industry. The Township government shall utilize all possible means of lessening these regulatory burdens that are placed upon agricultural operations as they try to modernize and expand. This shall include, but not be limited to, exemptions from the permitting process, zoning regulations, and reduced fees.

I. Tewksbury Township’s Agricultural Land Base

A. Location and Size of Agricultural Land Base

Tewksbury Township retains a large amount of active farmland (Figure 1). As of 2016, approximately 57% of the Township’s total 19,789 acres qualify for reduced tax assessment under the Farmland Assessment Act of 1964 (Figure 2 and Appendix A for full listing). Table 1 identifies farmland-assessed, typically the area encompassing the farmstead, and farm-qualified, remaining farmland, parcels within Tewksbury.

Table 1: Tewksbury Township Property Class

Property Class	Acres	% of Township Land
Farm Assessed/Qualified	11,229.86	56.7
Residential	6001.72	30.3
Public Property	1,301.84	6.5
Vacant	466.51	2.4
Other Exempt	454.55	2.3
Commercial	142.85	.7
Industrial	102.99	.5
Public School Property	48.67	.2
Church and Charitable	23.42	.1
Cemeteries	17.08	.1
TOTAL	19,789.49	100

The Township has identified three (3) proposed project areas which total 4,054 acres, excluding road areas. The proposed project area correlate to the Hunterdon County Project Area and Agricultural Development Area (ADA) area (identified on Figure 3). The project area is predominantly comprised of farm assessed/qualified land and public property (Table 2). Of the total 4,054 acres, 81% (3,295 acres) are farm assessed/qualified and 5% (214 acres) are public property. This totals 86% of the project area as farm and preserved lands.

Table 2: Property Class for Tewksbury Township Proposed Project Areas

Property Class	Acres	% of Project Area Land
Farm Assessed/Qualified	3,295	81%
Public Property	214	5%
No Data	347	9%
Residential	119	3%
Other Exempt	79	2%
Total	4,054	100

The nature of the Township is further highlighted by the 2012 Land Use/Land Cover data (Figure 4). Table 3 identifies the Land Use/Land Cover for the entire Township. There are 5,777 acres (28%) of the Township that are classified as Agricultural.

Table 3: 2012 Land use/Land Cover for Tewksbury Township

	Acres	% of Township Land
Forest	8,765.6	43
Agricultural	5,777.3	28
Urban	4,641.3	23
Wetlands	890.7	5
Water	150.4	1
Barren Land	100.4	0
TOTAL	20,325.7	100

When the 2012 Land Use/Land Cover is focused on the Township’s proposed project area, the agricultural land totals 59% (2492 acres) of the area.

Table 4: 2012 Land Use/Land Cover for Tewksbury Proposed Project Areas

	Acres	% of Township Land
Agricultural	2,492	59
Forest	1,169	28
Urban	332	8
Wetlands	210	5
Water	32	1
Barren Land	0	0
TOTAL	4,235*	100

**includes all land cover including roads, water and other lands outside of parcel delineations*

Table 5 identifies the amount of cropland and pastureland identified by the 2012 Land Use/Land Cover for both the entire Township and the Proposed Project Area (Figure 5). As witnessed above, the total area of cropland is concentrated in the proposed project area.

Table 5: 2012 Land Use/Land Cover Cropland and Pastureland

Category	Acres	Percentage of Area
Township Wide Cropland and Pasture Land	4,679	23
Township Project Areas Cropland and Pasture Land	2,084	49

Finally, it is important to note the amount of existing preserved farmland in the Township. To date, there are 1,712.7 acres of farmland preserved through SADC, the County and Municipal Funding as outlined in Table 6 (See [Appendix B](#) for full listing).

Table 6: Preserved Farmland by Agency

Type of Acquisition	Acres
Hunterdon County Easement Purchase Program	89.7
County Planning Incentive Grant Program	134.2
Municipal Planning Incentive Grant Program	1,008.2
Non-Profit Easement Purchase	48
State Direct Easement	432.6
TOTAL	1,712.7

B. *Distribution of soil types and their characteristics*

Tewksbury Township has a predominance of prime soils. Most of the productive farmland in the county is on land with series names such as Birdsboro, Bucks, Califon, Edneyville, Landsdale, Pattenburg, Penn Channery, Raritan and Readington. [Figure 6](#) depicts the soils map for Tewksbury Township demonstrates the concentration of these soils suitable for farming.

The USDA-NRCS classifies land capability from Roman numerals I to VII. As numbers rise the land has progressively greater limitations and narrower choices for practical use. Soils of statewide importance may produce a high yield of crops if treated and managed according to acceptable farming methods. In fact, yields may be as high as those of prime agricultural soils if conditions are right. Soils of Statewide importance include soils of 5-20% slopes and 0 to 5% loamy sands with same series names as above. Soils of statewide importance are interspersed with prime agricultural soils.

According to the “New Jersey Important Farmlands Inventory”, prepared by the State Agriculture Development Committee, soil classifications are defined as:

Prime Farmlands - Prime Farmlands include all those soils in Land Capability Class I and selected soils from Land Capability Class II. 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. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to acceptable farming methods. Prime Farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Soils of Statewide Importance - Farmlands of statewide importance include those soils in Land Capability Classes II and III that do not meet the criteria as Prime Farmland. These soils are nearly Prime Farmland and economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce yields as high as Prime Farmland if conditions are favorable.

Farmland of Local Importance - Farmland of local importance includes those soils that are not prime or statewide importance and are used for the production of high value food, fiber or horticultural crops.

Farmland of Unique Importance - Farmland of unique importance includes those soils that are not of prime or statewide importance and are used for the production of specialty crops.

The soils that are found in Tewksbury are suitable for farmland production. Overall, 54% (10,938 acres) of the Township has farmland capable soils (Table 7). In addition, 5,757 acres of farmland capable soils are located in agricultural areas as identified in the 2012 Land Use/Land Cover.

Table 7: Farm Capable Soils for Tewksbury Township

Soil	Acres	%	Acres in Agricultural Areas
Prime Soils	6,463	32	2,759
Statewide Important	4,475	22	1,501
Other	9,331	46	1,496
Total	20,239	100	5,757

The proposed project area also contains a high amount of farmland capable soils with 67% (3,022 acres) rated as Prime soils or Statewide Important soils (Table 8).

Table 8: Farm Capable Soils for Tewksbury Proposed Project Area

Soil	Acres	%
Prime Soils	1,791	42
Statewide Important	1,112	26
Other	1,315	31
Total	4,218	100

C. Number of Irrigated Acres and Available Water Resources

Irrigated Areas

Farms in Tewksbury are typically not irrigated. Field crops such as corn, grass, alfalfa, and small grains typically rely on natural rainfall and groundwater resources and require no additional water sources for irrigation. Most of the soils in the Township are deep and moderately well drained, allowing for the soils to retain water longer than a well-drained soil. As such, a total of 2.0 acres of farmland are currently irrigated, as identified in the New Jersey Farmland Assessment for 2010.

NJ Highlands Regional Master Plan mapping identifies water availability by subwatershed. In Tewksbury Township, there are three expansive “HUC14” subwatershed designations and two smaller designation at the northwestern and the southerly area of the municipality. The Township is primarily within watersheds with water availability of 40,000 to 390,000 gallons per day. Along the eastern boundary however, there is less water availability with a range of -990,000 to -1000,000 gallons per day.

Water Resources

Essentially all of Tewksbury Township water is provided by surface water and private wells. The Township is interlaced with streams including the Boulder Hills Brook, Cold Brook, Frog Hollow Brook, Guinea Hollow Brook, Hollow Brook, and tributaries to the Lamington River and the North Branch Rockaway Creek among others. Given the Township's location in the Highlands region, streams are automatically given a higher water quality rating of C-1 in the preservation area and offered extra controls in the Planning area. The Township feels preservation and consideration of water supply, quality and quantity are vital to the health of the Township and the environment.

D. Farmland Assessment and Census of Agriculture Statistics and Trends

Hunterdon County's agricultural diversity has been accomplished on relatively small to moderately-sized farms. This farm size trend is particularly apparent in Tewksbury Township. Contrary to the current national trend in agriculture towards larger, consolidated farms, the trend in Hunterdon County and throughout most of the municipalities in New Jersey is the reverse. In 1969, the average size of a farm in the County was 111 acres, which dropped to 80 acres in 1997, according to the US Census of Agriculture. In 2007 the average size of the farm was reported at 62-acres and in 2012 the average size is 66 acres. The decreasing average farm size is due to the loss of large farms and the significant increase in small, "part-time" farms such as those found in Tewksbury Township.

In 2007, of the 1,623 farm operators in Hunterdon, 60% do not claim farming to be their principal occupation, according to the US Census of Agriculture. In 2012, 1,447 farm operators reported (56%) that farming was not their principal occupation. Such a predominance of "part-time farmers" is typical of other counties in New Jersey, and throughout the country for that matter, but is particularly high in Hunterdon County. Tewksbury Township follows this trend. The increase in the number of small farms can largely be attributed to two reasons. One, in Hunterdon County there has historically been a large number of part-time farmers – people who derive the majority of their income from non-farm related work. A combination of the rural and scenic qualities of Hunterdon County and interstate access to major employment areas has made it a popular place to farm "a few acres" for enjoyment. People who enjoy the rural lifestyle are able to commute to work and come home and enjoy their "part-time farms".

Part-time farmers do not need a minimum farm size for income and large farms tend to be too much to manage - thus, the smaller farm. The predominance of part-time farmers is also a result of farmers not being able to make enough profits for a full time occupation. In fact, since 1974, the majority of Hunterdon County's farms were farmed by part-time farmers.

Aging farmer. The average age of Hunterdon County's farmers has been increasing for the last 25 years. In 1969, the average age of the County's farmers was 52.7. Although it decreased slightly over the next 10-12 years, it has increased since then. As of 1997, the average age of the farmer was 56. In 2007, the average age of the farmer increased to 57.6 years. The aging farmer contributes to the agricultural picture in Hunterdon County. With the average farmer close to retirement, there is little room for taking risks and making investments to adapt to a changing industry. Therefore, if profit margins are minimal, the path of least resistance is often the sale of the farm. Some farmers hold on to

the land and bequeath it to their children. However, with the current estate tax laws, even this can be a costly endeavor.

The number of small part-time farms has stabilized over the last few years, but will continue to be a large percentage of the township's agricultural complexion, assuming the rural character of the area is preserved and there are no major regulatory changes such as significant changes in the Farmland Assessment Act.

1. Number of Farms and Farms by Size
2. Average and Median Farm Size

The Tewksbury Township 2015 Farmland Assessment list 373 farms with an average acreage in all lands of 11,405, this includes the total land area of the farm, both active agricultural and non-agricultural areas. This would represent an average of 30.5 acres per farm, this includes some farm parcels that may be in common ownership. The County's 2012 average farm size was 66 acres with a median of 20 acres. This compares to the County average farm size of 62 acres in 2007, and a median size farm of 19 acres. Tewksbury Township's average farm size of 30 acres is 45% of the County average

Cropland Harvested, Pasture, Woodland, Equine and total for Agricultural Use

According to the 2015 New Jersey Farmland Assessment, the Township's primary agriculture, 36% (3,877 acres), is located on harvest cropland (Table 9). This is typical of the type of farming currently underway in the Township where silage crops are the primary source of income.

Table 9: Agricultural Land Use Trends from 1983-2015

Use	1983	1990	2000	2004	2010	2015	% Change
Cropland Harvested	5,053.8	3,807	3,809	4,790	3,755	3,877	-30.3
Cropland Pastured	856.35	568	777	778	568	458	-86.9
Permanent Pasture	1,977.2	1,661	1,991	1,352	1,865	1,575	-25.5
Active Agriculture Subtotal	7,887.3	6,036	6,557	6,920	6,188	5,910	-33.4
Unattached Woodland		1,960	1,831	1,137	2,474	3,096	-36.6
Attached Woodland		2,340	2,757	1,671	2,294	1,511	-54.8
Equine Acres	-	-	64	19	70	62	-3.2
Total for Ag Use			11,209	9,747	11,026	10,579	-5.9

The larger percentage of land devoted to cropland in the Township correlates to the amount of cropland in the County. According to the Hunterdon County Farmland Assessment for 2015, 63% of the County's Farmland Assessed acreage is devoted to cropland, which is defined as active agriculture, including Harvested Cropland, Permanent Pasture, and Cropland Pastured.

II. Tewksbury Agricultural Industry

A. Trends in Market Value of Agricultural Products

According to the USDA Census of Agriculture, as depicted in the Hunterdon County Comprehensive Farmland Preservation Plan, agriculture accounted for more than \$42 million in sales during 2002. This increased to \$69,645,000 in agricultural sales in 2007. In 2012, the census reported a drop in sales to \$67,206,000. The total amounts of revenue generated by farms in Tewksbury Township are hard to identify. The United States Department of Agriculture’s National Agriculture Statistics Service (NASS) is tabulated annually with certain crop yields recorded in recent years that were not previously recorded. Additionally, trends in market value are not compiled annually at the County level; rather they are reported every five years as part of the National Census of Agriculture. Much of the trends in Tewksbury Township correlate to those trends at the County level.

B. Crop/Production Trends over the last 20 years

Agriculture in Hunterdon County traditionally has been diverse. For example, according to the NJ Farm Bureau, agriculture in Cumberland County is largely comprised of vegetables, Salem County is corn and Hunterdon County is “very diverse”. This diversity ranges from hay production, feed corn, horses, and cattle, to sheep, nurseries, fruit, vegetables and specialty crops and animals. The agricultural diversity in Hunterdon County and in Tewksbury Township is likely due to the above average soils that accommodate a variety of agricultural uses, the relatively good climate, and the combination of part-time and full-time farmers that are interested in various types of agriculture.

The cost of farming. Large farm operations, particularly dairy and grain operations, have been declining in Hunterdon County for several decades. The price of dairy and grain commodities has been relatively low over these years and contributes to low and/or unpredictable farm incomes. Over the last two decades, milk and grain prices fluctuated but never increased in proportion with the cost of living in Hunterdon County. Some farmers adopted new farming strategies that either increased crop yields or profit margins; others shifted directions in farming and chose new, more profitable products. The latter requires investments and risks that many farmers, unfortunately, could not afford because of either retirement or financial needs.

While farm income has been relatively low, farm production costs continue to be high for farmers. New Jersey has been described as having the highest cost of farming in the country. The following chart illustrates the County statistics for 1997 from the USDA National Ag Statistics Service website, which provides updates through 2012:

	<u>1997</u>	<u>2002</u>	<u>2007</u>	<u>2012</u>
Average per Farm Hunterdon County Production Expenses	\$24,601	\$37,453	\$46,297	\$54,140
Average per Farm Hunterdon County Value of Ag Products Sold	\$27,461	\$27,917	\$42,973	\$46,445

*TEWKSBURY TOWNSHIP, HUNTERDON COUNTY
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In 1997, the average farm production expenses were \$24,601, which represents a sizeable portion of the \$27,461 average dollar amount of agricultural products sold. Fifteen years later in 2012, the average per farm Hunterdon County production expense was \$54,140, while the average per farm value of agricultural products sold was \$46,445. Interestingly, in 2002, there was reported for the 10-year period the widest gap between production expenses (\$37,453) and value of products sold (\$27,919).

According to the Hunterdon County Farmland Preservation Plan, the largest category of production expenses in Hunterdon County is property taxes, due to high property values and a high per student cost in the schools, which are the largest percentage cost of local taxes. Other large categories of farm production expenses include the cost of hired labor, feed for livestock, and repair and maintenance of buildings and equipment. The general shift away from more labor intensive crops and livestock during the recent years could account for the recent narrowing in the gap between production expenses and value of products sold.

Over the past 30 years production trends have been decreasing throughout the State. Tewksbury Township has experienced some of this decline, but has also seen an increase in a number of agricultural products. In particular, “grain corn” and wheat products saw the largest increase at 17% and 62% respectively, while all other products saw a decrease. This trend appears to follow market pricing for this period as well as the growth in equine and equine related industry. This mirrors the County, where field crops are the most dominant active agriculture type of farming done. In 2015, 48,226 acres in the County was dedicated to field crops with the remaining agricultural land devoted to other forms of Agriculture. According to the Hunterdon County Farmland Assessment, nursery operations had the second greatest amount of dedicated acreage with 3,004 acres. Vegetables were ranked third in the amount of acreage used with 1,233 acres. The remaining acreage was divided among cover crops, fruit, berries and grapes.

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Table 10 shows these 30-year trends, and others, devoted to field crops such as barley, grains, grasses and soybeans as inventoried by the New Jersey Farmland Assessment Survey.

Table 10: Tewksbury Township Land devoted to field crops (Acres)

	1983	1990	2000	2010	2015	Acres Change 1983- 2015	% Change 1983-2015
Grain Corn	492	543	408	417	593	101	17
Silage Corn	232	106	109	19	150	-82	-55
Alfalfa Hay	826	508	605	540	473	-353	-75
Other Hay	1,742	1,789	1,894	1,882	1,549	-193	-12
Subtotal	5,275	4,936	5,016	4,868	4,780	-495	-10
Barley	204	-	-	-	0	-204	-100
Grass Silage	48	5	0	0	0	-48	-48
Oats	102	86	98	58	28	-74	-264
Rye Grain	47	-	6	54	12	-30	-250
Sorghum	14	-	38	0	4	-10	-250
Soybeans	174	-	8	135	137	-37	-27
Wheat	20	219	259	127	53	33	62
Cover Crop	78	39	22	0	12	-66	-550
Other Field Crops	65	11	9	0	2	-63	-3150
Subtotal	752	360	440	374	248	-504	-203
TOTAL	6,027	5,296	5,456	5,242	5,028	-999	-20

Table 11 identifies acres devoted to fruit productions. The remaining fruit crop produced in the Township are apples, grapes, peaches, pears, strawberries and other mixed fruit.

Table 11: Tewksbury Township Fruit Production (Acres)

	1983	1990	2000	2011	2015	Acres Change 1983-2015	% Change 1983-2015
Apples	149	110	60	63	86	-63	-73
Blueberries	1	0	0	0	1	0	0
Grapes	46	0	10	0	2	-44	-2,200
Peaches	63	79	60	0	17	-46	-270
Strawberries	2	0	0	2	1	-1	-50
Blackberries/Raspberries	3	0	0	0	0	-3	-100
Cherries	0	0	0	0	3	3	100
Pears	0	0	0	1	3	3	100
Non-Bearing	0	0	1	0	5	5	100
Other Fruit	8	7	6	16	13	5	38
Total Fruit	272	196	127	101	127	-145	-114

Direct marketing and niche marketing. The trend in direct marketing will also continue in Hunterdon County. Eliminating the need for distributors, farmers are selling at farmstands and farmer markets and to nearby rural and suburban markets. Weekly farmers markets in Flemington, Califon, Long Valley and High Bridge have been established for a few years. Efforts to market a county agricultural tourism program may increase the profits in local direct marketing. The urban markets offer even more substantial opportunities. The close proximity to one of the largest metropolitan markets in the world presents farmers in Hunterdon County with tremendous possibilities.

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Table 12 below depicts the amount of farm acres devoted to vegetable production. A variety of vegetables are still in production with the most acreage devoted to sweet corn and pumpkins. These vegetables target a specific niche group usually sold at farmers market, farm stands and in response to seasonal demand.

Table 12: Tewksbury Township Vegetable Production (Acres)

	1983	1990	2000	2010	2015	Acres Change 1983-2015	% Change 1983-2015
Asparagus	.01	0	0	1	1	.99	99
Lima beans	.01	0	0	0	2	1.99	99.5
Snap Peas	.12	0	0	1	2	1.88	94
Cabbage	.01	0	0	0	1	.99	99
Carrots	.01	0	0	0	0	-.01	-100
Sweet Corn	31.89	9	16	3	25	-6.89	-28
Cucumbers	.10	0	0	1	2	1.9	95
Eggplant	.10	0	0	1	1	.9	90
Lettuce	0	0	0	1	1	1	100
Onions	0	0	0	1	1	1	100
Peas	0	0	0	1	0	0	0
Melons	.01	0	0	2	0	.01	100
Peppers	0	0	0	0	1	1	100
White Potatoes	0	0	0	1	1	1	100
Pumpkins	10.5	18	17	31	71	60.5	85
Squash	.01	0	0	3	2	1.99	99.5
Tomatoes	.51	1	3	5	16	15	94
mixed veg crops	22.5	2	5	11	9	-13.5	-150
TOTAL	65.77	30	41	63	136	70	52

Table 13 identifies acres of nursery and tree stock in the Township. This category has seen an increase primarily due to an overall rise in home sales and in turn, landscaping demands. This table shows wide and varied fluctuations in production among the categories of tree and nursery production, which is understandable given the tendencies of market demand and harvests necessary to respond to large contracts for nursery stock, and then replanting in subsequent years to grow replacement stock. Trees and shrubs and Christmas trees for example appear to be subject to this type of swing in reported acreages. The percentages are somewhat misleading in terms of indicating a market trend given the acreages involved in certain categories. The overall acreage devoted to nursery and tree production remained within a range of 219-acres in 1983 to 94 acres in 2015, while statistics reported showed an upward swing in 2000. This is presumably related to market demand for suburban tract development landscaping, which is expected to suffer from depressed demand for these products while the region and the nation struggle to recover from the Great Recession.

Table 13: Tewksbury Township Nursery and Tree Production (Acres)

	1983	1990	2000	2010	2015	Acres Change 1983- 2015	% Change 1983- 2015
Bedding Plants	1	2	2	1	0	1	100
Cut Flowers	2	0	1	7	8	6	75
Trees & Shrubs	45	37	43	30	29	-16	-55
Sod	5	0	0	0	0	-5	-100
Christmas Trees	133	38	62	32	53	-80	-151
Other Nursery	33	23	4	6	4	-29	-725
TOTAL	219	100	112	76	94	-125	-133

**TEWKSURY TOWNSHIP, HUNTERDON COUNTY
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Table 14 identifies timber and woodland production in the Township. This category typically has one of the highest rates of growth, however much of the acreage in the Township has been lost to development. As woodland management has become more important to the overall health of the natural systems, and wood supplies in increasing demand, more farms are taking advantage of woodland areas. However, in Tewksbury, trends over the past 30 years show decreasing acreage of all but the Timber products.

Table 14: Timber and Woodland Product and Areas

	1983	1990	2000	2010	2015	Acres Change 1983- 2015	% Change 1983-2015
Fuelwood (Cords)	794	261	204	242	273	-521	-191
Pulpwood (Cords)	0	7	0	0	2	2	100
Timber (Board Feet)	68,241	39,607	26,373	23,841	205	-68,036	-33,188
Woodlands Private Plan (Acres)	545	0	0	0	0	-545	-100
Woodland No Plan (Acres)	178	0	0	0	0	-178	-100
Land in Federal or Government Program (Acres)	137	212	42	212	197	60	30

Livestock and Poultry products such as young dairy, swine and ducks have seen a dramatic decrease as shown in Table 15, below, while bee hives, goats, equine and meat chickens have been on the rise.

Table 15: Tewksbury Township Livestock and Poultry Products (head)

	1983	1990	2000	2010	2015	Change 1983-2015	% Change 1983-2015
Beef Cattle	953	565	512	340	480	-473	-99
Bee Hives	31	17	18	57	48	17	35
Mature Dairy	256	259	147	138	200	-56	-28
Young Dairy	135	133	242	80	38	-97	-255
Ducks	59	36	108	98	25	-34	-136
Geese	42	Not reported	Not reported	Not reported	Not reported	-	-
Goats	138	7	80	83	173	35	20
Equine	361	262	465	541	541	180	33
Meat Chickens	225	160	60	31	695	470	68
Laying Chickens	818	376	378	428	629	-189	-30
Rabbits	12	Not reported	Not reported	Not reported	Not reported	-	-
Sheep	515	478	453	362	302	-213	-71
Swine	100	52	19	51	61	-39	-64
Turkeys	30	1	3	201	219	189	86
Other Livestock	25,002	740	6,018	7177	7,651	-17,351	-226

Overall the trends witnessed in the Township reflect the trends of the County. As identified in the Hunterdon County Comprehensive Farmland Preservation Plan, land devoted to equine and specialty crops have increased while overall areas devoted to vegetable and other crop production has decreased. The loss of food processing plants and land sold for development are the main attributors to this trend.

For Hunterdon County, Equine acreage is up sharply from the 2000 figure of 542 acres to 745 acres in 2004 (County 2007 FPP). This trend was evident in Tewksbury Township, where equine head in 2000 totaled 178 and rose to 541 in 2015.

C& D. Support Services within Market Region and Other Agriculturally-Related Industries

Due to the rural nature of Hunterdon County and the intensity of agriculture in the region, there are a number of businesses that have chosen to locate within easy reach of the local farmers. Various farm equipment dealers are located in the area to sell new equipment and service existing as well. There are also used equipment dealers located in the area that provide a lower cost alternative to buying new equipment.

Along with the equipment dealers, seed suppliers are also located within the area to provide farmers with their planting and crop protection needs. Many of these businesses are moving toward more nationally based outfits with the ease of transport and ordering through the internet. This creates an opportunity for greater diversity in products made available to local farmers that normally would not be exposed to such a wide array of products.

Regional support services necessary for sustaining Tewksbury Township's agricultural industry are accessible, though not generally within the Township but rather in the region, and sometimes out of State. Although most essential support services are available within NJ, costs are a significant factor in deciding to travel outside the region, to eastern Pennsylvania (specifically Lancaster County) or to upstate New York or Canada for alfalfa and quality hay in sufficient quantities. Feed and grains are also purchased largely from outside the area. Farmers find it necessary and cost effective to travel for more competitive pricing. For example:

- a. Large equine and cattle farms in the region have alfalfa and feed trucked in from Lancaster County, Pa., upstate New York and other markets. However, locally produced hay is preferred and is available in adequate supplies within the Township.
- b. Fertilizer and Pesticide are available in Hunterdon County and are generally purchased in regional centers or from local suppliers.
- c. Equipment- Equipment is difficult to locate in the region, although some basic tractors are available. Competitive pricing becomes an issue. Used and new tractors and equipment are available nearby in Ringoes on County Route 579 and US 202. New Holland dealerships selling new and used farm tractors are located nearby in Washington Borough, Warren County, and Doylestown, Bucks County, PA.

- d. The servicing of farm equipment and availability of parts and supplies are dwindling making service difficult to find. Farmers tend to rely on their own repair abilities and on mail order for parts.
- e. Processing facilities- Food processors are available on a regional scale, at markets such as the Hackettstown Auction and Lancaster County auctions for both purchase and sale of necessary product.

Slaughter houses and processing facilities are located in the region, and are accessible. Because of New Jersey's location between two urban areas, Philadelphia and New York, various direct marketing opportunities exist for specialty crops and vegetable products.

Local auctions are also a great service that allows for the sale and trade of agricultural goods at the local level. Many are held in the area allowing for local products to be concentrated within the area and benefiting neighbor farmers. In addition to the available auctions, farm markets are an outlet for local farmers and they are increasingly becoming established throughout Hunterdon County.

There is an agricultural resource guide that has been developed to assist the farming community by the NJ Agriculture Extension Service entitled the Salem "Green Pages, An Agricultural Resource Guide". The guide is maintained by the Cooperative Extension of Salem County. The guide includes statewide and national resources including listings of "Agricultural Associations," "Contacts and Programs," "Information and Resources," and "Service Providers." The website address is <http://saalem.rutgers.edu/greenpages/index.html> and is perhaps the most comprehensive directory of services and resources available to the farming community.

Many farmers in Hunterdon County and beyond supplement their farm incomes with farm-related and non-farm related businesses and activities. According to the FARMS Commission report, (November, 1994) supplemental farm-related income on New Jersey farms includes hunting/fishing; leaf composting; farmstand marketing; picnic facilities; pick-your-own operations; petting zoos; hay rides; farm tours; and bed and breakfasts. Hunterdon County farmers operate many of these activities on their farms, in particular hay rides, pick-your-own operations, corn mazes, and farmstands tend to be very popular. Non-farm businesses are an additional source of income for farmers in Hunterdon County, and can include school bus drivers, vehicle repair shops, arbor businesses and construction and excavating companies.

Table 16: Farmers' Markets in the Hunterdon County Region

Market:	Califon Farmers Market	Clinton Farmers Market	Liberty Village Premium Outlets Farmers' Market	Sergeantsville Farmers Market	Stockton Farmers Market	Hunterdon Land Trust Farmers' Market
Address:	15 River Road, Califon, NJ 07830	Clinton Fire Company 1 New St Clinton, NJ 08809	Liberty Village Shopping Center Off Rte. 12 Flemington, NJ 08822	Rts. 523 & 604 Sergeantsville, NJ 08557	19 Bridge St Stockton, NJ	Rte 12 Circle Raritan Township, NJ 08822
Phone:	(908) 832-2318	(908) 735-8811	(908) 783-8550	(908) 268-3641		(908) 237-4582
Contact:	Kyle Cuperwich	Harvey Finkel	Nancy Lally	Jack Gaskill	Mcbethdawn@yahoo.com	Catherine Suttle
Open:	2nd Saturdays June 14 - Oct 14 9am - 1pm	Sundays May 1 - Oct. 30 9am - 1pm	May- November, Sundays, 10am – 6pm	Sundays May 13- Oct. 28 8:30am - 12pm	Year round	Sundays May 21 - Nov 19 9 AM to 1 PM
Products:	Variety of fruits and vegetables	Fruits and vegetables, eggs, meats, body products, honey and more	Variety of fruits and vegetables.	Variety of fruits and vegetables, eggs, honey, cookies	Variety of Fruits and Vegetable	Fruits and vegetables, cheese, meats, honey, fruits and more

III. Land Use Planning

A. State Development and Redevelopment Plan

The State Development and Redevelopment Plan (SDRP) offers guidance in the formulation of land management and natural resource conservation policy (Figure 7). The SDRP provides a balance between growth and conservation by designating planning areas that share common conditions with regard to development and environmental features:

- Areas for Growth: Metropolitan Planning areas (Planning Area 1), Suburban Planning Areas (Planning Area 2) and Designated Centers in any planning area.
- Areas for Limited Growth: Fringe Planning Areas (Planning Area 3), Rural Planning Areas (Planning Area 4), and Environmentally Sensitive Planning Areas (Planning Area 5). In these planning areas, planning should promote a balance of conservation and limited growth—environmental constraints affect development and preservation is encouraged in large contiguous tracts.
- Areas for Conservation: Fringe Planning Area (Planning Area 3), Rural Planning Areas (Planning Area 4), and Environmentally Sensitive Planning Areas (Planning Area 5).

Additionally the State Plan promotes the creation or maintenance of designated “Centers” with the intention to design and place future development and redevelopment into compact, mixed-use communities preserving the surrounding areas in order to protect natural landscapes.

Tewksbury, located fully in the Highlands Regional Area, consists of 66% Highlands Preservation Area. The remainder of the Township contains primarily Rural Environmentally Sensitive (PA4B) and Environmentally Sensitive Planning Area (PA5), with a small amount of Suburban Planning Area (PA2).

Table 17: State Planning Areas in Tewksbury Township

Planning Ares	Acres	Percentage
PA2	226	1
PA4B	4,516	22
PA5	2,106	10
Highlands	13,466	66
Total	20,314	100

These designations recognize the valuable agricultural resources that Tewksbury Township seeks to protect from development pressure within the region that can transform valued agricultural areas.

SDRP guidance for management of the Rural Planning Area has been provided, as follows:

“Prudent land development practices are required to protect these resources and retain large contiguous areas of agricultural land. If a viable agricultural industry is to be sustained in the future, the conversion of some of the lands to non-farm uses must be sensitive to the areas predominant rural character and agricultural land base. Throughout New Jersey, some Rural Planning Areas are subject to greater development pressure than other areas. Without greater attention to maintaining and enhancing our rural areas, these economic activities are at risk. Tools

and techniques need to be tailored to address the distinctive situation. In particular, new development may require additional attention in areas with environmentally sensitive features.”

The SDRP promotes the retention of large open land areas in PA4B & 5, and the Plan defines “large contiguous area”.

“When applied to habitat, (large contiguous area) means the area of undisturbed land required to maintain a desired community of plants and animals”, and “when applied to farmland, large contiguous area means the amount of contiguous farmland usually considered necessary to permit normal farm operations to take place on a sustained basis.”

Development pressure continues to be a problem for Hunterdon County farmers. Hunterdon County has had the second fastest rate of residential growth in the State since 1980. For the period 1980 to 1990, the average annualized growth rate for Hunterdon County was 2.1%, second only to Ocean County. For the period from 1990 to 1995, the County's average annualized growth rate was 1.5%, which was second only to Somerset County. Similarly, the statewide average annualized growth rate was .5% for both periods. During this period, and to date, real estate developers aggressively solicited the interest of farmers to sell their land through letters, phone calls and door-to-door visits. Many large developers offer down payments to landowners in exchange for contracts to sell their farmland after subdivision approvals have been secured. This process can take up to several years, but the money initially paid to the landowner makes the offer attractive. Such offers are difficult for some farmers to resist if profit margins have been low or retirement is near.

New residential development also presents other problems. Residences and farms are not ideal neighbors. Nuisance suits, trespassing, noise and pollution complaints and liability issues are all common problems when farms are surrounded by residential developments. Right-to-farm laws have attempted to address this issue and recently these laws have been strengthened.

Tewksbury Township has seen witnessed development pressures. There are several new developments that impinge on both existing farm operations as well as threatening to expand to current farms and open space. Developers are seeking out developable land in the township and approach landowners with much frequency.

The Township is endowed with large contiguous land areas with valuable ecosystems, geological features and wildlife habitats that support critical habitat. Whether it is the maintenance of large contiguous areas for farmland, or to protect environmentally-sensitive areas, Tewksbury's stewardship of these areas require policies and management techniques to sustain the landscape in such a way that the long-term viability and function of these lands and natural systems may be assured.

SDRP Policies seek to maintain the viability of agricultural areas and the function of natural systems through strategies aimed at the protection of these resources and coordinated growth policies that orient new development adjacent to either Centers, or existing developed areas with infrastructure capable of supporting development. Development should be compact, and innovative development approaches, such as clustering or open lands zoning will be needed to discourage sprawl-type patterns of development that would fragment and destroy the very resources that the Rural and Environmentally Sensitive Planning Area designations seek to protect.

Centers are recognized in a range of scales, from major Urban Centers to small Hamlets, depending on the amount of employment and housing growth they will accommodate, as well as other characteristics. The State Plan Policy Map applies different criteria and policies to each type of Center:

Urban Centers

Urban Centers are the largest of the Plan's five types of Centers. ...Urban Centers offer the most diverse mix of industry, commerce, residences and cultural facilities of any central place. While New Jersey's Urban Centers have suffered decline, they still contain many jobs and households. They are repositories of large infrastructure systems, industrial jobs, corporate headquarters, medical and research services, universities, government offices, convention centers, museums and other valuable built assets...[and] are also home to a large pool of skilled and presently unskilled labor....

Regional Centers

In Metropolitan Planning Areas, Regional Centers may include some smaller cities not designated as Urban Centers. In Suburban Planning Areas, they often serve as major employment centers and offer regional services, such as higher education, health and arts/entertainment. In rural areas, they may be population centers and county seats, with small business districts serving residents. New Regional Centers should be located in the state's major corridors and designed to organize growth that otherwise would sprawl throughout the corridor and create unserviceable demands. They should be compact and contain a mix of residential, commercial and office uses at an intensity that will make a variety of public transportation options feasible as the Centers are built out. New Regional Centers should have a core of commercial activity, and the boundaries of the Centers should be well defined by open space or significant natural features.

Towns

Towns are the traditional centers of commerce or government throughout the state. They are relatively freestanding in terms of their economic, social and cultural functions. They contain several neighborhoods that together provide a highly diverse housing stock in terms of types and price levels. Towns have a compact form of development with a defined central core containing shopping services, offices and community and governmental facilities. New Towns should emulate to the extent possible the most cherished features of the traditional New Jersey towns, that is, the comfortable, human scale of blocks, streets and open spaces, the easy walking access to civic and community activities, and a collection of neighborhoods offering a remarkable diversity of housing choice.

Villages

Villages are compact, primarily residential communities that offer basic consumer services for their residents and nearby residents and may offer more specialized services

to a wider area. Villages are not meant to provide major regional shopping or employment for their regions. New Villages will comprise a small core and collection of neighborhoods. In the Suburban Planning Area, new Villages are likely to be distinguished from surrounding development only by a more cohesive and structured development form and by greater proximity between residential and nonresidential uses. In Fringe, Rural and Environmentally Sensitive Planning Areas, new Villages should be surrounded by natural areas, farmland or open lands in the form of a greenbelt and should contain a commercial component in the core capable of offering neighborhood-scale goods and services.

Hamlets

Hamlets are the smallest types of Centers in the State Plan. Existing Hamlets are found primarily in rural areas, often at crossroads. Hamlets are not synonymous with conventional single-use residential subdivisions. Although Hamlets are primarily residential in character, they may have a small, compact core offering limited convenience goods and community activities, such as a multi-purpose community building; a school; a house of worship; a tavern, luncheonette; or a commons or similar land uses. The density of a Hamlet should conform to the carrying capacities of natural and built systems.

The SDRP supports municipalities in their efforts to provide for sound long term planning processes. Plan Endorsement encourages municipalities to engage in cooperative regional planning. It ensures that municipal, county, regional and State Agency plans are consistent with the State Development and Redevelopment Plan and with each other. An endorsed plan entitles municipalities and counties to a higher priority for available funding, streamlined permit reviews, and coordinated state agency services. Priority is given to county and regional strategic plans. The creation and adoption of Master Plan Elements, such as the Farmland Preservation Plan, is one task required to enter Plan Endorsement.

B. Special Resource Areas

Tewksbury Township is located in the Highlands Region. The central and northern portion is within the Highlands Preservation Area while the southeastern area is within the Highlands Planning Area.

The Highlands Region is divided into two primary management areas, including (1) a Preservation Area and (2) a Planning Area. The majority of the Township is designated Preservation Area (Figure 8). The Highlands Council's Farmland Advisory Committee recommends that Highlands Conservation sub-zone farms should receive priority for preservation funds, in recognition of the underlying agricultural characteristics in this management area of the plan. According the Highlands Regional Master Plan, the Conservation Zone consists of areas with significant agricultural lands interspersed with associated woodlands and environmental features and the protection of these woodlands and environmental resources is paramount. The Conservation Zone is intended primarily for agricultural use and development, including ancillary and supporting uses and activities that are consistent with the environmental constraints. Non-agricultural development activities will be limited in area and intensity due to infrastructure constraints and resource protection goals. Where non-agricultural development does occur it must be designed to ensure compatibility with environmental conservation and agricultural

uses. This is true in Tewksbury Township, were the concentration of high-quality agricultural lands have received the Conservation Zone designation.

The goals of the regional master plan with respect to the preservation area shall be to:

- (1) protect, restore, and enhance the quality and quantity of surface and ground waters therein;
- (2) preserve extensive and, to the maximum extent possible, contiguous areas of land in its natural state, thereby ensuring the continuation of a Highlands environment which contains the unique and significant natural, scenic, and other resources representative of the Highlands Region;
- (3) protect the natural, scenic, and other resources of the Highlands Region, including but not limited to contiguous forests, wetlands, vegetated stream corridors, steep slopes, and critical habitat for fauna and flora;
- (4) preserve farmland and historic sites and other historic resources;
- (5) preserve outdoor recreation opportunities, including hunting and fishing, on publicly owned land;
- (6) promote conservation of water resources;
- (7) promote brownfield remediation and redevelopment;
- (8) promote compatible agricultural, horticultural, recreational, and cultural uses and opportunities within the framework of protecting the Highlands environment; and
- (9) prohibit or limit to the maximum extent possible construction or development which is incompatible with preservation of this unique area.

The goals of the regional master plan with respect to the planning area shall be to:

- (1) protect, restore, and enhance the quality and quantity of surface and ground waters therein;
- (2) preserve to the maximum extent possible any environmentally sensitive lands and other lands needed for recreation and conservation purposes;
- (3) protect and maintain the essential character of the Highlands environment;
- (4) preserve farmland and historic sites and other historic resources;
- (5) promote the continuation and expansion of agricultural, horticultural, recreational, and cultural uses and opportunities;
- (6) preserve outdoor recreation opportunities, including hunting and fishing, on publicly owned land;
- (7) promote conservation of water resources;
- (8) promote brownfield remediation and redevelopment;
- (9) encourage, consistent with the State Development and Redevelopment Plan and smart growth strategies and principles, appropriate patterns of compatible residential, commercial, and industrial development, redevelopment, and economic growth, in or adjacent to areas already utilized for such purposes, and discourage piecemeal, scattered, and inappropriate development, in order to accommodate local and regional growth and economic development in an orderly way while protecting the Highlands environment from the individual and cumulative adverse impacts thereof; and
- (10) promote a sound, balanced transportation system that is consistent with smart growth strategies and principles and which preserves mobility in the Highlands Region.

The goals and policies of the RMP for agricultural resources seek to preserve agricultural land and retain the viability of the agricultural industry. The RMP objectives are intended to provide incentives and funding opportunities to preserve agriculture, encourage best management practices and enhance the resources of the Highlands.

To achieve these ends, many of the policy statements center on supporting farmland preservation activities, classify agricultural soils as a critical resource and reducing the loss of agricultural areas through inappropriate development. One of the methods discussed to reduce incursion into agricultural areas is to use techniques such as TDR, mandatory cluster provisions or conservation design techniques. In addition, the RMP seeks to minimize construction of non-agricultural development inducing water and wastewater infrastructure in the Agricultural Resource Areas and to protect and enhance surface and ground water quality.

The Township is located almost entirely in an Agricultural Resource Area and contains High Agricultural Priority areas (Figure 9). The Township has long endeavored to retain agricultural areas and practices. Through the Land Use Plan and Development Regulations, many goals and provisions speak to the need to retain prime agricultural soils, encourage agricultural activities and continue efforts for farmland preservation. These goals are the most significant in the Township and continue to play a vital role in the Township's identity and future land use.

C. Tewksbury Township Master Plan and Development Regulations

A positive regulatory climate, such as ordinances and policies supporting agriculture, is essential for the future of farming, particularly for full-time farmers whose income relies largely, if not entirely, on the farm operation. Regulations supporting agriculture should include ordinances that give farmers flexibility to pursue new agricultural uses and recognize the need for farmers to supplement their operations with on-farm and off-farm activities and businesses. Development regulations should streamline the review process for new farm buildings and minimize the cost of the reviews. Equity protection is important to full-time farmers because a large part of their retirement security rests in the value of their farmland. This challenges the municipality to be creative and use innovative regulatory mechanisms that both achieve community goals and protect the farmer's nest egg.

The Township's 2003 Land Use Plan outlined the importance of preserving the rural character and retaining agricultural areas. The Township's main goals and objectives outlined in the Land Use Plan included:

- #5: Preserve farms and farmland, enable land conservation, and encourage agricultural activities and those enterprises that foster agricultural activities including equestrian activities.

The 2003 Farmland Preservation Plan acknowledged the need for retaining and encouraging farmland and farming activities to protect valuable food resources and production and to retain viable soils and land to support such endeavors.

The 2010 Reexamination report reiterated the goals of the 2003 Land Use Plan. Agricultural preservation and agribusiness retention and protection of critical environmental features remained a key issue in 2010. Development and redevelopment around existing developed areas was still seen as an

appropriate method to retain agricultural areas and open space, however the extent of the amount of potential new developed lessened as housing sales declined and new environmental data became available.

The 2010 reexamination report reviewed the use of TDR through the Highlands system to encourage farmland preservation in the Highlands Planning Area of the Township. However, the 2013, after a study was completed on the use of TDR in the Township, it was deemed not viable to pursue.

The project area consists primarily of the Farmland Preservation District and Highlands District (Figure 10 and Table 18).

Table 18: Existing Zoning for Township

Zone	Acres	%
Highlands	13,639	67
Farmland Preservation	2,981	15
Piedmont	2,006	10
Lamington	829	4
R-1.5	194	1
Mine	158	1
Village Residential	158	1
RO/MXD	122	1
South Oldwick Residential	90	.5
Village Residential - 1	84	.5
Village Business	22	0
Townhouse Village District	13	0
Village Office	4	0
TOTAL	20,300	100

Farmland Preservation District

The Farmland Preservation district contains large amounts of prime agricultural soils and soils of statewide significance for agriculture. The land is hilly and generally without steep or critical slopes like other parts of the Township. An Agricultural Development Area (ADA) covers most of the district, as does a proposed historic district. Hydrology is a mix of Border Conglomerates and the Passaic Formation. The zoning regulations for this District are derived from considerations set forth in the Master Plan. Minimum lot sizes are recommended at seven acres, with options for preservation using clustering, lot size averaging or non-contiguous density transfer. Permitted uses include agriculture and detached single family dwellings.

Highlands District

The Highlands District incorporates most of the Highlands Preservation Area in the Township. The area is characterized by steep slopes, forested areas, and narrow road cartways, it contains C-1 category streams, which support trout production. The geology is Precambrian Igneous and Metamorphic rock formations with limited groundwater capability and moderate to severe limitations for septic disposal. The zoning regulations for this District are derived from considerations set forth in the Master Plan. The Master Plan recommends lot sizes of twelve acres unless land conservation design such as clustering is used in subdividing, in which case the density can be reduced to 0.10 dwelling units per acre. Clustering,

lot size averaging or the use of non-contiguous transfer is strongly encouraged. Permitted uses in the district include agriculture and detached single-family dwellings.

Piedmont District

The Piedmont District is established in the south-eastern portion of the Township where, the terrain is less severe. The agriculture is related to the drainage basin dominated by the Passaic Formation, resulting in soils more favorable to crop production. These lands are also flatter in terms of topography, making them more useful to grazing. The zoning regulations for this District are derived from considerations set forth in the Master Plan. Based on environmental limitations and limited infrastructure, a low density residential pattern of one home per five acres is designated for this district. Permitted uses in the district include agriculture and detached single-family dwellings.

Lamington District

The Lamington District is located along the border with Bedminster Township and drains to the east to the Lamington River, which is Category 1 trout production stream. The district is highlighted by steep slope areas and includes valuable threatened and endangered habitat. The permitted uses in the district include single-family homes and agricultural uses. The minimum lot size for the district is 10 acres.

D. Current Land Use and Trends

Tewksbury Township is predominantly farmland and forest. The dominant form of developed land use is agricultural in nature. The residential developments are scattered throughout the community with many located along or near county roads (Figure 4). This pattern has been developing over the past 20 years. Table 19 shows the breakdown of the land use change over from 1995 to 2012.

Table 19: Land Use/Land Cover Change 1995 to 2012

	1995		2002		2007		2012		Percent Change
	Acres	%	Acres	%	Acres	%	Acres	%	
Agriculture	6,361	31	5,874	29	5,822	29	5,777	28	-10
Forest	9,263	46	9,096	45	8,803	43	8,766	43	-6
Urban	3,573	18	4,253	21	4,557	22	4,641	23	23
Wetlands	923	5	914	4	891	4	891	4	-4
Water	110	1	111	1	148	1	150	1	27
Barren Land	94	0	76	0	105	1	100	0	6
Total	20,324	100	20,324	100	20,326	100	20,325	100	

Land use in the Township echoes the land use trends of the County and State. Agricultural areas have shown a steady decrease as urban and developed areas have encroached on retiring farm lands.

E. Sewer Service Areas and Public Water Supply

There is very little area in the Township serviced by water and sewer facilities. The only area serviced by sewer is the Valley Rd Sewer Co - Pottersville STP (74.8 acres) and Tewksbury Township (79.2 acres) (Figure 11). Public water is equally limited and provided by Washington Township MUA (86.0 acres) and Elizabethtown Water Company (76.8 acres). The majority of the Township, where the primary agricultural areas are found, is serviced by private wells and individual on site subsurface septic disposal systems. All growth in the Township is dependant on available land, its capacity to support growth and local zoning. The Township has recently undergone a Master Plan Reexamination and Land Use Plan process, which resulted in policy statements that discourage conventional subdivisions and encourage conservation-based designs, which retain most of a parcel as open space or farmland. Water and wastewater will play a critical role in the actual development capacity of sites that will be dependent upon individual on site subsurface septic disposal systems and individual private potable water wells.

F. Tewksbury Master Plan and Zoning Overview

1. General Lot Size Categories and Distribution throughout the Township

The Township’s smaller lots are located throughout the Township, in historic areas, and along major county road networks. Larger lots between 1 and 10 acres are scattered as newer subdivisions began to develop over the last 2 decades. However, the majority of parcels (58%) are greater than 10 acres and are located throughout the Township.

Table 20: Lot Comparison

Lot Size	Number of Lots	Acres	% (from Acres)
Lots less than 1 acre	569	194	1
Lots between 1 and 5 acres	1,424	4,008	23
Lots between 5 and 10 acres	497	3,214	18
Lots greater than 10 acres	324	10,376	58
TOTAL	2,814	17,792	100

** due to rounding*

With 82% of the Township’s land mass zoned Highlands District or Farmland Preservation District (7-12 acre minimum lot size), it is expected that future subdivisions will increase the number of lots between 5 & 10 acres in area on individual septic systems and wells. If local rezoning investigations result in lower permitted densities and larger minimum lot sizes, which is expected, future growth will better support long-term farming opportunities and continued agricultural viability of existing agricultural lands.

2. Innovative Planning Techniques

The Township has strived to institute innovative planning techniques to further protect farmland and agricultural retention. Current zoning utilizes techniques such as clustering and lot size averaging.

Cluster Zoning

Residential cluster development is a land development technique permitted in the Highlands, Lamington, Farmland Preservation and Piedmont Districts, in order to provide permanent open space for the enjoyment of present and future generations; to protect natural resources and qualities; to provide for flexibility of residential design and for a variety and choice of housing; to reduce the cost of residential development; and to preserve and to encourage agriculture, to foster farmland preservation, and to preserve unfragmented forests, provided that the cluster development shall not have an unreasonably adverse impact upon its environs. A residential cluster development must provide a tract area at least 35 acres in the Highlands Zone, 28 acres in the Lamington Zone, 19 acres in the Farmland Preservation Zone, and 17 acres in the Piedmont Zone, each lot (other than common or public open space), is principally used for one detached single-family dwelling with access to a new interior street with no driveways exiting onto existing streets, and the cluster design will generate open space as set forth in this Ordinance. The ordinance allows for densities of .1 unit/acre in the Highlands District and .15 units/acre in the Farmland Preservation District.

In addition the Highlands RMP requires cluster development options in Agricultural Resource Areas, which includes the entire Township. Tewksbury opted-in to the Highlands for the entire Township, cluster provisions will be determined in accordance to Highlands' standards. In practice, the Planning Board routinely entertains informal requests for concept development review. Members of the Agricultural Advisory Committee that sit on the Planning Board participate in these review discussions. However, there is no formally designated procedure for informal concept development review by the Planning Board or the Agricultural Advisory Committee.

Non-contiguous cluster zoning

The Township does permit non-contiguous cluster zoning provision in the Highlands District. Noncontiguous clustering is essentially allowing the development of two separate, noncontiguous parcels of land to be concentrated onto one of the parcels of land.

Lot Averaging

Lot averaging is another development option allowed in the several districts. Lot averaging is a technique that permits the permitted residential density to be averaged in varied lot sizes across a tract of land. In the case where development rights are not assigned on the basis of density, the minimum lot size criteria is used as the average lot size - for each lot smaller provided than the minimum lot size, a lot larger than the minimum is required so that the overall number of conventional subdivision lots permitted on a tract of land is not exceeded. Again, the maximum density per acre under this option is .1 unit/acre in the Highlands District and .15 units/acre in the Farmland Preservation district.

Transfer of Development Rights (TDR)

The Township currently does not have a TDR program. TDR is a zoning technique that permits the removal of development rights on a parcel of land in a TDR designated ‘sending area’ and the redemption of those development rights at an increased intensity of development on a parcel of land in a designated ‘receiving area.’ The inclusion of the Township in the Highlands region provides an opportunity for a TDR program. The Township did explore the possibility of a TDR program through a Highlands Plan Conformance Grant in 2013, however, it was determined through that study that the TDR was not a viable option at this time.

Agricultural Option (§ 723.3)

The Agricultural option in Tewksbury's Development Ordinance is intended to promote agricultural preservation in the Highlands, Lamington, Farmland Preservation and Piedmont Zone Districts by allowing farmers and other landowners the ability to create minor subdivisions with up to two smaller lots, and deed-restricted farmland for agricultural uses and a farmstead. The option includes requirements for the deed restricted lands to remain in agricultural production. The overall intention of this option is that the agricultural deed restriction substantially utilize the New Jersey Agricultural Retention and Development Program. Consequently, the agricultural deed restriction ordinance is to be modified and augmented with any changes to the program.

Use of Mandatory vs. Voluntary Options

The Township does not require the use of either the cluster zoning or lot averaging provisions for development. While mandatory provisions are normally the most effective means of achieving open space set-asides as a by-product of residential subdivision, the Planning Board can request the use of the provisions if determined to be beneficial to the protection of agricultural and environmentally sensitive areas and meet the objectives of the Land Use Element. These planning techniques are intended to allow for appropriate development levels while maintaining a large portion of viable and contiguous farmland.

3. Description of Buffer Requirements

The Township does require a 150’ setback from any property line or residence. In addition, the Township is aware of potential problems between the two uses and adheres to the Right – to – Farm Act providing the continued rights of Farmers to undertake agricultural activities. The Township requires that all minor subdivision deeds contain language citing right-to-farm. All major subdivision plans must contain information regarding adjacent farming. The Township is not averse to investigating any further need to create a buffer standard in the future. The issue of requiring buffers has been discussed, but no action has been taken toward implementing a mandatory agricultural buffer requirement at the time of subdivision.

4. Discussion of Development Pressures and Land Value Trends

As identified in the previous sections, development pressures have resulted in a net loss of farmland in the Township. As undeveloped land in the State, and the Township, becomes more and more scarce, farmland becomes an attractive opportunity for further development. The combination of these factors has resulted in an increase in land value.

There has been a loss of farms to residential developments; there are several developments that have final subdivision approval, however, the slow down in the real estate market has brought a significant halt to the number of building permits issued. During boom years, property values were significantly higher and the appraisals done on proposed farmland easements showed an increase. The increase in easement values encouraged the applications for the program; resulting in an increase of applicants.

Table 21 shows the number of new housing permits and residential certificates of occupancy issued from 2000 to 2016 as reported by the New Jersey Department of Community Affairs. While construction continues in the Township, it has slowed down during the past few years and the same is true for all of Hunterdon County. Given the recent economic downturn, this trend is not uncommon in the state, however, as the economy rebounds, permits may increase, although it would be hard to determine to what extent and at what pace new residential development may proceed.

Table 21: New Construction Housing Permits 2000 – 2016

Year	Tewksbury New Construction Housing Permits	Hunterdon County New Construction Housing Permits
2000	35	620
2001	38	822
2002	26	594
2003	71	797
2004	35	641
2005	34	470
2006	26	422
2007	13	180
2008	4	111
2009	4	225
2010	4	91
2011	3	74
2012	8	90
2013	4	75
2014	6	220
2015	3	162
2016	0	230
Totals	314	5,824

Land values have become increasingly expensive as more and more easily developed land has been removed from the market and land remaining has increased in value due to supply and demand factors. This can be witnessed in the trends in purchasing agricultural easements. Values have increased to upward of \$8,000 per acre. While land values fluctuate over time, the general trend for values has been steadily increasing over time, particularly during the 1990's and 2000's. This trend is expected to level off and easement values are expected to stabilize during the period of economic recovery, which has yet to emerge from the Great Recession beginning in the fall of 2008.

G. TDR Opportunities

Transfer of Development Rights (TDR) is a planning tool that allows the movement of development rights from an area where development is not suitable (sending area) to an area where development is more compatible (receiving area). TDR programs allow land owners to profit from the sale of their land while moving that development to more suitable areas. The goal of a TDR program is to channel development away from valuable resource areas to areas where development is more suitable.

There are currently two TDR programs available to Tewksbury Township on the State level, through the State TDR Program and through the Highlands regulations. The New Jersey State Transfer of Development Rights Act (*N.J.S.A. 40:55D-137 et seq.*) authorizes the transfer of development rights by municipalities and outlines procedures to adopt or amend a TDR ordinance. The second opportunity is through the Highlands Act which will create a similar TDR program. As mentioned previously, the Township investigated the possibility of creating a TDR program and found it not viable at this time. To create such opportunities would require a significant investment in educating the public and elected officials about TDR and its benefits. Such an investment would have to be supported by state, county and municipal entities, with no guarantee that effort would result in the acceptance of TDR.

Another option is an intra-municipal TDR program that is limited to designation of sending and receiving areas only within Tewksbury Township. The Township lacks the necessary infrastructure to support a viable TDR receiving area designation since there is no sewer service available for increased residential densities. In addition, TDR is perceived to add an additional layer of complexity to the development review and approval process. The Township's view is that the planning process alone would be an onerous one relative to the potential benefits that may accrue from TDR. The statutory planning documents required to establish a TDR program include:

- a. Development transfer plan element of the master plan,
- b. Capital improvement program for the receiving zone, including the location and cost of all infrastructure and method of cost sharing if costs are to be assessed against the developer,
- c. Utility service plan element that calls for necessary infrastructure and utility services within any designated receiving zone,
- d. Real-estate market analysis that examines the relationship between the development rights anticipated to be generated in the sending zones and the capacity of designated receiving zones to accommodate the necessary development.

Following these statutory components of TDR planning, the Township would be required to seek SDRP Plan Endorsement, which includes an intensive set of planning requirements, including additional updates to the Master Plan and documentation required to achieve consistency with the SDRP. In the

end, it is believed that even if all of this documentation were undertaken by the municipality, there would be no certainty in any public support for the program.

IV. Tewksbury Township's Plan to Preserve Farmland

A. Hunterdon County Agricultural Development Areas

The Hunterdon CADB adopted Agricultural Development Areas (ADAs) in 1983 to satisfy the minimum eligibility requirements for the statewide farmland preservation program, pursuant to the State Agriculture Retention and Development Act N.J.S.A. 4:1C-18. The statutory requirement of the ADA is:

- “a. Encompasses productive agricultural lands which are currently in production or have a strong potential for future production in agriculture and in which agriculture is a permitted use under the current municipal zoning ordinance or in which agriculture is permitted as a nonconforming use;
- b. Is reasonably free of suburban and conflicting commercial development;
- c. Comprises not greater than 90% of the agricultural land mass of the county

The purpose of the ADAs is to identify where agricultural operations are likely to continue in the future and therefore be eligible for the farmland preservation program. In Hunterdon County as a whole, the ADA criteria and map were based on a study of agriculture in the county prepared by the Middlesex-Somerset-Mercer Regional Study Council. Key components of the study were the mapping of productive agricultural operations and the location of prime and statewide important soils. Based upon the study, the CADB adopted criteria for the designation of ADAs and mapped them along physical boundaries or property lines.

In 1988, the basic building block of the County ADA was changed from property lines and physical boundaries to tax blocks, making it easier to evaluate and maintain the database with the computer software available at that time. The 1988 ADA changes also reflected the new construction throughout the County; consequently, the land area in the ADA was reduced. In 1998, the ADA map was converted to the County's Geographic Information System (GIS) which improves the process for reviewing and evaluating ADA changes or requests. The ADA criteria have changed little over the years. The requirements are a minimum of contiguous area of at least 250 acres; the predominance of prime or statewide important soils; land use that is reasonably free of non-farm development; and the absence of public sewers.

Tewksbury Township ADA areas are located along the boundary of the Township with the central portion outside of the ADA area.

Hunterdon County tries to ensure the long-term viability of agriculture when selecting ADA areas. The Hunterdon County Draft Comprehensive Farmland Preservation Plan has identified the Tewksbury ADA which encompasses most of the Township and is aligned with the Tewksbury Township project area ([Figure 3](#)).

B. *Tewksbury Township Preserved Farmland*

The Township has currently preserved over 1,800 acres of farmland through municipal, county and state purchase programs. Table 22 identifies these farms by acquisition type.

Table 22: Preserved Farmland by Acquisition Type

Type of Acquisition	Acres
Hunterdon County Easement Purchase Program	89.7
County Planning Incentive Grant Program	134.2
Municipal Planning Incentive Grant Program	1,008.2
Non-Profit Easement Purchase	48
State Direct Easement	432.6
TOTAL	1,712.7

The following sections will identify the various types of farmland preservation programs and those utilized by the Township.

1. County Easement Purchase

The County Easement Purchase Program in Hunterdon County has been offered to landowners for the past approximately 25 years since 1985. Also known as the Purchase of Development Rights (PDR) or Traditional program, it was developed in accordance with the enabling legislation - the State Agriculture Retention and Development Act of 1983. The program involves the sale of development rights on a farm in exchange for a permanent restriction on the land that requires it to be available for agriculture in perpetuity. The County’s minimum eligibility requirements for the PDR program is that the farm is located in an Agricultural Development Area (ADA) and an agricultural district, is a minimum of 40 acres and is predominantly tillable farmland - farms with more than 50% woodlands are ineligible.

This has historically been one of the lesser used option in the Township with 89.2 acres using this preservation method.

2. County Planning Incentive Grants

The goal of County Planning Incentive Grants (PIGs) is to protect and preserve large pieces of contiguous farmland through the purchase of development easements. This newly created program took effect on July 2, 2007 in an effort to revamp the process of preserving farms at the county level through PIG activities that dates back to 1999. However, this process now replaces the traditional County Easement Purchase program. The County funding emphasis is the assemblage of core areas of farmland for preservation. Already preserved farms are the foundation that laid the base for the general areas as the preservation of large tracts of agricultural land. Added to the preserved farms are farms that have already received final approval from the SADC for preservation as an additional emphasis of the program. In addition to preserved farms and farms that have already received SADC approval for preservation, farms that are enrolled into the 8-year program receive emphasis as well. The County purpose of focusing on areas in which farms were already preserved is to preserve farms to allow for a

more consistent and seamless agriculture land base. This emphasis is to prioritize on opportunities with farmable soils and the location of permanent agriculture.

The State Agricultural Development Committee (SADC) has updated their rules (N.J.A.C. 2:76-6.3 through 2:76-17A.17) to promote County PIGs to streamline and expand the farmland preservation program throughout the state. This program is operated in a similar way to the Municipal Planning Incentive Grant Program in that it gives the county more flexibility to preserve those farms that meet the specific preservation needs and goals of the county.

To date, there have been 313 acres preserved through this program in the Township.

3. Municipal Planning Incentive Grants

The SADC established the Planning Incentive Grant Program, in accordance with the Planning Incentive Grant Act of 1999 (N.J.S.A. 4:1C-43.1) to provide grants to eligible municipalities to purchase agricultural easements on targeted farms in ADA's to protect concentrations of farmland in identified project areas. The local municipality and usually the county cover the remainder of the acquisition costs. The PIG program places an emphasis on planning for farmland preservation. To qualify for a Planning Incentive Grant, municipalities must adopt a farmland preservation plan element in their municipal master plan pursuant to the Municipal Land Use Law, a right to farm ordinance, and establish an Agricultural Advisory Committee. The municipal Agricultural Advisory Committee has to delineate project areas and develop a list of target farms. The SADC's new rules identifying minimum soils requirements for municipal PIGs may mean that some farms on existing municipal target farms lists will no longer be eligible for the program.

Tewksbury Township has developed all of the appropriate measures to qualify for a PIG and has preserved 1,008 acres under the Township's original PIG program, which was established under the former SADC regulations.

4. State Acquisition

A. SADC Direct Easement Purchase

There are two options for State direct purchases to preserve farmland. One State option for farmland preservation is the SADC Direct Easement Program. The SADC purchases development rights for preservation purposes under its Direct Easement Purchase Program. Another option is the outright acquisition of a farm under the Fee Simple Purchase Program. Landowners can either sell the development rights to their land and continue to own and farm the land; or sell their land outright to the State under the Fee Simple Easement Purchase Program. In both cases, the land is permanently deed-restricted for agricultural use. Under the Direct Easement Purchase Program, the SADC provides direct cost share funding to purchase development easements from landowners. In most cases, the State will pay up to 100% of the certified appraised easement value in the Direct Easement Purchase Program.

Applications will be accepted year-round. An applicant farm that is strategically located and meets or exceeds the minimum criteria for size and quality score will qualify for immediate consideration for preservation. The SADC and landowner will enter into a 120-day option agreement in which the

landowner agrees not to market the property for that time period. This provides time for two independent appraisers to evaluate the land. Based on the findings of those appraisers and the recommendations of its own review appraiser, the SADC will certify a fair-market value and make an offer. If the offer is accepted, the landowner and SADC will enter into a sale agreement of the development easement to the State. The SADC will order a survey and title search and work directly with the landowner through closing.

The SADC preserved 432 acres in Tewksbury Township using the Direct Easement purchase Program.

B. SADC Fee Simple

When the SADC purchases farms outright, it resells them at public auction as permanently preserved farms. This is the SADC fee simple acquisition program, which involves an entire property being purchased directly by the State. The SADC pays the survey and title costs, the landowner is exempt from paying rollback taxes for farmland assessment and the transaction can be completed in a matter of months. The SADC negotiates a purchase price subject to recommendations of two independent appraisers and review by a State review appraiser. The land becomes restricted so that it becomes permanently preserved for agriculture. In this type of acquisition, the landowner does not retain any rights. The property is then resold at auction with the agricultural deed restriction. The SADC does not retain ownership of the farm in most cases. To qualify to participate in this program, the farmland must be within an ADA and be eligible for Farmland Assessment.

The Township does not have any farms preserved under this method.

5. Nonprofit

The SADC provides grants to nonprofit organizations to fund up to 50 percent of the fee simple or development easement values on farms to ensure their permanent preservation. Nonprofit organizations should apply to the SADC directly. Notice of available funds will be published in the *New Jersey Register*. Applications must be submitted within 90 days of that notice. Nonprofit groups also must publish a notice that an application has been filed and notify the municipality and county agriculture development board. The SADC reviews and ranks applications based on the following criteria: percentage of high-quality soils; percentage of tillable acres; suitable boundaries and buffers, such as other nearby preserved farms and open space; the local commitment to agriculture (e.g., right to farm ordinances, community financial support); size of the farm; agricultural density of the area, and imminence of development.

Tewksbury Township has one farm that was preserved with the support of the New Jersey Conservation Foundation. The Township will take advantage of such partnerships should they become available. The County and Municipality reimburse the Non-profits in accordance with negotiated formulas.

6. Transfer of Development Rights

The transfer of development rights is a growth management tool that transfers development rights from one location, a preservation or 'sending' area, to another area as an identified growth area known as a 'receiving' area. The development rights are used to allow for development at a higher density than what the previous zoning of the receiving area allowed.

To date, this program has not been used to preserve farmland in the Township.

C. Consistency with the SADC Strategic Targeting Project

The purpose of the SADC Strategic Targeting Project is to prioritize farmland to be preserved by targeting farms for preservation based on specific criteria, including the prioritization of prime and statewide soils in agricultural production outside sewer service areas. According to the SADC, the Strategic Targeting Project has three primary goals. These are as follows:

- The coordination of farmland preservation and retention of agricultural practices “with proactive planning initiatives.”
- To update and create maps which serve as a tool for more accurate preservation targets.
- To coordinate different preservation efforts, such as open space, with farmland preservation.

Through the use of the Strategic Targeting Program, the SADC hopes to more efficiently target and designate farmland for preservation and, by doing so, boost the State’s agricultural industry. Tewksbury Township has identified target farms that meet the SADC primary goals (Figure 2). In addition, the Township continues to update all available information, through GIS, statistical data and the like, in order to maintain a data base of potential target farms for preservation efforts. Tewksbury Township, through the AAC, has maintained a strong relationship with the County Agriculture Development Board and SADC through continuous updates of the municipal PIG and efforts to preserve farmland. The Township’s successful efforts with both the County and State have led to the preservation of farmland in a coordinated fashion. The Township, through the AAC, continues their efforts to preserve as much of the remaining farmland in the Township as possible. Continued support and outreach to the CADB and SADC is a mainstay of the Township’s plant to preserve farmland.

D. Eight Year Programs

The 8-Year Farmland Preservation Program is a cost sharing program for soil and water conservation projects. Farmland owners agree to voluntarily restrict nonagricultural development for a period of eight years in exchange for certain benefits. There are two types of eight-year programs: municipally approved programs, which require a formal agreement among the landowner, county and municipality, and non-municipally approved programs, which require an agreement between only the landowner and county.

Landowners apply to their county agriculture development board. Land must be located in an Agricultural Development Area, be eligible for Farmland Assessment and meet local and/or county program criteria. Landowners enrolled in both municipally and non-municipally approved programs receive no direct compensation for participating but are eligible to apply to the State Agriculture Development Committee (SADC) for grants that fund up to 50 percent of the costs of approved soil and water conservation projects. Additionally, those in municipally approved programs enjoy greater protections from nuisance complaints, emergency fuel and water rationing, zoning changes and eminent domain actions. An eight-year agreement is recorded with the county clerk in the same manner as a deed.

The Township has not preserved any farms using this method.

E. Coordination with Open Space Preservation Initiatives

Tewksbury Township has partnered with Green Acres and Hunterdon County to preserve key properties in the Township. Partnering with a variety of agencies allows the Township to leverage funds from various sources to help achieve open space preservation goals. As seen on [Figure 13](#), Hunterdon County and holds the rights to large parcels in the Township. These parcels help to create larger contiguous tracts of land and help to maintain the rural character that is cherished by Township Residents. Some public open space includes trails and public access, as well as visual access to some farmland preserved properties. These public areas also help to promote agriculture by preserving large areas along side actively farmed lands and creating a larger buffer between farms and areas and neighborhoods that may be developed. The Township will continue to support the preservation of open space; especially if it is able to compliment farmland preservation efforts.

The Township’s AAC is aware of the distinctly different objectives between farmland preservation and open space preservation. Targets are generally identified on the basis of the preservation strategy appropriate to a given parcel of land and are identified accordingly. The local priorities are to maintain active and economically viable agricultural lands (farmland preservation) and to ensure that there is an ample supply of active and passive open space lands (open space preservation) that responds to the resident population. Open space preservation is discouraged where farmland preservation is the appropriate strategy within the Township’s farmland preservation project areas, and land preservation strategies are coordinated on this basis.

F. Farmland Preservation Program Funding Expended to Date

Table 23 below highlights the total cost of preserved farmland in the Township (see [Appendix B](#) for full details).

Table 23: Total Cost of Preserved Farmland to Date

	Total
Preserved Acres	1,845
Total Cost	\$34,380,429
SADC Share	\$24,409,699
County and Municipal Share	\$9,970,730
Average Cost/Acre	\$21,256

G. Monitoring of Farmland Preservation

Easement monitoring is critical to public confidence in the wide variety of farmland preservation programs. The holder of the deed of easement is responsible for the annual monitoring of preserved farms (i.e. the SADC must monitor farms preserved through the Fee Simple and Direct Easement Purchase Programs). The majority of farms in the Township have been preserved through the State Programs. Every farm that is permanently preserved through the farmland preservation program must

abide by the restrictions set forth in the deed of easement. The easement requires that the County inspect the property once a year, during the business week and daylight hours. All preserved landowners are to be given at least 24 hours notice of the inspection. The Hunterdon CADB has made a practice of sending letters to all landowners at the start of the monitoring season and then making appointments as far in advance as possible.

The inspection of a preserved farm usually involves walking the farm, interviewing the landowner, and taking photographs of all buildings, property lines, and suspicious activities. The inspection report is recorded in the CADB's farmland preservation database and stored as hard copy in the property's inspection file. A copy of the report is sent to the landowner for review and verification, the acknowledgment of which is also filed with the hard copy of the inspection report.

If the inspector finds that there have been violations to the Deed of Easement, a letter is drafted to the landowner's attention, directing him or her to cease the activity. Examples of such infractions have been the use of biosolid (sludge) fertilizer, the expansion or establishment of a non-agricultural use, and the obvious neglect of a farm field (the HCADB requires all fields be mowed once a year for weed-control). When the infraction involves soil or water management, the Hunterdon County Soil Conservation District (SCD) may be contacted for assistance.

Monitoring is not intended to be a punitive program. The restrictions of the Deed of Easement are applied reasonably and fairly. For example, if there has been a drought and the farmer explains that is the reason that nothing has grown on a field, there will not be a report of negligence to maintain the fields. In those cases where there has been a real violation of the Deed of Easement, CADB staff and the SCD are committed to working cooperatively with the landowner to remedy the situation. Only in the most extreme cases would such situations be remanded to the courts.

Violations

Since 1996, the CADB has been required by the SADC to monitor its preserved farms on a yearly basis. Until that time, farms were monitored every few years - or on a complaint basis. Until recently, the CADB encountered only few minor easement violations. In most cases the landowner was asked to mow an uncultivated area so the land will continue to be available for agriculture.

Landowner Responses to Monitoring

The inspections have proved to be valuable opportunities to receive feedback on the preservation program and the state of the agricultural business from the people who live it every day. Overall, the farmers have reported that they appreciate the one-on-one contact with the CADB, and are happy for the opportunity to express their concerns in a manner that allows them to be heard. A copy of the landowner comments and concerns section of the inspection monitoring reports is now sent to every member of the HCADB and the State Agriculture Development Committee.

H. Coordination with Transfer of Development Rights Programs

Transfer of Development Rights (TDR) may be used in conjunction with the traditional Purchase of Development Rights (PDR) program; these two programs are not mutually exclusive. Currently, the Township has not developed a Transfer of Development Rights program.

V. Future Farmland Preservation Program

A. Preservation Goals (1, 5 and 10 year acreage targets)

The Township has determined a 10 year goal for preservation of 1,000 acres. This goal is based on previous preservation efforts and current landowner interest. Table 24 highlights the acreage goals over the next 10 years.

Table 24: 10 Year Preservation Goals by Year

Year	Acres
1	100
5	300
10	1,000

The Township’s strong agricultural presence has resulted in a substantial amount of farmland preservation over the years. As noted previously, over 1,800 acres have been preserved already and the Township would like to continue this trend and preserve as much of the remaining active farmland as possible. Currently, there is an active application for farmland preservation with more landowners showing interest. The Township’s goal may be lofty to some areas, but in such an active and significant agricultural area such as Tewksbury, the Township believes these goals are attainable.

B. Tewksbury Project Area Summary

The Tewksbury Project Areas encompass the majority of the Township outside of the more residential areas (Figure 3) and is broken down into 3 districts. The project areas include existing preserved farmland and farmland assessed properties and will support the continued goal of creating a viable agricultural base by increasing preserved farmland. The Township will seek to preserve any farmland assessed properties within the project areas (See Appendix C for Target Farm List by Project Area). The areas include:

Project Area One (Oldwick Project Area) is located in the southeastern portion of the Township and is the largest of the three project areas. The project area includes preserved farmland and open space properties. The project area is primarily located within the Township's Farmland Preservation District, the Highlands Planning Area and within a Hunterdon County ADA. In addition the project areas is located within the Highlands Agricultural Priority Area. The Oldwick Project Area boasts agriculturally valuable soils, active cropland, pastureland and farm assessed parcels. The project area consists of 2,365 acres.

Project Area Two (Pottersville Project Area) is the smallest of the three project areas and is located in the northeastern portion of the Township. The Pottersville Project Area is located within the Township's Highlands District, the Highlands Preservation Area, is within a Hunterdon County ADA, and is within the Highlands Agricultural Priority Area. The area includes preserved farmland and open space areas and prime and statewide important soils. This project area totals 618 acres.

Project Area Three (Northwest Project Area) is located in the northwestern portion of the Township. The project area includes preserved open space and farmland Preservation properties.

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The area is rich in agriculturally important soils and cropland and pastureland. The Northwest Project Area is located within the Township's Highlands District and fully within the Highlands Preservation Area. In addition, the project area is also within a Hunterdon County ADA and the Highlands Agricultural Priority Area. The total area consists of 1,255 acres.

Both Tewksbury Township and Hunterdon County's project areas have a common goal to expand on the existing agricultural base in the region and will contribute to large contiguous areas of preserved farmland. However one noteworthy issue is the identification of two project areas, the Northwest and Pottersville, are fully within the Highlands Preservation Area. The SADC has identified Preservation Area farms as priorities in the Highlands Region.

The property class highlights the amount of active farming being conducted in the proposed project area. As seen on Tables 25 and 26, 81% of the project areas are classified as farm assessed/qualified and 59% of the project area is classified as agricultural by the 2012 NJDEP Land Use/Land Cover data.

Table 25: Property Class for Tewksbury Township Proposed Project Area

Property Class	Acres	% of Project Area Land
Farm Assessed/Qualified	3,295	81%
Public Property	214	5%
No Data	347	9%
Residential	119	3%
Other Exempt	79	2%
Total	4,054	100

Table 26: 2012 Land Use/Land Cover for Tewksbury Proposed Project Area

	Acres	% of Township Land
Agricultural	2,492	59
Forest	1,169	28
Urban	332	8
Wetlands	210	5
Water	32	1
Barren Land	0	0
TOTAL	4,235*	100

**includes all land cover including roads, water and other lands outside of parcel delineations*

In addition, the project area contains 49% cropland and pastureland (Table 27).

Table 27: 2012 Land Use/Land Cover Cropland and Pastureland in Project Areas

Category	Acres	Percentage of Area
Township Project Area Cropland and Pasture Land	2,084	49%

Soils located in the project area are very conducive to agricultural activity. The project area is comprised of 68% farm capable soils (Table 28).

Table 28: Farm Capable Soils for Tewksbury Proposed Project Area

Soil	Acres	%
Prime Soils	1,791	42
Statewide Important	1,112	26
Other	1,315	31
Total	4,218	100

Table 29: Farm Capable Soils by Project Area

Project Area	Prime Acres	Statewide Acres	% Farm capable per Project Area
Northwest	477	218	55%
Oldwick	1,051	761	77%
Pottersville	263	132	64%

All of the preserved farmland in the Township is located in the Project area. In addition, almost all of the municipally targeted farms are the same as those targeted by the County. This overlap not only shows the strengths of the Township’s larger farms, but also contributes to a larger pool of resources to draw from when purchasing farms in the Township. The combination of these factors results in the Township’s focus on the Tewksbury Project area for future farmland preservation efforts.

C. *Municipal and County Minimum Eligibility Criteria Coordination*

Tewksbury Township follows the County eligibility criteria, with the exception of acreage. The CADB has approved a minimum acreage for County Planning Incentive Grant applications which requires that the minimum size of a County PIG application be 40 acres unless the application directly adjoins a preserved farm. The CADB will also examine each application that is less than 40 acres on a case by case basis. Because Tewksbury Township has many farms that fall under the forty-acre minimum requirement of the County, and because these farms may in the cumulative comprise important and valuable agricultural soil or operations, or be valued “connector” properties or “fill-in” properties, Tewksbury Township utilizes a smaller acreage minimum requirement of 25 acres. Tewksbury Township finds that these properties are still important farms to preserve, and furthermore that in the event that funding is not available at the higher county and/or state levels, these farms are often within the budget of the Township to acquire without the aid of those other funding programs.

SADC Minimum Criteria

The SADC has created minimum criteria to designate what qualifications a parcel needs to adhere to in order to be considered for a cost share by the SADC. The SADC has split the qualifications up into two general land sizes: farms that are 10 acres and less and farms that are greater than 10 acres.

For farms that are Less than or equal to 10 Acres

- Farm must produce \$2,500 worth of agricultural or horticultural products annually
- At least 75% of the property, or a minimum of 5 acres tillable, whichever is less
- That tillable acreage must consist of soils that are capable of supporting agricultural or horticultural production such as Prime and Statewide soils
- Further, the land must have development potential. To determine development potential:
 - The municipal zoning ordinance for the property as it is appraised must allow additional development (at least one residential site beyond existing extent of development)
 - There must be access to the property that allows further development. If that access is only available through an easement, that easement must specify that further subdivision is possible.
 - If access is through an easement, and it is subject to ordinances governing allowable subdivisions, common driveways and shared access, it must be confirmed in writing by a municipal zoning officer or planner.
- 80% or more of the soils cannot be classified as freshwater or modified agricultural wetlands according to the DEP.
- 80% or more of the land cannot have slopes greater than 15% as identified by the NRCS soils map 2.2

OR

- If the farm does not meet the previous criteria, BUT the land is eligible for allocation of development credits from a transfer of development potential program that has been authorized and adopted by law, then it is eligible to enter the preservation process.

For Farms that are Greater than 10 acres

- At least 50% of the property or a minimum of 25 acres tillable, whichever is less
- That tillable acreage must consist of soils that are capable of supporting agricultural or horticultural production
- The land must have development potential. To determine development potential:
 - Municipal zoning ordinance for the property as it is appraised must allow additional development (at least one residential site beyond existing extent of development)
 - There must be access to the property that allows further development. In the case that access is only available through an easement, that easement must specify that further subdivision is possible.
 - If access is through an easement, and it is subject to ordinances governing allowable subdivisions, common driveways and shared access, it must be confirmed in writing by a municipal zoning officer
- Land that is less than 25 acres must not contain more than 80% soils that are classified as freshwater or modified agriculture wetlands according to the DEP

- Land that is less than 25 acres, 80% or more of the land cannot have slopes greater than 15% as identified by the NRCS soils map 2.2

OR

- The land is eligible for allocation of development credits from a transfer of development potential program that has been authorized and adopted by law. Lands that do not meet the minimum requirements are not eligible for a State cost share grant for farmland preservation purposes.

D. Municipal and County Ranking Criteria Used to Prioritize Farms

Hunterdon County and Tewksbury utilize the minimum eligibility criteria as outlined in the state regulations § 2:76-6.16 – Criteria for evaluating development easement applications, and implemented in accordance with policy P-14-E (see [Appendix D](#)). The evaluation is based on the merits of the individual application with a weighted factor assigned to each criterion. These include soil quality, tillable acres, boundaries and buffers, local commitment, size of farm and density of lands dedicated to farmland preservation, local factors encouraging agriculture and threat of development. The Tewksbury Township AAC evaluates farms on these criteria when reviewing Farmland Preservation applications.

Diminished funding availability at the State and County level is expected to become the primary limiting factor in achieving the Township’s ten (10) year goal to preserve 1,000 acres of farmland. Nevertheless, the ten year goal seems reasonable, and local preservation efforts will be targeted on the highest ranked farms that are presented as candidates for preservation to ensure that limited preservation funding achieves the maximum impact on preserving Tewksbury Township’s most productive farmland.

Where farms in the ranking process are locally important, but may fail to meet the minimum criteria thresholds for the County PIG program, the Township will focus its PIG program on the highest ranked applications that missed the County’s eligibility standards. These situations will obviously have to be addressed on a case-by-case basis as they arise. In this regard, Tewksbury Township envisions a flexible process that the AAC will coordinate to make sure that the maximum number of locally important farms are preserved within each funding cycle.

E. Municipal and County Policies Related to Farmland Preservation Applications

The Township, as stated previously, abides by the SADC’s policies, including those regarding housing opportunities, division of premises and approval of exceptions. In general the Township has encouraged land owners seeking preservation to carefully consider future use in the event that the land owner may wish to build a new home or provide a lot for a family member. Identifying these areas prior to the farmland preservation application reduces future burden on the land owner in the event they decide to build a home or sell a residential lot. The Township does not encourage this activity and also does not encourage division of premises, keeping in line with SADC and County policies. To date, land owners entering preservation have gone before the planning board to subdivide a portion of the existing farm lot in order to retain an area for future non-farm or housing opportunity. The remaining area has then entered into preservation.

Approval of Housing Opportunities

Housing opportunities needed on farms generally relate to the use of agricultural labor. Farms that raise vegetable crops that rely on manual harvest or equine farms where caretakers tend to horses are two areas where the need to have onsite housing maybe be seasonally or permanently needed. Agricultural labor housing is not currently protected in the State of New Jersey Right-to-Farm Act but is recognized as a need by the SADC. The SADC does have a policy that a landowner may refer to in order to construct labor housing. These applications are reviewed by the State Agriculture Development Committee.

Another housing need is for family members so that the farm may be passed on from generation to generation. One difficulty with maintaining agriculture, which is a common family storyline, is that it is too difficult to pass the farm from one generation to the next. If there is insufficient housing on the farm to accommodate a succeeding generation of farmers, the likelihood of continued farming is lessened. The SADC needs to provide flexibility to allow for family farm housing that may be needed to keep the next generation farmer on the land. Appropriate restrictions can be put in place to allow for this type of housing without compromising the integrity of the deed restriction against development.

As identified previously, the primary farming activities in the Township are field crops such as grain, corn and hay and horse farms. Typically, the production of field crops does not require additional labor other than the land owner or the tenant. However, larger horse farms may require permanent housing. Agricultural housing opportunities are currently allowed in the Township in specific circumstances and have not generally been an issue, however, the Township may investigate this further given the recent rise in farmland preservation and horse farms in the Township.

House replacement

Requests for replacement of a residence on permanently preserved land must be reviewed and approved on an individual basis by the CADB and the SADC. The CADB feels that the house should meet the needs of the farm and not create an estate-like situation with an excessively larger footprint than what was there previously. The need for expansion is realized; however the CADB feels that it should be within reason. An alternative view may be that continuing agriculture activities often involve substantial costs and investments. Those willing to shoulder the financial burdens of farming may also wish to have a larger home on a farm, that could be viewed as an excessively large footprint by some. As these situations arise, the approval process should not be unreasonably hindered by personal opinion, particularly where sufficient land is available within the easement exception for a replacement dwelling and appurtenant structures. The Township would welcome an opportunity to review and comment on any proposed house replacement and would encourage house replacement in order to further the long term farming activities on site. The AAC will be flexible in its review of replacement house situations and look first to the continued economic viability of farm operations as a priority if asked to provide an opinion on house replacement.

Residual dwelling site opportunity allocation

Residual Dwelling Site Opportunities (RDSOs) are potential housing sites located within a deed-restricted farm. A designated RDSO allows the landowner to identify a potential site for a future residential unit or other structure as referred to in N.J.A.C. 2:76-6.17. Residential units can be allocated to parcels that have a density of one unit per 100 acres. The site must be for “single-family residential housing and its appurtenant uses.” To qualify as an RDSO, the SADC requires that the use of the residential unit be for agricultural purposes and “at least one person residing in the residential unit shall

be regularly engaged in common farm site practices”and the allocation of an RDSO must be approved by the CADB. At the time of closing, the value of the RDSO is deducted from the total purchase price of the easement. (The value of the RDSO will be determined by the appraiser at the time the farm is preserved). After the farm is preserved, the landowner may apply to exercise the RDSO. For RDSO approval, the CADB and SADC criteria must be satisfied which generally require that the RDSO has a minimal impact on the existing agricultural operation. When farms apply to programs that are governed by CADB oversight and are eligible for an RDSO, the CADB generally tries to discourage RDSO use, but is accepting of those applications that choose that option as long as the applicant understands that the location must be approved by the CADB when the applicant chooses to exercise the RDSO option.

The Township encourages the use RDSO’s if the applicant intends at any time to provide for additional housing to a family member or themselves into the future-on large farms.

Division of the Premises

The goal of the SADC is to preserve large tracts of farmland and, therefore, a division of the premises is not an encouraged practice. As identified in the Hunterdon County Plan, agricultural trends over the last few decades towards smaller, more productive farms, has created opportunities for a landowner to divide a permanently preserved farm provided the division is for agricultural purposes and both parcels result in agriculturally viable tracts. An agriculturally viable parcel has been defined as a farm that is of sufficient size and soil quality such that it can accommodate a variety of agricultural uses suitable for the County. The CADB follows the State rules when taking into consideration agricultural subdivision applications and adheres to the criteria as it pertains to the purpose of the subdivision and the resulting parcels remaining agriculturally viable.

A landowner wishing to divide permanently preserved farmland must submit a written request. The application must be approved, in writing, by both the State Agriculture Development Committee and the CADB.

Division of the preserved premises is allowed by Tewksbury Township before the property is preserved, only if the township’s minimum acreage requirement is maintained. Tewksbury Township does not allow division of the premises after preservation.

Approval of Exception

Exceptions are defined by the SADC as “acres within a farm being preserved” which are “not subject to the terms of the deed of easement.” When an exception is made, the landowner does not receive any compensation in the excepted area. Exceptions are not a practice that is encouraged by the Township.

There are two types of exceptions that can occur; severable and non-severable.

Severable: A severable exception is defined by the SADC as an “area which is part of an existing Block and Lot owned by the applicant which will be excluded from the restrictions of the Deed of Easement and may be sold as a separate lot in the future.” A severable exception is made “if a landowner wants to be able to sell the excepted area separate from the deed-restricted farm.”

Non-severable: Non-severable exceptions are defined by the SADC as an “area which is part of an existing Block and Lot owned by the applicant that will not be subject to the restrictions of the Deed of Easement but cannot be sold separately from the remaining premises.” Unlike a severable exception, a nonseverable exception is “always attached to the protected farm.” Exceptions made to farmland have the potential to impact the value of the property. When an appraisal occurs, both severable and non-severable exceptions are considered in the determination of the restricted/ after value of the property.”

F. Funding Plan

1. Description of Municipal and County Funding Sources

The Township has funded the preservation of farmland using a variety of methods. The most important and stable source is the money leveraged from the Township’s adopted Open Space and Farmland Preservation tax which is currently \$0.05 per \$100 of assessed value. This fund has often been used to preserve both farmland and other open space and cultural parcels and will continue to fund preservation efforts.

The Township has typically paid for purchases of farmland and then were reimbursed by the County and the State, with the remaining municipal portion being paid through long-term bonding. The Township's debt ratio is currently 1.55%.

Expenses for surveys, appraisals, and contracts with non-profits were taken from these bonds. Although a majority of the funds bonded were used for major Green Acres open space and recreation acquisitions, this bond issue demonstrates the commitment of the Governing Body and residents of Tewksbury Township to investing in open space and farmland preservation projects. Additional funds have been appropriated through the Municipal Budget Capital Fund when necessary, and Tewksbury Township will continue this practice as farmland preservation opportunities arise.

In addition to the local funding sources, the Township has taken advantage of the available funding opportunities from Hunterdon County, State, and Federal resources . Historically, Hunterdon CADB will fund up to 20% of the funding cost-share for a municipal PIG project, often half of the difference between the state match and the total cost for preserving a farm through the municipal Planning Incentive Grant program. The amount of funding available from the County is dependent on the overall size of the farm and the location of the farm in relation to other preserved farmland or other preserved open space areas.

SADC employs a sliding scale funding policy which depends on the overall cost per acre easement value, farm size and criteria ranking. The formula calls for the State to pay a higher percentage of lower cost per acre easements, the SADC normally provides 60% and up to as much as 80% of the funds to acquire a development easement on a farm. The sliding scale is discussed in the SADC regulations at NJAC 2:76-6.11(d). The local share is typically split between Hunterdon County and the municipality. In years past, they have equally split the difference, typically 20% municipal and 20% county funds. According to the 2008 Hunterdon County Farmland Preservation Plan, Hunterdon County now employs a modified cost share formula based on the appraised value of the farm to determine how the cost share amount is split between the county and the municipality. The formula is shown below:

Table 30: Cost Share Formula

Appraisal value (\$/acre)	Increase in municipal cost share (%)
5,000 or less	0
5,001 to 7,000	1
7,001 to 9,000	2
9,001 to 11,000	3
11,001 and greater	4

This sliding scale suggests that Tewksbury Township’s cost share funding requirement will be 23% for a farm with easement values of approximately \$10,000, and anticipates a 17% cost share from Hunterdon County to provide the 40% cost share called for from other sources under N.J.A.C. 2:76-17A-14(b)1. The Township will continue to partner with the County to leverage funds for the preservation of farmland.

A study was commissioned by the Hunterdon Conservation Foundation in 1998 and completed by the American Farmland Trust. The finding of this study proved that farms and open land are good for the local tax base; the farms in particular continue to contribute taxes while requiring very little in costly municipal services. The report demonstrates that at the 1997 tax rate Farmland cost the municipality only \$0.35 of every dollar collected. If the preservation of Tewksbury Township is slowed down because of either a lack of funding or lack of interested property owners; the land will eventually be developed. As the study demonstrated both commercial and residential development will have a severe impact on the fiscal stability of this community. Along with such development will come the increase in traffic, pollution, need for additional emergency services, schools, and public accommodations.

2. Financial Policies

Tewksbury Township's plan for farmland preservation for the Project Area will combine a variety of techniques to encourage as many landowners as possible to preserve their farms. These efforts will include encouraging farmers to enter their farms into Municipally Approved Farmland Preservation Programs, entering into option agreements for easement purchase with landowners, installment purchase agreements and direct development easement purchase.

Preservation of all farms in the project area is being sought for this application. Assuming inclusion in the PIG budget, including local, county and state contributions, it is hoped that the majority of parcels identified can be preserved. This total amount can be expanded through the use of option agreements and installment purchases, which will be determined after negotiations with landowners.

Upon approval of this Planning Incentive Grant Application, Tewksbury will correspond with all property owners of the targeted properties in the Project Area and advise them of the parameters of the program.

Tewksbury will encourage property owners to consider the financial and other advantages of participation in the Farmland Preservation Plan, including a typical per acre maximum easement values

offered. Additionally, owners will be encouraged to assist in leveraging available funding through donations of easements, partial donations of easements and/or bargain sales of development rights.

In order to maximize preservation opportunities, Tewksbury Township will utilize option agreements or installment sales where possible for easement purchases. These vehicles will allow the Township and property owners to develop agreements regarding price and terms that maximize the amount of farmland which can be brought into the preservation program in the early period.

3. Cost Projections and Funding Plan

The Township of Tewksbury estimates that the per acre value of development easements in the Project area will be roughly \$18,000 to \$33,000. This is based on analysis of recent appraisals.

The Township has two long-term goals. As mentioned above, the goal of the Farmland Preservation program is to preserve 1,000 acres of farmland. Given a per acre value of \$18,000 the total cost to preserve the 10 year target of 1,000 acres would be approximately \$18,000,000 million dollars, with a municipal share of \$4,140,000 (Table 31).

Table 31: Funding Needed for Target Farm Acquisition under Traditional Cost Share

Year	Acres	Value	Municipal Share (23%)	County Share (17%)	SADC Share (60%)
1	100	\$1,800,000	\$414,000	\$306,000	\$1,080,000
5	300	\$5,400,000	\$1,242,000	\$918,000	\$3,240,000
10	600	\$10,800,000	\$2,484,000	\$1,836,000	\$6,480,000
TOTAL	1,000	\$18,000,000.00	\$4,140,000	\$3,060,000	\$10,800,000

Assuming an SADC cost-share of 60%, a County cost-share of 17% and 23% Municipal cost-share, and based upon a \$18,000 per acre easement value, the Township is in need of \$10,800,000 from the State, \$3,060,000 from the County CADB and the Township will have to provide \$4,140,000 over the course of 10 years. The Township’s cost share of \$4.1 million over 10 years will be achieved through the use of Township open space trust funds, bond issuance, and donations and partnerships with non-profit organizations where possible.

The Township’s estimated 17% cost share offered through the County’s modified rules has been used to forecast funding required for the goals of this plan. However, in terms of long term planning, if the traditional cost share split of 60%, 20%, 20% once again becomes available through County policy, Tewksbury will seek to leverage its farmland preservation funding accordingly.

The use of installment purchases to preserve farms could be expected to dramatically accelerate the pace of farmland preservation in the Township. With installment purchases, easement purchase values could be tied to present value and add a dimension of stability and predictability to municipal funding requirements, while at the same time enable action to be taken on these farmland preservation projects that are likely to be held in abeyance until conventional funding is available.

G. Farmland Preservation Program and AAC Resources

1. Municipal Staff and Consultant Resources

The Tewksbury Township Land Use Board and Governing Body participate and authorize the Agricultural Advisory Committee. The Agricultural Advisory Committee meets as the need arises. The Agricultural Advisory Committee also receives consulting planning services, when necessary.

2. Legal support

Legal support for the Township's farmland preservation program is provided by the Township's Attorney.

3. Database Development and Geographic Information System Resources

The Township's Planning Consultants currently provide database management, mapping and GIS resources for the Township. The Township also has GIS capability through the County Planning department if needed.

H. Factors Limiting Farmland Preservation Implementation

1. Funding

Funding for the Farmland Preservation Program is the only limiting factor for future preservation efforts in the Township. The goals for the Township to reach 1,000 acres in ten (10) years are dependent upon the funding sources. With the ability of the Municipality, County, and Non-Profits to submit PIG applications it would appear to be a realistic goal. The State share on each of these programs rests with the continued funding of the Garden State Preservation Trust.

The acreage of all target farms in the Township's project areas totals roughly 1,000 acres of farmland. If the goal is achieved at an easement purchase value of \$18,000, approximately 1,300 acres of farmland would remain developable. If the easement value were to rise to a level near or exceeding the highest easement value recorded for Tewksbury of \$33,000, the Township would likely fall short of its goal. It is not clear, however whether the limiting factor would be State/county cost share, or the municipal cost share availability. For Tewksbury, were the local land use goal is to preserve the agricultural land base, it is likely that the Township will bond as necessary to continue to aggressively pursue the 1,000-acre goal, even if easement values rise to as high as \$20,000.

2. Projected Costs

The Township has been able to identify a reasonable per acre value that can be projected out through the 10 year funding cycle. Utilizing the estimated \$18,000 per acre easement value and the amount of funding that will be generated through Township sources and strategies identified in this plan, the Township should be able to meet the preservation goals of this plan.

3. Land Supply

The Township retains a healthy and viable agricultural community with 5,777 acres in active farmland and pasture. Land Supply is not a limiting factor for farmland preservation in the Township.

4. Landowner Interest

Tewksbury is fortunate to still have actively farmed areas with landowners dedicated to the promotion of farmland preservation and agricultural retention. The Township continues to have landowners display interest in placing their land in farmland preservation. This constant interest in local farmers has resulted in a large amount of lands being entered into the preservation program. There has been a great deal of interest by landowners to enter farmland preservation and is landowner interest in not a limiting factor in the preservation program.

5. Administrative Resources

The Agricultural Advisory Committee and Township Land Use Administrator have been extremely helpful in the promotion and execution of the farmland preservation program. Landowners have been able to contact the AAC and Township Land Use Administrator for assistance in preparing applications for farmland preservation. Administrative resources are not a limiting factor to the Township's preservation efforts.

VI. Economic Development

A. Consistency with N.J. Department of Agriculture Economic Development Strategies

The NJ Department of Agriculture Economic Development Strategies for 2011 highlights several strategies for economic development that the Township supports. The Township has used the support services provided by the State and will continue to look to the State for guidance on ways to retain and promote agricultural production. The primary agricultural activities in the Township center around field crop production, nursery sales, and the equine industry. The following section has been provided by the Economic Development Strategies for 2011 as it relates to the efforts of Tewksbury Township.

Field and Forage Crops

Strategies to consider include:

- Ensure plant health through programs to working to prevent plant disease and pests such as Mexican Bean Beetle and soybean rust and to encourage beneficial insects.
 - Work with Rutgers Cooperative Extension and NRCS to:
 - Provide regional producer workshops that will emphasize the benefits of good pasture and cropland management and preservation of water quality.
 - Explore the use of demonstration plots that will emphasize renovation and intensive management systems to improve yield per acre.
 - Further develop opportunities to produce crops that can be pelletized for use in energy systems.
- Support Organic Field Crop Production
 - Continue to encourage the production of certified organic soybeans, corn and wheat to increase the value of these crops.
 - Continue to assist in linking growers with organic food processors, retailers, animal feed suppliers and all other handlers to help identify new market opportunities and take advantage of the growing demand for processed food products made from organic ingredients.
- Support Plans for a Green Energy Initiative
 - Continue to facilitate and support efforts to construct bio-fuel plants in New Jersey, and to foster related bio-fuels businesses whose end goals focus on feedstock crops most suited for growth in New Jersey.

Ornamental Horticulture Industry

Ornamental horticulture includes greenhouse, sod, nursery and floriculture operations. This is one of the leading agricultural industries in the State. Some of the strategies identified by the SADC to ensure the health and viability for the industry include:

- Ensure Plant Health
 - Work to have a comprehensive approach to ensuring plant health. The following methods to be employed include:
 - Continue inspections for harmful pests and disease.

- Seek ways to increase use of new methods of pest control and beneficial insects.
- Inspect and certify nurseries, enabling growers to sell certified disease-free material in and out of state.
- Conduct seed certification and seed control testing programs to ensure high quality turf grass seed for New Jersey sod growers.
- Encourage the New Jersey Agricultural Experiment Station to continue its research in identifying new varieties of agricultural products resistant to pests, diseases and new plant introductions.
- Increase Consumer Awareness
 - Strengthen the Jersey Grown brand name to enable the industry to benefit from a common trademark identifying locally produced horticultural products.
 - Work with growers and independent garden centers and nurseries to strengthen their efforts to promote Jersey Grown products with advertising tools such as point of sale materials.
 - Continue distributing the new Jersey Grown banner for use at the point of sale and also to identify growers participating in the program.
 - Continue to include horticultural crops in the Department's marketing program and communicate the benefits of buying Jersey Grown products.
 - Maintain the retail nurseries and garden center listings on the Jersey Grown website. Continue efforts with major area retailers to coordinate the promotion of locally produced Jersey Grown products
 - Publish the list of certified Jersey Grown growers on the Department's Jersey Grown website.
- Improve State and Public Contract Requirements
 - Continue to work with government agencies including the National Resource Conservation Service, the Department of Transportation through its highway planting program, and the Department of Environmental Protection through its forestry program, to use New Jersey-produced products whenever possible and ensure that all products meet the pest-free standards of the New Jersey Nursery Law and satisfy the quality standards set by the Jersey Grown Rule

Equine Industry

- Work with horse owners to assure awareness of disease threats and animal safety.
- Continue working to protect the health of horses from the immediate threat of devastating and economically damaging diseases.
- Work with Rutgers University's Cook College to continue development of a state-of-the-art research facility for its Equine Science Center.
- Work to implement the recommendations of the Department's "Focus on New Jersey's Horse Racing Industry" report and seek to augment purse values, increase track attendance, and improve the industry's supportive infrastructure.
- Continue to host Olympic caliber events and to promote the state's many quality venues and prestige events.
- Continue to improve the New Jersey equine website highlighting the sectors of New Jersey's Equine Industry activities. The website will improve coordination of all equine

activities in the state and feature schedules of events, horseback riding trails and other industry related activities.

- Bolster promotion and education of the pleasure horse and racing industries to increase interest and work to stimulate new owners and create career opportunities.
- Continue working with 4-H to establish new clubs that will expand the interest in standard bred racing.
- Work on developing and strengthening the promotion of the *Jersey Bred* brand and logo.

Livestock and Poultry Industry

- Ensure Animal Health
 - Through the continued implementation of best management practices for bio-security, the Department will continue working to protect the health of the livestock and poultry industry from the immediate threat of devastating and economically damaging diseases.
- Work with Markets
 - Support the sale and marketing of locally produced poultry meat and eggs. Monitor the health code and market regulations that affect this industry to ensure that they address current industry models of production and distribution. Distribute, and communicate the principles contained in, the guidance document “Chapter 24 and You: A Practical Guide to Selling Safely at Farmers Markets” to ensure the safe and legal sale of poultry and eggs at community farmers markets.
- Support Youth Programs
 - Continue to support the New Jersey Junior Breeders’ Fund loan program, which is helping future generations of agricultural education/FFA students and 4-H members to continue to advance the breeding of purebred livestock and the production quality of grade livestock.

The AAC promotes the continuation of these forms of agricultural development in the Township. These three forms of agriculture are the predominate activities currently practiced in the Township and are the most appropriate. The AAC and Township will continue to encourage and support a variety of economic strategies to support a diverse and healthy agricultural industry.

B. Agricultural Industry Retention, Expansion and Recruitment Strategies

The Hunterdon County Comprehensive Farmland Preservation Plan provided an extensive wealth of information on agricultural retention, expansion and recruitment strategies. The Township promotes and encourages these strategies in an effort to maintain and expand the Township’s agricultural base. Providing support services for farmers who seek to encourage younger farmers to enter into the agricultural activities is a mainstay to farming in general. Mentoring, outreach and support from the AAC to any interested existing or potential farmers are key to the future continuation of agriculture in Tewksbury.

Equally important is to raise awareness to agricultural activities in the Township and region. The more local residents and visitors are made aware of the large variety of farming practices undertaken in the Township, and the goods available on a local level, the greater the promotion of agriculture in the Township. Many people are beginning to see the value of locally raised products as good for the local

economy, their health and the environment. Farmers markets that provide locally grown products are becoming more popular as the demand for these type of local goods increase. The AAC and Township encourages the out reach and informational networking to increase awareness and provide for the sustainability and expansion of agricultural activities.

1. Institutional

The following sections, Farmer's Support through Community Supported Agriculture, highlight activities as they relate to Tewksbury. For additional information is available online or through the Hunterdon County's Farmland Preservation Plan.

Farmer Support

Persons interested in purchasing farms are referred to the Farm Link Program through the SADC website (www.state.nj.us/agriculture/sadc/farmlink.htm). The Farm Link Program is "a resource and referral center for new farmers seeking access to land and farming opportunities, landowners seeking farmers, and farmers working on estate and farm transfer plans." The web site lists farming opportunities available and sought such as farms for sale or lease, internships, and relocation and expansion options.

In addition, new farmers or those interested in entering the agricultural industry, seeking educational opportunities related to the farming profession, converting an operation from one type to another, or assuming responsibility for an inherited farm are referred to many sites. The Northeast Organic Farmers Association of New Jersey (NOFA-NJ) periodically offers workshops entitled Exploring the Small Farm Dream, based on materials from the New England Small Farm Institute. Rutgers Cooperative Extension also offered a new farmers course in 2006 using a similar curriculum. In addition, there is a wealth of Internet resources available to aspiring farmers including the web sites Growing New Farmers, www.growingnewfarmers.org and The New Farm, www.newfarm.org. Aside from offering courses, Rutgers Cooperative Extension will deploy its agents to work with landowners to select crops and livestock suited to the soils of a particular site.

Farmers seeking information regarding financing can seek information from a range of sources. First Pioneer Farm Credit provides loans and financial services to new and established farmers. The USDA-Farm Service Agency coordinates various conservation and loan programs for which area farmers are eligible. Whole Foods Market has instituted a privately funded loan program. It has set aside \$10 million for low interest loans to farmers and plans to host a conference in New Jersey.

Marketing / Advertising / Public Relation Support

Agritourism promotes the use of agricultural amenities and resources, such as open fields farm houses, live stock and other scenic components of the farm for the purpose of offering fee-based recreational opportunities. Agritourism can benefit local communities by attracting tourists to the area who not only spend time at participating farms, but spend money in other local businesses. Farmers benefit by supplementing their income from those added activities.

Agritourism may be a valuable means of supplementing farm income and may increase the sale of products produced on-site. People residing in suburban and city environments are attracted to rural areas with active farm operations. Given Hunterdon County's close proximity to New York and Philadelphia metropolitan areas, farmers have a large urban population to market an agritourism program uniquely tailored to their farm operations.

The New Jersey Department of Agriculture instituted the Jersey Fresh promotional campaign over 20 years ago to increase awareness of locally grown produce and food products. Numerous farmers and venues use the Jersey Fresh logo. In recent years the program has expanded to include the designations Jersey Bred (for horses and lambs), Jersey Seafood and Jersey Grown (for horticulture). The NJ Dept. of Agriculture also maintains a web site, www.state.nj.us/jerseyfresh/index.htm, which is a great place to locate roadside stands, community farmer's markets and pick-your-own facilities.

The Township is eager to partner with any State, regional or County initiatives that will further promote agritourism and agricultural industry. The opportunities available through larger farming networks can provide valuable networks of information and exchange of opportunities for further expansion. The Township supports agricultural business expansion as a means to enhance the income of local farmers and to provide additional opportunities for the Township.

Community Farmers Markets

Community farmers markets enable farmers to sell their products directly to the public. These markets are usually held weekly in a pre-determined location and invite vendors and farmers to set up stalls. Most markets establish rules about what can be sold and how much product must be locally grown. Aside from fresh produce, many vendors offer value-added items such as baked goods and jams. Eliminating the need for distributors, farmers are selling at farm stands and farmer markets and to nearby rural and suburban markets. There are several community farmers markets in Hunterdon County. These markets are located in Flemington, Lebanon, High Bridge, West Amwell and Sergeantsville and are open for business on Saturday or Sunday. (NJDA Jersey Fresh). Efforts to market a county agricultural tourism program may increase the profits in local direct marketing. The urban markets offer even more substantial opportunities. The close proximity to one of the largest metropolitan markets in the world presents farmers in Hunterdon County with tremendous possibilities.

Community Supported Agriculture¹

Community Supported Agriculture (CSA) is a relationship of mutual support and commitment between local farmers and community members. Shareholders pay the farmer an annual membership fee to cover the production costs of the farm, in turn, they receive a weekly share of the harvest during the local growing season. The arrangement guarantees the farmer financial support and enables many small- to moderate-scale organic family farms to remain in business.

¹ Hunterdon County Comprehensive Farmland Preservation Plan, 2008

Ultimately, CSA creates "agriculture-supported communities" where members receive a wide variety of foods harvested at their peak of ripeness, flavor and vitamin and mineral content.²

The benefits to belonging to a CSA include a level of trust in the source of food products grown. Members, having a stake in the farm, are assured their produce comes from a local source. This helps the local economy. Customers gain an understanding of where and how their food is grown by supporting the farm, a local business. A CSA also helps to develop the community character by allowing residents to meet and talk to the farmer who grows their food. Food that is grown locally also improves air quality. The food does not have to travel long distances to get to customers, which reduces air pollution from trucks that carry the produce. Fewer trucks on the roads mean less air pollution.

CSA's that are also organic farms provide an added benefit to the community and to the members who have a stake in the farm. Using no pesticides and fertilizers, the community can be sure that fewer chemicals are running off into nearby waterways or seeping into groundwater sources. Members of the farm are also assured that the food they eat from the farm does not contain harmful chemicals.

Agricultural Education and Market Research Coordination

Municipalities such as Tewksbury Township need the CADB to play a strong role in dissemination of information and sponsoring seminars and workshop to benefit landowners, farmers and local officials. Agriculture is changing in New Jersey and farmers need administrative help to keep apprised of these changes. Agricultural organizations, such as the Hunterdon County Board of Agriculture or the Rutgers Cooperative Extension may suggest seminars that the CADB can sponsor or cosponsor on new and potentially profitable ideas that may improve agricultural productivity. If there are such seminars that are particularly applicable to a specific township or market, the CADB should make municipal agricultural committees aware of them. Marketability is particularly important in today's agriculture and workshops can be held to better understand new and existing markets. By partnering with other organizations, the CADB can sponsor and/or assist in the dissemination of this important information.

The Hunterdon CADB should continue to work closely with municipal agricultural committees and other groups and organizations to form partners for farmland preservation. Future partners may include the Hunterdon County Chamber of Commerce, Hunterdon Economic Partnership, County Board of Agriculture and the New Jersey Farm Bureau. Working with these groups could result in such benefits as improved marketing of agricultural products, developing educational programs for farmers to be more competitive in today's economy, reducing crop damage caused by wildlife, introducing agribusiness that would use locally grown produce and ensuring the compatibility of local regulations with the needs of the farmer.

Tewksbury Township farmers have a variety of resources in the CADB, Rutgers Cooperative Extension Service, the NJ Agricultural Experiment Station, the Rutgers School of Environmental and biological Sciences and others. These organizations work to disseminate information and sponsor seminars and workshops to keep Hunterdon County farmers and local officials apprised

² Rutgers Cook College, Cook Student Farm at <http://www.cook.rutgers.edu/~studentfarm/aboutcsas.html>

of changes in NJ agriculture. These organizations, and their assistance to Tewksbury farmers, are described below.

New Jersey Agricultural Experiment Station (NJAES) and Rutgers Cooperative Research and Extension

According to the NJAES website *Jersey Fresh* Information Exchange, Rutgers Cooperative Extension launched an innovative produce distribution and merchandising website to help New Jersey farmers get their products into new retail locations, such as white-table restaurants and grocery chains. Less than a month after a kickoff meeting that brought New Jersey growers face-to-face with noted New Jersey chefs, national chain grocers and multi-state distributors, these new relationships had already turned into critically needed new sales.

The New Jersey Department of Agriculture, Division of Marketing and Development, is host of the Jersey Fresh campaign and is also responsible for other initiatives that promote and support New Jersey agriculture. The division offers free advertising materials to farmers to use for direct marketing. The division is a resource that can be used to identify opportunities that are helpful to agricultural businesses. For instance, the division has identified an opportunity for New Jersey farmers to sell over-produced or under-valued product to the New Jersey Department of Corrections. This opportunity would be beneficial to farmers when market conditions are very poor and regaining only production costs is an appealing alternative to suffering a financial loss. Hunterdon County farmers are eligible to take advantage of this safety net if they register with the New Jersey State Treasury. Opportunities like this should be identified and information should be made available to local farmers to help support agricultural businesses in the county and the township.

In addition, the NJAES website offers a wealth of information relating to animal agriculture, farm management and safety, pest management, plant agriculture and other elements of interest to those involved in commercial agriculture.

The Hunterdon County RCRE traditionally has been a sponsor of workshops and a helpful resource for local farmers. Rutgers Cooperative Extension Service is a leading program on new-use agriculture. This is defined as agriculture where traditional agricultural crops and live stock are used for new purposes other than food. For example, plants are grown for medicinal purposes and corn is grown for bio-diesel and other types of fuel. It is anticipated that many of these types of new-use agriculture will require large areas of farmland due to economies of scale. The potential for the farm community to benefit from alternative fuels, both as consumers of energy in their farm operations and as producers of the feed stocks needed to create alternative fuels, such as corn for ethanol and soybeans for bio-diesel. An aggressive program encompassing solar, wind and bio-fuels energy was undertaken to help interested farmers pursue these avenues for both cutting their costs and broadening the market for their commodities. There are many opportunities for interested Tewksbury farmers to partner with Rutgers on some of these endeavors.

Rutgers School of Environmental and Biological Sciences

The municipality can touch base periodically with Rutgers regarding any opportunities for farm research, test/experimental projects that might be appropriate for local farms. The RCRE in Hunterdon County can keep farmers abreast, through the *Green and Growing* newsletter and the RCRE website, of any upcoming special workshops or information or appropriate continuing education curriculum.

The Rutgers School of Environment and Biological Sciences is based on the foundation of the physical and social sciences but also focuses on the social and human dimensions of scientific practice in majors such as environmental and business economics or environmental policy, institutions and behavior. Tewksbury Township farmers, officials, and interested residents can use their services regarding any opportunities for farm research and testing

Other Opportunities

Tewksbury Township should continue to work closely with the CADB and other groups and organizations to form partnerships for farmland preservation. Future partners may include the Hunterdon County Chamber of Commerce, Hunterdon Economic Partnership, County Board of Agriculture and the New Jersey Farm Bureau. Working with these groups could result in such benefits as improved marketing of agricultural products, educational programs for farmers to be more competitive in today's economy, reduced crop damage caused by wildlife, agribusiness that uses locally grown produce and local regulations that are compatible with the needs of farmers.

2. Businesses

Most of the Township farms purchase products and supplies from larger agricultural centers or online. However there are some local services available for specialty items. If the farming community begins to provide more specialty products, the Township may be able to help create educational information on where local suppliers and distributors of specialty products can find and exchange items. This could be a goal of the AAC to provide this type of information service to expand and a growing specialty market.

Input Suppliers and Services (from Hunterdon County Comprehensive Farmland Preservation Plan)

Hunterdon County farmers have indicated that there are very few farm equipment dealers within the county. One AGWAY is located in Clinton and the other AGWAY in Flemington has closed for business. There is one Tractor Supply store located in Flemington. Most farmers travel to Pennsylvania in order to buy equipment. Many of the dairy farmers are looking for specialized equipment that is unavailable in the County. Those farmers that are looking for specialized equipment now look toward the internet to find those products. The growth of internet based businesses has allowed farmers to look further beyond their immediate region to find products that would not normally be available to them. With the coverage that shipping services such as UPS and FedEx have, it gives farmers another option when looking for agricultural inputs.

For equipment repairs, most farmers try to “do it themselves” and maintain their existing equipment. For those who need assistance, there are two repair services available in the region. One dealer in Ringoes (East Amwell) does repairs and sells used machinery and a farmer in Jugtown (Bethlehem Township) also does repairs and will make house calls, if necessary.

Product Distributors and Processors (from Hunterdon County Comprehensive Farmland Preservation Plan)

Hunterdon County will continue to host a variety of agriculture but there will probably be a continued loss of large farms –as in previous years- due to lower profit margins of grains, and loss of local feed mills. There are no major grain processing facilities in Hunterdon County. However, many farmers who continue to farm grains will likely grind their own feed and sell locally.

3. Anticipated Agricultural Trends (from Hunterdon County Comprehensive Farmland Preservation Plan)

Agriculture in Hunterdon County as a whole and Tewksbury Township generally is likely to continue its trend towards smaller, more intensive use farms. Innovative marketing techniques will be sought by many farmers to meet production needs. Part-time farmers will continue to dominate the industry and the diversity of farming that has traditionally characterized Hunterdon County also will continue.

Given these trends, the future of farming in Hunterdon County looks promising, though it may not be the traditionally thought-of wide-open fields of dairy cattle and field corn. Part-time farmers, particularly those with horses and other livestock, will continue to be important players in the Township’s agricultural industry and their continued existence should be nurtured. Part-time farmers often do not have the time or the land to plant enough hay or other feed for their livestock and therefore create a market for hay and grain farmers. Part-time farmers are also important because they keep land in farming and out of the hands of developers, minimizing the intrusion of residential developments on neighboring farm operations. Additionally, they often provide farmland for others to farm by leasing their land. This is particularly important for grain farming which has a low per acre value and requires a considerable amount of land to be profitable.

The number of small part-time farms has stabilized over the last few years, but will continue to be a large percentage of the County's agricultural complexion, assuming the rural character of the area is preserved and there are no major regulatory changes such as significant changes in the Farmland Assessment Act. Small farms will continue to be the trend in the Township. Profits may well increase as agriculture in the County enters a new phase towards smaller, more intensive types of farming, including high value crops. Whereas grains and field crops have the lowest per acre value of products (\$200-\$500 per acre), high value crops such as vegetables and horticulture tend to have a much higher per acre value (\$1,000-\$5,000 per acre). For this reason, large farms are no longer necessary for comfortable profit margins. While Hunterdon County’s climate and soils are not as conducive to vegetable growing as are New Jersey’s

southern counties, greenhouses do not demand the climate and soil conditions and may become more popular in the County.

Market location

Tewksbury Township has a great market location due to its close proximity to the New York and Philadelphia metropolitan areas. The median household income for Hunterdon County, according to the 2010 census data is \$100,980. This is well above the statewide average of \$69,811. Hunterdon has the highest median household income in the state, followed by Morris County and Somerset County. Hunterdon County had a population of 128,349 persons, according to the 2010 census.

Product demand

Hay comprises 30% (30,140 acres) of agricultural lands in Hunterdon County, and is the leading crop countywide and statewide. Corn and other grains crops, soybeans, specialty crops, nurseries, cattle, milk cows and horses also characterize the county's agricultural base. In 2004, Hunterdon County ranked first in New Jersey for hay, fourth for corn and grain and also for cattle and calves and fifth for soybeans for beans, wheat for grain, and nursery stock acreage.

The Future of Farming in Hunterdon County and Tewksbury Township. Agriculture in Hunterdon County and Tewksbury Township likely will continue trending towards smaller, more intensive use farms. Innovative marketing techniques will be sought by many farmers to meet production needs. Part-time farmers will continue to dominate the industry and the diversity of farming that has traditionally characterized Hunterdon County and Tewksbury farms will continue.

Diversity of agriculture, loss of larger farms. Hunterdon County and Tewksbury Township will continue to host a variety of agriculture for all of the same reasons that it has in the past: the proximity to various types of agricultural markets, the above average soils and climate, the variety of people farming and the scenic and rural qualities that attracts part-time farmers. There likely will be a continued loss of large farms in Hunterdon County - as in previous years - due to lower profit margins of grains, loss of local feed mills, and the number of farmers near retirement. Many farmers who continue to farm grains will likely be grinding their own feed and selling locally. New fertilization and liming techniques, as well as integrated pest management practices, will also help to increase crop yields and profit margins for grains and field crops.

Small farms and high value crops. Small farms in the Township will continue to be the norm. Profits may well increase as agriculture in the Township enters a new phase towards smaller, more intensive types of farming, including high value crops and agri-tourism. Whereas grains and field crops have the lowest per acre value of products, high value crops such as vegetables and horticulture tend to have a much higher per acre value. For this reason, large farms are no longer necessary for comfortable profit margins. While Hunterdon County's climate and soils are not as conducive to growing vegetables as are New Jersey's southern counties, greenhouses do not demand the climate and soil conditions and may become more popular in the township.

Part-time farms and horse farms. Part-time farmers, particularly those with horses and other livestock, will continue to be important players in Tewksbury Township's agricultural industry and their continued existence should be nurtured, both for continued agriculture and increased open space. Part-time farmers often do not have the time or the land to plant enough hay or other feed for their livestock and therefore create a market for hay and grain farmers. Part-time farmers are also important because they keep land in farming and out of the hands of developers, minimizing the intrusion of residential developments on neighboring farm operations. Additionally, they often provide farmland for others to farm by leasing their land. This is particularly important for grain farming which has a low per acre value and requires a considerable amount of land to be profitable.

4. Agricultural Support Needs

In general the Township, with the support of the AAC and Hunterdon County initiatives, have encouraged and promoted agricultural activities in the Township. However, there are areas that may be strengthened within the Township that may better support the agricultural community. Providing for streamline permitting and applications which would help farmers take advantage of changing market conditions could be useful. Additionally, providing increased ACC involvement to help farmers navigate and understand county and state regulations would also be valuable in supporting the agricultural community. The AAC may look into outlining some of these issues for future support services.

The Township may be able to support these types of activities by appropriating funds to the production of informational flyers or postings on the Township's website on the farming community, not only locally but regionally, to expand awareness. The Township may also be able to supply additional support services through using in-house staff to provide administrative support for farmers seeking funding opportunities and grants made available through the County or State. These items should be further explored to identify all the areas the Township may be able to provide additional support services to the agricultural community.

The County of Hunterdon held a public meeting on specific topics for inclusion in The Hunterdon County Comprehensive Plan. Farmers expressed concerns with local support and made the following suggestions for better support:

- Technical support needs to be less generic and more specific
- NRCS not helpful due to lack of manpower
- Environmental constraints need to be more specific, not general
- Farm credit – good but needs expansion
- More local financial participation
- Access to and affordability of farm labor is an issue
- Local kids are not interested in farm labor
- Landscaping is biggest competitor for labor, can't meet the price
- Not enough farmers to lease acreage
- No ability to entice young farmers – cost, opportunity
- SADC – more flexible on housing on preserved farms
- Need housing for children that want to work on the farm
- Tax impacts of preserving land

- Assessment should freeze at time of preservation
- Disincentive to improve the farm buildings
- Local Board of Ag. needs more teeth
- Deer issues need to be addressed: fencing, hunting, control
- Community kitchen to support local baked goods
- Full time market needed
- Additional county and municipal support

Agricultural Facilities and Infrastructure

The infrastructure the farmers most need is on the regulatory and technical assistance side: getting municipalities, residents and consumers to look favorably on agriculture and understand the economic and quality of life advantages it brings to the County, getting municipal support through flexible land use regulations and ordinances that take into consideration the special needs of the agricultural operations, and getting help with financial and planning matters through workshops and other educational and counseling services provided by the state, RCRE, the CADB and the federal government.

Additional support could come from a concerted effort to promote agritourism through signage, publications, website and media promotion.

Flexible Land Use Regulations

A positive regulatory climate, such as ordinances and policies supporting agriculture, is essential for the future of farming, particularly for full-time farmers whose income relies largely, if not entirely, on the farm operation. Regulations supporting agriculture should include ordinances that give farmers flexibility to pursue agricultural uses and recognize the need for farmers to supplement their operations with on-farm and off-farm activities and businesses. Development regulations should streamline the review process for new farm buildings and minimize the cost of the reviews. Equity protection is important to full-time farmers because a large part of their retirement security rests in the value of their farmland. This challenges the municipality to be creative and use innovative regulatory mechanisms that both achieve community goals and protect the farmer's nest. The requirements for constructing agricultural labor housing are much less stringent than Residual Dwelling Site Opportunity (RDSO), provided the house is for non-family related farm labor. Any number of agricultural units may be constructed on permanently preserved farmland provided at least one tenant/resident actively works on the farm and there are no blood relatives to the landowner residing in the house. Any existing agricultural labor housing that is destroyed may be reconstructed. Once an agricultural labor unit is no longer inhabited by an agricultural laborer, the unit must be vacated. This policy prevents abuse of the program where the units could be rented out to non farm related tenants.

Flexible land use regulations can help municipalities secure and expand the agricultural industry. It is important to understand that agriculture is key to the economy of the county and the importance of an agriculture-friendly environment at the municipal level in support of the agricultural sector of the community. Right to Farm and accommodations for agricultural vehicle movement and the building of an awareness of and provisions supportive of agriculture into

municipal master plans and zoning ordinances go a long way towards the kind of support agriculture needs in order to be an economically viable sector.

Other areas where municipal sensitivity to the land use needs of agriculture can be helpful include consideration of the following issues when creating municipal ordinances and regulations:

- Setting specific buffer standards for non-farm development adjacent to working farms that help to limit trespassing and littering and also protect the residential landowner from dust and spray materials spread during farming activities, thus minimizing potential Right to Farm conflicts;
- Code or ordinance provisions requiring developers to notify purchasers of the proximate existence of active agriculture;
- Exemptions for certain farm structures from building height restrictions;
- Allowing additional principal dwelling units on farms in order to meet the needs of farmers for additional housing for their children or for farm managers;
- Exemptions from setback requirements when farmers seek to expand an existing nonconforming structure;
- Flexible fencing ordinances that make allowances for types of fencing on farms that might not be desirable in residential zones, in consideration of the farmers needs to prevent wildlife damage; and
- Construction fee reduction for agricultural buildings.

Agricultural Support Implementation

Suggestions for future agricultural support include workshops and other educational opportunities at the state and county. Such programs could help alleviate some of the frustration and barriers identified by local farmers identified above. In addition, support for the implementation and monitoring of farmland preservation, one of the chief ways to protect and ensure the continued presence of agriculture in the County, comes from the County's open space trust fund, local contributions from municipalities, SADC dollars through programs such as Planning Incentive Grants and soil and water conservation grants and federal dollars from federal programs such as the Farm and Ranch Lands Protection Program.

The Hunterdon Chamber of Commerce could also play an instrumental role in supporting local agriculture. The Chamber of Commerce is an action-oriented business organization that promotes a favorable business climate for its membership and community, works with other interested organizations to develop effective mechanisms for taking action on issues of community interest, and provides business leadership for improvement of the economy and quality of life in Hunterdon County, New Jersey. A partnership with agricultural representatives could promote agri-business in the County.

The Hunterdon County Agriculture Development Board is the leader in farmland preservation. The CADB helps to guide future policies. Their mission statement is to "Promote the present and future of Hunterdon County agriculture by preserving agricultural land and by promoting public education and agricultural viability."

As mentioned in previous sections, Rutgers Cooperative Research and Extension Service is a grassroots

organization where the needs of the community take precedence over programs designed at other levels of government.

Finally, the Hunterdon County Soil Conservation District is a special purpose subdivision of the State. In cooperation with the State Soil Conservation Committee, the Districts are empowered to conserve and manage soil and water resources and address stormwater, soil erosion, and sedimentation problems that result from land disturbance activities.

VII. Natural Resource Conservation

A. Natural Resource Protection Coordination

The Hunterdon County Plan provided information on various services involved in farmland preservation and natural resources protection. For more information on these services as they apply in Hunterdon County, refer to the Hunterdon County Plan. The following section is a summary of natural resource conservation services available. The Township seeks to increase its communication with the Natural Resource Conservation Service (NRCS) and the Hunterdon County Soils District to encourage agricultural retention and best management practices by local farmers.

1. Natural Resource Conservation Service

The United States Department of Agriculture-Natural Resources Conservation Service (NRCS) assists landowners and managers with conserving soil, water and other natural resources. The agency has a field office at the county’s agricultural building in Franklin Township and offers technical and financial assistance. NRCS staff prepares conservation plans for preserved and non-preserved farm owners and then helps landowners secure funds through Farm Bill programs to implement the plans. Preserved farm owners are required by their Deeds of Easement to prepare a conservation plan. The Hunterdon County Agriculture Development Board staff refer these landowners to the USDA-NRCS who customize a conservation plan for each preserved farm. Conservation plans are a written record of management decisions and conservation practices to be used on a farm. The plans are intended to help protect soil fertility and productivity, improve water quality, and attract desirable wildlife.

2. Hunterdon County Soil Conservation District³

The Hunterdon County farm community is served by the Hunterdon County Soil Conservation District (SCD) located in Franklin Township. Some of the technical services that the SCD provides Hunterdon farmers include animal waste management, erosion control design and construction and Integrated Pest Management. Hunterdon County farmers who are interested in developing farm conservation plans apply to local Soil Conservation Districts which assist in developing farm conservation plans and ensure projects are necessary and feasible. Applications are forwarded to the N.J. State Soil Conservation Committee, which recommends projects to the SADC for funding approvals. The Hunterdon County Soil Conservation District gives final approval on all Conservation Plans and program contracts.

Within one year of the signing of the Deed of Easement on a Preserved Farm through the County Easement and Municipal PIG programs, the landowner must obtain an approved Farm Conservation Plan from the Hunterdon County SCD. Although an approved Conservation Plan within a year of the preservation of a farm is required, implementation of the plan is not mandatory. According to the Hunterdon County SCD, approximately 25% of these plans are implemented. Although the services of the NRCS for the implementation of the Conservation Plan is cost free to the farmer, the services of the SCD may be needed to complete the

³ Ibid

implementation of the plan and this work is billable as the SCD is a separate entity from the NRCS. Funding for approved soil and water conservation projects are available from the SADC for up to 50% reimbursement. However, State funding has been limited in recent years.

The farmland preservation program has an ongoing program that ensures annual monitoring of preserved farmland. In Hunterdon County, the Soil Conservation District handles this responsibility for the County on farms where the County holds the easements.

B. Natural Resource Protection Programs

The Township and local farmers are encouraged to use any available grant program to retain agricultural production in the Township. The Township will seek to provide additional support to local farmers in educating and outreach to ensure that land owners are aware of all the support opportunities available to them. The following is an outline of some of the grant opportunities provided by the State and Federal programs.

NJDA Soil and Water Conservation Grants

The SADC Soil and Water Conservation Grant Program provides grants, up to 50% of a project's costs, to owners of permanently preserved farms and 8-year Program participants. Irrigation, erosion control, and stream corridor enhancement projects are among those that are eligible. Many Hunterdon County farmers have obtained Soil and Water Conservation grant money over the years.

Conservation Reserve Enhancement Program (CREP) and Conservation Reserve Program (CRP)

The Conservation Reserve Program (CRP) is administered through the Farm Service Agency. According to the USDA's web site (www.nrcs.usda.gov/programs/crp/), the program "encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers." Landowners enroll in either the general (a.k.a. traditional) or continuous CRP program. Each has slightly different rules. There are two traditional, 10-year CRP contracts within Hunterdon County. Both protect highly erodible soils through tree plantings in the first case and grass in the second. Another continuous CRP contract, also for 10 years, protects water quality through the establishment of filter strips.

The CREP program falls under the umbrella of the continuous CRP program. It focuses on four stewardship practices and offers a higher cost share than some other Farm Bill programs. CREP is intended to reduce agricultural water runoff and improve water quality by paying farmers to remove highly erodible pastureland and cropland from production. Participants must meet strict eligibility standards.

Conservation Innovation Grant program (CIG)

The aim of the CIG program is to stimulate the development and adoption of conservation approaches and technologies which are innovative, in conjunction with agricultural production.

Funds are awarded as competitive 50-50 match grants to non-governmental organizations, tribes, or individuals.

Environmental Quality Incentive Program (EQIP)

EQIP is a conservation program to encourage agricultural production and environmental quality standards that are compatible with national goals. The program provides assistance to eligible applicants to carry out structural and management practices on agricultural lands. The program offers contracts with a maximum term of ten years that provide incentive payments and cost shares to farmers to execute approved practices.

Farm and Ranch Land Protection Program (FRPP)

The Farm and Ranchland Protection Program (FRPP) provides cost share funding for the purchase of development easements. From 1996-2004, eight farms in Hunterdon County were preserved with the help of FRPP funds, including one in Tewksbury. Because impervious coverage restrictions associated with these funds have become more stringent in recent years (from 2% coverage up to 6% if waiver is secured), however there has been several farms partially persevered through this program in Hunterdon County.

Grassland Reserve Program (GRP)

The Grasslands Reserve Program (GRP) offers landowners the opportunity protect, restore, and enhance grasslands on their property. A per county acreage cap is set at the national level for this program.

Wetlands Reserve program (WRP)

The Wetlands Reserve Program (WRP) pays farmers for restoring and protecting wetlands on their property. These wetland areas are considered marginal farmland. They may currently be farmed or used as pasture or may have been previously drained for agricultural use. The land must be restorable and suitable for wildlife.

Wildlife Habitat Incentives Program (WHIP)

The WHIP program is designed for non-federal landowners who wish to improve or develop fish and wildlife habitat on their property. Priority is placed on habitat for species with declining populations. The program provides monetary and technical assistance for the creation of suitable habitat for a wide range of species. The NRCS works with the landowner to create a wildlife habitat development plan, which becomes the basis for the cost share agreement. Participation in the program requires a property owner to limit use of his or her land for a period of time. Projects focus on creating and enhancing wildlife habitat with warm season grass plantings or native tree and shrub plantings, controlling invasive species, and creating and restoring wetlands.

Landowner Incentive Program (LIP)

New Jersey's Landowner Incentive Program provides technical and financial assistance to private landowners interested in conserving threatened and endangered plant and animal species on their property. Potential projects include vernal pool restoration, prescribed burns, and stream fencing. The State is particularly focused on grassland within regional priority areas and lands adjacent to Wildlife Management Areas and other permanently protected areas.

C. Water Resources

Water conservation is an important issue for local farmers. Much of the active farmland in the Township relies on groundwater and rain water recharge. Prudent use of water helps to maintain aquifer recharge and groundwater supplies. Sensible use of water resources has become progressively more important, not only in the Township, but for the entire State. Increased development, and uncertain climatic conditions, has resulted in more sporadic cycles of wet and dry periods, placing higher demand on water resources. Over the past decade, the State has witnessed severe droughts as well as very wet seasons. Proper management of water resources, which conserves water to the maximum extent, will allow for greater long-term water resources and the ability to allocate water resources efficiently. Conflict over water resources can occur if groundwater is removed for residential purposes, depleting groundwater resources often drawn upon for agricultural uses.

Supply Characteristics

The 2003 Master Plan summarized a Hydrogeological Study conducted by M2 Associates. Based on the data, reports, and maps reviewed in preparation of the Tewksbury Township water resource evaluation, the following conclusions are made:

The source of drinking water for Tewksbury Township residents is groundwater. Water is supplied to these residents from individual wells or public community wells completed in fractured bedrock aquifers.

Tewksbury Township's groundwater resources are of value to the current and future residents of the Township as well as downstream consumers and ecological receptors. Tewksbury Township wants to protect these critical resources for these residents, receptors and consumers.

The northern two-thirds of the Township are located in the Highlands Province, which has long been recognized as a vital water-resource region worthy of protection. The bedrock underlying the Highlands portion of the Township is made up of rocks some of which exceed 1 billion years in age. The southern portion of the Township is located within the Piedmont Physiographic Province, which forms the core of central New Jersey. The Piedmont portion of the Township has a subsurface of rocks deposited as the Newark Basin opened in the Triassic (208 to 245 million years ago) and Jurassic (208 to 145 million years ago) Periods. These basins were formed as a result of continental separation or rifting.

Data for wells completed in the Precambrian rocks beneath Tewksbury Township indicate a median yield greater than elsewhere in Hunterdon County. However, the specific capacity data and estimates of aquifer transmissivity indicate that to compensate for this increased yield, the water level beneath Tewksbury Township must be drawn down to greater depths and that ultimately, the higher yields cannot be sustained. The Precambrian aquifer cannot transmit more water beneath Tewksbury Township than it can beneath other Townships in Hunterdon County. Local well data indicate that the Precambrian igneous and metamorphic rocks beneath Tewksbury Township are poor aquifers.

The Leithsville Formation underlies approximately 80.5-acres of Tewksbury Township. This aquifer system because it is comprised of carbonate rocks susceptible to the formation of caverns and other solution features, is very prolific and capable of high yields. Given the high capacities for these carbonate rocks to store and transmit groundwater, the Leithsville dolomite is an important water resource for the Township and region. This aquifer system, because of the frequency of solution cavities and sinkholes is highly susceptible to contamination from anthropogenic sources such as septic systems and other discharges.

The Passaic Formation conglomerate facies are encountered near the border faults between the Piedmont and Highlands Provinces. Given the proximity to this fault it would be expected that these rocks are highly fractured and capable of transmitting large volumes of water. However, local well data indicate that these conglomerates continue to be well-cemented and poorly transmissive aquifers. These rocks have median yields, depths, and specific capacities that are substantially below those of the Precambrian rocks, which are well recognized as poor aquifers. Beneath Tewksbury Township, the Passaic conglomerate units are very poor aquifers with limited capability to transmit groundwater.

Regionally, the Passaic Formation rocks are recognized as one of the better yielding fractured bedrock aquifer systems in New Jersey. However, in Tewksbury Township, well data indicate that the Passaic Formation has a poor capacity to transmit water and further indicate that the Passaic Formation in Tewksbury Township has a capacity to transmit water very similar to the Precambrian igneous and metamorphic rocks beneath the Township.

Jurassic igneous and metamorphic rocks are comprised of diabase, basalt, and metamorphosed Feltville Formation. They have a capacity to transmit water that is equal to approximately 25 percent of the transmission capacity of the Precambrian and Passaic Formation aquifer systems and approximately 50 percent of the transmission capacity of the Triassic-Jurassic conglomerates beneath Tewksbury Township.

Comparisons of local and regional data indicate that the many rock types beneath Tewksbury Township should be considered as five bedrock aquifer types or hydrogeologic zones. The majority (65.7 percent) of the Township is underlain by poor aquifers associated with the Precambrian igneous and metamorphic rocks and Hardyston Quartzite. The aquifer system encompassing the second largest area (16.5 percent) beneath the Township is comprised of Passaic Formation sedimentary rocks. The hydrogeologic zone encompassing the third largest portion (13.7 percent) of Tewksbury Township is comprised of the three Triassic-Jurassic conglomerate units. The Jurassic igneous and metamorphic rocks are encountered

beneath approximately 3.7 percent of the Township. The Cambrian carbonate rocks of the Leithsville Formation are encountered beneath approximately 0.4 percent of the Township.

Groundwater recharge to the Precambrian Igneous and Metamorphic Zone ranges from 1.3 to 4.4 inches per year, with median rates ranging from 1.8 to 4.0 inches per year or 130 to 298 gpd/acre.

The 80.5-acre Cambrian Carbonate Rock Zone in the northern portion of the Township receives the most recharge per acre. Recharge to these rocks may be as much as 22 inches per year.

Local streamflow data indicate that the recharge rates for the conglomerate rocks beneath Tewksbury Township range from a very low 0.01 to approximately 5.0 inches per year or 100 to 205 gpd/acre. The recharge rates near the upper limits of this range should be cautiously used and considered overestimates because of the significant presence of Precambrian rocks beneath one of the analyzed basins. Local data indicate that the Triassic-Jurassic conglomerates are very poorly recharged.

The Passaic Formation aquifer system has similar water-transmission capabilities and may have similar recharge rates as the Precambrian igneous and metamorphic rocks beneath Tewksbury Township. Local streamflow data suggest recharge rates ranging from 2.3 to 2.4 inches per year for the Passaic Formation rocks. However, these local streamflow measurements may be affected by discharges from Round Valley Reservoir and therefore, may be biased high by the reservoir discharges. USGS studies in areas underlain by Passaic Formation rocks with more extensive fracturing than encountered beneath Tewksbury Township indicate recharge rates ranging from 8.11 to 8.25 inches per year. Since the Passaic Formation rocks beneath Tewksbury Township are apparently less fractured than those beneath the USGS study areas, the recharge rates determined from the USGS studies are considered high estimates. The 16.5 percent of the Township underlain by Passaic Formation shales, siltstones, and mudstones may receive recharge at median rates ranging from 175 to 609 gpd/acre. The upper end of this range was determined from USGS computer modeling efforts for an area primarily in Mercer County that is significantly more fractured than the Passaic Formation rocks in Tewksbury Township.

The Jurassic Igneous and Metamorphic Zone is recharged at median rates ranging from 156 to 234 gpd/acre. The 3.7 percent of Tewksbury Township underlain by the weakly fractured and slightly weathered Jurassic igneous and metamorphic rocks are very likely to be as poorly recharged as the Jurassic igneous rocks and associated metamorphic rocks elsewhere in Hunterdon County and northern Mercer County at rates ranging from 2.1 to 3.15 inches per year.

Within the Precambrian Igneous and Metamorphic Zone, the dependable yield ranges from approximately 347,862 to 795,115 gpd.

Within the second largest hydrogeologic zone, the Triassic-Jurassic Passaic Formation Zone, which encompasses approximately 16.5 percent of the Township, the dependable yield ranges from 117,235 to 272,052 gpd.

The third largest zone, the Triassic-Jurassic Conglomerate Zone, encompasses approximately 13.7 percent of the Township and has a dependable yield ranging from 55,766 to 113,597 gpd.

The Jurassic Igneous and Metamorphic Zone encompassing approximately 3.7 percent of the Township, has a dependable yield of approximately 23,556 gpd, and could sustain a population of 236 persons.

The Cambrian Carbonate Rock Zone encompassing approximately 0.4 percent of the Township, has a dependable yield ranging from 3588 to 17,557 gpd.

The result of the variety of aquifers in the Township show that while there is supply available to handle modest residential and agricultural uses, the aquifers are subject to climatic influences and pollution issues that can harm the water supply quality and quantity. As stated previously, most of the Township's agricultural practices do not require irrigation. However, those that do can take steps to reduce the amount of water necessary to irrigate crops.

There are a number of ways to irrigate a farm. Surface water from the local watershed can be collected and stored in a pond and then used to supply agricultural water needs. This method is often used for irrigation during periods of lower than normal precipitation. If the area to be irrigated is near a stream, it may be possible to withdraw water without building a pond.

Groundwater is also a source of irrigation water. It may be removed by drilling a well and installing a pump, a potentially expensive proposition. On properties with a high water table, a farmer may be able tap groundwater to create a pond without having to drill. To get some idea of scale, Albert Jarrett of Penn State estimates that irrigating cropland by sprinkler requires supply rates as high as 10 gallons per minute (gpm) per acre. Drip irrigation requires 3 to 7 gpm per acre. Farm ponds can lose 40-60% of volume to seepage and evaporation. Such ponds require about 4 acres of upland watershed to supply one acre-foot of usable water per year.

The NJDEP's Bureau of Water Allocation requires farmers to obtain water use registration or certification papers to withdraw large quantities of surface water or groundwater. An operation needs water use registration if it withdraws less than 70 gallons per minute or less than 3.1 million gallons per month. A farm must obtain water use certification if it withdraws greater than 70 gallons per minute or greater than 3.1 million gallons per month. Forms are available on the NJDEP's web site. They are submitted to and processed by Rutgers Cooperative Extension and then forwarded to NJ DEP.

Water diversions were once considered routine but because of increasingly strict environmental regulations and growing competition from other land uses, it's getting harder to obtain permission for water withdrawals. It is very important not to let certifications lapse. In the coming years it will be ever more valuable to have existing farm ponds, irrigation systems, and water rights.

Water Conservation Strategies

The Sustainable Agriculture Network, an affiliate of the United State Department of Agriculture, published a very useful guide to water conservation entitled, “Smart Water Use on Your Farm or Ranch.” The guide focuses on three main aspects of conserving water on agricultural lands: managing soil to increase water availability, plant management, and water management.

There are several techniques to better manage soil for water conservation. The goal is to increase the organic content of the soil to improve water holding capacity. This can be done by spreading manure, applying composts, using cover crops between or amid cash crops, and reducing tillage.

When managing plants for water conservation, farmers should select species adapted to local conditions. Native and drought tolerant plants can help reduce water needs. Crop rotation is often a beneficial practice.

Finally, water conservation can be accomplished by adjusting water delivery systems, lining ditches with impermeable materials, and better timing water applications. Terraces and swales can help control drainage flows to give water more time to infiltrate.

The 2007 Hunterdon County Growth Management Plan recommends the CADB to work with agricultural organizations who lend support to the farm community, including the Hunterdon County Board of Agriculture and North Jersey RC&D. These organizations should work to promote funding opportunities for agricultural water conservation practices, such as the federally funded EQIP program and Conservation Reserve Program.

In addition, Hunterdon farmers have worked with various agencies to help improve water quality in our streams. North Jersey RC&D, in partnership with the Natural Resources Conservation Service, Rutgers Cooperative Extension, County Soil Conservation Districts, and the NJ Department of Agriculture has successfully leveraged federal monies to help farmers employ land management practices that reduce chemical inputs without compromising yields. Local watershed associations also offer River Friendly programs, such as the Stony Brook-Millstone Watershed Association. By 1999, some 14,000 acres, including acreage in Hunterdon County, were using best management practices on their lands through this program. The County Growth Management Plan recommends that these success stories be actively marketed.

D. Waste Management and Recycling

Waste management for the Township exists on several levels. Field crop production and nursery stock can create a large amount of agricultural byproducts. Additionally livestock production creates a great deal of organic waste byproducts that need to be carefully disposed of to avoid pollution issues.

Farm waste may vary from animal byproducts to solid waste. Animal waste has the potential to impact ground and surface water quality. If poorly managed, such waste products may introduce unwanted bacteria into water supplies. To prevent these problems many equine and livestock owners in the county work with the NRCS to develop manure management plans. Also, depending on their scale, animal feeding operations that exceed certain livestock population thresholds are required by the State to obtain

New Jersey Pollutant Discharge Elimination System (NJPDES) permits and develop animal waste management plans.

The SADC has adopted an animal waste Agricultural Management Practice (AMP) under the Right-to-Farm Act and provides guidance for managing livestock waste. Information on the Manure Management Rule can be found at:

<http://www.state.nj.us/agriculture/divisions/anr/agriassist/animalwaste.html>

The Hunterdon County Soil Conservation District offers technical assistance for Hunterdon County farmers in the area of Animal Waste Management. The County can provide farmers with technical assistance concerning the disposal of tires including locations for disposal and also recycling opportunities.⁴

E. Energy Conservation

Energy conservation has wide ranging implications, not only on the local environment but on a global scale. Climate change has been on the forefront of the world stage and strategies to combat the resulting issues have been promoted and encouraged. One such strategy is to conserve energy and find alternative energy production that does not further degrade the environment.

Energy conservation planning is typically conducted by the New Jersey Department of Environmental Protection or by the United States Environmental Protection Agency through the Office of Pollution Prevention and Compliance Assistance.

Opportunities for energy conservation are increasingly available in the farming community. Examples of energy conservation in farming include no-till agriculture, solar farms and wind harvesting farms. The advantages of energy conservation include reductions in air-pollutants, dollars saved and a reduction in green house gas emissions. The State Agriculture Development Committee has weighed in on the acceptable uses of alternative energy on preserved farms. Stating informally that alternative energy is an acceptable use on preserved farms, as long as the energy production is generally limited to the approximate needs of the farming operation and also has no negative impacts on the farming operation.

There is recent legislation that will result in changes in municipal obligations to provide for the use of alternate energy resources. Tewksbury Township, to date, has not amended or created new policies directly related to energy conservation however the Township has amended the Development Regulations to allow solar and wind energy systems.

Solar Energy

Solar energy can be harnessed via the installation of solar panels. This harnessed or stored energy can then be used to create electricity and provide heat. If excess electricity is generated, it can be sold back to the electric grid for a profit. The overall use of solar panels has greatly increased in New Jersey. EQIP does provide some funding for solar panels, and farmers interested in using this alternate energy source can contact the local NRCS office for more information.

⁴ *ibid*

Wind Energy

The power of a strong wind can be captured by turbines or windmills, turning such power into electricity. Expanding and evolving technology is making this option more attractive to farmers as a way to cut energy costs. There has been a movement toward wind energy in areas along the coast, where coastal winds make wind power feasible in that area. One possible roadblock to use of wind turbines, is that few, if any, municipal ordinances allow the use of wind turbines.

Ethanol

Ethanol is a renewable fuel “made by distilling the starch and sugar in a variety of plants.” It can then be blended into gasoline as an “oxygenate”, reducing air pollution. Its use may also reduce dependence on foreign oil, and the harmful environmental effects of oil drilling. Also, unlike the gasoline additive MTBE, Ethanol will not contaminate groundwater. Corn, hay and soybeans, could provide additional revenue sources for local farmers. New studies nationally and locally would need to be done on whether this would be profitable for County farmers, and how it would affect other local agriculture industries (for instance, how it would affect the dairy industry’s supply of, and price for, feed corn).

Renewable Energy Grant Programs

The NJDA provides the following information on renewable energy grant programs, which can help encourage the use of these energy sources:

New Jersey’s Clean Energy Program: Administered by the New Jersey Board of Public Utilities, this program provides financial incentives to install clean energy systems, including fuel cells, solar energy, small wind and sustainable biomass equipment. Financial incentives are in the form of rebates, grants and loans. Additional information is at www.njcep.com/.

Renewable Energy Systems and Energy Efficiency Improvements Program: As part of the 2002 Federal Farm Bill, this program “funds grants and loan guarantees to agricultural producers for assistance with purchasing renewable energy systems and making energy efficiency improvements”. Final rules for loans and grants were adopted by the U.S. Department of Agriculture in July 2005. The proposed 2007 Farm Bill would reportedly continue this funding. Additional information can be found at the following website: www.rurdev.usda.gov/rbs/farmbill/index.html.

Biomass Research and Development Initiative Grants: The United States Departments of Agriculture and Energy support development of biomass energy. Grants are available for research, development and demonstrations on bio-based products, bio-energy, bio-fuels, bio-power and additional related processes. In the recent past, grants have focused on development and demonstration projects that lead to greater commercialization. Additional information is available at the following website: <http://www.state.nj.us/agriculture/news/hottopics/topics060222.html>.

F. Outreach and Incentives

Tewksbury has been active in promoting and assisting the agricultural community while preserving the valuable natural resources that have made agriculture a viable option in the Township and the region. The Township has often reached out to farmers to promote sustainable practices as identified by the SADC and the CADB, as well as supporting practices that are consistent with local objectives to preserve agricultural and the environment. The conservation and preservation of resources is invaluable to the Township and the region. For these reasons the Township encourages the use of best management practices and sustainable agriculture. In addition, the County is active in promoting sustainable practices. The Township's Environmental Commission works closely with the AAC through the Land Use Board, working toward common goals of preservation of open space, agricultural activities and natural resource protection. This collaboration will continue in order to achieve common goals.

VIII. Agricultural Industry Sustainability, Retention and Promotion

A. Existing Agricultural Industry Support

1. Right to Farm

New Jersey has enacted a strong right-to-farm statute, which applies statewide. New Jersey’s Right-to-Farm Act provides commercial farm owners or operators with certain protections from restrictive municipal ordinances and public and private nuisance actions. Protected agricultural activities include production, processing and packaging of agricultural products, farm market sales and agriculture-related educational and farm-based recreational activities. Commercial farms are also protected from unduly restrictive municipal regulations and public and private nuisance lawsuits.

These protections are available to commercial farms which:

- are operated in conformance with federal and state laws, agricultural management practices recommended by the New Jersey State Agriculture Development Committee (SADC) or site specific agricultural management practices;
- are not a direct threat to public health and safety; and
- are located in an area where agriculture was a permitted use under municipal zoning ordinance; or
- were operating as of December 13, 1997

The SADC seeks to preserve agricultural viability, an individual parcel's ability to sustain “a variety of agricultural operations that yield a reasonable economic return under normal conditions. . .”. Both the SADC and the State Planning Commission seek to retain large masses of viable agricultural land.

While the New Jersey right-to-farm statutes extends protection to all farms in the State, incorporating right-to-farm language into the municipal ordinance makes a strong statement to those developing lands within the Township (see [Appendix E](#) for Township’s adopted Right-to-farm ordinance). Continuing development will undoubtedly be at odds with existing agricultural operations and nuisance conflicts will arise. The Township adopted a right to farm ordinance that was modeled on the SADC example. The Township’s right to farm ordinance uses the same definitions and regulations as identified in the SADC model ordinance and strives to remain consistent with SADC regulations. Tewksbury’s right to farm ordinance, like that of SADC, strives to encourage and promote farming activities and minimize conflicts between residential neighborhoods and farming practices.

It should be noted that the Hunterdon CADB has developed a “Policy for Public Hearings Involving Right to Farm Conflicts”, which was developed through guidance offered by the SADC.

Municipalities are able to limit the number of right to farm complaints and encourage farming as an industry by enforcing the comprehensive Right to Farm ordinance and by requiring notification of homeowners when purchasing a home in a new subdivision where active agriculture occurs on adjacent property.

The Township's Right-to-Farm ordinance is based on the SADC model and includes a mediation process and provides nuisance protection for farmers conducting agricultural processes. The Township has not revisited the adopted Right-to-Farm ordinance since its adoption, however, consideration of expanded discussion intended to reduce conflicts and increase awareness of agricultural practices could be reviewed at such time. To date, the Township's Farmland Assessment does not apply to structures or provide for rollback penalties for farmland conversion.

2. Farmland Assessment

The Farmland Assessment Act of 1964 purpose is identified as, "The Farmland Assessment program is a tax incentive which reduces property taxes on active commercial farmed land, thereby assisting farmers with a critical financial aspect in helping to keep land in farms. This tax incentive is made possible by the Farmland Assessment Act of 1964, N.J.S.A. 54:4-23.1 et seq."

The eligibility requirements are:

- The applicant must own the land;
- Land must consist of at least five contiguous farmed and/or woodland management plan acres. Land under or adjoining a farmhouse is not counted towards the minimum five acres;
- Gross sales of products from the land must average at least \$1,000 per year for the first five acres, plus an average of \$5.00 per acre for each acre over five. In the case of woodland or wetland, the income requirement is \$.50 per acre for any acreage over five. Dependent on the agricultural or horticultural products being produced, the farmer can also offer clear evidence of anticipated yearly gross sales, payments, or fees within a reasonable period of time; and,
- The property owner must represent that the land will continue in agricultural or horticultural use to the end of the tax year.

The Township uses the 1964 Farmland Assessment Act and subscribes to the eligibility standards it uses.

B. Additional Strategies

1. Permit Streamlining

The Township should consider reducing costs of building permits for structures associated with agricultural use. This allows farmers to construct necessary facilities without the high costs associated with permitting. In addition land use regulations should be reviewed and updated to minimize deterrents to agricultural activity, and provide increased opportunities for agricultural expansion. This may include expanded opportunities for direct marketing of locally grown produce, which eliminates the middleman and makes agricultural activities more rewarding to the farmer. Additional streamlining process such as site plan approvals and expedited permits for agriculturally related improvements may be considered in the future to help elevate some of the associated time and costs, however, nothing is planned at this time.

2. Agriculture vehicle movement

The Township protects all agricultural activities as outlined under §23-1 of the Right-To-Farm ordinance. However, the transportation of slow-moving equipment over roads within the municipality is

not specifically stated. Some actively farmed sites where farm vehicles are routinely moved along the public way have road signage indicating farm machinery movement. However, many of the routes where farm equipment has to be moved on a public road do not have signage warning passenger vehicles about slow moving equipment. Additionally, roadway shoulders along much of the rural roads of the Township are narrow and do not provide much clearance for safe passing of slow moving machinery by passenger vehicles. As development has moved closer to active farm sites, conflicts between farm and passenger vehicles may become more prominent. Additionally, farm equipment such tractors have become increasingly large as more area is devoted to farming field crops. The Township may consider reviewing areas where these conflicts are likely to occur and determine better solutions to alert vehicles to slow moving equipment. This could mean increasing the number of signs, placing signs in more prominent viewing areas and providing gravel shoulder areas where feasible to allow tractors to move to the side to allow vehicles to pass safely.

3. Farm Labor Housing/Training

The Township's zoning ordinance allows for accessory dwellings for farm workers through the Agricultural Option with a deed restriction for the use. Agricultural labor is typically associated with crops requiring manual harvesting and livestock farms, where additional farm labor is required for the care of animals. The Township contains the latter type of farm where farm labor is necessary for the continuation of agricultural industries.

4. Wildlife Management Strategies⁵

The Hunterdon County Comprehensive Farmland Preservation Plan outlines a variety of issues and strategies for wildlife management. The following section has been provided by the County.

Management of nuisance and crop damaging wildlife is critical to the short and long term sustainability of Hunterdon County's agriculture industry. Crop damage from wildlife leads to economic loss for the farmer and/or land owner, and is a serious problem in Hunterdon County, with "large" losses reported in certain instances. Most damage is caused by a multitude of insects, as well as deer, turkey, Canada Geese and other wildlife. It is imperative to not only control and manage damage to crops, but also to do it in a manner which creates the least amount of collateral natural resource damage (i.e. limit pesticide use to the greatest extent possible, using natural pest control). State, county, and local government units must be sensitive to the negative economic impacts caused by crop damage, and support efforts to control it through education, technical and financial assistance, and regulatory flexibility.

Deer exclusion fencing may be effective for protecting produce, since produce is grown on relatively small plots of land. However, it is not cost effective to erect deer fencing on very large tracts of land where, for example, corn may be grown⁶. One key way for Hunterdon County farmers to control damage from deer is through hunting of crop damaging animals. This hunting is allowed on private lands through depredation permits, issued by the New Jersey Department of Environmental Protection's (NJDEP) Fish and Wildlife Program. In many instances, this is the

⁵ Ibid

⁶ The SADC Farmland Stewardship Deer Fencing Program provides a cost sharing grant for the installation of Deer Fencing on Permanently Preserved Farmland

only short term solution to control damage of crops by what is widely considered an excessive deer population in the County. Hunterdon County farmers continue to work with the NJDEP and NJDA, as well as counties and municipalities, to implement wildlife control strategies on privately and publicly owned land. One example of this cooperation is coordinated hunting of nuisance animals on county owned lands.

Municipalities may approach the Hunterdon County Parks Commission with a request to stage a hunt on County owned lands, typically when such lands are adjacent to other publicly owned lands. The Parks Commission works with the town on details of a proposed hunt, but the Township generally is the lead implementing entity. Hunting Clubs or professional hunting companies may be brought in to perform an approved hunt. This cooperative program between municipalities and the Hunterdon County has been successful in controlling nuisance wildlife, especially deer.

The New Jersey Department of Agriculture's Division of Plant Industry works to safeguard New Jersey's plant resources from injurious insect and disease pests. The Division implements several programs for detection, inspection, eradication and control of insect pests, which helps to ensure that the public can enjoy high quality, pest-free agricultural products. In addition, "the Division oversees programs that certify plant stock for interstate and international shipments, protects forested communities from tree loss caused by the gypsy moth and Asian long-horned beetle, inspects honeybees for harmful bee diseases and pests, regulates the quality of plant seeds, and produces and releases beneficial insects to reduce crop and environmental damage and decrease dependence on chemical pesticides. Protection of forest resources is important to Hunterdon County farmers who harvest wood as part of woodland management plans on their farmland assessed properties. One important example of the Division of Plant Industry's work is in control of the gypsy moth. The gypsy moth is considered the most destructive defoliation forest insect pest in New Jersey. The Division's Gypsy Moth Suppression Program is a voluntary cooperative program involving local governments, county and state agencies, as well as the USDA Forest Service. The Division promotes an integrated pest management approach, which "encourages natural controls to reduce gypsy moth feeding and subsequent tree loss."

However, aerial spray treatments of the chemical insecticide *Bacillus thuringiensis* are utilized when gypsy moth cycles are at a peak and natural controls are not sufficient to control defoliation.

The federal government is a key partner in supporting Hunterdon County agriculture. There are several federal programs that support, or could support, the agricultural industry in Hunterdon County.

5. Agriculture Education and Training

The Township does not currently offer any agricultural education but does support the efforts of the County. The following is provided by the County on their efforts:

To sustain a modern, diverse and stable food and agricultural industry, education and progressive, ongoing training for farmers will promote a more efficient and productive business

environment. This includes programs covering “farmer risk management education, labor education including worker safety, agricultural leadership training, secondary school and college agricultural education.”

One educational link for Hunterdon County agricultural land owners and operators is to collaborate with the Rutgers Cooperative Research and Extension (RCRE) of Hunterdon County (associated with Cook College, Rutgers University). There is not a minimum or maximum size farm to which the RCRE will lend assistance. During the growing season, RCRE of Hunterdon County can provide one on one, on-site consultations with farmers to assist with control of insect infestations and plant diseases for fruits, vegetables, greenhouse nurseries and ornamentals, Christmas trees, and also for field crops. Similar farm animal consultation can be provided on a year round basis. During these one on one consultations, technical scientific research is relayed to the farmer in a useful and applicable manner. However, it is reported that these on-site consultations have become infrequent. This is due, in part, to more farm visits by chemical company representatives that supply herbicides and pesticides, and the decline in the dairy industry to only several Hunterdon County dairy farms. Also during the growing season, RCRE of Hunterdon County coordinates with other RCRE offices in northwest New Jersey to conduct on-site farm meetings regarding a range of agricultural issues including vegetable growing, safe operation of farm equipment, and programs to certify and recertify farmers for pesticide application licenses. Hunterdon County farmers are invited, and do attend.

In the winter months, regional and local classes are conducted by RCRE of Warren and Hunterdon Counties on a diverse set of agriculture topics. Two of special significance are conducted with the North Jersey Vegetable and Fruit Growers Association. A class on vegetable growing is conducted at the Snyder Farm in Pittstown, Hunterdon County, while a similar class on fruit growing is held at the Warren Grange in Franklin Township, Warren County. Hunterdon County farmers and the RCRE of Hunterdon County participate in these classes. RCRE of Hunterdon County also provides practical assistance to farmers.

Examples include:

- Assistance in obtaining water certification and registration permits from the New Jersey Department of Environmental Protection, for groundwater and/or surface water allocations;
- Soil testing for fields and pastures;
- Assistance with obtaining farmer certificates for N.J. Division of Motor Vehicle registrations;
- Assistance with applications for “Outstanding Young Farmer” (OYF) nominations. OYF is a state award given annually by the NJDA which “recognizes the outstanding achievements of a young person engaged in farming in New Jersey”
- Assistance with grant applications to the NJDA for various types of economic assistance. Examples include “Jersey Fresh” grants to advertise;
- Distribution of “Jersey Fresh” and “Jersey Grown” promotional material such as bumper stickers, banners and t-shirts;
- Assistance to connect owners of farmland with tenant farmers, so that land may stay in farmland assessment;

- Assist new farmers with various regulatory requirements, and acquaintance with various farmer organizations;
- Provide outreach through the RCRE of Hunterdon County Website, and at the annual 4-H Fair

Through its Division of Agriculture and Natural Resources' Natural Resource Conservation Program, the New Jersey Department of Agriculture offers technical, financial and regulatory assistance, and provides educational outreach to landowners throughout the state. The Department also offers, in conjunction with the U.S. Department of Agriculture, farm risk management and crop insurance education programs to assist farmers in understanding what assistance is available to reduce agricultural risks

Hired farm workers continue to be one of the most economically disadvantaged groups in the United States due to low wages, seasonal employment and limited participation in the non-farm labor market. Therefore, as an important statewide resource to the agricultural industry, the New Jersey Department of Labor recommends that more must be done to ensure a well-trained, educated farm labor workforce, that has adequate living and working conditions, and is trained in worker safety. Agriculture labor education and training funding may be available through the New Jersey Department of Labor and Workforce Development programs. These programs can help to assist in upgrading the skills and productivity of the agricultural workforce. Some of the programs which may be applicable include Customized Training Initiative, Basic Skills Program, and Occupational Safety and Health Training Program.

Finally, as a form of "education", government agencies at the state and county level can provide continuous outreach information to farmers, to ensure they take full advantage of all federal and state loan, grant, education, and technical assistance programs. This is especially important since these programs are meant to aide the farming business to thrive and survive. Due to the complexity and vast array of the programs, they may be unknown to many farmers.

Youth Farmer Education Programs

Due to the aging farmer population in Hunterdon County (52.7 years in 1969, as compared to 56 years in 2002 and 57.6 in 2007) the next generation of the County's farmers needs to become interested in, and exposed to the business of agriculture, and be prepared to enter the industry.

The National Future Farmers of America (FFA) Organization "operates under a Federal Charter granted by the 81st Congress of the United States, and is an integral part of public instruction in agriculture. The National FFA Organization was founded in 1928, and currently has 7,242 chapters and nearly 500,000 members. The Hunterdon County Agriculture Community can look to expand agriculture education beyond the Vocational Technical School so that more youth are exposed to agriculture, and may become interested in it as a future career. Youth agriculture education classes or programs are not offered at any elementary schools within the County, but are an opportunity to cultivate young people's interest in the field of agriculture. The National Agriculture in the Classroom program helps K-12 students become aware of the importance of agriculture. 4-H is an informal, practical educational program for youth, which assists young people interested in farm animals through livestock projects. The New Jersey Agricultural

Society's Agriculture Leadership Program provides young professionals in agriculture with leadership development skills and opportunities.

In addition, the New Jersey Department of Agriculture offers an "Agricultural Education" program. This is "a systematic program of instruction available to students desiring to learn about the science, business, and technology of plant and animal production and/or about the environmental and natural resources systems. A complete Agricultural Education program is composed of three components: class/lab instruction, supervised agricultural experience (SAE), and FFA, which provide a well-rounded and practical approach to student learning

Conclusion

Tewksbury Township has a long agricultural history which can still be witnessed in the large preserved and actively farmed agricultural areas throughout the Township. Tewksbury has supported and preserved highly prized agricultural areas for continued use and the planning policy has encouraged agriculture in an effort to allow agricultural business to flourish. Tewksbury seeks to preserve and encourage as many agricultural operations as possible by utilizing a variety of land preservation techniques, economic strategies, and educational activities to support future generations of farms.

Tewksbury seeks to expand the base of preserved farmland and actively farmed areas throughout the Township. The goal of the Township in the project area is to create as much contiguous farmland as possible. The Township recognized the value and importance of preserved farms. By expanding on core areas of preserved farmland, agriculture can be sustained into the future assuring that the precious remaining pieces of the Township's rural fabric are not lost forever.