

# ***COUNTY IMPLEMENTATION PLAN***

**Fulton County Conservation District**

February 2005

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## **A. Executive Summary**

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This County Implementation Plan for Fulton County, Pennsylvania, has been developed to guide the efforts and resources of the Fulton County Conservation District and its cooperating partners in achieving the maximum potential reduction of pollution, particularly sediment and nutrient pollution, to local waterways and, subsequently, the Chesapeake Bay. The plan focuses efforts from March 2005 through the end of 2010.

The Fulton County Conservation District has been very successful in utilizing local, state and federal resources, both human and monetary, to implement educational and conservation efforts throughout Fulton County's Juniata River and Potomac River Watersheds. These efforts deal with a wide range of environmental issues, including the implementation of, and educational programs about, agricultural best management practices, erosion and sedimentation reduction and watershed management.

While Fulton County faces increased development pressure and the potentially damaging effects from the development of infrastructure, residential, commercial and industrial projects, agriculture remains the largest source of sediment and nutrient pollution to local streams. The need for even greater implementation of soil and water conservation efforts, combined with an ever shrinking and unpredictable funding supply, require even greater dedication and cost-effective efforts from local resource management agencies.

The Fulton County Conservation District proposes a prioritized list of the most cost effective methods to ultimately reduce sediment and nutrient pollution to local waterways and the Chesapeake Bay and is requesting **\$35,500.00** in Chesapeake Bay Program Special Project funds to carry out the following proposed objectives for **2009-2010**:

### **Proposed Projects:**

### **Funding Needed:**

- |   |                     |
|---|---------------------|
| <b>A. Direct Seeding of Riparian Forested Buffer Demonstration<br/>Receiving Waters: Licking Creek 13-B</b>               | <b>\$ 10,000.00</b> |
| <b>B. Agricultural Compliance Initiative<br/>Receiving Waters: Three ag-impaired sub-watersheds of Licking Creek 13-B</b> | <b>\$ 25,000.00</b> |
| <b>C. Erosion and Sediment Control Workshop for Local Earthmoving Contractors<br/>Receiving Waters: County-wide</b>       | <b>\$ 500.00</b>    |

## **B. County Description**

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### **1. Location**

Fulton County is located in south-central Pennsylvania between Bedford County to the west, Franklin County to the east, Huntingdon County to the north and Maryland and the Mason-Dixon Line to the south. Fulton County was created in on April 19, 1851 from a portion of Bedford County. Rectangular in shape, the county is approximately 15 miles wide and 29 miles long. Typical of the Appalachian Mountain area, the county is a series of small, narrow, flat valleys surrounded by ridges running northeast and southwest.

### **2. Size**

Fulton County is 439.8 square miles in area (approximately 278,000 acres) and had an estimated population of 14,641 in 2004. A largely rural area, Fulton County's average of 33.3 people per square mile is well below the state average of 274 people per square mile.

### **3. Population**

Population growth from the year 2000-2005 was estimated to be 2.6%, roughly three times the projected state population growth rate (1.2%) for the same period. Population growth is beginning to increase as urban and suburban population centers continue to expand, making Fulton County an attractive option for retirees or commuters to larger urban centers or those who are able to work from home.

### **4. Economy**

The Fulton County Comprehensive Plan (May 2000) observes the following regarding the local economy:

- Since 1980, Fulton County has experienced a strong growth and employment pattern, with a 16.3% increase in total employment from 1979-1988, and an additional 10% from 1988-1993.
- The majority of industry sectors experienced increases in total employment with manufacturing employing the greatest percentage of the total labor force.
- Although the agricultural sector remains an important component of the County's economic composition, it has experienced declines in employment opportunities and profitability.

The median household income in 2000 was \$34,882, compared to the state average of \$40,106.

Fulton County's agricultural industry, while still an important part of the local economy and landscape, has declined both in the numbers of farms and as a source of employment for local residents.

Regardless of changes in land use, preservation and conservation of Fulton County's natural resources, particularly surface and groundwater *quantity and quality*, is of the utmost importance for the continued health of Fulton County residents and those who live downstream.

## 5. Land Use

Fulton County is a largely rural county with a great deal of forested and public lands. The following table contains a breakdown of the existing land use within Fulton County in 2005.

### Existing Land Use in Fulton County, 2005

Land Use	Acreage	% of Total
Commercial/Industrial	729	0.3%
Cropland/Pastures	74,038	26.4%
Deciduous Forest	142,346	50.8%
Evergreen Forest	17,991	6.4%
Mixed Forest	7,934	2.8%
Recreational	331	0.1%
Residential	2,913	1.0%
Transportation/Utilities	31,835	11.4%
Strip Mines	1,122	0.4%
Water Bodies	1,046	0.4%
<b>Total</b>	<b>280,285</b>	<b>100%</b>

Source: Fulton County Comprehensive Plan, May 2000 citing US EPA MRLC data, 1986.

Of forested lands, 48,693.8 acres, or 26.2 percent, of this category is publicly owned and includes the Buchanan State Forest, Cowans Gap State Park and the County's six State Game Lands. The majority of forest ownership is private.

## 6. Culture

Small villages, local topography, townships and two small boroughs group local residents, but a strong County identity is present – perhaps due to the geographic isolation provided by steep mountain ridges at the eastern and western borders of the County. In addition, the overwhelming majority of homes in Fulton County are served by the Fulton County News, which has been the primary source of local news for more than a century.

The people of the Fulton County are passionate about the place they call home. Most residents have long family histories in the area. Most citizens interact directly with farmers, local governments, land use planners and conservation officials. Some residents fall into all the categories listed above. Local citizens recognize that the natural beauty and rural quality of Fulton County prompts others to visit the area and prompts their children to stay in the area. This uncommon pride and sense of place is a strong asset for local conservation and can be further enhanced through improved education and a better understanding of the implications of land use and management decisions.

## 7. Ag Profile

Fulton County's agricultural industry, while still an important part of the local economy and landscape, has declined in both the numbers of farms and as a source of employment for local residents. Over the past 10 years, there has been an average of 550 farming operations per year in Fulton County, totaling approximately 100,000 acres. The average farm size is around 180 acres.

While farm numbers have declined dramatically in the last 50 years, the average acres under management for many of Fulton County's farms, particularly dairy operations, have increased, as has the average size of dairy herds. In addition, a recent influx of concentrated swine and poultry facilities, including some large corporate facilities, has become a widely debated topic of local interest.

One of the primary challenges facing Fulton County in the coming years, a challenge already being faced by many locations in Pennsylvania and across the Mid-Atlantic region, is balancing the preservation of the rural landscape with the decreasing profitability of agriculture in our region and the corresponding increase in development pressure.

The following tables contain a number of agricultural statistics for Fulton County from 1985-2005.

## Fulton County Agricultural Statistics (1985-2005)

Crops - Harvested Acres								
Year	Corn Silage	Corn for Grain	Soybeans	Alfalfa Hay	Grass Hay	Winter Wheat	Barley	Oats
1985	2,300	12,600	200	8,500	10,500	1,400	900	3,200
1990	3,600	6,700		8,500	14,500	2,500	700	2,900
1995	3,200	6,200	500	7,500	16,500	1,900	1,200	2,100
2000	6,900	4,000		5,800	17,200	2,300	1,300	1,800
2003	6,300	4,000	300	5,000	19,300	1,400	1,200	1,300
2005	6,800	9,700	500	5,200	19,800	1,400	1,000	1,100

Farm Operations								
Year	Number of Farms	Land in Farms (acres)	Average farm size (acres)	Cattle	Commercial Dairy	Hog	Sheep	Poultry
1985								
1990	500	101,300	203					
1995	575	96,750	168					
2000	575	100,000	174					
2002/2003	560	100,000*	179	310	60	40	30	40

Source: Pennsylvania Agricultural Statistics 2002-2003.

\* This figure includes 4,417.3 acres of cropland and 608.7 acres of riparian buffer enrolled in the Conservation Reserve Enhancement Program (CREP).

Animal Numbers							
Year	Dairy cows	Beef cattle/calves	Hogs	Sheep	Goats	Horses	Chickens
1985	5,500	18,400	7,800	400			4,000
1990	6,100	16,300	9,500	550			2,500
1995	5,000	16,500	12,400	350			
2000	5,100	16,200	10,900	550			
2003	5,400	16,800	20,200	700		1,110 (a)	
2004/2005	5,800	16,700	19,000	700		1,110 (a)	

Sources:

Pennsylvania Agricultural Statistics 2003-2004. National Agricultural Statistics Service, Pennsylvania Statistics Office. Harrisburg, PA. 2004.

[www.nass.usda.gov/pa](http://www.nass.usda.gov/pa) – Pages that pertain to agriculture in Fulton County.

(a) The Pennsylvania Equine Industry – Inventory, Basic Economic and Demographic Characteristics of the Equine Industry. College of Agricultural Sciences. The Pennsylvania State University. May, 2003.

## **C. Water Resources / Quality**

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Fulton County is located entirely within the Chesapeake Bay Watershed. This rural county occupies a unique position in the watershed and relative to many areas of the Bay watershed, has good water quality and great potential to further improve local water quality in a very cost effective manner.

Fulton County lies in the headwaters of both the Susquehanna and Potomac River Watersheds. The northern third and western edge of Fulton County drain north to the Juniata River and eventually the Susquehanna River. The principal streams of the Susquehanna system (in Fulton County) include Brush Creek, Sideling Hill Creek, Wooden Bridge Creek, and Little Aughwick Creek. The other two-thirds of Fulton County drain largely to Licking Creek and Big and Little Tonoloway Creeks, tributaries of the Potomac River.

Being located at the “top of the hill” presents unique opportunities and hazards for Fulton County’s residents. With the vast majority of local streams originating within the county, Fulton County does not inherit the polluted surface and groundwater that may emanate from upstream neighbors. The obvious counterpoint to this advantage is the fact that degraded water bodies and water quality in Fulton County have local origins – making it difficult to pass the buck and blame other communities upstream.

### **1. Juniata/Susquehanna River Drainage**

The Juniata River tributaries, which drain roughly one-third of Fulton County, drain largely forested and sparsely populated areas. Consequently, water quality through this drainage is relatively high. Agriculture is present in this drainage, with a number of dairy farms, located on primarily shale soils.

#### **Fulton County Tributaries to the Juniata River Watershed:**

Brush Creek  
Sideling Hill Creek (north)  
Little Aughwick Creek  
Wooden Bridge Creek

#### **Population Centers:**

Wells Tannery  
Hustontown  
Fort Littleton  
Burnt Cabins

#### **Areas of Interest:**

The Juniata watershed in Fulton County is home to one of the two streams in Fulton County designated Exceptional Value under PA Chapter 93 regulations and home to all of Fulton County’s designated wild trout streams. In addition, Cowans Gap State Park is located along the South Branch of the Little Aughwick Creek.

#### **Exceptional Value Stream(s):**

Little Aughwick Creek (above lake @ Cowans Gap State Park)

#### **Wild Trout Stream(s):**

Brush Creek  
Laurel Fork (tributary to Sideling Hill through Wells Tannery) - from T-443 to the mouth  
Sideling Hill (north) – confluence of Oregon Potomac Drainage and Laurel Fork to T-445 Bridge  
Roaring Run (tributary to Little Brush Creek)

## **2. Potomac River Drainage**

The Potomac River watershed, draining roughly two-thirds of Fulton County, has many similarities to the Juniata River watershed with a large percentage of land in forested, sparsely populated areas. In contrast, to the Juniata River drainage, Fulton County's Potomac drainage is home to most of the County's population and agriculture.

The population and agricultural land uses center around a number of streams influenced by limestone geology. These limestone streams receive large volumes of cold water from dozen of local springs. Less flashy hydrographs and a steady supply of cool, clear water gives these streams tremendous potential to support unique biological communities. Not coincidentally, these streams are found amidst Fulton County's best agricultural soils, also limestone in origin. Population centers also occur in these areas of fertile soil and abundant water resources.

Not surprisingly, a significant amount of stream and water quality impairments are also located in this drainage, found in association with population centers and agricultural areas. . The Potomac River watershed in Fulton County is home to all seven of the streams with reaches officially denoted as "impaired" by the PA DEP Source Water Assessment Program (*See Impaired Waters Section of this report, page 11*).

### **Fulton County Tributaries to the Potomac River Watershed:**

Big Cove Creek/Licking Creek  
Little TonoLoway /TonoLoway Creeks  
Sideling Hill Creek

### **Population Centers:**

Hustontown  
McConnellsburg  
Warfordsburg  
Nedmore

### **Areas of Interest:**

The Potomac watershed in Fulton County is home to one of the two streams in Fulton County designated Exceptional Value under PA Chapter 93 regulations. In addition, Meadow Grounds Lake, a PA Fish Commission lake frequented by a large number of boaters, sits amidst State Game Lands along Roaring Run, a tributary to Big Cove Creek.

### **Exceptional Value Stream(s):**

Sideling Hill Creek (south) – Union Township

## **3. Chapter 93 Designations**

Please see Appendix A for a list of the Chapter 93 designations for Fulton County streams.

## **4. Impaired Waters**

Section 303(d) of the Federal Clean Water Act requires states to list all impaired waters not supporting uses even after appropriate and required water pollution control technologies have been applied. For example, a waterbody impacted by a point source discharge that is not complying with its effluent limits would not be listed on the 303(d) list. The PA DEP has an ongoing program to assess the quality of waters in Pennsylvania and identify streams and other bodies of water that do not meet water quality standards (WQSs) as "impaired."

As a follow-up to listing, the state or EPA must develop a Total Maximum Daily Load (TMDL) for each waterbody on the list. A TMDL identifies allowable pollutant loads to a waterbody from both point and non-point sources that will prevent a violation of water quality standards. A TMDL also includes a margin of safety to ensure protection of the water. At present no Fulton County streams are in the TMDL development process, although several Fulton County streams are officially recognized as impaired. All of the officially impaired streams in Fulton County are located in the Potomac River watershed, found in agricultural valleys and are listed as impaired largely due to the impact of agriculture (e.g. grazing, loss of vegetation, excessive nutrients or sediments). The following table includes several characteristics of the designated impaired streams in Fulton County. In addition, please see Appendix B, *Designated Use Attainment Fulton County*, for a map of the locations of these streams.

Stream Name	Watershed	Township	State Water Plan #	Grazing Related Agriculture	Siltation	Nutrients	Vegetation Removal	Unknown/Mercury
Bear Run	Potomac	Union	13B	X				
Big Cove Creek	Potomac	Ayr	13B	X	X	X		
Cove Run	Potomac	Bethel	13B	X	X	X		
Kendall Run	Potomac	Ayr	13B	X	X			
Licking Creek	Potomac	Thompson	13B					X
Spring Run	Potomac	Ayr	13B	X	X	X		
Stahle Run	Potomac	Union	13B	X	X	X	X	

Waterbody assessment and data evaluation is a continuous process. The current impairment status of Fulton County streams was developed using information from stream and lake surveys and other sources, including DEP’s Statewide Surface Water Assessment Program, the Non-point Source Program, and existing and readily available data submitted to DEP by external groups and agencies.

**5. A Watershed Approach**

In recent years, the Fulton County Conservation District has worked closely with the PA DEP, other regulatory and funding agencies and local landowners to prioritize the implementation of conservation activities in Fulton County. Local watershed assessments and DEP’s Source Water Assessment Program (SWAP) have helped the Fulton County Conservation District focus limited time and funding to achieve the greatest “bang for the buck”.

Spring Run, a 7.25 mile, 303(d) listed, agriculturally impaired watershed in Ayr Township is perhaps the best example of these focused efforts. Federal, state and local dollars have been focused on the elimination of agricultural pollution and regeneration of this small limestone watershed. Spring Run has excellent restoration potential, which is now beginning to be realized. Over the last five years, cooperative landowners have teamed with the Fulton County Conservation District and the local USDA NRCS and FSA offices to eliminate hundreds of tons of manure inputs and miles of direct cattle access to streams in this small watershed.

The watershed approach will continue to guide Fulton County’s efforts in the restoration of local water quality and the water quality of the Chesapeake Bay, by focusing limited funding in areas where the largest water quality benefits may be realized.

**D. Trends of Significance to Water Quality**

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**1. Population**

As noted previously, Fulton County is experiencing population growth. This growth in new housing will have potential significance for water quality in Fulton County. As housing development begins to increase, there is a corresponding increase in impervious surfaces, which can lead to increased stormwater flows. Likewise, an increase in rural, single-family dwellings increases the number of on-lot water treatment systems and thus the potential for groundwater contamination should these systems fail.

Even in developed areas, new housing puts additional burdens on the county’s small community wastewater treatment plants. These treatment facilities contribute to nutrient flows into local waterways. Presently, Fulton County has wastewater treatment facilities at Cowans Gap State Park, the Day’s Inn in Town Hill, the Interstate 70 Rest Area, and the School House Village residential development and in the communities of McConnellsburg, Hustontown, Knobsville and Warfordsburg. The communities of Fort Littleton, Burnt Cabins and Needmore are in the process of designing, developing and constructing wastewater treatment plants.

As residential development increases, so too does the potential for nutrient enrichment of local waterways due to lawn and garden maintenance practices. Also, depending upon where these dwellings are located, their construction could slightly increase deforestation rates in Fulton County.

Not only is Fulton County experiencing more housing starts, but there are some increases in commercial development as well. Most of this increase is centered in the McConnellsburg and Warfordsburg areas. Any construction activity has the potential to lead to sedimentation problems in local waterways. Land clearing/disturbance operations do not always obtain nor follow erosion and sediment control plans, resulting in negative impacts to water quality.

Certain areas, such as the borough of McConnellsburg, have experienced such growth and the Fulton County Comprehensive plan notes that Cove Creek is “threatened by increasing amounts of storm water runoff” and that there is a need to minimize impervious surfaces.

## **2. Agriculture**

While increasing population growth is an important potential water quality concern, existing land uses are obviously critical as well. Several studies have been conducted since 1990 that indicate the trends and environmental impacts related to agriculture in Fulton County.

### **a. Trends**

According to the county’s comprehensive plan, while the overall number of farms in Fulton County has decreased over time, the overall size of remaining farms has increased. However, according to USDA data, the number of farms rose from the mid- 1980’s to 2000 and has declined slightly since then. Since the late 1980s, according to USDA data, farm size has actually decreased slightly. Perhaps this discrepancy lies in how a farm is defined. The number of farms may have increased due to the increase in what may be called “farmettes”.

The number of dairy farms in Fulton County has decreased (60), while there has been a corresponding increase in crop and beef farming (250). Although the actual number of dairy farms has declined the average acres under management and the size of the dairy herd per farm has, on average, increased.

There has also been an increase in the number of contracted swine operations. This trend seems like it will continue given that large operations are having more difficulty locating in more eastern counties. Also, we are seeing more interest from local operators in developing contracted swine operations. According to USDA statistics, the number of hogs increased quite a bit from the 1980 to the 90s, but has been fairly steady in recent years. As noted, this may change soon.

Poultry operations seem to have leveled off in recent years. We have a few large poultry operations, primarily turkey barns, but no new operations in the past years. According to USDA statistics, the poultry inventory in Fulton County has decreased in recent years. If we see an increase in these operations, it will be because of market forces that have made this an attractive way for local landowners to diversify their operations.

Beef operations also appear to have leveled off. Fluctuations in recent years are probably due to market concerns/forces. Sheep farms have increased since the 1980s, but appear to have leveled off in recent years.

While no agricultural statistics are easily available for goat farms, local Penn State Cooperative Extension Service employees feel that there has been a slight increase in goat numbers in the past 10 years.

One area of agriculture that has not been addressed to any great degree in Fulton County is equine operations (2003 PA Ag Statistics shows approximately 1,100 horses in Fulton County). While Fulton County does not many large operations (over 100 AEU’s) we feel that paying more attention to this area and increasing BMPs on such operations would be beneficial to water quality. There are easily over 75-100 equine Brown Animal Concentration Areas (ACA’s) or more in Fulton County. Another area that has not received much attention is that of “deer farms”, the number of which is on the increase.

The majority (75%) of the cropland in Fulton County is rented, while at this time approximately 60% of the pastureland is also rental land. This information is important as it shows that most of the crop and pastureland is not under the direct management of the landowner, but under a leaseholder. Rental land is often not treated with the same care as owned land and it is imperative that conservation plans be developed and implemented on these rental lands. Rules are on the books requiring conservation plans on agricultural operations in order to comply with Pennsylvania’s Chapter 102 programs or to participate in federal farm programs; however, adequate capacity to enforce the implementation and updating of these plans is currently lacking.

## **b. Environmental Impacts**

Agriculture has been shown to be a significant source of sediment and nutrient pollution for Fulton County streams. According to DEP agriculture is responsible for 30% or 4,757 miles of stream water quality degradation statewide and according to DEP assessment studies, there are 7 waterways in Fulton County that have non-attainment status. These tributaries include the upper reaches of Bear Creek and Stahle Run in Union Township, the majority of Cove Run in Bethel Township, the lower reaches of Licking Creek in Thompson Township and the entire main branch of Spring Run and Kendall Run in Ayr Township (See Appendix B). These streams appear to be impaired primarily due to agricultural influences (*Please refer to the table in the Impaired Waters section, page 12*).

The 1992 *Licking/Tonoloway Creek Assessment of Non-Point Source Pollution* identified “excessive sediment”, “excessive nutrients from fertilizer”, and “nutrient laden surface and groundwater from animal wastes” as the major pollution issues in these watersheds. As summarized in the report “overall, the two largest problems from non-point agricultural pollution are sediment reaching the streams from erosion and excess nutrients going into stream and ground water from the lack of livestock waste management.” (Assessment, p. VII-13) “The farm interviews identified improper livestock management and improper waste handling as the primary problems related to agricultural wastes.” (Assessment, p. IX-4) The Spring Run watershed was studied more intensely in 2003 and a report released in June of 2004. This report noted areas of severe impairment as a result of agricultural operations.

## **3. Forest Management**

While Agriculture has a significant impact on water quality, it is important to note that the major land use in Fulton County is actually forest. Approximately 69% of Fulton County is forested. Timber harvesting does occur, but the actual degree (number of acres) to which it occurs is unknown as most logging operations are conducted without any permits or township notification. This situation leads to the potential for much abuse and ultimately a negative impact on water quality. Anecdotal evidence indicates that many logging operations do not implement erosion and sediment control measures and thus add to sediment pollution. This concern is noted later in this document.

## **4. Unpaved Roads**

Dirt and gravel roads have the potential to contribute to sediment pollution to local waterways. Fulton County has approximately 160 miles of dirt and gravel roads maintained by the municipalities. This figure does not include private and state-owned dirt and gravel roads. The District administers an active Dirt and Gravel Road Program, which to date has stabilized approximately 9 miles of unpaved township roads in Fulton County. However, the program does not provide funding to address the sediment problems associated with privately owned dirt and gravel roads in the county.

## **E. Sediment and Nutrient / Source Reductions**

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The following component of the County Implementation Plan will provide a brief overview of the conservation programs currently administered by the Fulton County Conservation District, in addition to the programs directed by cooperating agencies such as the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA) and the Chesapeake Bay Foundation (CBF). Each section will then discuss the present accomplishments of the program within Fulton County.

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## **1. Current Programs/Accomplishments in the County**

### **a. Chesapeake Bay Program**

The Chesapeake Bay Special Project Funds Program is a financial assistance program managed by the Pennsylvania Department of Environmental Protection (DEP). The Fulton County Conservation District then administers this program by providing cost-share assistance (currently up to 80%) to farmers to implement an array of Best Management Practices (BMPs) including, but not limited to, barnyard runoff management, animal waste management, stripcropping, diversions, waterways, conservation tillage, stream protection and fertilizer management. These BMPs help to manage the nutrients associated with animal manure produced on commercial livestock and poultry operations.

Through 2005, 28 projects have been completed in Fulton County with Chesapeake Bay Program funding. From January 2006 through 2007 an additional 10 projects have been completed. Historically, this source of cost-share funding has been spent primarily on animal waste management and heavy use area protection; however, with a reduction in funds allocated to conservation districts and a growing trend towards the implementation of “softer” conservation practices (i.e., riparian buffers, stream bank fencing, animal management, cover crops, no-till, etc.), the types of projects funded will likely be very different in the future.

### **b. Dirt and Gravel Road Maintenance (DGR) Program**

In 1997, the Dirt and Gravel Road Maintenance Program was signed into law under Section 9106 of the Pennsylvania Motor Vehicle Code. The intent and purpose of the DGR Program is to fund the safe, efficient and environmentally sound maintenance of sections of dirt and gravel roads, which have been identified as a significant source of dust and sediment pollution to Pennsylvania’s streams. The State Conservation Commission (SCC) distributes monies to county conservations districts in order to administer the program, as well as provide education and funding to local townships to eliminate the non-point source pollution occurring along these rural roadways.

There are approximately 160 miles (845,000 feet) of dirt and gravel roads in Fulton County. This figure refers only to the miles of unpaved roads maintained by local municipalities. There are also an unknown number of private and state-owned unpaved roadways within the county. An initial assessment of Fulton County’s dirt and gravel roads was conducted in 1997. This assessment identified 66 potential worksites, or sections of unpaved roads, that were contributing sediment pollution to the streams of Fulton County.

To date, \$234,577.00 in Dirt and Gravel Road Program funding has been allocated to the Fulton County Conservation District to administer this worthwhile program. Of that, \$164,876.64 has been spent on the completion of 18 projects. As a result of this effort, a variety of Environmentally Sensitive Maintenance (ESM) practices have been implemented on 47,297 feet of unpaved road surfaces within Fulton County.

### **c. Erosion and Sediment Pollution Control (E&S) Program / National Pollutant Discharge Elimination System Permitting (NPDES) Program**

The Fulton County Conservation District has a Level II Program Delegation Agreement with the Pennsylvania Department of Environmental Protection (DEP) to conduct the administrative and enforcement functions of the E&S and NPDES Programs. These programs implement the provisions of Chapter 102, the Pennsylvania Cleans Streams Law and the Federal Clean Water Act. The purpose of the E&S and NPDES Programs is to minimize the potential for accelerated erosion and sedimentation in order to protect, maintain, reclaim and restore water quality and existing and designated uses of waters of the Commonwealth. Chapter 102, Erosion and Sediment Control, regulates the discharge of stormwater associated with four major types of earth disturbance activities: agricultural plowing and tilling, timber harvesting, road maintenance and general construction activities.

#### *Agricultural Plowing and Tilling:*

At a minimum, Chapter 102 requires agricultural plowing and tilling activities to implement and maintain erosion and sediment control Best Management Practices (BMPs). The regulations also require operators to either develop a written Erosion and Sediment Control Plan or to implement a current Conservation Plan. Both plans identify conservation practices and site specific BMPs to minimize the potential for erosion and sedimentation to local waterways. Currently, there are approximately 250 farming operations in Fulton County with Conservation Plans; however, the overwhelming majority of these plans need to be updated. This in itself is a daunting task,

considering that there is only one NRCS employee assigned to Fulton County that has the ability to write/update these Food & Security Act plans. Coupled with the problem of outdated plans and limited resources, historically, the Department of Environmental Protection has not enforced Chapter 102 erosion and sediment control requirements for agricultural operations. As such, the Fulton County Conservation District can only encourage farmers living in agriculturally impaired streams to follow their Conservation Plans and update them if necessary.

#### *Timber Harvesting:*

There are approximately 12,758 acres of publicly owned and 35,936 acres of privately owned forestland in Fulton County. Like agricultural plowing and tilling activities, operators are required, at a minimum, to implement and maintain erosion and sediment control BMPs to minimize erosion and sedimentation to the waterways they impact. Timber harvesting activities that disturb greater than 5,000 square feet are required to develop a written Erosion and Sediment Control Plan; however, the operator is not required to have the plan reviewed or approved by the district. As a result, the Fulton County Conservation District is largely unaware of where logging operations are occurring within the county.

#### *Construction Activities:*

In general, construction activities are subject to the same erosion and sediment control requirements as agricultural and timber harvesting operations, with the exception of additional requirements for the permitting a certain activities. All earth disturbance activities disturbing five acres or more are required to obtain a NPDES permit. Activities disturbing between one and five acres are required to obtain a NPDES permit if the project has a point source discharge to a surface water of the Commonwealth. When a NPDES permit is required, an Erosion and Sediment Control Plan is also required as part of the permit application. Projects disturbing less than one acre are required to develop a written plan; however, these plans do not have to be reviewed or approved by the district. NPDES permit requirements allow the district to have greater control over larger construction activities, otherwise, the district lacks the ability to ensure that written Erosion and Sediment Control Plans are being prepared and properly implemented for smaller earth disturbance projects.

#### **d. Farmland Preservation Program**

The Farmland Preservation Program provides an avenue of funding for the purchase of the development rights of local farm acreage in order to protect and preserve this land use from the pressures of residential, commercial and industrial development. The Pennsylvania Department of Agriculture (PDA) provides the funding to purchase these development rights. The county also provides a portion of funding to complete a joint purchase between the county and the state. In addition, PDA will match the amount contributed by the county. To be considered for purchase, the farm must meet the following criteria: (1) The farm must be located in a designated agricultural security area; (2) The farm must be at least 50 acres in size; (3) At least 50% of the soils located on the farm must consist of capability classes I-IV as defined by USDA-NRCS; and (4) The farm must be at least 50% harvested cropland, pasture or grazing lands. Selection of a farm for purchase is based on ranking order and the availability of funding.

To date, 94.92 acres of local farmland have been preserved through the Farmland Preservation Program. The county is currently in the process of preserving an additional 50 acres.

#### **e. Nutrient Management Program**

Pennsylvania's Nutrient Management Act 6 of 1993 and Act-38 of 2007 requires the regulatory oversight of Nutrient Management Plans. The Nutrient Management Program is administered and enforced by the PA Department of Agriculture, State Conservation Commission and administered by conservation districts. The Fulton County Conservation District houses at least one staff person certified to write and review these plans. The goals of the Nutrient Management Program are to improve farm efficiency in regards to manure management, as well as to improve the quality of waters of the Commonwealth. The Nutrient Management Program offered two financial assistance programs to livestock or poultry operations. The Nutrient Management Plan Development Incentives Program (PDIP) provides a 75% cost-share to develop a Nutrient Management Plan that complies with the Nutrient Management Acts. In addition, the Nutrient Management Grant Program provides financial assistance (80%) to those operators who are required to install Best Management Practices (BMPs) in order to comply with an approved Nutrient Management Plan, but do not have the financial means to do so. These programs as of January 2008 are currently without funds.

There are currently 52 board-approved Nutrient Management Plans on file at the Fulton County Conservation District. Approximately 25% of these are for Concentrated Animal Operations (CAOs) or Concentrated Animal Feeding Operations (CAFOs), while the remainders were required in order to qualify for potential state or federal

funding sources. In addition, there are several Nutrient Management Plans on file that meet the old Act 6 standards, but did not have to be approved by the District Board of Directors.

#### **f. Environmental Education Program**

The Fulton County Conservation District strongly believes that education plays a *crucial* role in protecting water quality and improving the health of the Chesapeake Bay. Through the recent manipulation of staff duty responsibilities and the creation of an Environmental Education Specialist position, the District is devoting more time and energy toward environmental/conservation education. The District will continue to pursue grants, conduct tree and bulb sales, and work in partnership with other agencies in order to obtain the financial and staff resources necessary to implement needed educational programs.

#### **g. Agricultural Management Assistance (AMA)**

Through AMA, NRCS provides financial assistance (75% cost-share) to establish Best Management Practices that minimize accelerated erosion and sedimentation to Pennsylvania streams. This program is often used in conjunction with other funding resources, such as Project Grass, to increase the cost-share up to 100%.

#### **h. Conservation Security Program (CSP)**

CSP is a relatively new conservation effort by NRCS to reward farmers for doing the best environmental work in the field of agriculture to reduce sediment and nutrients to waters of the Commonwealth. CSP is a three-tiered program that provides financial incentives to qualified farmers for implementing certain conservation practices on their land. The higher the tier, the more money the farmer is eligible to receive. Tier one provides financial incentives for farmers who are addressing all water quality and soil loss issues in one field on their farm, while the second tier provides money to farmers who address all water quality and soil concerns on the entire farm. To qualify for the third tier, the farmer must address all environmental concerns on the farm, including forest and wildlife resources.

In the first year for CSP (2004), farms within the Raystown Branch Watershed in Fulton County were evaluated for enrollment in the program. In 2005, operations within a different Fulton County watershed will have the opportunity to sign up for the program. In 2008, operations within the Lower Juniata watershed will have the opportunity to sign up for the program. According to NRCS, every watershed in the nation will be evaluated for CSP within the next seven years.

#### **i. Environmental Quality Incentives Program (EQIP)**

Through EQIP, NRCS provides technical and financial assistance to local farmers in order to put into operation sediment and nutrient reducing conservation practices such as animal waste management facilities, barnyard lane stabilization, streambank fencing, terraces, filter strips, tree planting, permanent wildlife habitat, nutrient management, pest management and grazing land management. There are five categories of available funding: grazing, grazing cropland, no-till, livestock and organic. The EQIP program currently supports 50% of the costs associated with these practices, with a potential to increase the cost-share to a maximum of 75%, if the landowner agrees to incorporate a "wildlife practice" on the farm. A cost-share of 90% is available for beginning farmers or other limited resource farmers. EQIP funding is often used to supplement other conservation programs to help pay for projects.

A number of projects have been completed within the county using EQIP funding. To date, funding has been spent primarily on animal waste management and heavy use area protection practices. Available funds and a shift towards funding more cost effective conservation practices will determine how EQIP money is spent in the future.

#### **j. Grassland Reserve Program (GRP)**

GRP, established by NRCS in 2002, funds the restoration and preservation of grassland, pasture and rangeland to reduce sediment loss from agricultural operations. Financial benefits to qualified landowners include easements, rental agreements and annual cost-share payments. GRP funding can also be used to construct diversions or implement rotational grazing systems.

To date, there have been 18 GRP contracts awarded in Fulton County, resulting in the preservation of 1,166 acres of grassland/pasture – supposedly the greatest number of applicants in the Commonwealth.

#### **k. Conservation Reserve Enhancement Program (CREP)**

CREP, offered by the USDA Farm Service Agency (FSA) since 1986, was developed to help protect the Chesapeake Bay from the effects of sediment and nutrient-laden runoff associated with agricultural activities. CREP provides financial assistance (50% cost-share), as well as annual rental payments, to landowners who enroll in the program. A variety of conservation practices may be funded, including, but not limited to, riparian buffers, stream bank fencing, filter strips, cover crops, soil conservation, wildlife habitat and wetland creation.

CREP has achieved great success in Fulton County. Currently, 4,417.3 acres of cropland and 608.7 acres of riparian buffer have been enrolled in CREP. In addition, 20.1 acres of wetland restoration has also occurred as a result of this program.

#### **l. PA DEP Stream Bank Fencing Program**

This program, offered by the Department of Environmental Protection, improves water quality by reducing soil erosion and nutrient deposition caused by livestock that have direct access to waters of the Commonwealth. The Stream Bank Fencing Program covers all costs associated with the design and installation of a high tensile fence and one agricultural crossing or ramp for landowners with livestock operations along streams in the Chesapeake Bay Watershed. In order to be eligible for this program, the landowner must agree to provide a minimum 12-foot wide buffer between the top of the stream bank and the fence line.

To date, the DEP Stream Bank Fencing Program has funded 10 projects in Fulton County. As a result, livestock have been fenced out of 29,630 feet of stream.

#### **m. Farm Stewardship Program (FSP)**

Established in 2000, the Farm Stewardship Program is a private conservation program jointly operated by the Chesapeake Bay Foundation (CBF) and Ducks Unlimited (DU). Unlike DEP's Stream Bank Fencing Program, FSP not only fences livestock out of streams and wetlands, but also encourages the creation of wooded riparian buffers to help reduce sediment and nutrient loads. This program covers the total cost of fencing and plantings and in addition, provides "BMP credits" per acre of buffer, which the landowner can then use to help pay for a variety of conservation practices (i.e., stabilized stream crossings, diversions, milkhouse waste management, roof gutters/downspouts, grassed waterways, etc.). The minimum buffer width for FSP is 15 feet.

Currently, 33 contracts have been signed for CBF fence in Fulton County. As a result, livestock have been fenced out of 192,119 feet of stream and local operators have earned \$155,670 in BMP credits to implement other conservation practices on their farms. CBF funds have not been available to implement this conservation program since 2003.

#### **n. PA DEP Growing Greener Grant Program**

The Fulton County Conservation District has worked hard to secure several DEP Growing Greener Grants to fund a variety of projects aimed at the improvement of water quality within Fulton County:

##### *Licking/Tonoloway Creek Watershed Assessment*

In August of 2001, the Fulton County Conservation District received \$46,035.11 in Growing Greener funds to conduct the Licking/Tonoloway Creek Watershed Assessment. This ongoing assessment, encompassing roughly two-thirds of Fulton County, has included macroinvertebrate and stream chemistry assessments, as well as spring and groundwater sampling. The bulk of the work has been done in house by Conservation District staff and seasonal interns. Preliminary results have already assisted the District in setting priorities for the implementation of agricultural conservation practices and stream restoration projects to reduce sediment and nutrient loads to Fulton County's streams.

##### *Spring Run Watershed Technical Assessment*

Funded by the Growing Greener Grant Program (\$40,800) in August 2002, the main purpose of the Spring Run Watershed Technical Assessment was to develop a comprehensive stream corridor evaluation of the Spring Run watershed, in order to provide an effective Watershed Management Plan.

This assessment effort included identifying stream reaches along Spring Run where future stream restoration and stabilization efforts will be most beneficial. With critical areas identified and projects designed, future funding will be more easily acquired.

The Fulton County Conservation District continues to work closely with streamside landowners to implement streambank fencing and other BMP projects along this high priority stream. The assessment was completed and in the following round of Growing Greener, the district submitted a proposal to design and implement a stream restoration project along the most critically impaired reaches of Spring Run; however, the proposed project did not receive additional funding.

#### *Big Cove Creek Urban Stream Restoration Project*

The Fulton County Conservation District, working closely with conservation minded landowners along Big Cove Creek near downtown McConnellsburg, received \$31,500 in Growing Greener funding (September 2003) to implement a previously funded design for a stream bank restoration project along Big Cove Creek, as it flows south of Lincoln Way West along the McConnellsburg Borough/Ayr Township line. The proposed project will serve as a demonstration project, highlighting the benefits of stream restoration and careful management of urban stream frontage for conservation and aesthetics.

The chief objectives of this restoration design include the following:

- To further stabilize the site.
- To improve flood storage capacity.
- To enhance the amenity and aesthetic value of the site.
- To enhance the area's riparian habitat diversity and value.
- To provide a demonstration area with educational signage in order to promote the benefits of improved riparian management in urban and residential areas.

#### *Fulton County Medical Center Innovative Stormwater Management Project*

The Fulton County Conservation District, in cooperation with the Fulton County Medical Center, secured \$50,000 in Growing Greener Grant funding in September 2003 to incorporate unique environmental strategies into the development of a new healthcare facility. The grant proposes an innovative, onsite approach to stormwater management. Best Management Practices (BMPs) such as infiltration trenches, rain gardens, rainwater cisterns, porous pavement and enhanced landscaping will be implemented in order to reduce runoff, improve water quality and encourage groundwater infiltration. In addition, the site will serve as a demonstration of improved stormwater management practices for local municipalities, developers and their contractors.

#### *Cover Crop Incentive Program Project*

A grant was submitted in 2007 to Growing Greener I to finance a county wide cover crop incentive program. The program was to encourage farmers to follow their corn for silage with a no-tilled cover crop. This two-year grant was awarded in 2008.

### **o. Project Grass**

Project grass is a conservation program administered by NRCS and funded by the DEP Growing Greener Grant Program. The purpose of Project Grass is to provide technical assistance to establish rotational grazing systems and cost-share funding (75%) to implement BMPs such as fencing, watering systems, stream crossings, alleyways, stabilization, etc. Project Grass funds can be used to supplement other sources of funding to complete projects.

In 2003, the Fulton County Conservation District received \$12,692.30 in Project Grass funding to implement conservation practices on three farms. The second round of funding in 2004 provided the district with an additional \$18,000 for 4 projects. And the third and final round of funding in 2005 provided the district with an additional \$14,750 for 6 farms. This money has been piggy-backed with Chesapeake Bay Program – Special Project funding for the installation of BMPs on thirteen farms in the county.

**p. Raystown Branch-Potomac-Aughwick Watersheds, Bedford-Fulton County, Cover Crops Incentive Program**

In September 2003, the Western Pennsylvania Conservancy was awarded \$154,694 in Growing Greener funds to implement a Cover Crops Incentive Program. This program will directly lead to reductions in nutrient runoff, soil erosion, and soil quality declines on 2,650 acres of the watersheds' farmland by establishing cover crops on corn silage fields. Cover crops can reduce soil erosion by an average of 65% to 95%, depending on the soil type; reduce excess soil nitrogen by scavenging 75% or more of the residual nitrogen; and increase soil quality by increasing soil organic matter levels by 10% in just three years.

In its first year of implementation (2004), 30 Fulton County producers enrolled 1,564 acres of corn silage ground for cover crop planting and cost share funding through the program. High corn yields resulted in less silage harvest than anticipated and accurate determinations of cover crops planted are currently being tallied. As a result, it is estimated that approximately \$15,000 in cost share funds will be dispersed to Fulton County farmers for their efforts. In the second year (2005), 26 County producers enrolled 1,540 acres. And in the third and final year (2006), 35 Fulton county producers enrolled 2,099 acres.

**q. Agricultural BMP Implementation and Technical Assistance Project: Potomac and Juniata River Watersheds, Fulton County**

The Western Pennsylvania Conservancy received a \$50,000 Growing Greener Grant in January 2004 to conduct the Agricultural BMP Implementation and Technical Assistance Project. A partnership among Western Pennsylvania Conservancy, The Fulton County Conservation District, the Natural Resources Conservation Service, and the Bedford-Blair County Crop Management Association, will address Fulton County agriculturally-linked watershed conservation challenges by:

- Inventorying the county's existing agricultural conservation practices to improve the ability to assess conservation gaps and report progress made in recent years to DEP for credits toward the Commonwealth's Chesapeake Bay Watershed conservation goals.
- Laying the foundation for increased use of no-till planting and cover crops and laying the foundation for a Crop Management Association in Fulton County.

This project is scheduled to get underway in the Spring of 2005.

**r. Energy Harvest Grant Program**

*Fulton County Medical Center Green Building Project*

The Fulton County Conservation District received \$200,000 of Pennsylvania Energy Harvest funds (February 2004) to aid in the design and construction of a high performance, environmentally sound, "green" healthcare facility on 20 acres of ground in Todd Township, Fulton County, at the western edge of the Borough of McConnellsburg.

Key elements to be incorporated into the new facility include:

- 1) A passive solar hot water heating system.
- 2) High performance glass and daylighting to reduce lighting costs, while preserving and enhancing the insulative capacity of the building.
- 3) A geothermal heating system to serve the majority of the building.

These technologies will constitute only a portion of a "systems oriented approach" to design and construction, which seeks to utilize low impact development in the areas of sustainable site design, water and energy efficiency, utilizing environmentally responsible methods and materials, and maintaining a high level of indoor air quality.

The Fulton County Medical Center Green Building Project represents a valuable opportunity to address the dual concerns of energy consumption and environmental quality. The application of proven green technologies into a hospital setting is innovative territory. This project will demonstrate the repeatability of these technologies for other healthcare facilities statewide, thus becoming the rule, rather than the exception. The new Fulton County Medical Center will provide an enhanced living, healing and working environment for long-term residents,

patients and employees, as well as protect and conserve the natural environment and the rural character of the site.

#### *Fulton County Medical Center Energy Harvest II*

On November 5, 2004, the Fulton County Conservation District received an additional \$125,000 in the second round of Energy Harvest funds to further enhance the design and construction of a high performance, "green" health care facility.

#### **s. Pennsylvania DEP Section 319 Clean Water Act Monies**

##### *The Spring Run Agricultural BMP Nutrient Reduction Project*

In December 2004, the Fulton County Conservation District was awarded \$78,715 in Section 319 Clean Water Act monies. The Spring Run Agricultural BMP Nutrient Reduction project will implement agricultural Best Management Practices on three agricultural operations along the main stem of Spring Run, a small limestone watershed in the Potomac River Watershed, Fulton County. These projects constitute an integral part of an overall comprehensive plan for each operation and will significantly, and measurably, reduce nutrient and sediment loading to the main stem of Spring Run, the Potomac River and the Chesapeake Bay. These projects will build upon other restoration projects undertaken in this small watershed, including aggressive streambank fencing and planting achievements, as well as barnyard improvement and elimination of manure laden runoff. The three proposed projects represent the elimination of 90% of the remaining direct livestock access to the perennial main stem of this valuable waterway.

Spring Run is on Pennsylvania's 303D list and is Fulton County's highest priority for conservation and restoration. Local interest and involvement in the conservation and restoration of the Spring Run Watershed is at an all time high.

#### **t. Other efforts within the County**

##### *Fulton County Water Resources Forum*

From 2002-2004, the Fulton County Conservation District used various sources of funding to sponsor three Fulton County Water Resource Forums. The purpose of these forums was to bring provide a venue for local citizens to learn of and discuss water resource issues with water resource professionals and municipal officials. The forums have been successful, averaging an attendance of 70 participants, at highlighting watershed management, wastewater treatment, non-point source pollution, stormwater and stream restoration issues in the local landscape.

##### *Stream Restoration at Camp Sinoquipe*

In August 2001, the Mason-Dixon Council of the Boy Scouts of America secured \$172,000 in Growing Greener funds to conduct a stream restoration project along Dry Run, located within the Juniata/Susquehanna Watershed. This project will stabilize Dry Run, a tributary to Camp Sinoquipe Lake, which has contributed excessive sediment due in part to accelerated erosion and head cutting and poor road maintenance. This project has changed its focus and scope since inception and is now nearing completion, with significant stream restoration work, improved daylighting and drainage along the township road. Two new arch culverts were installed – one under the township road and one under an access road to Camp Sinoquipe. Dirt and Gravel Road Driving Service Aggregate (DSA) is scheduled to be placed in Spring of 2005.

##### *Spring Run Adopt – a – Stream*

In March 2003, the PA Fish and Boat Commission entered a reach of stream toward the mouth of Spring Run in the Adopt-a-Stream program, with the Fulton County Conservation District serving as the sponsor. This program will provide habitat assessment and technical assistance, including up to \$2,000 per year for the installation of habitat improvement structures.

In the fall of 2004, local citizens, DCNR Bureau of Forestry and conservation district staff worked to install four habitat improvement structures along a channelized portion of Spring Run below the village of Webster's Mill.

##### *Kerper Tract Enhancements*

The Fulton County Conservation District has been working the with Pennsylvania Department of Conservation and Natural Resources (DCNR), Bureau of Forestry to enhance the Kerper Tract, also known as Redbud Valley. The Kerper Tract is approximately 500 acres of State Forest Land, donated in a bequest from the Edmond Kerper Estate. The tract has impressive plant and bird diversity and offers excellent accessibility to the public.

The Kerper Tract lies downstream of the mouth of Spring Run, along the banks of Big Cove Creek and makes up a portion of a popular section of delayed harvest trout waters, becoming an increasingly important tourist destination. In the past, the site was utilized for environmental education and recreation. Infrastructure at the site has fallen into disrepair and invasive plants, including multiflora rose and honeysuckle, have run rampant. The district is currently pursuing hopes of redeveloping walking trails, learning stations, and a bridge to cross the creek and gain access to the floodplain /riparian area west of the creek. Preliminary trails have been cleared and local schools have been surveyed for potential interest. The DCNR Bureau of Forestry Buchanan State Forest District Office is leading the site assessment and funding of these potential improvements.

#### *PACD Mini-Grants*

The Fulton County Conservation District was awarded two PACD mini-grants in the fall of 2004. One of the grants funded an educational program geared towards local middle school and high school students. The goal of this program was to demonstrate the relationship between land use and water quality. Thus far, in conjunction with this program, students have planted approximately 650 trees in riparian/wetland areas across the county.

The other grant was used to develop and implement a workshop series, co-sponsored with the Fulton County Planning Commission, aimed specifically at local township officials, but also open to the general public. The main focus of this series was land use, especially the impacts of growth and water quality. The main topics presented at the workshops were "visioning for growth," wastewater treatment, low-impact development, erosion and sediment control requirements and stormwater issues.

In 2005 the Conservation District was awarded a PACD mini-grant to develop and facilitate a workshop and publication about proper care and maintenance of on-lot sewage disposal systems. The District produced a publication that consisted of a 13 page informational newsletter that was distributed to approximately 5000 Fulton County residents. A follow-up workshop was also held for those interested in receiving more information or clarifying issues. This educational effort was designed to minimize the number of failing on-lot wastewater treatment systems to not only protect water quality, but to protect human health as well.

#### *Big Cove Creek Community Corridor Initiative*

Pursue the design and implementation of a stream restoration project along the most critically impaired reaches of Spring Run and Big Cove Creek. Spring Run is a Fulton County watershed of highest priority for Ag BMP implementation and stream restoration efforts. Spring Run is a tributary to Big Cove Creek, also a high priority for stream restoration efforts. The largely intact riparian buffer along Big Cove Creek as it flows along the Borough of McConnellsburg/Ayr Township border should be preserved and restored as a community greenway and corridor for the natural control of flooding and stormwater runoff, as well as public access and education.

#### *DEP Environmental Education Grant*

The District received a DEP Environmental Education grant in 2005 to conduct environmental education programs with local school students. Utilizing that grant, the District has purchased some educational materials and plans to work with schools in the spring of 2006 for hands-on educational experiences illustrating the connection between land use and water quality.

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The following section will identify the remaining and future needs of the aforementioned programs in order to continue to reduce the amount of sediment and nutrient loading to the waterways of Fulton County.

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## **2. Remaining and Future Needs**

### **a. Agricultural Needs**

#### *Chesapeake Bay Program*

There is an ongoing need in Fulton County to encourage farmers to implement conservation practices such as addressing "brown" animal concentration areas (ACA), riparian buffers, stream bank fencing, cover crops and no-till. In addition, adequate, dedicated funding is necessary to implement these practices on local farms in order to significantly reduce the amount of nutrients discharged to local waterways. The Fulton County

Conservation District should continue to work with NRCS to access additional funding from other conservation programs in order to supplement the costs associated with these projects.

In order to encourage farmers to implement these types of conservation practices, the Fulton County Conservation District must provide public education and outreach, whether in the form of public meetings, workshops, one-on-one interactions, field days, etc. Additional funding for the Chesapeake Bay Special Project funds must be provided by DEP.

*Conservation Reserve Enhancement Program, DEP Stream Bank Fencing Program and Farm Stewardship Program:*

Additional stream bank fencing is needed in Fulton County, as there are still a large number of operations where animals have direct access to the stream. Stream bank fencing will benefit local streams by helping to reduce the amount of soil and nutrients entering these waterways. The Fulton County Conservation District, along with our cooperating partners, has done a good job of selling the environmental and livestock health benefits associated with this conservation practice. The district must continue to encourage local farmers to fence their livestock out of the stream through ongoing education and outreach efforts, be it a workshop, field day or by personal interaction with the landowner.

The need for additional stream bank fencing cannot be addressed without additional funding from federal, state and private resources. In addition, DEP should also require wider riparian buffers and mandate the fencing of all livestock out of waters of the Commonwealth.

*Farmland Preservation Program:*

Currently, the greatest need facing the Farmland Preservation Program is convincing the Fulton County Commissioners to contribute more money to this worthwhile cause. With a greater contribution from the county, PDA would in turn contribute more and therefore, more local farmland could be preserved through this program.

*Grant Programs (Growing Greener, Energy Harvest, Section 319 Clean Water Act Monies, etc.):*

The Fulton County Conservation District shall continue to pursue and apply for grant opportunities to fund projects in Fulton County aimed at reducing sediment and nutrient loads to local waterways. In addition, DEP should continue to dedicate funding to conservation programs such as Project Grass and the Cover Crops Incentive Program.

*NRCS Cost-Share Programs (AMA, CSP, EQIP, GRP):*

Adequate funding is needed to through the Farm Bill to fund conservation programs that will help to reduce sediment and nutrient loads to Fulton County's streams. In addition, the Fulton County Conservation District should continue to work closely with NRCS to combine funding resources to address *all* sediment and nutrient issues on farms in the county. NRCS should strive to submit more EQIP applications to address the runoff from "brown" ACA's.

*Nutrient Management Program:*

Conservation districts must have the ability to charge for the review of Nutrient Management Plans, much like charging for the review of Erosion and Sediment Control Plans. District staff is spending a considerable amount of time reviewing plans that are grossly inadequate. Districts need to have the ability to recoup some of the costs associated with the time spent reviewing these plans. Districts should have the ability to set their own fee schedule and even require additional fees for additional reviews, if necessary. Also, DEP or PDA must enforce the implementation of these plans, otherwise, how effective are they *really* in reducing nutrient inputs to waters of the Commonwealth? Ultimately, adequate, dedicated program funding must also be provided to the districts to properly administer the program.

**b. Erosion and Sediment Control Needs**

*Agricultural Plowing and Tilling Activities:*

Agricultural plowing and tilling activities are a major source of erosion and sedimentation to local streams. The Fulton County Conservation District must have the ability to ensure that local farms are operating under a current Conservation Plan in order to minimize these sediment loads. Changes to the Chapter 102 regulations and the ability to enforce these regulations must be addressed. In addition, District staff should be provided training on Conservation Plans, as well as dedicated funding, to assist NRCS in the development, review and implementation of these plans, which in Fulton County would constitute a full-time position dedicated solely to writing soil and water conservation plans and not need to write and administer grants and not need to design and supervise installation of conservation practices.

#### *Timber Harvesting:*

The Fulton County Conservation District must have the ability to ensure that written Erosion and Sediment Control Plans are being prepared and properly implemented for all timber harvesting operations in the county. These operations contribute a significant amount of sediment pollution to local streams. The first step in addressing this need, are changes to the Chapter 102 regulations. The regulations should require that all timber harvesting operations greater than one acre at a minimum, be required to submit an Erosion and Sediment Control Plan to the district for review and approval prior to the start of the logging activity. The program should also require the routine inspection of these sites to ensure compliance with the regulations. In the meantime, the Fulton County Conservation District must continue to work closely with conservation partners such as local township supervisors, the Bureau of Forestry and the Pennsylvania Fish and Boat Commission to get a handle on the timber operations occurring within the county. Education and training opportunities for loggers should also be conducted to make operators more aware of the Chapter 102 requirements.

#### *Construction Activities:*

Ultimately, changes to the Chapter 102 regulations are necessary in order for conservation districts to reduce the erosion and sedimentation associated with construction activities, especially those projects disturbing less than one acre. The regulations must be simplified, requiring that all projects over one acre obtain a NPDES permit. Until such time, the district should continue to pursue the development of a Memorandum of Understanding (MOU) with each township. These MOUs should require that the landowner have an approved Erosion and Sediment Control Plan prior to the issuance of a land use permit. In addition, the MOUs should require the townships to notify the district of permit applications received that involve greater than one acre of earth disturbance.

Additionally, the Conservation District needs to “reach out” to the local earthmoving contractor community and educate them on the specific requirements of Chapter 102. The District has never sponsored an Erosion & Sediment Control Workshop for local earthmoving contractors – most education and outreach efforts have been focused on local municipalities and loggers. The ultimate goal of the workshop would be to establish a cooperative working relationship with these contractors. A better understanding of the regulations will ideally prevent erosion and sediment pollution problems before they occur.

In summary, if conservation districts are to reduce the sediment pollution associated with agricultural, timber harvesting and construction activities, DEP must provide adequate, dedicated funding to districts in order to properly administer this program. Administering the E&S and NPDES Programs is a full-time job; however, DEP currently only funds a portion of a technician’s salary. In many cases, technicians must administer other programs in order to make up their salaries and as a result, the time required to administer the E&S and NPDES Programs to their fullest potential cannot be met. Currently, the District Manager administers this program with the assistance of a part-time Erosion Control Specialist, who works primarily as a Land Use Planner for the Fulton County Planning Commission.

#### *Road Maintenance Activities:*

There is a serious need to conduct another Dirt and Gravel Road Assessment in Fulton County to determine the current status of unpaved roads in each township and identify potential worksites. Once this assessment has been completed, the Dirt and Gravel Road GIS database for the district must also be updated. Also, a general awareness of why dirt and gravel roads are a problem in regards to water quality is lacking and should be addressed.

Dirt and gravel roads and the manner in which they are maintained are a major source of erosion and sediment pollution to the streams of Fulton County. The Fulton County Conservation District must be provided with adequate, dedicated funding by the State Conservation Commission to properly administer this program. Also, additional funding is needed to complete the potential projects that have been identified.

As stated earlier, the Dirt and Gravel Road Program does not provide funding to address sediment problems on privately owned roads. Currently, there is no funding available to address these issues. The District would like to develop a cost-share program to provide funds to implement environmentally sensitive road maintenance practices on privately unpaved roads, particularly farm lanes.

### **c. Additional Needs**

#### *Environmental Education Program:*

While projects “on the ground” often correct immediate needs and problems, it’s also important to be proactive and to think long-term. One way to meet future needs and hopefully prevent future problems is through educational programs. The Fulton County Conservation District strongly believes in the value of education and educational programs, especially in the public school system. The District feels that additional resources need to be made available to increase our ability to conduct educational programs.

The District will place more emphasis in the near future on creating more programs for the agricultural community. Now that new nutrient management regulations have been promulgated, there is more emphasis on agricultural compliance issues, and no-till agriculture is being greatly encouraged, the District needs to more actively provide educational opportunities to our agricultural community. The District is actively pursuing funding sources to accomplish these important goals.

## **F. County Implementation Plan**

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### **1. Best Management Practice (BMP) Implementation Needs**

The following chart illustrates the BMPs still needed in order for Fulton County to meet its “share” of the responsibility for nutrient and sediment reductions to the Chesapeake Bay Watershed. These figures were provided by the Department of Environmental Protection and the “credits” for BMP implementation reflects our best estimate as to how well Fulton County has achieved, to date, its implementation goals. The chart also shows the BMPs that were accomplished in 2005, as well as projections for BMP implementation through 2010.

While this chart provides some information regarding where we “are” and where we “need to go” in Fulton County, the District feels it *does not* accurately represent our gains in certain areas. Given the turnover within the District and the potential for gaps and inaccuracy in BMP reporting, the District feels that the chart serves only as a “guide” at best. In addition, some of the BMPs listed are beyond the scope of typical district responsibilities (such as septic denitrification). However, through educational endeavors, we feel that we can stimulate other parties to participate in helping Fulton County meet its “responsibilities” regarding nutrient and sediment reduction.

### **2. Plan of Action**

The following section provides a list of the specific implementation strategies that the Fulton County Conservation District will pursue over the next five years. Many of these strategies are similar to those expressed in the *Assessment of Agricultural Non-Point Source Pollution for the Licking-Tonoloway Creek Watershed (1992)*. While the District has made some headway in addressing our impaired waterways, there is still room for improvement and many projects are already “in the works,” some of which are simply waiting much needed funding. In 2005, the District received a total of \$32,150; in 2006 we received \$73,550 and in 2007 we received \$61,720 in Chesapeake Bay Special Project funds to implement a number of these important objectives and projects.

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### **a. Agricultural Compliance Initiative**

#### *Background*

Fulton County is situated entirely within the Chesapeake Bay Watershed. More specifically, it lies at the “top of the hill,” in the headwaters of both the Susquehanna and Potomac River drainage basins. The northern and western edges of Fulton County, encompassing approximately one-third of the total area, drain to the north into the Juniata River and eventually, the Susquehanna. The remaining two-thirds of the county drain southward into tributaries of the Potomac. This unique position within the Chesapeake Bay Watershed presents valuable opportunities for the residents of Fulton County. With the vast majority of local streams originating within the county’s limits, Fulton County does not inherit polluted surface and groundwater resources from upstream neighbors. As a result, degraded water quality within the county has local origins.

Seven streams in Fulton County have been officially recognized as being impaired by the Pennsylvania Source Water Assessment Program. For all but one, the main source of this impairment has been identified as agricultural. All of the agriculturally impaired streams in Fulton County are located within the Potomac River drainage basin. As stated earlier, this watershed comprises roughly two-thirds of the county. In addition, it is home to the majority of the area's population and agricultural operations. Also, these streams are heavily influenced by the limestone geology that dominates the Cove. For these reasons, the District has identified the county's ag-impaired streams as a high priority for local conservation efforts and is also the main focus of this specific initiative.

The Fulton County Conservation District recognizes that a watershed approach is essential in guiding the District's efforts to protect and restore local water quality. This approach has aided the District in focusing limited funding in areas where the largest water quality benefits may be realized. As a result, the efforts of this initiative, in conjunction with the goals and objectives of the *County Implementation Plan* and other District sponsored conservation efforts, will work to reduce sediment and nutrient loads to these impaired streams, and ultimately, the Chesapeake Bay.

### *Strategy*

The purpose of this proposal is to request an Agricultural Compliance Initiative Special Project Grant to administer the proposed *Fulton County Agricultural Compliance Initiative*. This initiative will focus on increasing agricultural compliance on farming operations located within the drainage basins of streams that have been designated as "agriculturally impaired" by the PA Source Water Assessment Program.

The general approach of the proposed initiative will occur in two distinct phases. The **first phase** will consist of data collection and assessment. The Fulton County Conservation District will hire a consultant to develop a GIS database for assessment and tracking purposes. Once the database has been developed, the District will conduct an assessment of each ag-impaired watershed, beginning with the stream of highest priority. This assessment will be conducted to ultimately determine the level of compliance of each agricultural operation within the impaired watershed. Once the assessment has been completed, farms will be ranked within each watershed as having a high, medium or low environmental impact. A "compliance list" will then be developed for each watershed to establish priorities in an effort to reduce sediment and nutrient loads to the impaired streams and improve water quality.

The **second phase** of this initiative will be to actually assist local operators in achieving voluntary compliance with baseline manure management and erosion and sediment control requirements. Using the "compliance list" generated for each ag-impaired watershed in the first phase, the District will schedule initial "one-on-one" meetings with each landowner. The District will focus these efforts on the highest priority impaired stream first, beginning with the operator(s) ranked as highest priority (i.e., those with critical environmental impacts), to discuss erosion and sediment pollution control and manure management requirements and why they are important to local water quality. The specific objectives of these individual meetings will be to determine how sediment and nutrient loads can be reduced and what educational, technical and/or financial assistance is needed or available to bring the operation into compliance with the minimum requirements. Once these "compliance assistance measures" have been identified, a plan of action will be developed for each operation. This plan of action will detail the measures and/or practices to be installed or developed and a reasonable timeframe for the landowner to complete these measures/practices in order to bring the operation into voluntary compliance. The plan will be reviewed with the landowner and the District will conduct follow-up visits to determine the progress of the plan of action. Throughout both phases of this strategy, environmental education efforts will be a key component to the initiative's overall success.

If voluntary compliance cannot be achieved, the Fulton County Conservation District Board of Directors shall make a formal recommendation that a particular operation be referred to DEP for enforcement action if they determine that the District staff has made every plausible effort to assist the landowner; however, the landowner refuses to comply with the basic requirements. This action shall only be used as a last resort in an effort to achieve compliance.

### *Objectives*

The **primary objective** of the *Fulton County Agricultural Compliance Initiative* will be to increase compliance with baseline erosion and sediment control and manure management requirements on operations contributing to the degradation of impaired waterbodies. As a result, sediment and nutrient loads will be reduced and water quality will be improved – both major objectives of the District's *County Implementation Plan*. A **secondary**, but equally important **objective** of this initiative will be to increase the farming community's understanding of these requirements and why they are important to restoring and protecting local surface and groundwater resources.

Finally, a critical goal of this entire process will be to expand the District's relationship with the local farming community. The District wishes to be recognized as a primary source of technical, financial and educational assistance by local operators. This proposed initiative will assist the District in achieving this extremely valuable and necessary goal.

### *Scope*

The following scope details how the Fulton County Conservation District proposes to accomplish the *Fulton County Agricultural Compliance Initiative's* core objectives of **increasing compliance within ag-impaired watersheds** and **increasing the farming community's understanding of the requirements and why they are important**.

### *Increasing compliance*

The proposed initiative will focus on farming operations located within the drainage basins of streams that have been designated as "ag-impaired" by the Pennsylvania Source Water Assessment Program. With a list of priorities established (See Table 1 below), the Fulton County Conservation District will conduct an assessment of each impaired watershed, beginning with the stream of highest priority.

**Phase I – Data collection and assessment.** Before a detailed assessment of each ag-impaired watershed can be conducted, the District needs the tools to be able to complete this important first-step of the process. The District recently purchased a new Dell desktop computer and ArcGIS 9.0 software with the intent of developing a GIS database for tracking purposes; however, District staff has limited knowledge and experience, as well as the time available, to develop such a database. In addition, the Fulton County Planning Commission has agreed to provide the District with layers from their own system to be included in the District's database. More specifically, the Planning Commission has just completed digitizing all of the tax maps for Fulton County and this layer will be made available to the District. Thus, the first step of the proposed initiative will be to hire a consultant to develop a workable GIS database for District staff. This database will assist staff in determining what agricultural operations are located within a particular drainage area. It will also enable staff to enter important information into the database on each farm and track the progress of the objectives of this initiative, as well as the progress of other District conservation efforts (i.e., Chesapeake Bay Tributary Strategy, watershed assessments and BMP projects, streambank fencing, CREP, Project Grass, etc.).

While the aforementioned GIS database is being developed, the District, with the assistance of its cooperating partners (i.e., DEP, NRCS, etc.), will develop a process by which to rank all farming operations located within the study area based on the level of environmental impact (i.e., sediment and nutrient loading) that each operation is having on the ag-impaired watershed. This will aid the District in generating a "compliance list" to establish priorities to focus the District's efforts in increasing agricultural compliance and reducing sediment and nutrient loads to the impaired streams.

Once the database and ranking process have been developed, the Fulton County Conservation District will then conduct an assessment of each ag-impaired watershed, beginning with the stream of highest priority to determine how many and what types of agricultural operations are located within the specific study area. Once this information has been gathered, farming operations will be ranked as high, medium or low environmental impact. A "compliance list" will be generated for each impaired watershed to establish priorities in the District efforts to complete the objectives of this initiative.

**Phase II – Increasing compliance.** Once a "compliance list" has been established for each ag-impaired stream, the District, beginning with the watershed of highest priority, will schedule initial "one-on-one" meetings with the landowners of highest priority (i.e., those having a critical environmental impact on the impaired stream) to discuss erosion and sediment pollution control and manure management requirements and why they are important. Depending on the situation, all District staff (i.e., Ag Specialist, Erosion Control Specialist, Watershed Specialist, Environmental Education Specialist and District Manager) could potentially be involved in these discussions, in addition to representatives from cooperating agencies (i.e., DEP, NRCS, CBF, etc.). The specific objectives of these meetings will be to determine how sediment and nutrient loads can be reduced (i.e., "compliance assistance measures") and what educational, technical and/or financial assistance is needed/available to help bring the operations into voluntary compliance. The District will consult with its cooperating partners (i.e., DEP, NRCS, etc.) as necessary throughout this step of the process to determine what conservation measures and/or practices may be appropriate. A report, similar to a Chapter 102 Earth Disturbance Inspection Report, will be written to document the details of this meeting. The landowner and the District will sign the report and a copy will be provided to the landowner and the original kept on file at the

District. District technicians will report regularly to the District Manager and the Board of Directors on the details of these meetings.

Once appropriate “compliance assistance measures” have been identified, a plan of action will be developed for each operation. This plan of action will detail the conservation measures and/or practices to be installed or developed and a reasonable timeframe for the landowner to complete these measures/practices in order to bring the operation into voluntary compliance. The plan will be reviewed with the landowner and a copy provided to the landowner for their reference. The District shall conduct follow-up visits with the operator to determine the progress of the plan of action. Reports shall be written to document the details of each subsequent visit. District technicians shall keep the District Manager and the Board of Directors informed of the status of each operation.

In the end, if voluntary compliance cannot be obtained, District staff shall consult with the Board of Directors regarding the operation. The Board of Directors shall review the staffs’ efforts to bring the operator into compliance and will determine the course of action. The Board of Directors shall make the recommendation that a particular operation be referred to DEP for enforcement action if they determine that District staff has made every plausible effort to assist the landowner; however, the landowner refuses to comply with the basic requirements. This action shall only be used as a last resort in an effort to achieve compliance.

#### *Increasing awareness*

Throughout this entire process, environmental education will be a key component to the overall success of this initiative. Before the assessment of ag-impaired watersheds begin, the District shall develop an article to be printed in the Fulton County News to make the local farming community aware of the District’s *Agricultural Compliance Initiative* (i.e., purpose, objectives, targeted area, approach, baseline requirements, etc.). The District also plans to conduct a survey of the agricultural community to determine local needs and interests. Based on the results of this survey, the District shall develop various articles to be published in the Conservation District Newsletter, the Fulton County Farm Bureau Newsletter and the Fulton County News, and will develop workshops and/or meetings to provide the information requested by local agricultural operators.

#### *Partners*

A strong partnership exists for the proposed *Fulton County Agricultural Compliance Initiative*. The Fulton County Conservation District has garnered the support of several federal, state and local agencies and organizations that have a dedicated, common interest in the enhancement and protection of the county’s surface and groundwater resources, as well as in the sustainability of agriculture. These partners include **the Pennsylvania Department of Environmental Protection (DEP)**, the **Natural Resources Conservation Service (NRCS)**, the **Fulton County Planning Commission** and the **Fulton County Farm Bureau**. Throughout this process, the District will consult with these various partners as necessary.

#### *Targeted area/audience*

The *Fulton County Agricultural Compliance Initiative* will focus on farming operations located within the drainage basins of streams that have been designated as “impaired” by the PA Source Water Assessment Program. The major source of this impairment has been identified as agricultural (i.e., due to grazing, vegetation removal, excessive nutrients or sediments). These impaired waters include **Big Cove Creek; Kendall Run**, a tributary to Big Cove Creek; **Spring Run**, also a tributary to Big Cove Creek; **Cove Run**, located in the southern end of the county; and finally, **Bear Run** and **Stahle Run**, both tributaries to Sideling Hill Creek, which is designated as Exceptional Value (EV) waters. The following table lists these ag-impaired streams in order from highest priority to lowest priority in terms of focusing the efforts of this proposed initiative. This ranking is also consistent with the priorities established in the *County Implementation Plan*, adopted in February 2005:

**Table 1. Ag-Impaired Streams of Fulton County**

Stream Name	Watershed	Township	Approximate Drainage Area	Approximate No. of Ag Operators
Big Cove Creek	Potomac	Ayr	53 sq. mi.	30
Kendall Run	Potomac	Ayr	4 sq. mi.	2
Spring Run	Potomac	Ayr	7 sq. mi.	6
Cove Run	Potomac	Bethel	5 sq. mi.	7
Bear Run	Potomac	Union	4 sq. mi.	3
Stahle Run	Potomac	Union	2 sq. mi.	2
		<b>TOTALS:</b>	<b>75 sq. mi.</b>	<b>50 operators</b>

All agriculturally impaired streams in Fulton County are located within the Potomac River Basin. This watershed drains roughly two-thirds of the total area of Fulton County and is home to the majority of the county's population and agricultural operations. In addition, these streams are heavily influenced by the limestone geology that dominates the Cove. For these reasons, the District has identified these ag-impaired sections as high priorities for local conservation efforts, as well as this specific initiative.

The objectives of the proposed *Fulton County Agricultural Compliance Initiative* will coordinate and complement other District efforts, particularly through the Growing Greener and Federal 319 Programs that have already been completed or are in the process of being completed within the Potomac Rive drainage basin. These efforts include: an assessment of the Licking/Tonoloway Creek watersheds (which included the Big Cove Creek drainage basin); a watershed assessment focused entirely on the Spring Run watershed (a tributary of Big Cove Creek); an urban stream restoration project on a small section of Big Cove Creek near the Borough of McConnellsburg; the design and pending construction of agricultural BMPs within the Spring Run watershed, as well as other conservation efforts (i.e., streambank fencing, CREP, Project Grass, etc.). In addition, the *County Implementation Plan* also focuses the District's efforts to reduce sediment and nutrient pollution within the Potomac River Watershed.

*Plan of action outline*

The following is an outline of the plan of action proposed for the *Fulton County Agricultural Compliance Initiative* to achieve the main objectives of increasing agricultural compliance and farm community understanding of the requirements. The process of increasing agricultural compliance will occur in two distinct phases. Environmental education efforts will occur throughout the entire process to increase awareness.

*Phase I – Data collection and assessment:*

1. Hired a consultant to develop a workable GIS database for the District (December 2006).
2. Developed a process to rank all operations within each ag-impaired watershed to determine the level of environmental impact (i.e., high, medium or low) that each operation has on the impaired stream (December 2006).
3. Conduct an assessment of each ag-impaired watershed (See Table 1), to determine how many and what types of operations are located within the watershed (began March 2007).
4. Rank all operations within each ag-impaired watershed as having a high, medium or low environmental impact (April 2008).
5. Based on the results of the assessment and ranking, develop a “compliance list” for each ag-impaired watershed to establish priorities to begin the process of achieving voluntary compliance and reducing sediment and nutrient loads (June 2007).

*Phase II – Increasing compliance:*

1. Beginning with the highest priority stream, schedule “one-on-one” meetings with landowners, beginning with the operator(s) identified as the highest priority (i.e., those having the highest environmental impact), to discuss the requirements and why they are important (begin July 2008).
2. Determine how sediment and/or nutrient loads can be reduced each operation (i.e., “compliance assistance measures”).

3. Determine what educational, technical and financial assistance is needed or available to bring each operation into voluntary compliance with the minimum requirements. Consult and coordinate efforts with cooperating partners as necessary.
4. Develop a plan of action for each operation, detailing the recommended practices/measures to be implemented or developed and a reasonable timeframe for installing these practices/measures.
5. Conduct follow-up visits with each landowner to determine the progress of the plan of action.
6. If voluntary compliance cannot be achieved, Fulton County Conservation Board of Directors will refer the operation for enforcement action by the appropriate agency.
7. Once these steps have been completed for the highest priority stream, conduct steps 1-6 on the second highest priority watershed and so on.

#### *Total costs*

The Fulton County Conservation District requested a total of \$20,000.00 to implement the proposed *Fulton County Agricultural Compliance Initiative*. The funds requested by the Fulton County Conservation District to implement the proposed initiative fall under two main budgetary categories: Contractual and Equipment & Supplies.

#### *Contractual*

A total of \$15,000.00 is requested to procure contractual services needed to implement the *Fulton County Agricultural Compliance Initiative*.

The District is requesting \$10,000.00 to hire a consultant to develop a GIS database and provide District staff with basic GIS training. This estimate is based on an in depth discussion with the Fulton County Planning Commission Director, who has extensive experience with these types of professional GIS consulting services. The District recently purchased a new Dell desktop computer and ArcGIS 9.0 software with the intent of developing a GIS database for the District; however, District staff has limited knowledge and experience in developing such a database. The Fulton County Planning Commission has agreed to provide the District with layers from their own system to be included in the database. Once the database has been developed, the District can commence the assessment of all ag-impaired watersheds in Fulton County.

The District also requests \$5,000.00 to pay for soil sample and manure sample testing for operations within ag-impaired watersheds that will need to develop/update a conservation plan or manure management plan that meets the baseline requirements established by the Pennsylvania Department of Environmental Protection (DEP).

#### *Equipment and supplies*

A total of \$5,000.00 is requested to purchase equipment and supplies needed to implement the *Fulton County Agricultural Compliance Initiative*.

A portion of the funds requested under this category is needed to cover the expenses associated with the development of the District's GIS database. First, in order for the District to have direct access to the recently digitized tax maps and other GIS layers (i.e., ortho-photo quads); the District must be connected to the County's network. The County's Information Technology Department estimates this cost at \$900.00. Once the District is connected to the County's network, the District will have direct access to the tax parcels, which will assist District Staff in determining what landowners are located within a particular watershed. In addition, the District will not only have access to the tax maps, but will also have the most up-to-date version of these maps as changes in land ownership occur throughout the county. Having access to the tax parcels will aid the District in other conservation efforts as well.

A portion of the funds requested under this category are also needed to purchase a new computer for the District's Ag Specialist, who is currently responsible for administering the Chesapeake Bay, Nutrient Management and Farmland Preservation Programs. As stated earlier, the Ag Specialist will also be primarily responsible for carrying out the proposed *Agricultural Compliance Initiative*. The current Ag Specialist has extensive experience with Toolkit, nutrient management and conservation planning, after 40 years of service with the Natural Resources Conservation Service (NRCS) in the state of Maryland.

A portion of the funds requested under this category is needed to purchase an annual maintenance agreement for the District's ArcGIS 9.0 software. This will enable the District to automatically receive updates to the software, as well as access to GIS training provided directly by ESRI, and is highly recommended by the Fulton County Planning Commission. The total cost for a two-year maintenance agreement is \$800.00.

Finally, the District requests \$1,800.00 in funding to cover the expenses associated with various environmental education efforts for the proposed initiative. The funds requested would be used for the printing and postage of an ag survey, the printing of newsletter or newspaper articles/ads and the sponsorship of a local agricultural workshop/forum.

#### *Compliance improvement*

Within the two-year timeframe of the Agricultural Compliance Initiative Special Project Grant, the Fulton County Conservation District hopes to achieve a significant increase in agricultural compliance in an effort to reduce sediment and nutrient loads to local waterbodies and the Chesapeake Bay. The District estimates that there are 50 *major* agricultural operations (i.e., those operations with significant animal numbers and working the majority of the total land area) within the drainage basins of the county's six ag-impaired streams (See Table 1). Of that, the District also estimates, based on the number of "up-to-date" NRCS Conservation Plans currently on file, that only **10%** (or five) of these major operations are actually in compliance with the baseline requirements of manure management and erosion and sediment control.

**GOAL:** In two years, the Fulton County Conservation District will increase the agricultural compliance within the Chesapeake Bay Watershed to 50%, through a combination of educational, technical and/or financial assistance. More specifically the District will assist 25 operators in achieving voluntary compliance with the basic requirements of having an up-to-date conservation plan and manure management plan and 12 operators in achieving further compliance by fully implementing the plans that have been developed.

#### *Method of projection and reliability*

The Fulton County Conservation District feels that the compliance improvement goal that has been projected is very obtainable in terms of the small number of operations to work with, limited staff time, a high level of staff expertise and a history of already working with a number of these operators through other District conservation efforts. The District also feels that the estimated percentage of operations currently in compliance is fairly accurate, although the detailed assessment and ranking of operations within each ag-impaired watershed, a critical component of this initiative, will reveal the actual level of compliance.

#### *Method of tracking/reporting actual results*

Throughout this entire process, District staff shall keep detailed records of all contacts (i.e., phone, mail, personal visits) made with each individual landowner as steps are taken to achieve voluntary compliance. Digital photos of each operation will also be taken throughout the process. All information for each operation, including the plan of action, shall be kept in a file by impaired stream. In addition, information on each operation will be entered into the GIS database to track the overall progress of the proposed initiative. The GIS database will then be used to generate reports as required by the Pennsylvania Department of Environmental Protection (DEP).

#### *Board approval*

On December 8, 2005, Fulton County Conservation District Staff provided Board Members with a detailed outline of the proposed initiative. After some discussion and consideration, the Fulton County Conservation District Board of Directors unanimously approved a motion in support of the development and submission of the *Fulton County Agricultural Compliance Initiative* by District Staff.

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## **b. Animal Waste Management Systems**

In 2005, the District requested that DEP grant the use of "old" Chesapeake Bay Program funds to complete two major agricultural BMP projects that had been initiated with landowners previously in 2004. Both projects involved the construction of nutrient management systems (heavy use area protection), had completed designs and were simply waiting for funding verification. Neither of the projects relied totally on Bay Program funding. Both had EQIP agreements and one had an Act 6 grant application; however, funding was not sufficient to bring these projects to fruition. The District felt very strongly that the Bay Program needed to follow through with the commitments that had been made and help cost-share these projects. DEP granted this request and one of the projects was completed in 2005, while the other was fully completed in the fall of 2007.

The Fulton County Conservation District will continue to seek funds to design and construct barnyard renovations, but only for those located near ag-impaired streams. The District will continue to work with EQIP, Act 38 and other cost-share programs to assist landowners in funding these important projects

## **b. Cover Crops**

As noted earlier, the Bedford and Fulton County Conservation Districts, in conjunction with other cooperating agencies, began a Cover Crop Incentive Program in 2004, funded through the DEP Growing Greener Program. In 2005, a total of 26 Fulton County producers participated in the program, pledging to implement just over 1,500 acres of cover crops on corn silage ground. A total of approximately 700 acres of rye, 500 acres of wheat and 300 acres of barley were planted. In addition, the Farm Service Agency also reports that 5,188 acres of small grains were planted throughout the county in 2005. In 2005, 26 County producers enrolled 1,540 acres. And in 2006, 35 Fulton county producers enrolled 2,099 acres.

Once the Growing Greener Grant is expended in 2006, the Fulton County Conservation District will seek additional funds to continue this successful and important program into the future. The District intends to "phase out" cost-share funding available to those producers who have been enrolled in the program for two years, while making full cost-share resources available to those producers new to the program.

In 2005, the District received \$12,000 in Chesapeake Bay Program Special Project funds to purchase an Aerway to allow producers to incorporate fall-applied manure into a no-till cover crop planting system. After much deliberation and discussion with DEP, the District is now considering utilizing these funds to obtain the use of a no-till drill through the Bedford County Conservation District or through a local dealer/distributor.

## **c. Conservation Plans**

There continues to be a *serious need* in Fulton County for the development and revision of *hundreds* of conservation plans. At the time this plan was originally developed, the District did not have personnel qualified to write conservation plans and the NRCS continues to have only one individual assigned to Fulton County. The District had proposed to contract with a Technical Service Provider (TSP) until a District technician could be adequately trained and their job responsibilities rearranged, so as to provide that person with the capability and the *time needed* to write/update these plans.

Furthermore, the District's *Agricultural Compliance Initiative* will focus on farming operations located within the drainage basins of streams that have been designated as "ag-impaired" by the Pennsylvania Source Water Assessment Program. One of the major objectives of this initiative is to increase agricultural compliance within these ag-impaired watersheds. The District estimates that the majority of these operations will require the development or revision of a conservation plan in order to bring the operation into compliance with the state minimum requirements for erosion and sediment pollution control. The execution of this initiative will necessitate the writing/updating of conservation plans by the District's Ag Specialist.

In 2005, the District received \$5,000 in Chesapeake Bay Special Project funds to contract with a TSP; however, the District has been extremely fortunate in acquiring a well-qualified person as the District's new Ag Specialist. This individual brings 40+ years of previous experience with the NRCS and is certified in conservation planning. As a result, the funds received through the Chesapeake Bay Program are no longer needed to contract a TSP. DEP has suggested that these funds could be utilized for any BMP implementation required by conservation plans. In 2005, NRCS completed Food & Security Act planning on 2,000 cropland acres within the county. The District goal is to develop soil & water conservation plans on approximately 500 acres annually for the next five years.

## **c. Conservation Tillage and No-Till**

Through the Bedford/Fulton Cover Crop Incentive Program, the rental of a no-till drill, conservation planning and education, the District will continue to encourage the use of conservation tillage practices, specifically no-till. To accomplish this, the District will provide a two-year subsidy program for the use of such a planter.

In 2005, the District received \$1,000 in Chesapeake Bay Program - Special Project funds to be utilized towards these ongoing efforts. The District plans to implement 100 acres of conservation tillage/no-till in 2006. It is important to note that there are several producers in Fulton County that are actively implementing conservation tillage, including a significant number of acres in no-till.

#### **d. Streambank Fencing and Riparian Buffers**

As noted throughout this document, studies conducted in Fulton County have indicated that many streams in agricultural areas suffer from lack of streambank protection. The District will continue to cost-share additional riparian buffer projects, especially those associated with off-stream watering systems. These projects will include both forested and grass buffers, as well as the necessary streambank fencing and riparian plantings.

In 2005, the District received \$4,000 in Chesapeake Bay Special Project funds to fence out existing forested riparian buffers. The District is currently in the process of ranking potential projects in addition to matching these projects with other cost-share programs (i.e., Project Grass) to implement these worthwhile projects. The District will implement 100 acres of forested buffer in 2006.

The Fulton County Conservation District will continue to encourage township officials to develop and pass a riparian buffer ordinance for new construction to minimize non-point source pollution.

#### **e. Nutrient Management**

While DEP figures seem to indicate that Fulton County has met our nutrient management “obligations”, we will continue to stress the need for nutrient or manure management plans and the Bay program will work closely with the Nutrient Management Tech. Also, the Fulton County Conservation District would like to increase the number of producers utilizing manure nutrient testing, and increase the use of manure balance sheets. This is applicable to all animal operations, not just ones with nutrient management plans. The District desires to develop a program whereby we cost-share manure testing if a landowner has never tested or it’s been more than 3 years. An accompanying educational effort will stress the importance of record keeping and the development and utilization of manure (nutrient) balance sheets. Not all operators will be willing to commit to the expense of a formal nutrient management plan, but showing producers how to best utilize nutrients on their operation will have both environmental and economic benefits.

As stated earlier, the District’s *Agricultural Compliance Initiative* will focus on farming operations located within the drainage basins of streams that have been designated as “ag-impaired” by the Pennsylvania Source Water Assessment Program. One of the major objectives of this initiative is to increase agricultural compliance within these ag-impaired watersheds. The District estimates that the majority of these operations will require the development or revision of a nutrient management plan or manure management plan in order to bring the operation into compliance with the state minimum requirements for manure management. The execution of this initiative will necessitate the writing/updating of nutrient or manure management plans by the District’s Ag Specialist.

#### **f. Precision Managed Agriculture**

The Fulton County Conservation District does not have the technical or equipment resources to assist precision managed agriculture on a grand scale. However, in 2005, the District developed a program to stimulate landowners to obtain recent soil tests, perform manure analysis, and keep better pesticide, fertilizer, and yield records, and assisted producers in farm mapping using GPS.

Another aspect of this involves the idea of *Yield Reserve*, which, if we were to push such an idea, would obviously require funding to use as “yield insurance”. Without guaranteed funds, we are reluctant to develop a “yield reserve” program at this time. However, our proposal does reflect the funding we feel we would need if we were to enroll approximately 600 acres of corn grain into such a program.

In 2005, the District received \$3,000 in Chesapeake Bay Special Project funds to conduct soil tests and manure analyses. To date, three manure analysis and approximately 276 soil tests have been conducted covering approximately 2,400 acres. The District cost shared \$3.00/test plus the required postage. An additional \$6,720 was granted to us through the 2007 Chesapeake Bay Special Project funds for soil/manure testing and the development of Nutrient Balance Sheets (NBS).

#### **g. Rotational Grazing**

While Fulton County has an active Project Grass program, the needs and interests of producers far exceed the funding available. The District will continue to encourage precision rotational grazing and will provide cost-share funds to implement fencing and the development of watering systems during the next several years. The District will target equine operations in particular, as these operations have been largely ignored. Rotational

grazing programs may tie in very well, depending upon the operation, with riparian buffers, nutrient management, off-stream watering, etc. Through cooperation with the NRCS, the District will increase the number of "precision" rotational grazing plans.

In 2005, the District received \$300 in Chesapeake Bay Program funds to sponsor a pasture walk. The District will conduct the pasture walk in 2006. In addition, the District also received \$6,000 in special project funds to specifically address rotational grazing on equine operations. Funds will be used to cost-share fencing, watering systems and limit livestock access to surface waters. Through existing and additional requested funding, the District implemented 187 acres of "precision" rotational grazing in 2006 and an additional 144 acres in 2007.

#### **h. Timber Harvesting Activities**

Given that almost 70% of the County is forested, the District recognizes how important environmentally sound timber harvesting practices are to the water quality in Fulton County. The Pennsylvania Sustainable Forestry Initiative offers "Environmental Logging" courses and the will subsidize 5 local loggers to attend these courses. The District will continue to work with local township officials to develop or strengthen ordinances regarding erosion and sediment control requirements for timber harvesting activities. The District has a strong working relationship with the local DCNR Bureau of Forestry office and actively encourages landowners to utilize PA Forest Stewardship program and the services of the Bedford/Fulton County service forester.

In 2005, the District received \$850 in Chesapeake Bay Special Project funds and PACD Mini-Grant funds to conduct a timber harvesting workshop. The District sponsored a workshop in the fall of 2006.

#### **i. Road Maintenance Activities**

As described earlier, Fulton County has an active Dirt and Gravel Road program. The District will continue to administer the program, but are limited by the availability of project funding. At present, the District has more township interest than funding available. In the future, the District plans to develop a cost-share program aimed specifically at funding environmentally sensitive road maintenance practices on privately owned dirt and gravel roads, especially farm lanes.

#### **j. Land Use Planning**

While Fulton County is primarily rural, the area is beginning to experience an increase in residential, commercial and industrial development. The District has partnered with the Fulton County Planning Commission in assisting 12 of the 13 municipalities in the development and implementation of a Multi-Municipal Joint Comprehensive Plan. The process began in 2005 with series of workshops focused on growth and planning. The first workshop focused on erosion and sedimentation regulations, stormwater management and low-impact development, while the other delved into on-site and centralized wastewater treatment systems and local land use planning issues. The District will continue to be actively involved in planning for growth in Fulton County and minimizing the negative impacts of this growth on local water quality.

#### **k. Stream Restoration**

As noted earlier, the Fulton County Conservation District completed a Spring Run Watershed Assessment and submitted a proposal to design and implement a stream restoration project along the most critically impaired reaches of Spring Run, a Fulton County watershed of highest priority for agricultural BMP implementation and stream restoration. However, the District has been unsuccessful in obtaining the necessary funding and therefore is unable to implement the needed restoration at this time. The District will continue to apply for the necessary financial assistance required to repair this critical watershed.

#### **l. Ammonia Emission Reduction**

The District feels that the only resources that can provide at this time are educational in nature.

#### **m. Phytase Feed Additive**

The Fulton County Conservation District plans to work with the major poultry and swine producers to offer technical/educational assistance.

#### **n. Tree Planting**

Through EQIP contracts, educational programs, and riparian buffer/stream fencing projects, the Fulton County Conservation District will continue to plant as many acres of trees as possible. In 2005, the District utilized a PACD Mini-Grant to plant approximately two acres of trees with the help of local high school students. The District will continue these efforts in the future as resources are available.

#### **o. Additional Efforts**

Through the assistance of the Western Pennsylvania Conservancy Growing Greener Grant and the Agricultural Compliance Assistance Special Project Grant, the District will develop a GIS database to catalog BMP implementation and track the progress of the County Implementation Plan.

An ongoing pursuit of the District is environmental education and outreach efforts. As noted earlier, the District has recently devoted additional staff resources toward furthering environmental/conservation education in Fulton County. Unfortunately, there continues to be a lack of dedicated state program funding to support a full-time position. Environmental education is a *full-time position*; however, districts must supplement a full-time position by placing other program duties and responsibilities on this person.

### **G. Plan Development Process**

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Throughout the initial development and subsequent revision of this guidance document, the Fulton County Conservation District continues to work very closely with several important cooperating agencies:

The District continues to partner with NRCS and FSA personnel on a daily basis to address agricultural concerns throughout Fulton County. In addition, certain aspects of the plan have been developed in association with the **Fulton County Planning Commission, Penn State Extension Service, DCNR Bureau of Forestry and Chesapeake Bay Foundation.**

District staff continues to develop a positive working relationship with the local **Farm Bureau**, by keeping them informed regarding the development of this plan and the *Agricultural Compliance Initiative*, as well as other ag-related issues. The District's Ag Specialist will attend their local meetings at least quarterly, to keep this important line of communication open between the District and the local farming community.

The District also continues to work closely with the **Western PA Conservancy (WPC)** in their efforts to administer a Growing Greener Grant aimed specifically at data collection and assessment of agricultural BMPs in Fulton County.

Finally, the **Department of Environmental Protection (DEP)** continues to be a valued partner in guiding the District in the revision of the *County Implementation Plan* – a process that will be conducted annually. The District has participated in several meetings with Bill Zett, Andrea Blosser, Mark Mathews, Rick Devore and Bill Botter regarding the specific goals and objectives of the plan.