



May 22, 2006

Memorandum

To: Montgomery County Planning Board
From: Krishna Akundi, Ph.D., Research & Technology Center, 301-495-4561
Re: Agricultural Economy: A Summary of Statistics and Local Views

Last year marked the 25th Anniversary of the Agriculture Reserve. The Planning Board, County Council, and Department of Economic Development have asked that we take a look back: Where are we now? Where do we go from here?

Staff spent three months traveling along rural roads to some of the County's farm-based communities such as Brookeville, Poolesville, and Laytonsville. Staff interviewed educators, agriculture extension agents, farmers, and farm-related business owners to learn what problems they face, what type of assistance they prefer from local government, and where do they see the local farm economy in the next 5-, 10-, 20-years.

Here are some of the voices we heard:

"Montgomery County's Agriculture Reserve is to the Washington DC region what Central Park is to New York. It is a cultural resource."

"Agriculture adds to the County economy. It certainly does not fuel the economy like the I-270 corridor."

"There are 100 'multi-generational' farm families in the County. At least one person from those families will continue in farming."

"Traditional farming is dying in Montgomery County. The future is in niche markets: cut flowers, pick-your-own produce, horse operations, and ethnic vegetables."

"There is no money to be made in farming given the way Park & Planning has things set up."

"They can diminish a farmer's equity with the stroke of a pen."

There is agreement on one point: Montgomery County is unique among urban counties in the nation. This County has preserved 93,000 acres of farmland and open space at the urban fringe. National organizations including the Natural Resources Defense Council and the American Farmland Trust have heaped praise on the County for its accomplishments. As noted in our interviews, after 25 years, the agriculture reserve remains strong and presents some novel opportunities but it also faces severe threats.

Strengths

- The most acres under easement
- An affluent citizenry
- Farmer's Markets
- A supportive and knowledgeable County Extension & Agriculture Service
- An established equine industry: over 12,000 horses and 233 horse farms
- A leading horticulture industry: 325 businesses
- A growing produce sector: 37 farms and 3,000 acres under cultivation.

Threats

- Clustering
- Large Public Institutional Facilities
- Increased Use of Sand-mounds
- Abuse of Child Lot Provision
- Availability of Labor
- Loss of Equity

Opportunities

- Bio-engineered crops
- Bio-fuel/bio-diesel production
- Composting
- Ethnic vegetables
- Hydroponics

Attached is a 50-page document. Section one summarizes the establishment of the Agricultural Reserve in the 1980s. It also includes a glossary of selected terms.

Section 2 provides a statistical profile of farming and agriculture in Montgomery County. Taking a larger perspective, in this report we consider the relative importance of agriculture to other Maryland counties as well as to other states. Agriculture is an ever-changing industry: the crops that were once dominant will give way to others. For example, in Montgomery County, traditional crop farming has been overshadowed by horticulture and equine operations.

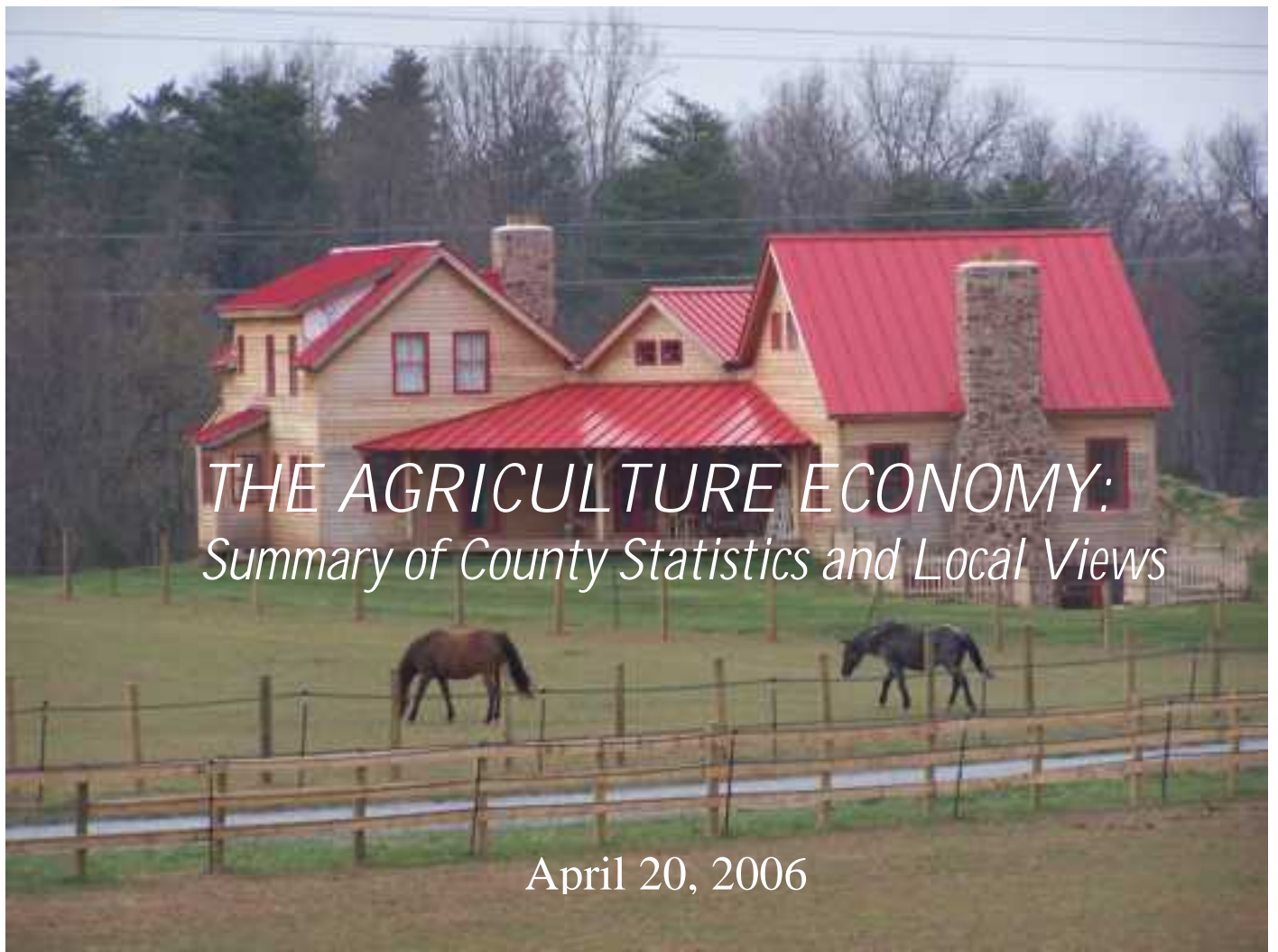
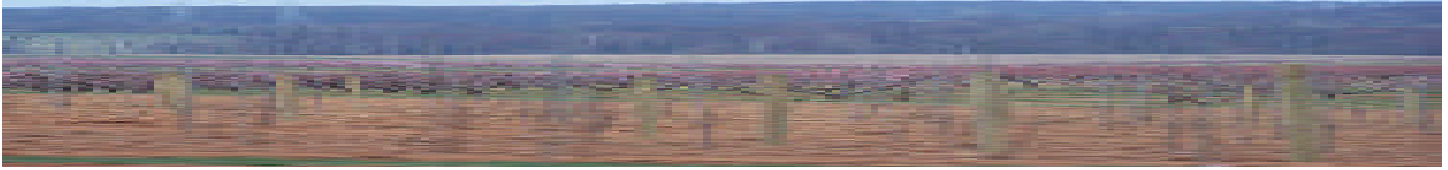
What are some of the issues that concern farmers and agriculture related businesses? This question was posed not only by Montgomery County Officials but also by the Governor of Maryland during a "listening tour" in 2005. In section three, staff highlights some pressing issues as reflected in our interviews with farmers and researchers, and concerns brought out at the Governor's listening tours.

Staff also asked interviewees to speculate on the future of agriculture in Montgomery County. This exercise demonstrated how varied and diverse the County's agricultural market is. The traditional farmers were more cautious and skeptical while horticulturalist and equine operators were optimistic and ebullient.

In the final section, staff includes an annotated bibliography that directs readers to works on Agricultural Preservation, Development Pressures, Financial Supports and Incentives, Farm Tourism, and Best Practices. Also included interviewee list and interview notes.



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*A memorandum prepared by the research staff of the Research and Technology Center, Montgomery County Department of Park and Planning.
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The Agriculture Economy: A Summary of Local Views and Statistics

REPORT OUTLINE

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I INTRODUCTION

Twenty-five years ago, the Montgomery County Council and the Maryland-National Capital Park and Planning Commission established the Agriculture Reserve. To preserve agriculture and open space at the fringe of a dynamic urban metropolis is unique. Royce Hanson called the Reserve a cultural resource, a theme echoed by many. Economic developers will even agree that when businesses and families consider locating to the County, they will take into account the recreational amenities and quality of life afforded by the Reserve.

One-third of Montgomery County's total land area is rural. In this rustic, bucolic setting, one finds wide expanses of hills and valleys, undisturbed forests, and farmers growing corn, soybeans, and wheat. There are also a growing number of horse operations and horticultural businesses. Perhaps the beauty and expanse of the Agriculture reserve is best described by Melanie Choukas-Bradley, the educational director of [Celebrate Rural Montgomery](#). She described the Reserve to talk show host Kojo Nnamdi in this way: "The Potomac River marks the Reserve's southern boundary and the Patuxent River its northern boundary. If you climb Sugarloaf Mountain and look down you will see the patchwork of farms, fields and woodlands. There are also many towns in the Reserve--some of the larger one's are Poolesville, Damascus, and Laytonsville. Smaller communities include Comus, Barnesville, and Hyattstown."

What was the vision behind the Reserve?

Dr. Royce Hanson was chairman of the Planning Board when the Reserve was established. Staff met with Dr. Hanson in late September to learn about the principle and vision behind the Reserve. He also shared his recollection of events that spurred creation of a "rural wedge" in the northern and western sections of the county. (See interview notes in appendix)

"Retain where possible a critical mass of unfragmented farmland that could be farmed in perpetuity." To bring this vision to reality, Park and Planning and the County Council relied on four pillars: the County's Master Plan, the development of the RDT zone, the use of transfer development rights, and the restriction of sewer service.

The rural density transfer zone (RDT) was critical to the creation of the Agriculture Reserve.

Total Acreage in Montgomery County	316,800
Acreage Zoned RDT	96,538
Farmland Acreage in RDT Zone	63,212
Farmland Acreage outside RDT Zone	11,785

Thirty percent of the County's total land area is zoned RDT, however, not all of that land is protected from development. According to the County's Department of Economic Development, around 60,000 acres have been protected from development through programs such as the transfer of development rights, the Maryland Environmental Trust,

the Maryland Agricultural Land Preservation Foundation, the Agricultural Easement Program and the Rural Legacy Program.

During staff's interviews with farmers, it quickly became clear that any conversation on the future of farming or the agricultural reserve could not be separated from a discussion of open space, RDT zoning, and TDR's. Hence, this review of terms.

Glossary

Agriculture: The process of producing food, feed, fiber and other desired products by the cultivation of certain plants and the raising of domesticated animals (livestock). This process involves farms and farming but also agribusiness, researchers, and policymakers.

Agriculture Reserve: Generally, it is a planning term that refers to an area in which farming is the preferred economic activity. Districts may be voluntarily created by landowners who receive benefits in return for not developing the land for a certain number of years, or they may be designated in a local land use plan. Specifically, in the case of Montgomery County, the Agricultural Reserve is the primary agricultural area (in the northeastern and western parts of the county) that includes the majority of working farms as well as other non-farm land uses that serve to define and support those farms. The Reserve, as defined in the [1980 Functional Master Plan](#), includes 110,000 acres.

Agribusiness: It is a broad category referring to agriculture-related businesses that supply farm inputs such as feed, seed, fertilizer and equipment; and businesses that market farm products such as warehouses, processors, wholesalers, transporters, and retailers. Farms are not usually considered as an agribusiness.

Conservation Easement: According to the [American Farmland Trust](#), conservation easements are deed restrictions that a landowner voluntarily places on his/her property. The reason for an agricultural conservation easement is to protect productive agricultural land, ground and surface water, wildlife habitat, historic sites or scenic views. The easement authorizes a qualified conservation organization or public agency—designated by the landowner—to monitor and enforce the restrictions. At the federal level, the USDA's Farm and Ranch Lands Protection Program ([FRLPP](#)) provides communities with the financial and technical assistance to purchase conservation easements. In fiscal year 2005, Maryland received an additional \$2.1 million dollars under the FRLP program. The state of Maryland through its [Maryland Environmental Trust](#) (MET) maintains, monitors, and enforces conservation easement programs. MET has preserved 9,844 acres of land. The agency also provides assistance to local land trusts. There are four land trusts in Montgomery County. These are the Greater Sandy Spring Green Space, Kensington Land Trust, Potomac Conservancy, and the Sugarloaf Countryside Conservancy. In Montgomery County, MET has preserved 2,086 acres.

Development Rights: As described in a [National Education Policy Center](#) report, a landowner owns a bundle of rights that go with the land. These rights include water rights, air rights, right to sell the land, the right to pass it along to heirs, the right to use the land, and the right to develop it. Any of these rights can be separated from the bundle and sold, donated, or otherwise encumbered.

Farm: The [U.S. House of Representatives Committee on Agriculture](#) defines this term, as used in the Census of Agriculture, to mean any place that has or has the potential to produce \$1,000 or more in annual gross sales of farm products. [Statistics Canada](#) defines “farm” in terms of products produced: A farm is an agricultural operation that produces at least one of the following: crops, livestock, poultry, animal products, and horticulture.

Maryland Agriculture Land Preservation Foundation (MALPF): Foundation created by the Maryland Department of Agriculture to administer statewide agricultural land preservation districts and to purchase conservation easements. As of 2004, the Foundation reported 232,767 acres preserved. The objective of the agriculture district program is to reserve at least 50 contiguous acres for agriculture for producing food or fiber or land that has the potential to do so. This is a voluntary program. Landowners elect to be part of the agriculture district. As part of the district, landowners agree not to subdivide their land for residential, commercial or industrial purposes. Thus, we could have a situation where there are two adjacent 100-acre farms but only one of them is in the district while the other is not. District designation is not permanent. The agreement that a landowner enters into with the MALPF is valid for five years. Individual counties, such as Montgomery, may have regulations that are more stringent with respect to an agriculture district and may also have other programs to ensure agriculture preservation such as Rural Legacy, Critical Farms, Conservation Easements, Purchase Development Rights, Transfer Development Rights and Land Trusts. Under the MALPF program, 3,322 acres of Montgomery County farmland have been protected.

Purchase Development Rights (PDR): A farmland owner sells his development rights (also known as a conservation easement) to a government agency or private land trust and receives compensation in return for the restrictions placed on the land. The farmer retains title to the land and the right to sell or pass along to heirs. However, the land must be retained for use as a farm or open space.

Rural Density Transfer (RDT) zone: Type of zoning designed by the Park and Planning Commission as part of its efforts to protect farmland and open space in the rural areas of the County. The RDT zone permits no more than one house per 25 acres and the minimum lot size is one acre. Property owners inside this zone are allowed to sell or transfer their development rights. A larger discussion of RDT may be found on-line in the Commission’s publication, [Plowing New Ground](#). The Commission’s GIS Property Layer indicates that there are 5,310 parcels in the County’s RDT zone: nearly 96,540 acres. Sixty-five percent of the RDT zoned acreage is farmland.

Sustainable Agriculture: An agriculture production and distribution system—as outlined by the [Leopold Center at Iowa State University](#)— that achieves the following:

- Integrates natural biological cycles
- Protects and renews soil fertility and the natural resource base
- Optimizes the management and use of on-farm resources
- Reduces the use of nonrenewable resources and purchased production inputs
- Provides an adequate and dependable farm income

- Promotes opportunities in family farming and farm communities
- Reduce adverse impacts on health, safety, wildfire, water quality & environment

Sustainable agriculture is gaining ground especially through CSA's or "community supported agriculture" farms. There are 37 CSA's in Maryland according to the [USDA database](#). Six of those are located in Montgomery County: Avianmead Organics in Brookeville, Comus Ridge Farms in Comus, Query Mill Farm in Gaithersburg, Red Wiggler Community Farm in Clarksburg, and the Sandy Spring CSA in Silver Spring.

Transfer Development Rights (TDR): A market-based approach to land use control. TDR's have been used to protect/preserve farmland, rural communities, open space, historic sites, wildlife habitats, water quality and other natural resources. To date, there are 135 TDR programs across the United States. Four such programs have been considered exceptional: [Montgomery County, Maryland](#); [Calvert County, Maryland](#); [Boulder County, Colorado](#); and the [New Jersey Pinelands](#). Montgomery County's program has been described as allowing a rural landowner to sell the development rights to his/her property to another (usually a developer) in those areas of the county designated for growth and development. The TDR allows the buyer of those rights to build at a higher residential density. As of 2002, over 40,000 acres of land have been permanently preserved through Montgomery County's TDR program.

Urban Agriculture: A form of agriculture best described as the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities. Urban agriculture is represented by greenbelts; farming at the city's edge; vegetable plots in community gardens, and food production in inner city vacant lots.

Methodology and Organization of Report

Volumes of data have been collected on the local farm and agriculture economy. This type of data is reported by the County's [Agriculture Services Division](#) and the State's [Department of Agriculture](#). There is also a wealth of research on the future of farming and agriculture economics. Many of these studies have been published by the [University of Maryland's College of Agriculture](#) and the USDA's [Economic Research Service](#). The focus of this 45-page report, on the other hand, is to relate the concerns and views of those individuals who live, work and play in the Agriculture Reserve as it relates to economic development.

Over the course of three months, staff interviewed a number of persons, including grain farmers (those whose families have farmed for generations as well as the more recent hobby farmer), equine operators, and horticulture businesses. The report is organized into five sections: an introduction, statistical profile, issues, vision, and appendices.

II STATISTICAL PROFILE

This section begins with a demographic snapshot of the County's farming communities: households, incomes, employment, and business diversity. Next, the farm economy is examined: number and size of farms, as well as the type and market value of products. The report also places the County's agriculture economy in the larger context— i.e., in terms of the state and national farm economy. Lastly, the authors consider the economic impact of farming.

A. Demographics

For analysis purposes, the Maryland-National Capital Park and Planning Commission has divided the County into 22 planning areas. The Agriculture Reserve is part of the Poolesville and Damascus Planning areas. According to the [2003 Census Update Survey](#), there were 38,000 households living in the rural parts of the County. The average age of this rural population was 35 years compared to 37 years for the countywide population. Ninety percent of the rural population is white compared to 68 percent countywide. Twenty-one percent of the area's 25 and over population holds an advanced degree (Master's, Doctorate, or professional) while countywide it is 34 percent. In 2002, the median household income for the County's rural populace was \$99,490—twenty-five percent higher than the countywide median of \$79,115.

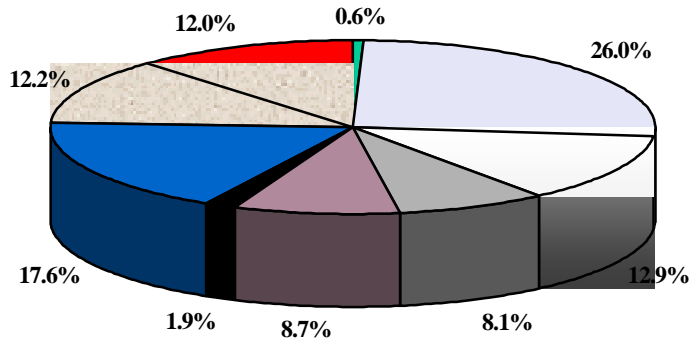
There are nine sizeable communities in rural Montgomery County: Barnesville, Bealesville, Brookeville, Boyds, Damascus, Dickerson, Hyattstown, Laytonsville, and Poolesville. Examining business and employment data for these communities, pulled from the Census Bureau's *Zip Code Business Patterns*, we estimated the size of the County's rural non-farm economic base.

2003 Rural Non-Farm Economic Base

Establishments	1,124
Employment	8,988
Annual Wages	\$272,091,000

The primary non-farm industries that drive the rural economy appear to be Construction, Professional Services, Trade & Transportation, Support Services and Personal Services. The graph below shows the composition of the rural non-farm economy in terms of the number of establishments in each industry as a percent of all businesses in the rural economy.

COMPOSITION OF THE RURAL ECONOMY



Forestry	Mfg & Construction	Trade & Transportation
Finance & Real Estate	Education, Health, & Arts	Information & Mgmt
Professional Services	Support Services	Lodgings & Personal Services

Source: 2003 U.S. Census Bureau, Zip Code Business Patterns
<http://censtats.census.gov/cbpnaic/cbpnaic.shtml>

B. County Farm Economy

Agriculture has played a role in the County since the 18th Century when tobacco was the premier staple. Tobacco's reign was displaced by grain farming in the 19th Century. In the first half of the following century, farmers appeared to gravitate towards dairy farms. However, by the 1950s and early 1960s, dairy farming had begun a precipitous decline. The County went from a peak of 500 dairy farms to a mere 7 as reported in the 2002 Agriculture Census. Many abandoned and obsolescent dairy farms are being reborn as farmettes and country estates. The late 20th Century and the beginning of this new century find that no one type of agriculture dominates the County's farming economy. There is far more diversity. In addition to traditional agriculture, horticulture and equine operations sustain the farm economy.

Doug Tregoning, the County's Agriculture Extension Service agent, recently commented: "Agriculture adds to the economic base. It certainly does not fuel the local economy the way the Technology Corridor does."

Montgomery County’s industries reported \$32.4 billion in earnings in 2002. Half that amount came from the burgeoning services industry and 22 percent came from government. Farms generated \$16.141 million in earnings. According to the 2002 Agriculture Census, there were 577 farms— this suggests that County farms, on average, grossed \$28,000 in income per farm.

While it may be true that farm incomes are not a major component of the larger economy, agriculture’s importance is magnified by the intermediate purchases and sales that occur and the final value of the agricultural products produced.

Staff examined the number and size of farms, tenure and organization, and the principal agricultural products of the County’s farm economy.

Size of Farms

Number of Farms by Acreage and Value

Acres	Farms	Value	Farms
1 - 9	88	>\$2,500	285
10 - 49	260	2,500 - 4,999	55
50 - 179	134	5,000 - 9,999	58
180 - 499	62	10,000 - 24,999	73
500 - 999	20	25,000 - 49,999	28
1000+	13	50,000 - 99,999	23
		100,000+	55

Source: National Agriculture Statistics Service
<http://www.nass.usda.gov/census>

The average size of a Montgomery County farm is 130 acres. The size of the farm also depends on what is being raised or grown. For grain farmers, especially, a large acreage is important. They have to produce enough to either break-even or overcome their equipment and transportation costs. Farming does not generate large revenues. As shown in the above table, only 9 percent of county farms generated \$100,000 or more in sales. The vast majority generated less than \$5,000 per year. The market value of goods produced is important to a farmer but his greatest asset is in the land he owns. Falling land values could spell the end of a working farm.

Of the 577 farms in Montgomery County, 388 are located in the northern and western parts of the county—in the rural communities of Barnesville, Beallsville, Brookeville, Boyds, Clarksburg, Dickerson, Damascus, Laytonsville, and Poolesville. The largest tracts of farmland are also found in these rural communities: 11 of the 13 farms that are over 1,000 acres.

Organization and Tenure of County Farms

Media reports in the 1970s and 1980s seemed to suggest that the family farm was being replaced by corporate agriculture. Reports of the family farm's demise were greatly exaggerated. In 2002, nearly 90 percent of all farms in the nation were family farms; 86 percent of Montgomery County farms were family-owned. This county, however, is home to more corporate and institution-managed farms than either the state or nation: eight percent of all county farms.

Farm Organization
(reported as a share of all Farms)

Organization	U.S.	Maryland	Montgomery
Family-Farm	89.7%	86.7%	86.1%
Partnership	6.1%	6.3%	5.7%
Corporate Family-Farm	3.1%	5.3%	5.4%
Non-Family Corporation	0.3%	0.7%	1.0%
Institution	0.7%	1.0%	1.7%
Number of Farms	2,128,982	12,198	577

Source: National Agriculture Statistics Service
<http://www.nass.usda.gov/census>

Operating a farm is a business; and as a business, farms are organized by the federal government into one of four ownership or management models: family farm—which is similar to a sole proprietorship; partnership, corporation, and institution. There are two types of corporate farm. Thirty-one farms or five percent of county farms have been organized for business and legal purposes as corporate family farms— i.e., the stockholders of these corporate farms are related by blood or marriage. Six county farms are managed by non-family corporations; candy maker Mars Inc., for example, holds over a thousand acres near Laytonsville. Institutions, such as the Maryland National Capital Park and Planning Commission and the Washington Suburban Sanitary Commission, manage ten farms.

Nationally, the number of corporate non-family farms did increase 13 percent between 1987 and 1997. Over the next five years, however, there were 54 fewer corporate non-family farms nationwide. In the state of Maryland, on the other hand, the number of non-family corporate farms increased from 65 in 1997 to 84 in 2002. The number of non-family corporate farms doubled in Montgomery County between 1997 and 2002. The rise in corporate non-family farms, statewide and countywide, has paralleled the decline in corporate family farms.

The U.S. Department of Agriculture, as part of its quinquennial census, tracks farm tenure: What is a farm's ownership interest in the land? Is all the land used for farming, is part owned and part leased, is it all leased? Statistics indicate that about 70 percent of farms are full-ownership operations. The full-time farm usually is indicative of an operation with modern machinery, well-organized materials handling systems, and skilled management. These full-time operations, depending on scale and sophistication, may also support one or more hired workers. Nationally, 26 percent of all farms exist

under a part-ownership arrangement. In rural Montgomery County, it is a fifth of all farms. Some part of the land is maintained by the legal owner and the remainder is leased. Staff interviewed two farm owners who leased part of their land. These owners had leased a segment of their lands to individuals who would continue in farming while the segment they kept served as either their homestead or as open space. Nine percent of farmers in rural Montgomery County are tenants. A tenant farmer farms, resides on and pays rent for a plot of land owned by someone else.

Tenure Characteristics of Farms

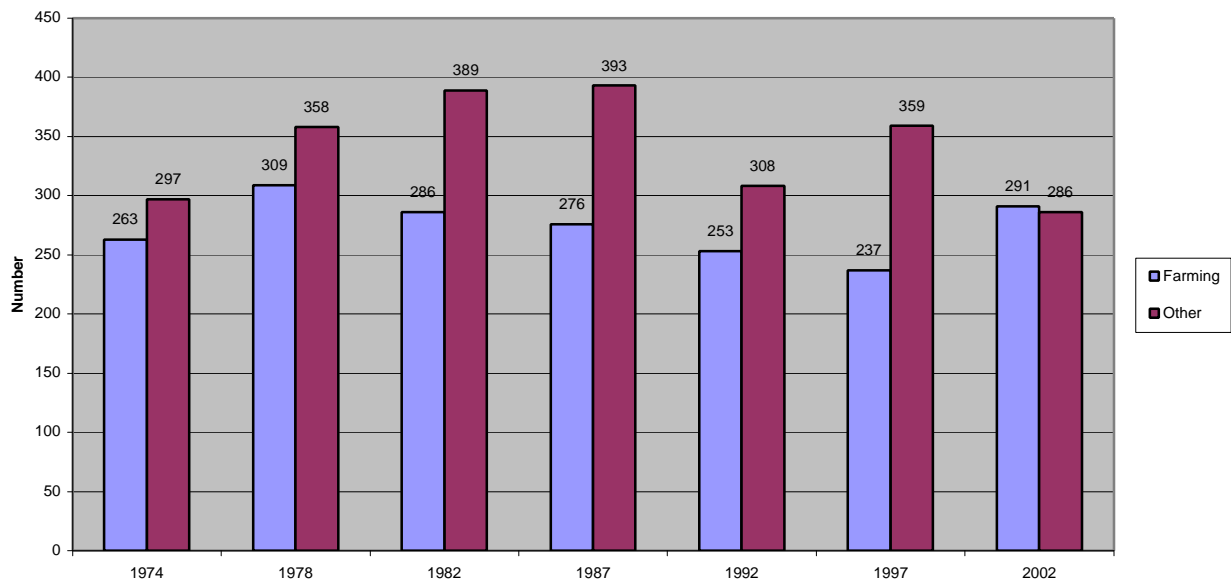
Tenure	U.S.	Maryland	Montgomery	Rural Montgomery
Full-Ownership	67%	70%	74%	70%
Part-Ownership	26%	22%	19%	21%
Tenant	7%	8%	7%	9%
Number of Farms	2,128,982	12,198	577	388

Source: National Agriculture Statistics Service

<http://www.nass.usda.gov/census>

The number of part-ownership farms and tenant farmers in the County has fallen since 1997. The number of full-ownership farms has increased. One reason for this may be the entry of hobby or lifestyle-farmers. The hobby farmer is one whose major source of income is non-farm, and whose principal occupation is usually in some other sector of the economy. Statistics from the 2002 Census of Agriculture show that the primary occupation for 60 percent of farm operators in the U.S. and in Maryland is farming; 40 percent of farmers are, by definition, hobby farmers. In Montgomery County, there appear to be an equal number of primary and hobby farmers. The graphic below illustrates the trend in primary and hobby farming over the past 28 years.

**Occupation of Montgomery County Farm Operators
1974-2002**



Source: 1995 Montgomery County Future of Agriculture Study; National Agriculture Statistics Service

Agriculture Products

Farmers grow crops, raise livestock, or do both on their land. Crop farming is more prevalent in Montgomery County. There are two main types of crops: traditional commodity crops, and horticultural products. Based on data from the 2002 Agriculture Census, staff estimates that 58 percent of all farms in Montgomery County are engaged in traditional crop farming and 30 percent are engaged in growing horticultural products. Our analysis of the data suggests that a typical farm may set aside an average 123 acres to raise traditional commodity crops while 24 acres may only be needed to grow horticultural crops.

2002 Traditional and Horticulture Crop Statistics

Crop	Farms	Acres	Value	Avg ac. per farm
	<i>Traditional</i>	<i>41,149</i>	<i>\$6,194,000</i>	
Barley	9	315		35.0
Corn	48	11,121		231.7
Hay	188	10,974		58.4
Oats	4	60		15.0
Rye	4	168		42.0
Soybeans	43	13,794		320.8
Wheat	34	4,717		138.7
	<i>Horticulture</i>	<i>4,239</i>	<i>\$30,045,000</i>	
Nurseries	69	1,747		25.3
Orchards	33	278		8.4
Flowers	32	108		3.4
Potatoes	6	3		0.5
Sod	6	1,117		186.2
Vegetables	33	986		29.9

Source: National Agriculture Statistics Service
<http://www.nass.usda.gov/census>

The market value of harvested crops increased 84 percent between 1997 and 2002 while the market value of livestock declined 38 percent. Clearly, the future of farming in Montgomery County lies in the harvesting and cultivation of crops. Farming horticultural products, however, is the more high value-added business: uses less acreage and brings a higher return. Research staff estimates that the market value of traditional crops increased, roughly, \$2.8 million between 1997 and 2002. The market value of horticultural products increased around \$13.7 million during that period.

Traditional Agriculture. Traditional agriculture is dominated in this county by three principle crops: corn, wheat, and soybeans. According to 2002 agriculture statistics, there are 125 farms engaged in that type of farming—grain farming. Wheat, soybeans, and corn account for 48 percent of the acreage used by all traditional crops: 19,632. The other large user of acreage is hay. Hay is a traditional crop although it may be considered part of the equine industry.

Horticulture. The County's horticulture industry posted sales of \$125.3 million in 2002. Montgomery County ranks second in the entire state. Horticulture, however, involves not just growing plants but also the related businesses. Horticulture includes the production and marketing of flowers, vegetables, and fruits. In addition, the horticulture industry includes the production, marketing, and maintenance of landscape plants. The production of sod and turfgrass also fall under horticulture. The County's Department of Agricultural Services reports that the industry employs 7,000 workers.

There is great variation in the size of the County's horticulture operations. Farmhouse Flowers and Plants, a cut-flowers enterprise in Brookeville, occupies 3 acres while Ruppert Nurseries out in Laytonsville is 176 acres. Butler's Orchard is 260 acres. In contrast to soybean or corn or wheat farmers, horticulture operations are not necessarily affected by size.

Equine. The equine industry or horse operations are the other leg of the County's agriculture economy. The state of Maryland is home to 90,000 horses; 13 percent or 12,000 horses are in Montgomery County. Statewide, the equine industry is becoming a significant income-producing segment of Maryland's agriculture economy: its assets are valued at \$5.2 billion and it reported sales of \$119.3 million. Horse farms bring a high-value per acre. In Montgomery County, the equine industry is valued at \$84.8 million. The County ranks third in the state and 23rd in the nation for number of horses.

The equine industry is not restricted to horse farms. In fact, staff was corrected by one researcher: there are no horse farms; there are horse operations—2,590 in the County. There are places that keep horses for agricultural purposes—albeit few if any in this County— and those keeping horses for business purposes, namely to breed, board or race. Most family farms that have a horse or two keep them mainly for personal enjoyment— thus, explaining the growth of horse operations in this county. The wealth and affluence of county residents as well as the quality of life and recreational amenities, all make the County ripe for a growing equine industry. Jane Siegler, the owner of Reddemead Farms in Silver Spring summed it up best: “Riding horses is a luxury; it is a luxury that residents of Montgomery County can afford. “

The impact of the equine industry is not lost on crop farmers. Based on our interviews, we found that many farmers engaged in traditional agriculture, set aside some of their acreage for hay production. In other words, hay was not their primary crop but hay production supplemented their income. In 2002, 188 farms grew hay. Recent data from the County's Agricultural Services Division shows that four more farms have opted to grow hay—a total 12,000 acres are now dedicated to growing this crop in the County.

C. Snapshot of National and State Farm Economy

At the dawn of the 20th century, 41 percent of the American workforce was employed in agriculture. Thirty years later, half were in agriculture. The number of persons employed in agriculture has steadily declined. So too, has agriculture's share of the national economy. In 1947, agriculture represented 8 percent of the US Gross Domestic Product. Forty-years later, it represented only 2 percent and as of 2003, it barely contributes 1 percent to GDP. In the first nine months of 2005, the U.S. exported \$56.0 billion dollars of agricultural product to other countries. The nation also imported \$56.0 billion dollars of product— the first time in 40 years that the country has not had a net agricultural trade surplus. However, agriculture is a mainstay for a handful of state economies and the 'bread and butter' for several local economies.

Major Agriculture Product by Region

Region	Market Value	Leading Product(s)
Midwest	\$76,004,355,000	Grains
West Coast	\$34,263,410,000	Fruits
Southwest	\$22,686,595,000	Cattle
Southeast	\$22,386,807,000	Poultry
Gulf Coast	\$14,438,719,000	Poultry
Mountain	\$10,849,890,000	Cattle
Mid-Atlantic	\$10,036,821,000	Dairy and Poultry
New England	\$1,992,000,000	Horticulture

Source: National Agriculture Statistics Service
<http://www.nass.usda.gov/census>

The geographic center of the nation's agriculture economy is the Midwest also known as the country's breadbasket or Farm Belt. Among the thirteen states that make up this regional grouping, Nebraska generated \$9.7 billion dollars in crop and livestock sales. Cattle were the state's leading agricultural product. On the West Coast, California drives the farm and agriculture economy: the state reported \$25.7 billion in sales most of that value coming from fruits and vegetables. Pennsylvania drives the Mid-Atlantic region's agricultural economy.

Ranking agriculture's contribution to state economies—i.e., gross state product— shows that in 2003, the top ten included North Dakota (9.0 percent of gross state product), Nebraska (7.4 percent), South Dakota (7.3 percent), Idaho (6.1 percent), Montana (4.7 percent), Iowa (3.9 percent), Arkansas (3.7 percent), Mississippi (3.2 percent), Oregon (3.2 percent) and Oklahoma (2.7 percent). Agriculture contributes a mere 0.4 percent to the Maryland state economy.

Measuring the value-added contribution of agriculture to a state economy reveals that eight of the ten top states are located in the Midwest. Value-added measures the difference between the sales of an industry and the costs involved in making its products— such as parts, materials, and services. This difference represents payments made by the industry in the form of labor income, interest, profits, and business taxes.

<i>State</i>	<i>Value-Added</i>
California	\$20,741,097,000
Texas	\$10,463,771,000
Iowa	\$9,649,343,000
Illinois	\$7,445,230,000
Nebraska	\$5,953,811,000
Minnesota	\$5,445,579,000
North Carolina	\$5,210,803,000
Arkansas	\$4,515,441,000
Indiana	\$4,438,691,000
Wisconsin	\$4,373,647,000

Source: USDA, Economic Research Service, 2004 Agriculture Statistics

The leading agricultural goods produced in Maryland are poultry and horticulture.

	<u>Maryland</u>	<u>U.S.</u>
Land in Agriculture (acres)	2,077,630	938,279,056
Number of Farms	12,198	2,128,982
2004 Value-Added	\$1,007,002,000	\$148,276,594,000
2004 Farm Earnings	\$319,000,000	\$53,051,000,000
2002 Sales	\$1,293,303,000	\$192,658,597,000

Source: Bureau of Economic Analysis; USDA Economic Research Service

Maryland ranks 36th in terms of sales, farm earnings, and value-added; it ranks 37th in terms of number of farms, and 40th in terms of acreage. The data indicate that the state share of the U.S. agriculture economy is less than one percent. Nonetheless, agriculture plays a significant role in the state's rural counties

Data indicate that the economic centers for agriculture production in the State of Maryland—as measured by market value—are in Wicomico, St. Mary's, Worcester, Caroline and Frederick Counties.

2002/2003 Maryland Farm Characteristics by County

County	Farms	Acreage	Market Value	Earnings	Jobs
Allegany	278	39,379	\$2,135,000	-\$179,000	255
Anne Arundel	432	35,218	\$10,978,000	\$5,241,000	490
Baltimore	784	71,277	\$62,160,000	\$39,304,000	1,322
Calvert	321	30,032	\$3,244,000	-\$2,945,000	427
Caroline	506	114,843	\$104,358,000	\$4,798,000	774
Carrol	1,058	147,252	\$68,956,000	\$15,183,000	1,446
Cecil	468	77,089	\$68,612,000	\$22,766,000	745
Charles	418	52,056	\$6,387,000	-\$109,000	481
Dorchester	351	125,385	\$83,866,000	\$8,018,000	506
Frederick	1,273	195,827	\$96,753,000	\$23,523,000	1,837
Garrett	634	101,444	\$20,857,000	\$10,335,000	777
Harford	683	81,409	\$26,094,000	\$24,587,000	911
Howard	346	37,582	\$21,661,000	\$15,533,000	533
Kent	318	117,372	\$66,836,000	\$25,528,000	700
Montgomery	577	75,077	\$41,634,000	\$16,141,000	801
Prince George	452	45,462	\$12,208,000	\$13,627,000	708
Queen Anne's	443	155,565	\$66,024,000	\$4,783,000	661
Somerset	301	68,153	\$12,196,000	\$1,600,000	828
St. Mary's	577	56,650	\$127,277,000	\$2,286,000	360
Talbot	288	105,729	\$33,451,000	\$6,476,000	326
Washington	775	125,159	\$59,577,000	\$4,860,000	1,095
Wicomico	512	88,470	\$174,594,000	\$29,664,000	952
Worcester	403	131,249	\$123,450,000	\$18,028,000	679
Maryland	12,198	2,077,679	1,293,308,000	289,048,000	17,614

Source: National Agriculture Statistics Service; Bureau of Economic Analysis
<http://www.nass.usda.gov/census>; <http://www.bea.gov/bea/regional/reis/>

Note: Jobs or farm employment is the number of workers engaged in the direct production of agriculture commodities either livestock or crops.

Wicomico County farms generated 174.6 million in farm sales—13 percent of the state's total market value. Allegany County, in contrast, generated \$2.1 million in sales. Montgomery County represents a middle ground: in 2002, the market value of the county's agriculture was \$41.6 million.

Farms in Baltimore County have the highest total earnings: \$39.3 million. Montgomery County farms generated half that amount: \$16.1 million. Earnings per farm, on the other hand, are highest in Kent County (\$80,277) followed by Wicomico (\$57,938) and Baltimore (\$50,133). All this would seem to suggest that farms in Kent, Wicomico, and Baltimore are better off than farms elsewhere in the state.

Frederick County— as described by Billy Willard, President of Willard Agri-Services— is a distribution hub. Many farmers truck their goods out of the state through Frederick and many farms purchase necessary goods or inputs from Frederick County. Frederick County is home to 1,273 farms and 196,000 acres in farmland.

D. Economic Impact of the Farm Economy

Nationally, the influence of the farm economy has declined over time. However, researchers— particularly at the state and metropolitan level—are looking less at the actual dollars generated by farming and more at its ripple effects throughout the state or local economy. Some economic development agencies when analyzing the importance of agriculture combine farm production with agribusiness.

Applying established economic impact models, researchers have estimated the contribution of agriculture and agriculture-related businesses to state and county economies. At a minimum, economic impact reports attempt to answer the question: What additional revenues, wages, and jobs does a particular type of economic activity create in a region? Researchers have used a myriad of methods and tools to measure impacts. Legitimacy tends to come from research where the methodology is transparent and/or the results may be replicated. This has led an increasing number of investigators to use a common set of tools—i.e., to use one of the commercially available economic impact software models: IMPLAN Pro developed by the Minnesota IMPLAN Group, REMI Policy Insight developed by Regional Economic Models Inc., or RIMS II produced by the U.S. Bureau of Economic Analysis.

The table below shows results from analyses conducted for Florida, Wisconsin, Virginia, Minnesota, Louisiana, Arkansas, Arizona, Washington, Ventura County, California and Lancaster County, Pennsylvania. Research teams involved in these studies, all used the IMPLAN software.

State	Direct Investment	Sales	Value-Added	Employment
Florida	\$31.4 billion	\$49.2 billion	\$23.8 billion	544,000
Wisconsin	\$28.6	\$51.5	\$16.8	420,000
Virginia	\$26.1	\$35.8	\$19.5	387,800
Minnesota	\$25.0	\$45.0	\$17.6	350,000
Louisiana	\$8.5	\$14.7	\$6.1	227,825
Arkansas	\$6.9	-	\$13.0	337,868
Arizona	\$4.5	\$6.6	\$3.0	73,000
Washington	\$4.1	\$6.9	-	94,518
Ventura County	\$1.6	\$2.4	\$1.3	28,641
Lancaster Cnty	\$0.65	\$3.2	\$1.0	20,159

About the Analysis Tool: IMPLAN (Impact Analysis for Planning) was the product of a modeling effort—begun in 1979— among the U.S. Forest Service, U.S. Bureau of Land Management, the Federal Emergency Management Agency, and the University of Minnesota. One objective of that effort was to estimate the impact of land planning and resource management activities on surrounding communities. Since 1993, the IMPLAN software package and county databases have been maintained and updated by the Minnesota IMPLAN Group, a private consulting firm based in Stillwater, Minnesota.

IMPLAN is based on input-output methodology. It calculates the effects on a regional economy caused by change in the final demands of an industry. Take the case of Florida's agriculture industry as illustrated in the above table. Florida's agriculture industry generated \$31.4 billion. How did this initial change affect other sectors of the Florida economy? The increase created a ripple effect throughout the state economy that resulted in a total gain of \$49.2 billion. In other words, the initial change in the agriculture industry generated increases in the sales of other industries in the economy that either directly or indirectly are related to agriculture. IMPLAN also reports on gains in value-added and employment.

The University of Maryland has measured the impact of agribusiness on the Maryland economy. The Maryland team also used IMPLAN but they were more interested in the multipliers than the actual contribution. Multipliers show the magnitude of the ripple effect. The team concluded that a one-dollar increase in the state's agriculture sales would result in the state's total output increasing by \$1.50.

Has an impact or multiplier analysis of agriculture's contribution to the Montgomery County economy been completed? Research and Technology Center staff is not aware of such a study. However, the County's Agriculture Services division estimated that agriculture (farm production and related businesses) contributed \$252 million to the local economy in 2002: traditional agriculture generated \$42 million in sales, the horticulture industry \$125 million in sales, and the equine industry \$85 million in sales.

Research and Technology Center staff has access to the IMPLAN software and the related databases for the Montgomery County economy. Staff conducted a rough estimate on the impact of crop production on the County economy. [Note: the required data were not available to estimate the impact of agribusiness]

For the purposes of this exercise, crop production was defined in terms of the following IMPLAN industries: grains, vegetables, cut trees, fruits, nursery, and other crops. Sales data for each of these six local industries were obtained from the 2002 National Agriculture Statistics Service.

Crop	Sales
Grains	\$6,194,000
Vegetables	\$1,074,450
Cut Trees	\$56,550
Fruits	\$1,150,000
Nursery	\$26,624,000
Other Crops	\$1,140,000

What is the countywide impact of a \$36.2 million change in the crop production industry?

Total Countywide Impact

	Sales	Value-Added	Employment
Contribution	\$45,689,439	\$34,450,333	549
Multiplier	1.26	1.21	1.19

Results from IMPLAN show that for every \$1 increase in the sales of the crop production industry, sales activity or output in other parts of the county economy would increase by twenty-six cents. For every \$1 increase in the value-added of crop production, payments to workers, interest, profits, and indirect business taxes in other sectors of the economy would increase by twenty-one cents. For every one job created in crop production, other sectors may find a marginal increase in hours worked or create a temporary position.

Which sectors of the economy are most affected by a change in the final demands of crop production? Results indicate that it is other crop producing industries followed by real estate, wholesale trade, power generation and supply firms, and food services and drinking places.

Staff conducted a similar quick analysis to determine the impact of agriculture production in general—the impact of a change in the final demands of crop and livestock production. In 2002, according to the County’s Agriculture Services Division, crop and livestock production reported sales (or a change in final demands) of \$41.6 million. That number translates into a total countywide impact of \$53.5 million. Total impact is the sum of the direct investment from the subject industry and the spin-off effects it creates. Because of the agriculture production industry’s initial investment, \$11.8 million in spin-off effects were generated primarily in the consumption-oriented industries; about \$4.2 million of that spin-off was generated by industries that either purchase goods from the agriculture production industry or sell inputs to that industry. These industries make up a part of the County’s agribusiness community: real estate, wholesale trade, power generation and supply, greenhouses and nurseries, insurance carriers, agricultural support services, financial institutions, truck transportation, accounting and bookkeeping services, warehousing and storage services, farm machinery, and animal production.

In the future, a study examining the contribution of agribusiness to the Montgomery County economy is needed. Moreover, such a study should analyze the relationship between agriculture production and its business suppliers and customers.

III ISSUES

Staff spent Fall 2005 traveling along rural roads to some of the County's farm-based communities including Brookeville, Poolesville, and Laytonsville. Staff interviewed educators, agriculture extension agents, farmers, and farm-related business owners to learn what problems they face, what types of assistance they prefer from local government, and where do they see the local farm economy in the next 5-, 10-, 20-years.

Here are some of the voices we heard:

Montgomery County's Agriculture Reserve is to the Washington DC region what Central Park is to New York. It is a cultural resource.

Agriculture adds to the County economy. It certainly does not fuel the economy like the I-270 corridor.

There are 100 "multi-generational" farm families in the County. At least one person from those families will continue in farming.

Traditional farming is dying in Montgomery County. The future is in niche markets: cut flowers, pick-your-own produce, horse operations, and ethnic vegetables.

There is no money to be made in farming given the way Park & Planning has things set up.

They can diminish a farmer's equity with the stroke of a pen.

The dozen interviews all indicate that, after 25 years, the Agriculture Reserve remains strong and presents some novel opportunities but it also faces severe threats. Staff interviewed or otherwise received information from farmers representing a variety of farm types, as shown in the following table.

Tenure	Type of Farm	Location	Acreage	Potential Expansion	Core Issue
Full-Time	Traditional Agriculture (corn, soybeans, wheat, hay)	Poolesville	2,200	No	Equity, Deer Management
Full-Time	Horticulture (fruits, orchards)	Germantown	260	No	-
Full-Time	Horticulture (tree nursery)	Laytonsville	176	No	Public Institutional facilities
Full-Time	Horticulture (cut flowers)	Brookeville	3	Yes	Labor
Full-Time	Equine (boarding & training)	Silver Spring	33	No	Composting
Part-Time	Traditional Agriculture (pigs, turfgrass, hay)	Clarksburg	103	No	Equity
Part-Time	Traditional Agriculture (soybeans, wheat, hay)	Poolesville	50	Yes	Equity
Tenant	Traditional Agriculture	Clarksburg	78	No	Equity
Tenant	Traditional Agriculture (winter wheat, hay)	Comus	50	No	-

These are some of the strengths, threats, and opportunities of the reserve as expressed by interviewees:

Strengths

- The most acres under easement
- An affluent citizenry
- Farmer's Markets
- A supportive and knowledgeable County Extension & Agriculture Service
- An established equine industry: over 12,000 horses and 233 horse farms
- A leading horticulture industry: 325 businesses
- A growing Produce sector: 37 farms and 3,000 acres under cultivation.

Threats

- Clustering
- Large Public Institutional Facilities
- Sand-mounds
- Child Lots
- Availability of Labor
- Loss of Equity

Opportunities

- Bio-engineered crops
- Bio-fuel/bio-diesel production
- Composting
- Ethnic Vegetables

In the next several pages, staff lists the challenges facing farmers statewide and in Montgomery County: for example, development pressures, access to markets, the issue of equity, and the availability of labor. Novel opportunities are mentioned as well. This presentation is followed by a description of the types of support government agencies—both here and elsewhere—have provided the farming community. Finally, staff highlights the vision expressed by interviewees on what they perceive or fear as the future of agriculture in Montgomery County.

A. Challenges

As staff was beginning its study of the Montgomery County agriculture economy, we were alerted to a similar effort at the state level. In late 2004, Governor Ehrlich asked that the Maryland Department of Agriculture (MDA) and the Agricultural Commission draft policy recommendations to support and further agricultural productivity and profitability in the State of Maryland. As a first step, the Department of Agriculture surveyed 170 farmers and agricultural interests, from across the state, for their input on the subjects of profitability, land use, alternative enterprises and agricultural bio-security. Subsequently, the Department began a series of listening tours to gain public comment. Based on this work (surveys and public input), the Agricultural Commission will develop policy recommendations and a strategic plan for the future of agriculture. Comments and discussion summaries from the Listening Tours have been transcribed and made available for viewing at the MDA website: http://www.mda.state.md.us/hot_topics/index.php

Policy makers wrestle with balancing the needs of an urban population with the need to preserve farmland and open space. A possible compromise lies in estimating the amount of land necessary for a viable farm operation. The average size of farms in Montgomery County is 130 acres. The size of a farm, however, depends on what is raised or grown. An economic study, commissioned by the Planning Board when it was establishing the Agriculture Reserve, concluded that 25-acres could sustain a viable farm, particularly a small nursery or horse farm. Grain and other traditional crop farmers, on the other hand, require a larger acreage. They have to produce enough to at least pay for their equipment and transportation costs. Staff interviews suggest that traditional farmers believe at least 100 contiguous acres of land are required for a successful operation.

Most agricultural land, whatever the size— be it 3 acres or 2,200 acres— is worth preserving because there is an agricultural use for every size parcel. That said, there is still considerable value in preserving as many contiguous parcels of land as possible. Some important agricultural uses require large contiguous parcels and without those large tracts, the farm operation would be neither productive nor profitable. When that happens, it becomes nearly impossible to recapture that agricultural use anywhere else in the County.

The University of Maryland attempted to answer the question: how much land is necessary for an operation to be viable? They found no magic number. However, the amount of farmland and the productivity of farms are affected by several factors including: farm expenses, unemployment, population density and housing units in particular, and development pressures generally.

1. Development Pressures

According to the Governor's Agriculture Listening Tours, conducted around the state in 2005, the number one concern for Maryland farmers is land use and management. Farmers are concerned by urban sprawl because it causes flooding and erosion. Encroachment of other types of development could prevent farmers from expanding their operations. Residential development proximate to a farm may raise nuisance issues. Farmers, be they large or small, are also concerned about losing their livelihood to housing pressures. Perhaps the most important issue of all, zoning and other land use regulations could affect the "value of my farm."

Land Use and Zoning issues also resonated with farmers and others in Montgomery County. Specific points of concern—revealed in interviews and local news articles—were clustering, sand mounds, private non-profit institutional facilities, and child lots.

[a] Clustering

William Hussman, a former member of the County Planning Board, discussed the benefits of clustering in a July 1999 *Gazette* interview. He said: Houses are going to be built in the Agriculture Reserve; that is a fact. Given this reality, Hussman finds that clustering allows the County an opportunity to shape the development pattern. Instead of having houses line up along the road, they could be grouped together, perhaps away from the road. The County would benefit because more affordable homes would be built in subdivisions that must heed the Reserve's well and septic rules; and, the County would preserve more contiguous farmland acreage.

Park and Planning data show that housing is permitted on one-third of the 93,000-acre agriculture reserve. Currently, there are 3,300 homes on RDT-zoned land and an additional 1,775 homes may yet be built. In 2005, 52 homes were approved for construction in the Reserve. Clustering typically offers the highest densities on farmland and the least reduction in a farmer's land value.

Contrary to this viewpoint, opponents of clustering contend that it creates developments that are functionally and visually incompatible with surrounding land uses. Activists in Boyds actually sued the County Planning Board for approving a 17-home development on the Thompson Farm. Although their suit was rejected, it is emblematic of the tension among activists, farmers, developers, and planners on this issue.

Clustering, it is argued, invites nonfarm neighbors into an agricultural community who may, over time, object to nuisances related to traditional farming practices: insects, noise, odor, dust, slow-moving equipment, and narrow roads. A study of California's Ventura County farm economy, for example, found that farms near urban developments experience higher labor costs and lower profitability because farm operators had to accommodate the new development. They had to minimize crop spraying and chemical applications and reduce dust generation. In addition to nuisance complaints, farmers are beset with trespassing, vandalism, utility service interruptions, traffic congestion, higher

land values and property taxes. All these have a negative impact on the profitability of the farm operation, and could force some farms out of production.

While clustering is considered a threat by some, it may be remedied by addressing other threats to the Reserve. Countless news articles have reported on the call by citizen activists to restrict private institutional facilities (PIF), sand mounds and child lots in the County's 93,000-acre RDT zone. If these threats are not resolved, preservationists contend, the County will lose productive farmland and open space to unrestrained growth and development.

[b] Private Non-Profit Institutional Facilities

One of the pillars that made possible the creation and preservation of the Agriculture Reserve was restricting connections to public sewer service. Non-profit private institutions such as churches, private schools, and day care centers, however, were exempt from this rule. They were exempt because, twenty-five years ago, none were perceived as a threat. The emerging sentiment towards these types of development in the Agriculture Reserve is described by a farm operator interviewed for this report:

Eight years ago, a farmer in Laytonsville donated his land to the local church. The church had proposed making a small expansion and preserving the rest of the farm as open green space. Things didn't work out and that local church sold the land to Derwood Bible. Derwood Bible wants to build this mega big-box out here. It's not just the impact on the land but what about the strain on local services and roads. Once Derwood Bible moves in, the character and environment will irrevocably change. The value of these lands will also fall.

Plans submitted by Derwood Bible and Bethel World Outreach Ministries reflect the transformation in churches: from a small one-room facility serving the immediate community to an all-purpose complex that serves the faith-based needs of a large regional congregation. Bethel World Outreach Ministries had proposed a 120-acre complex at Brink Road in Goshen. It would seat up to 3,000 members. It would also provide a day care center among other facilities. The Bethel World Outreach complex required hook-ups to the public sewer system. Derwood Bible proposed a 226-acre campus at Laytonsville and Griffith roads. This complex would include a 1,500-seat church, sports facility, and education classrooms. Unlike the Bethel World Outreach church, Derwood Bible would not be using the public sewer system rather they would use an alternative septic system that must handle 19,500 gallons-a-day.

One of the issues with building so large a complex is its impact on water quality. A 2004 Working Group, commissioned by the County Council, considered the issue of high-density projects in low-density zones and their impact on water quality. The Working Group concluded that in the RDT zone the amount of ground that could be paved or built over should be limited to 15 percent and to 20 percent in the rural zone. This would provide a minimum level of water absorption and thereby protect water quality. Environmental groups, interested in this debate, called for an 8 percent cap.

On November 29, 2005, the Montgomery County Council in a 6-2 vote approved legislation that bans all water and sewer hook-ups in the RDT zone. Bishop Darlington Johnson of Bethel World Outreach, quoted a day later in the *Washington Post*, said:

“Now we are forced to sell this land to a developer who will build four houses on that land. It’s never going to be put in agriculture.”

Derwood Bible had requested a change to the Ten Year Water Supply and Sewerage Plan allowing it to provide service at its Laytonsville-Griffith road site. On March 7, 2006, The County Council denied the request. A month earlier, County Council approved an amendment to the Ten Year Plan that introduced capacity ceilings proposed by Council members Knapp and Perez. The amendment restricts the handling capacity of multi-use onsite septic disposal systems in the Agriculture Reserve to 600 gallons-a-day per residential unit; and, for PIF’s in particular capacity is capped at 5,000 gallons per day.

These actions by the County Council, for the most part, put an end to large-scale development in the RDT-zone.

[c] Sand Mounds

The soil chemistry in the Agriculture Reserve—especially in Poolesville and vicinity—is not suited for use of septic tanks. These soils do not percolate-- they fail the standard tests for water absorption. Because of non-percable soils, developers have largely avoided subdivisions in the RDT-zone. Alternative septic systems such as sand mounds have changed that, bringing developers such as Winchester Homes with a proposal for 15-single family homes.

In a conventional septic system, waste flows into a storage tank then into a drain field where the soil soaks up most of it. In a sand mound system, a pump carries the sewage up into a man-made mound of sand and gravel bypassing the unsuitable soil. A pipeline then lets the waste drain down through the soil. There are 100 sand mound systems in the County. According to one farmer’s account, thirty-seven have been constructed in the agriculture reserve since 1994.

In 1994, the County Council issued a resolution approving use of alternative septic technology in the RDT zone in cases where traditional septic systems have failed, and when required for new dwellings. It was assumed that family farms that needed to build another house for a child would benefit from sand mounds.

Winchester Homes won approval, in March 2005, from the County’s planning board to build a residential subdivision on its RDT-zoned 704 acres of land. Technically, Winchester could build up to 28 dwelling units but they scaled back their proposal to 15 units. This still means that 12 sand mounds could be built in a single year, tripling the annual county average. It also means, that the Stoney Springs subdivision and similar developments could negatively impact agriculture productivity, groundwater recharge, open space, traffic conditions, and wildlife habitats.

As noted in the Planning Board's deliberations, the situation begs the question: Is residential development in the RDT-zone ancillary to farming or vice versa? In the case of Stoney Springs, the developer, in addition to placing 300 acres under temporary easement, envisions a cluster of farmettes with trails for the recreational use of horse enthusiasts.

The Montgomery County Council has also reacted to the sand mound issue. Sand mounds tie into the issue of clustering and subdivision development in the Agriculture Reserve. The sand mound controversy also places the spotlight on the goals of the Agricultural and Rural Open Space Master Plan for the 21st Century. Planning Board staff recommend that the County Council halt subdivision approvals in the agricultural reserve until an evaluation of sand-mound septic systems and their impact on the agriculture reserve are completed. Following that recommendation, in November 2005, the County Council approved a nine-month moratorium that stops the construction and installation of sand mounds in the RDT-zone. The Council also proposed that, beginning in late April 2006, an ad-hoc study group thrash out all issues related to the Agriculture Reserve.

A number of farmers view the efforts of the Council and Planning Board to obstruct use of sand mound technology as a strike at their incomes and property rights. James Clifford, a lawyer and part-time farmer, spoke to the *Potomac Almanac* newspaper on the Council's decisions:

Farmland is the farmer's 401(k). It is often times their only asset of worth and what they and their families have spent a lifetime to acquire. If you eliminate the use of the sand mound system, you've taken real value and property rights away from the farmer... Not just hundreds of dollars but thousands and even millions of dollars

[d] Child Lots

When the agriculture reserve was created in 1980, one important criterion was to allow farm families to remain together on the farm. Thus, those property owners who owned land in the Reserve in 1980 were permitted to subdivide their land to build homes for their children— one lot per five acres.

Farmers are against restricting sand mounds principally because it hampers the farmer's ability to provide housing for his/her children.

Royce Hanson asserts that the child lot provision is, perhaps, being abused: Farmers in the agricultural reserve were given one development right per 5 acres which ought to mean 5 houses within 25 acres. It also assumed that farmers would pass this right onto a child who would continue the farm operation. "I think that's not the case; I think the idea behind child lots is not being enforced." There are no reliable records on how many child lots exist in the reserve. There are anecdotes that farmers are "selling" their development rights to distant relatives or even close friends. Media accounts tell of property owners deeding lots to their children who then sell them as building lots, rather than building

their home on the family land. Another perceived problem has been lax enforcement--families getting more lots than allowed.

A December 14, 2005 issue of the *Montgomery Gazette News* reports that Park and Planning staff recommend three pivotal changes to the child lot provision:

- Creation of a child lot requires applicant submit affidavits and proof of residence
- Recipient of the child lot— namely the sons and/or daughters of the property owner— live on the property for a minimum of five years
- The child lot provision to the RDT zoning ordinance expire January 6, 2011.

Clustering, institutional facilities, sand mounds, and child lots are the main threats to the County's agriculture reserve and to a viable farm economy. If an individual farmer cannot make a profit or if the costs of development drive him/her out of production, then that farmer must reassess his/her prospects. As the number of productive farms shrinks, however, the County's agriculture economy suffers. A critical mass of farms or of productive acreage is necessary to support the County's agriculture-related businesses which include suppliers of feed, seed, fertilizer, fuel, and farm equipment; warehouses, processors, transporters, and retailers.

If production levels decline, costs will rise for the support businesses. Rising costs mean these businesses will either shut down or relocate. This, in turn, means that farmers have to travel farther and pay higher prices for services and supplies.

2. Access to Markets

Access to the market is critical. Farmers need access to those who sell them the inputs--such as seed, feed, fuel, fertilizer, etc— to grow their crops. At the same time, they need access to their customers. A farmer's customer could be a retailer or wholesaler or the consumer himself. Participants at the Governor's listening sessions felt that four requirements were needed to facilitate access to markets:

- Standardize government regulations
- Provide low cost credit
- Build processing facilities
- Encourage consumers to buy local

Unlike the case for farmers statewide, Montgomery County farmers interviewed for this report did not express any problems with access to markets. Farmers reported no difficulty in obtaining needed supplies or finding buyers for their products.

Depending on the farm, the buyers could be local. A tree farm such as Ruppert's Nursery sells its product to wholesalers nationwide. Farmhouse Flowers and Plants sells its goods at farmer's markets and to florist shops in the District of Columbia. The Reddemead Equestrian Center sells its services to customers across the region.

In the case of grain farmers, the multiple crops grown and farm size influences to whom and where they sell. The Clifford farm for example, which is only 50 acres, sells its soybean crop to a grain and fertilizer company based in Frederick. The Willards, who have one of the largest grain operations in the County, sell crops to processors and distributors across the Mid-Atlantic. Of the four crops grown on the Willard farm—corn, soybeans, wheat, and hay— only the hay is sold locally. Grain farmers sell their commodity, mainly, to wholesale distributors. According to data from the U.S. Bureau of Labor Statistics, at least 30 wholesale establishments in the County either purchase or sell farm products and supplies. The Bureau of Labor Statistics also indicates that around 100 retail establishments in the County are engaged in selling agriculture products and supplies.

In addition, Montgomery County encourages its residents to buy local. This is principally achieved through the weekly farmer’s markets and the pick-your-own produce locations.

Surprisingly, only one of the farmers we interviewed purchased his inputs locally. More Montgomery County farmers purchase their agricultural inputs from southern Pennsylvania and Frederick County, Maryland. We asked why farmers were not buying local and the most frequent response was that the vendors they need are just not here or they do not operate on a large enough scale. Would they change if a local provider were found? The one person who answered this question said they probably would not because of the familiarity and business history already developed with their current supplier.

Montgomery County grain farmers, as all grain farmers in the state, have essentially been barred from shipping their products to markets outside the country. When there was a storage facility at the Port of Baltimore, the Willards used to ship their soybeans to Spain. Today, most of the soybean is trucked to Perdue Farms, which has a processing facility in Norfolk, Virginia.

There are no processing facilities in the state of Maryland or in Montgomery County. Processing is the key to value-added agriculture. Value-added agriculture is any process by which the economic value and consumer appeal of a commodity is increased. Value-added agriculture involves growing a high-quality product—one that is kept fresh, clean, reliable and organically produced. A value-added commodity is one that is demand driven. In other words, the farmer identifies the market for his commodity and grows as much as necessary for that season to satisfy the needs of that market. Value-added agriculture means that the farmer has a clearly delineated supply-demand chain. He is not searching for input suppliers and intermediate producers, the farmer knows who they are: they are his business partners. (See Minnesota Department of Agriculture for more information <https://www.mda.state.mn.us/mgo/farming/value-added.htm>)

While none of the interviewed farmers identified a processing facility as important for the continued viability of the region’s agricultural economy, horse farmers expressed a need for a manure-composting facility. Horse operations produce a lot of manure. Some of it can be spread on the farm but much of it cannot. It has to be hauled away. Horse farmers

suggested that having a composting facility could reduce the expenses for horse operators and support the environment as well as the horticulture industry.

3. Labor Availability

The lack of qualified or even interested labor was a charge leveled by at least two of the farmers staff interviewed. The larger question that concerns farmers as well as economists: “Are we losing the next generation of farmers?” The average age of farmers in fertile Lancaster County, Pennsylvania is 47 years while in Montgomery County, Maryland it is 57 years. As the current generation of farmers moves past their prime working years, will the next generation take the reins of the family farm? The challenge is to retain the offspring of existing farm families, attract others into the farm economy, and provide both groups with sufficient incentives to stay.

Child lots were one vehicle to retain the offspring but are these children involved in the day-to-day business of farming? One of the first interviews staff conducted was with Bruce Gardner, then the interim dean of the University of Maryland’s College of Agriculture. We asked Dr. Gardner about the next generation of farmers. According to department data, 25 percent of the College’s undergraduates come from family farms but only ten percent return to the family farm. The majority of the program’s undergraduates go on to pursue veterinary science. The second most popular career choice for the program’s undergraduates is a job in the horse industry. The other choices include landscaping, animal science, agribusiness (i.e. the retail or wholesale aspect of crop farming), and graduate school.

A common refrain from interviewees was that the next generation of farmers is faced with the double pressures of limited land supply and the difficulty of making a profit. Farmers interviewed for this report stated that farm revenues barely keep up with expenses. They said that while persons who choose farming as a vocation or hobby must have a love or interest in agriculture, they also need the financial resources. One speaker, at the Governor’s listening tour in Harford, emphasized the difficulty in hiring permanent or even seasonal workers: We cannot compete with other industries for labor; our profits are slim; there is no 40 hour work week in our business—it’s a lot longer; we can’t offer wages between \$15-\$20/hr, health insurance, housing, paid vacation and holidays.

Farm type, size, and organization also affect the ability of a farm operator to find labor and maintain a successful business. Large-acre operations tend to be relatively successful. Small family farms, on the other hand, may struggle not only with labor but also with keeping the operation afloat.

Generally, farmers and farm families need to supplement their income with off-farm work. Eight of ten county farmers said in a 1997 survey that their farm income alone could not support their families. Thus, as Stephan Tubene describes, some members of a farm’s family must work full-time on the farm while other family members find off-farm work (part-time or full-time) to supplement the farm’s income. Off-farm income could present a dilemma. If steady income from off-farm work is higher than the unpredictable income generated by the farm, full-time operators may be drawn to that other profession

at the expense of the farm operation which may be relegated to secondary status, a mere hobby, or even being shut down.

An international study of farm operations found that, in those regions where there are more part-time farmers and on-site diversification, “exit rates” are declining. On-site diversification involves not just growing a variety of crops but supporting related activities— i.e., in addition to production, the farm operation may include processing, distribution, sales, and/or professional services. Examples of on-site diversification are found among Montgomery County’s large scale operations: Even though the Willards maintain a full-time farm operation in the County, their main source of income is derived from the agricultural services business. The Rupperts maintain a nursery but also are involved in direct and on-line sales as well as in providing landscape installation and management services. The Butler’s grow fresh fruits and vegetables on their orchards and they invite customers to tour the farm and pick-your-own produce. Butler’s Orchard is also involved in sales as well as in processing its fruits into jams, jellies, and syrup.

While large-scale operations may benefit most from on-site diversification, what of smaller operations? Individuals who wish to enter or remain in farming must seek less cost prohibitive or relatively more profitable ventures: flowers, sod, pick-your-own produce, and horses. The state of Maryland has initiated a program to assist young new farmers in purchasing land and provide loans to other entrants into the rural economy. The state’s general assembly created the Maryland Agriculture and Resources Based Industry Development Council in 2004.

4. Equity

In many cases, the term “equity” refers to basic fairness. For farmers it also means the value of their operation—the difference between assets and liabilities. The largest asset that farmers have is their land. These two interpretations of equity— fairness and value— are joined for farmers especially when government undertakes initiatives that affect equity in a way that impacts a farmer’s ability to continue in farming. Farmers rely on the value of their farmland to help defray major expenses, serve as collateral when expanding the farm operation, as retirement income, and as the college fund for their children. Many farmers contend that restricting child lots and suspending sand mound technology is unfair and affects the value of their land..

The issue of equity is an emotionally charged topic in rural communities especially among traditional farmers. Thomas Hartsock expressed the anger and frustration of many: “There is no money to be made in farming given the way Park and Planning has things set up. My daughter loves this farm but I don’t think she could make a living from it.” (Mr. Hartsock says he’d like to leave it to her but he’s worried that it’ll be more of a burden). There is no predictability as to how much a farm operation will gross from year to year. Regardless of gross revenues, operation expenses and FICA taxes have to be paid, annually. Farmers pay between 14 -15 percent of their earnings to FICA, not the 7.5 percent paid by a typical employee. Many farmers have their retirement tied up in the land. So, what does this mean? It means that farmers who want to sell some portion of their land to developers — to supplement their incomes and create a safety net for their children — aren’t getting what they consider to be fair market value.

Downzoning lowers property values. If you cannot build at high densities— if you are permitted only one unit per 25 acres— then the speculative value of farmland decreases. Mr. Hartsock gives the example that the fair market value for his land is \$8,000 per acre but because of the restrictions placed on farmland, he would only get a \$1,000 an acre. Were he to sell, developers would get land on the cheap, and his nest egg would have lost 80 percent of its value. The state of Maryland also purchases farmland for its MALPF program at 50 to 80 percent of market value. In Queen Anne’s county, for example, the market price per acre of farmland is \$10,000 but if the land is placed under easement, the farmer may only receive a minimum \$5,000 or at most \$7,000 per acre.

Speaking of its creation in a 1997 Washington Post Article, Royce Hanson said: “[When establishing Montgomery County’s Agriculture Reserve] we had to make the farmers feel they were being treated fairly.” They had to be compensated for the loss in development rights. Montgomery County was the first to use the Transfer of Development Rights mechanism for land use planning: Farmers were given one TDR for every five acres of land. Initially, a single TDR was valued at \$3,500; in 2002, TDR’s were valued at \$7,250 each; values have since quadrupled: \$30,000 in 2004 and \$40,000 in 2005. The County created a fair and equitable mechanism to compensate farmers and preserve farmland.

The success of the TDR system, however, depends on whether the observer sees the glass as half full or half empty. A farmer who wishes to sell his development rights would receive \$8,000 per acre but would that same price apply if the farmer wanted to buy more land in the Reserve for agriculture? James Clifford narrated an extreme case: he wanted to purchase an additional 50 acres from the farm next door. According to the state tax assessor, the average price per acre of farmland in Montgomery County’s RDT-zone is \$2,000. Clifford assumed that the seller would ask somewhere in the \$3,000 to \$5,000 range; she did not. The seller wanted \$24,000 per acre— three times the value of a TDR. At a time when land is scarce and demand is high, prices are soaring. Many officials and preservation activists point to Clarksburg as a prime reason for escalation in TDR prices. The general development climate also plays a role. Crown Farm, for instance, which lies far outside the Agriculture Reserve, sold for \$800,000 per acre. Simply, the seller in Clifford’s example felt that the state and county were undervaluing her property.

More recently, the value of a TDR has increased dramatically. According to the most current data, the value of a TDR is \$35,000 compared to the \$7,000 price of only 2 years ago.

Farming is a business. It is a business where land is the principal asset and expense. For those who wish to expand their farm operation and those who wish to start a farm operation, these persons must determine whether the return on investment (ROI) will cover the rate of the loan plus enough of a profit to justify making the investment. If the ROI is not adequate, the land will not be bought for farming purposes. When the price of farmland rises above what a farmer will or can pay for it, that land is effectively taken out of agriculture production. Farmland prices should remain affordable to new entrants. The

future of farming, agribusiness, and rural preservation in Montgomery County rests with these new farm operators.

B. Opportunities

Just as tobacco farmers of the 18th century, or the dairy farmers of more recent times did not give serious thought to not farming or to farming something completely different, the traditional farmers, staff interviewed, did not consider the possibility “if I can’t grow corn, beans, and wheat, I’ll...” The reality, however, is that technology and consumer demand change over time and, if they are to survive, businesses must adapt to changing times.

When the Butler’s started farming, they sold peaches to local grocers. When those grocers stopped buying, the Butler’s placed more emphasis on mazes and pick your own farm fresh produce including strawberries, blueberries, peas, tart cherries, thornless blackberries, red raspberries, pumpkins, apples and Christmas trees.

Dave Dowling, the owner of Farmhouse Flowers and Plants, did not always have a 3-acre farm. In fact, his family had a 200-acre dairy farm. For twenty-years they made a go of it but by the 1960s they had to sell. Dave, like the offspring of many other older farm families, did not want to leave farming. Ten years ago, he started a horticulture business.

The socio-demographic character of Montgomery County’s farmers is also changing. More farmers fall into the category known as lifestyle farmers. Affluent individuals who enjoy the rural ambience and have a taste for farming are entering the farm economy: some like Tom Hartsock and Jim Clifford are investing in traditional agriculture while others such as Jane Siegler are investing in horse operations.

The 21st Century holds an array of opportunities for farming and the rural economy in Montgomery County: from revitalizing traditional agriculture to strengthening equine support businesses. Specific efforts, mentioned by interviewees, might include building a manure composting facility, growing ethnic vegetables, developing alternative fuels, and serving as a resource to the biotechnology industry.

1. Composting

A farm with the full range of livestock (cattle, swine, sheep, horses, and poultry) could collectively produce, on average, 180 pounds of manure per day. According to the 2005-2006 Agronomy Guide, horse operations produce an average 45 pounds of manure per animal per day. Animal wastes, if left uncollected and in the open, pose a threat to environmental quality and health. Thus, it is vital that animal wastes—which contain pathogens and bacteria—are handled and treated in a safe, effective and efficient manner: composting is one such method.

Composting is a process that accelerates the decomposition of organic matter (e.g. plant and animal remains/wastes) into a safe natural fertilizer (or mulch) for enriching soil nutrients. Compost improves the drainage capacity of soils and increases a soil’s water infiltration and storage properties. The most common uses for compost include

agriculture, bioremediation, erosion control, gardening, landscaping, turf and pasture management.

The Montgomery County Soil Conservation District, in the early part of the decade, completed a study of horse operations in the county. The authors recommend building a centralized composting facility for animal wastes in the county:

Many horse operations in Montgomery County are required to have a nutrient management plan. These operations find it difficult to dispose of their stall wastes in an accepted environment-friendly manner. The disposal problems are twofold: first, they do not have enough land to spread the manure; second, the cost of having it hauled away is prohibitive or commercial haulers already have more clients than they can handle.

Composting would be the viable alternative. Unfortunately, most horse operators do not have the space or manpower to devote to the composting process— staff interviewed Jane Siegler of Reddemeade who echoed the sentiment. Thus, the desire, on the part of many horse operators, for a regionally located manure composting facility or at least a drop-off site, where the owners of livestock— not just horses— can bring their manure. The composted material could then be sold to farmers, nursery operators and landscapers.

Farmers in the agriculture reserve and the county's rural economy could benefit from the development of a regional manure-composting facility. The County already owns a 118-acre site in Dickerson where solid wastes are recycled and yard trimmings (grass, leaves, and brush) are turned into compost. *Perhaps, near that site, the County and state should consider building a facility for converting animal waste into compost.*

2. Ethnic Vegetables

As the demographics of the nation, state, and county change, there will be an ever-increasing demand for foods from the native lands of ethnic minorities. Montgomery County continues to experience changes in its demographic character. The two fastest growing ethnic groups in the county are Asians and Hispanics. To meet the culinary tastes of these and other minorities, over 96 ethnic grocers have established stores in the county and there are some 3,000 ethnic restaurants located here as well.

Stephan Tubene, a researcher with the Small Farm Institute, argues for a program to promote ethnic farming: There are an increasing number of persons from Latin American countries, Asia and Africa who have migrated to the U.S. and want to farm. These farmers, however, need business and financial assistance. More often than not, they cannot afford to purchase farmland; thus, they lease some small acreage from an established farmer or large landowner.

Data from the 2002 Agriculture Census, reported by the National Agriculture Statistics Service, indicate that 97 percent of farms in Montgomery County were owned by whites; 1.5 percent of all farms were owned by Asians; 0.9 percent by blacks; and 0.7 percent by

Hispanics. The number of ethnic farmers in the county is essentially nonexistent when compared to the number of ethnic minorities in the populace.

Not only would homegrown ethnic farms meet strong local demand, ethnic farms are better suited to an urban environment— ethnic vegetables such as amaranth, basil, cilantro, eggplant, peppers, sweet potato, and tomatillo may be grown on smaller plots of land. *The County should consider encouraging further diversification of the horticulture segment of the economy; it could also take steps to reduce barriers to entry for ethnic farmers and farming.*

3. Alternative Fuels

In contrast to others that staff interviewed, William Willard is optimistic about traditional agriculture. He imagines that local grain farmers could provide a unique opportunity for the County's biotech industry: serving as a laboratory for growing better crops. He also believes that, at a time when fuel prices are escalating, local soybean farmers could benefit from expanded use of biodiesel and other biofuels in the state and region.

Soybean is commonly recognized as an ingredient in soaps, foams, salad dressings and tofu. It is also a key ingredient in the production of biofuels. Hot soybean oil can be blended with ethanol and potash to make glycerin and biodiesel. Unlike unleaded gasoline, soybean oil has clean-burning properties: a reduced level of carbon monoxide, sulfur, and sooty particulate matter and it is biodegradable.

In 2002, Maryland farmers produced 10.7 million bushels of soybean. Montgomery County produced 403,042 bushels. The county's soybean farmers, like all others in the state, mainly sell this crop to the poultry industry. Perdue Farms crushes them into meal for chicken feed. A by-product of that process, however, is soybean oil. Willard entertains the notion of farmers selling all or some percentage of their soybean crop to biodiesel processing facilities. The drawback is not having a processing facility in the county or state that converts the soybean into oil. The Cropper Oil Company, based in Worcester Maryland, is the state's only commercial seller of biodiesel.

According to the Biodiesel Organization, there are fifty-three processing facilities in the United States. Most of the nation's biodiesel facilities are located in Texas; there is only one in the Washington DC region: Virginia Biodiesel Refineries at West Point.

One of the main arguments against alternative fuels is a small to non-existent market. However, local governments may be the early adopters. Nationally, 600 fleets (including government, military, commercial, and school bus) use biodiesel. Examples of biodiesel users include: The Beltsville-based Agriculture Research Service fleet; Kansas City Missouri; King County Washington's 1,200 school buses; Florida Power & Light; and Warwick Rhode Island. In the state of Maryland, all 180-diesel fleet vehicles owned by Queen Anne's county use a 20 percent bio-blend. St. Mary's County has plans to install a 1,000-gallon biodiesel tank for its county-owned vehicles. *Should Montgomery County government, the Montgomery County Public Schools, and the Montgomery Regional Office of the Maryland National Capital Park and Planning Commission convert their*

fleets to biodiesel or B20 blends, it could be a boon to county farmers and to traditional agriculture.

Another agriculture-based fuel is ethanol. Ethanol is a corn-based derivative that, when mixed with gasoline, becomes an alternative fuel for cars. The debate, however, is in the mix. Currently gasohol, or a 10 percent ethanol and 90 percent gasoline mixture, can easily be used in all vehicles. This particularly mixture has been mandated in Minnesota for the past eight years. States, especially in the Midwest, are pushing for use of E85: 85 percent ethanol and 15 percent gasoline mixture. Using ethanol-mixed fuels could reduce greenhouse emissions from 35 to 46 percent.

Statistics from the Iowa Corn Growers Association indicates that one-bushel of corn produces 2.7 gallons of ethanol; one acre produces 300 gallons of ethanol. It is estimated that producing ethanol could add \$20 million to the Maryland farm market. The state of Maryland produces 30 million bushels of corn on 406,000 acres of farmland. A study by the University of Maryland, however, finds that nearly all corn production in the state is targeted to the poultry industry. To prevent competition for corn between the poultry industry and ethanol producers, university researchers recommend using barley as a substitute. Montgomery County produces one million bushels of corn on its 11,000 acres. If all the County's corn production were dedicated to ethanol, the county could generate 3.3 million gallons. While the state and county may have the raw material, there are, as of yet, no ethanol production facilities in Maryland.

Clearly, there are still opportunities for farming in Montgomery County. What is needed, perhaps, is more government support: government support in terms of financial assistance and research.

C. Government Support

Generally speaking, farmers are loath to invite government intervention. This sentiment was widely expressed at the Governor's Agricultural Listening sessions. Nonetheless, participants at the Harford County listening session were perplexed by why Maryland was not as supportive of agriculture as other states. Many cited New Jersey and Pennsylvania as better supporters. One rather humorous suggestion: "Should we send adults out to farms as a prerequisite for holding public office?"

In Montgomery County, the farmers we spoke with were generally happy with the status quo: maintain the agriculture reserve at the one unit per 25-acre level. What the traditional farmers did object to were attempts to take away their ability to make a profit or limit their ability to expand operations. As one farmer pointed out: Profitability rests, in many cases, on a farmer's equity on his land. A farmer relies on that equity to buy equipment, to provide for his family and children.

Moreover, many farmers have their retirement tied up in the land. They have to pay about 14 -15 percent of their earnings to FICA not the 7.5 percent the rest of us pay. How do these small family farmers supplement their incomes and provide a safety net for their children. They have to sell a portion of their farmland or the development rights of that farmland. The question then is will they be getting fair market value.

Doug Tregoning, the County’s agricultural extension agent, who is a farm-boy himself and sympathetic to the plight of farmers, provided this counterpoint to the profitability issue: If anyone felt that an objective of the reserve was or ought to be to keep farmers profitable, that hasn’t been realized and won’t be. In this part of the world, we are not going to make farmers profitable to the extent that they can keep up with land preservation.

On the other hand, an objective of the agriculture reserve and agricultural policy should be “to preserve farms not land.” If we support farms and farmers and they build equity and profit, one argument goes, preservation will take care of itself.

A University of Albany study found that Lancaster County, in southern Pennsylvania, is perhaps the only jurisdiction in the nation that has a program dedicated to sustaining the working rural landscape in which the farming industry is an important component of the local economy. Most other local governments focus on preserving open space and the rural character.

Lancaster County has 388,000 acres in farmland—over half of the county’s total land area. It is home to 4,700 farms with an average 76-acre size. Unlike Montgomery County, Lancaster is not the inner suburb of a major metropolitan area. Although, in the not too distant future, Lancaster could well become an exurb of the Harrisburg-Carlisle metropolitan area and face increasing development pressures and the attendant increases in land values. For now, the County has several tools to sustain the farm economy. To date it has protected 60,000 acres of farmland. Most has been through its PDR program which has protected 47,000 acres.

The main program that local governments offer to preserve the economic viability of farming is an easement program. Staff conducted telephone interviews with local officials at Montgomery, Calvert, Frederick and Harford Counties.

	Montgomery	Calvert	Frederick	Harford
TDR	45,042	11,682	0	0
MALPF	3,322	4,467	16,000	0
MET	2,086	713	2,500	10,000
County Easements	6,678	4,525	4,340	3,000
Other	3,904	1,776	1,445	24,000
TOTAL	61,032	23,163	24,285	37,000

Staff also contacted other counties in the region and Mid-Atlantic. Cumberland County New Jersey, for example, has 10,000 acres of farmland under easement. Cumberland faces intense development pressures. Matthew Pisarski, with the county’s agriculture services division, states “if farmers based their decision purely on finances they would absolutely sell to developers; Cumberland can’t compete against that.”

One problem that Montgomery County could face, if clustering becomes an accepted practice, is nuisance complaints. To improve the agriculture community, New Jersey and

Cumberland County have supportive right-to-farm ordinances including right-to-farm legislation and protection from nuisance complaints.

Cumberland County, similar to Montgomery County, is dominated by the horticulture (nursery stock, sod, and organic vegetables) and equine businesses— all high value-added products. The County or rather individual municipalities have not considered down-zoning: municipalities currently allow six acres per lot. Pisarski believes that this is mainly because local zoning commissioners tend to be farmers and they don't want to remove a farmer's equity in his land.

Unlike Cumberland County and Calvert County, representatives from Loudoun County Virginia, Frederick County and Harford County expressed a concern about how to keep people in agriculture. In other words, how do we compete with developers who are willing to give top dollar to struggling farm families to give up their land?

A. Visions of a Future Montgomery

Staff asked interviewees, What the Montgomery County farm economy would look like 10-, 15-, 20 years from now? Responses were not that varied. A lot of land is being lost to development. The farm economy will change which means that many farms and types of agriculture we see today will be gone. The equine industry in this county and in this state, on the other hand, will thrive. Horse operations can function on limited land. Some of the existing farms may become support businesses growing hay and straw.

The Montgomery County farm economy, as it is today, is diverse. Traditional agriculture, horticulture, and equine do co-exist. If this were to change through neglect or by design, we just may lose a once viable agricultural economy. Farmettes and Country Estates do not make a viable farm economy.

One of the most forceful responses to this query came from Dr. Hanson: If things continue as they are (i.e., addressing the needs and issues over development in the agriculture reserve in an "ad hoc" fashion with no reference to the Master Plan or the legislative history), this would most likely result in substantial fragmentation and thus destroy agriculture as the primary use in the Reserve. Greater engagement by the Planning Board is warranted.

Several in the agricultural community fear a farm economy dominated by horse operations. Horse operations or equine ought to be one component of a diverse farm economy but not the core engine. While there is demand for equine support businesses, it currently does not offer the growth potential or challenge that comes from operating one's own farm. The County's equine industry is geared more to recreational use than to farm work or horse racing. Introducing horse racing operations into the county, on the other hand, could change the economics.

APPENDIX

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FARM INTERVIEWS

- 1. Mr. Jeremy Criss, Manager**
Agricultural Services Division
Montgomery County Department
Of Economic Development
Jeremy.criss@montgomerycountymd.gov
301-590-2823

Wednesday July 20, 2005
9:00 – 12:00
- 2. Dr. Bruce Gardner, Professor**
University of Maryland- College
Of Agriculture and Natural Resources
bgardner@arec.umd.edu
301 405-2072

Monday August 8, 2005
10:00 – 11:15 a.m.
- 3. Dr. Stephan Tubene, Director**
Small Farm Institute – UMD
Southern Maryland Cooperative
Extension Agent.
stubene@umd.edu
410 222-6759

Thursday August 11, 2005
9:30 – 11:15 a.m.
- 4. Dr. Tom Hartsock, Director**
Institute of Applied Economics
University of Maryland – College Park
tgh@umd.edu
301-405-4684

Monday August 15, 2005
1:00 – 1:30 p.m.
- 5. David Dowling, Owner**
Farmhouse Flowers & Plants
4501 Gregg Road
Brookeville 20833
dave@farmhouseflowers.com
301-652-5799

Thursday August 18, 2005
10:30 – 11:00
- 6. Ms. Jane Siegler, Owner**
Reddemeade Equestrian Center
Silver Spring 20905
jane@reddemeade.com
301 421-4481

Friday August 19, 2005
10:30 – 12:10
- 7. Craig Ruppert, CEO**
Ruppert Nurseries
Laytonsville 20882
mbrittle@ruppertcompanies.com
301-482-0300

Monday August 22, 2005
10:00 – 12:00

8. **Melanie Choukas-Bradley**
Celebrate Rural Montgomery
Melanie@ruralmontgomery.org
301-652-5799
Wednesday August 24, 2005
2:00 – 2:45 p.m.
9. **James Clifford, Sr.**
Clifford, Debelius, Crawford
320 East Diamond Avenue
Gaithersburg 20877
Clifford@Debelius.com
301-840-2232
Tuesday September 27, 2005
10:00 – 11:15 a.m.
10. **Dr. Royce Hanson, Director**
Center for Washington Area Studies
George Washington University
rhanson@gwu.edu
202-994-5758
Thursday September 29, 2005
10:00 – 11:15 a.m.
11. **Billy Willard, Owner**
Willard Farm
White's Ferry Rd
Poolesville 20837
Tuesday October 4, 2005
10:00 – 11:15 a.m.
12. **Doug Tregoning, Director**
County Extension Service
18410 Muncaster Rd
Derwood 20855
dwt@umd.edu
301-590-2809
Tuesday October 11, 2005
11:00 – 12:15 a.m.

EVENTS

- Harford County
Governor's Agriculture Listening Tour
August 8, 2005
7:00 – 9:00 p.m.
- Agriculture Commission Mtg.
Maryland Department of Agriculture
Annapolis MD
August 10, 2005
9:00 – 10:30 a.m.
- Kojo Nnamdi Show
National Public Radio
Panel: 25th Anniversary Montgomery County Agricultural Reserve
Panelists: R. Hanson, M. Choukas-Bradley, W. Butler, S. Wachter
October 4, 2005
1:00 – 2:00 p.m.

GOVERNMENT INTERVIEWS

1. **Mr. Jeremy Criss, Manager**
Agricultural Services Division
Montgomery County Department
Of Economic Development
Jeremy.criss@montgomerycountymd.gov
301-590-2823
Wednesday July 20, 2005
9:00 – 12:00
2. **Dr. Bruce Gardner, Professor**
University of Maryland- College
Of Agriculture and Natural Resources
bgardner@arec.umd.edu
301 405-2072
Monday August 8, 2005
10:00 – 11:15 a.m.
3. **Dr. Stephan Tubene, Director**
Small Farm Institute – UMD
Southern Maryland Cooperative
Extension Agent.
stubene@umd.edu
410 222-6759
Thursday August 11, 2005
9:30 – 11:15 a.m.
4. **Dr. Tom Hartsock, Director**
Institute of Applied Economics
University of Maryland – College Park
tgh@umd.edu
301-405-4684
Monday August 15, 2005
1:00 – 1:30 p.m.
5. **David Dowling, Owner**
Farmhouse Flowers & Plants
4501 Gregg Road
Brookeville 20833
dave@farmhouseflowers.com
301-652-5799
Thursday August 18, 2005
10:30 – 11:00
6. **Ms. Jane Siegler, Owner**
Reddemeade Equestrian Center
Silver Spring 20905
jane@reddemeade.com
301 421-4481
Friday August 19, 2005
10:30 – 12:10
7. **Craig Ruppert, CEO**
Ruppert Nurseries
Laytonsville 20882
mbrittle@ruppertcompanies.com
301-482-0300
Monday August 22, 2005
10:00 – 12:00