

Phase 3 WIP Agriculture Workgroup – Preliminary Recommendations

**Pennsylvania Dairy Summit
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Nutrient/sediment reductions needed for PA to reach Chesapeake Bay TMDL goal:

- Nitrogen: PA must reduce nitrogen runoff by 53.9 million pounds.
- Phosphorus: PA must reduce phosphorus runoff by 2.2 million pounds.
- Sediment: PA must reduce sediment runoff by 650 million pounds.

Agriculture Workgroup - Composition

- 15 Workgroup members.
- 6 members are active farmers.
- Other members of Workgroup:
 - Staff person from Pennsylvania Farm Bureau
 - Staff person from PennAg Industries.
 - Technical staff person from county conservation district
 - Staff person from animal ag integration corporation.
 - Technical staff person from farm consulting business.
 - Staff person from Chesapeake Bay Foundation.
 - Government agency officials (DEP, PDA, SCC).

Agriculture Workgroup - Objective

“Our objective is to develop a realistic and effective strategy for reducing nutrient and sediment loadings coming from farmlands in the Bay watershed, to the maximum extent practical for the farm community to implement.”

- **Ag Workgroup’s attitude and approach: The timeframe in which recommended benchmarks are to be achieved must be reasonable (not necessarily by 2025).**

Ag Workgroup's preliminary recommendations include:

- 1. Recommendations for levels of farm conservation measures to be attained collectively in Pennsylvania's Bay watershed.**
- 2. Recommendations for additional supporting actions that the Ag Workgroup believes are important to achieving those farm conservation measures and sustaining viability of farm operations implementing those measures.**

Main features of Ag Workgroup's preliminary recommendations for ag conservation:

- 1. Agricultural compliance.**
- 2. Practices for enhancement of soil health.**
- 3. Expanded nutrient management.**
- 4. Expanded development of on-farm manure storage facilities.**
- 5. Precision feeding of dairy animals.**
- 6. Development of integrated systems for eliminating excess manure.**
- 7. Forested and grassed riparian buffer enhancement.**

Total estimated impacts and costs for attaining ag conservation measures recommended by Ag Workgroup:

Total impacts:

- Would achieve 63% of PA's total required TMDL reduction of nitrogen.**
- Would fully attain PA's total required TMDL reduction of phosphorus (106% of TMDL goal) .**

Total estimated costs:

- \$327 million annually (\$3 billion totally).**

1. Agricultural Compliance

- **Objective** – Compliance with state legal requirements of farming operations to:
 1. Develop and implement soil erosion and sedimentation plans.
 2. Develop and implement manure management plans.
- **Recommended benchmarks:**
 - ✓ Attaining E&S/Manure Mgmt. compliance on 90% of cropland.
 - ✓ Proper runoff controls on 90 % of CAFO farm feed/barnyard areas.
 - ✓ Runoff controls on 67% of feed/barnyard areas of non-CAFO livestock farms.

1. Agricultural Compliance (cont'd)

Impacts of attainment of agricultural compliance benchmarks:

- Over 8.1 million pounds nitrogen reduction – 15% of PA's TMDL goal.
- 236 thousand pounds phosphorus reduction – 12% of PA's TMDL goal.

Estimated annual costs to attain agricultural compliance benchmarks:

- Nearly \$30.6 million.

2. Soil Health

- **Objective** – Engagement in crop and soil management practices that will not only help improve water quality but also help improve long-term soil health and productivity.
- **Recommended benchmarks:**
 - ✓ Maintaining minimum levels of crop residue (30-60%) and no till on 67% of croplands.
 - ✓ Production of non-harvested cover crops on 33% to 50% of croplands.
 - ✓ Prescribed grazing on 50% of pasture lands (with exclusion fencing, where applicable).

2. Soil Health (cont'd)

Impacts of attainment of soil health benchmarks:

- **Nearly 7.7 million pounds nitrogen reduction – 15% of PA's TMDL goal.**
- **327 thousand pounds phosphorus reduction – 16% of PA's TMDL goal.**

Estimated annual costs to attain soil health benchmarks:

- **Nearly \$30.4 million.**

3. Expanded Nutrient Management

- **Objective** – Engagement of non-animal farming operations in:
 1. Structured nutrient management planning and implementation on farms.
 2. Precision management of area, timing and rate of nutrient applications (4R management) on crop land.
- **Recommended benchmarks:**
 - ✓ Development and implementation of nutrient management plans on 20% of crop land not receiving animal manure.
 - ✓ 4R management of both nitrogen and phosphorus on 20% of crop land not receiving animal manure.

3. Expanded Nutrient Management (cont'd)

“Achievement” of nutrient management benchmark may largely be accomplished through improvement of reporting and data collection of practices already being performed on non-animal farming operations.

3. Expanded Nutrient Management (cont'd)

Impacts of attainment of expanded nutrient management benchmarks:

- **817 thousand pounds nitrogen reduction – 2% of PA's TMDL goal.**
- **44.2 thousand pounds phosphorus reduction – 2% of PA's TMDL goal.**

Estimated annual costs to attain expanded nutrient management benchmarks:

- **\$18.14 million.**

4. Development of Manure Storage Facilities

- **Objective** – Heightened construction and use of manure storage facilities meeting state and federal requirements to effectively manage the use and land application of animal manure on farms to sustain water quality.
- **Recommended benchmarks:**
 - ✓ **90% of swine and poultry operations with proper manure storage facilities.**
 - ** Construction of new housing facilities for swine and poultry often include integrated manure storage systems.**
 - ✓ **75% of other livestock operations with proper manure storage facilities.**
 - ** Relative to swine and poultry operations, much more difficult to attain, as manure storage systems are not integral parts of livestock housing structures.**

4. Development of Manure Storage Facilities (cont'd)

Impacts of attainment of manure storage facility benchmarks:

- **Over 7 million pounds nitrogen reduction – 13% of PA's TMDL goal.**
- **Nearly 304 thousand pounds phosphorus reduction – 15% of PA's TMDL goal.**

Estimated annual costs to attain manure storage facility benchmarks:

- **\$204.6 million.**

5. Precision Feeding

- Objective – Improving type and timing of animal feed to dairy cows to reduce the cow's output of nutrients in animal manure (without reducing the cow's milk production capability).
- Recommended benchmark – Precision feeding to 33% of dairy animals.
- Estimated to provide **610 thousand pounds** (1% of TMDL reduction goal) in nitrogen reduction and **61.2 thousand pounds** (3% of TMDL reduction goal) in phosphorus reduction.
- Estimated to be a cost savings (\$1.75 million).

6. Elimination of Local Excess of Manure

- Objective – Development of integrated county-based or region-based systems for transportation of excess manure outside the watershed a/o manure treatment systems to reduce nutrients in processed manure.
- Estimated to potentially provide **957 thousand pounds** (2% of TMDL reduction goal) in nitrogen reduction and **181.5 thousand pounds** (9% of TMDL reduction goal) in phosphorus reduction.
- Cost ????

7. Implementation of Forested and Grassed Buffers

- **Objective** – Increased use of farm and open space lands near streams to establish forested and grassed buffers .
- **Many human challenges in achieving increased implementation of buffers:**
 - **Landowner concern in losing land that could be used for other functions.**
 - **Inconsistent success in buffer propagation and development.**
 - **Lack of available personnel to assist landowner manage buffer area, especially during times when extreme weather and climate conditions seriously damage or stunt growth of buffer area.**

7. Implementation of Forested and Grassed Buffers

(cont'd)

- Recommended benchmarks:

- ✓ Increase of 25% of available open lands near streams for development of forested buffer at least 35 feet in width.
- ✓ Increase of 15% of available open lands near streams for development of grassed buffer at least 35 feet in width.

*****Total commitment of an additional 130,000 acres of open land for buffer use.***

7. Implementation of Forested and Grassed Buffers

(cont'd)

- **Additional recommendations, relative to forested buffers:**
 - ✓ **Financial a/o tax incentives to landowners committing lands for forested buffer.**
 - ✓ **Commitment of technical support and manpower to effectively assist landowner in performance of buffer management tasks and response to conditions that harm or threaten buffer development.**
 - ✓ **Greater effort to direct and concentrate buffer development to areas that will provide greater relative water quality benefit.**

7. Implementation of Forested and Grassed Buffers

(cont'd)

Impacts of attainment of forested and grassed buffer benchmarks:

- Over 8 million pounds nitrogen reduction – 15% of PA's TMDL goal.
- Over 1 million pounds phosphorus reduction – 49% of PA's TMDL goal.

Estimated annual costs to attain forested and grassed buffer benchmarks:

- Nearly \$45 million.

Additional recommendations contained in Ag Workgroup's preliminary report:

- 1. Discourage local ordinances to mandate ag conservation measures.**
- 2. Financial and tax incentives for landowner participation.**
- 3. Providing effective confidentially protection in farmer/landowner reporting.**
- 4. Increased technical assistance in designing and implementing ag BMPs.**
- 5. More aggressive pursuit and crediting of advanced soil health initiatives.**
- 6. Innovative regulatory strategies that prioritize and encourage and reward pursuit of ag BMPs that advance PA's water quality objectives.**

Additional recommendations contained in Ag Workgroup's preliminary report: (cont'd)

- 7. Reevaluation of existing state funding sources and program appropriations.**
- 8. Enhanced nutrient management planning requirements for land application of biosolids.**
- 9. Coordination and use of ag conservation by municipalities in meeting MS4 stormwater management requirements.**
- 10. Committed effort to implement coordinate streambank restoration measures with buffer development, where environmentally and economically effective.**
- 11. Increased and extensive focus in implementation and Bay model recognition of programs for removal of legacy sediment (earthen dams from water mills).**

Additional Assistance and Resources Needed

- Cost estimates largely reflect those related to performance of “boots on the ground” measures for implementation and maintenance of recommended ag practices.
- Additional funding will be needed for the additional supporting administrative and technical personnel necessary for proper design and oversight of effective ag conservation measures.

***** A minimum of 150 personnel with extensive training and expertise are estimated to be needed, and more likely a higher number will be needed***

The Ag Workgroup is looking for additional input from farmers and agribusinesses:

- Ag Workgroup's recommendations are not "set in stone."
- Workgroup wants input from agricultural stakeholders:
 - What did the Workgroup we get right?
 - What did the Workgroup get wrong?
 - What additionally should the Workgroup be thinking about?

The Ag Workgroup is looking for additional input from farmers and agribusinesses:

Given the time that EPA expects Pennsylvania and the Bay states to submit WIPS (spring for initial draft and August for final draft), any comments you have should be provided to the Ag Workgroup as soon as possible.

Thank you for your attention

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