Region III AFO/CAFO Initiatives

Farm, Ranch, and Rural Communities Committee

September 30, 2010

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Outline

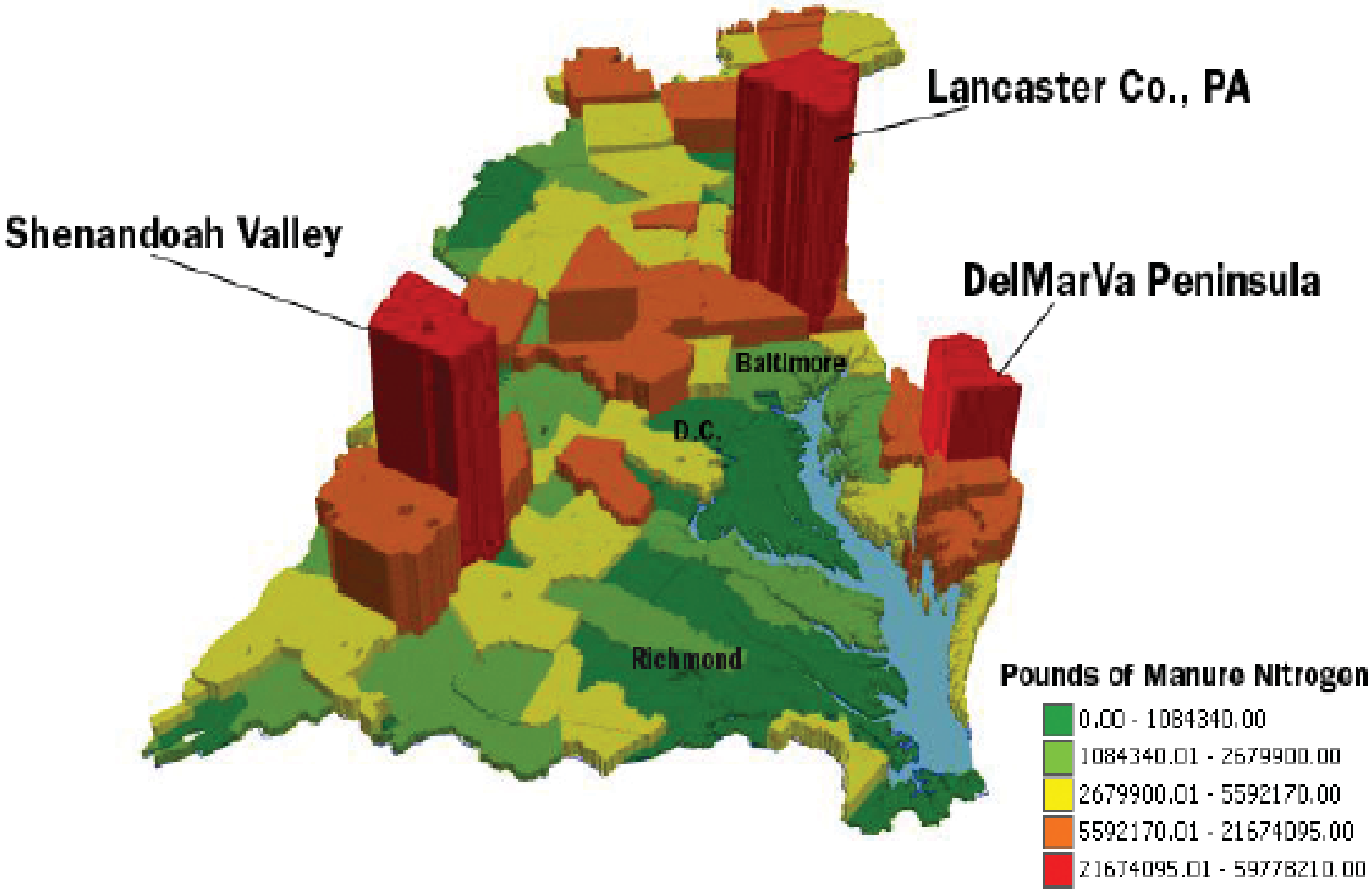
Animal Agriculture and Bay Impacts

Three Priority Geographic Areas

Conclusions

Animal Agriculture and Bay Impacts

Total Manure Nitrogen in Chesapeake Bay Watershed Counties



Source: EPA Chesapeake Bay Program

Agricultural Sources of Total Phosphorus

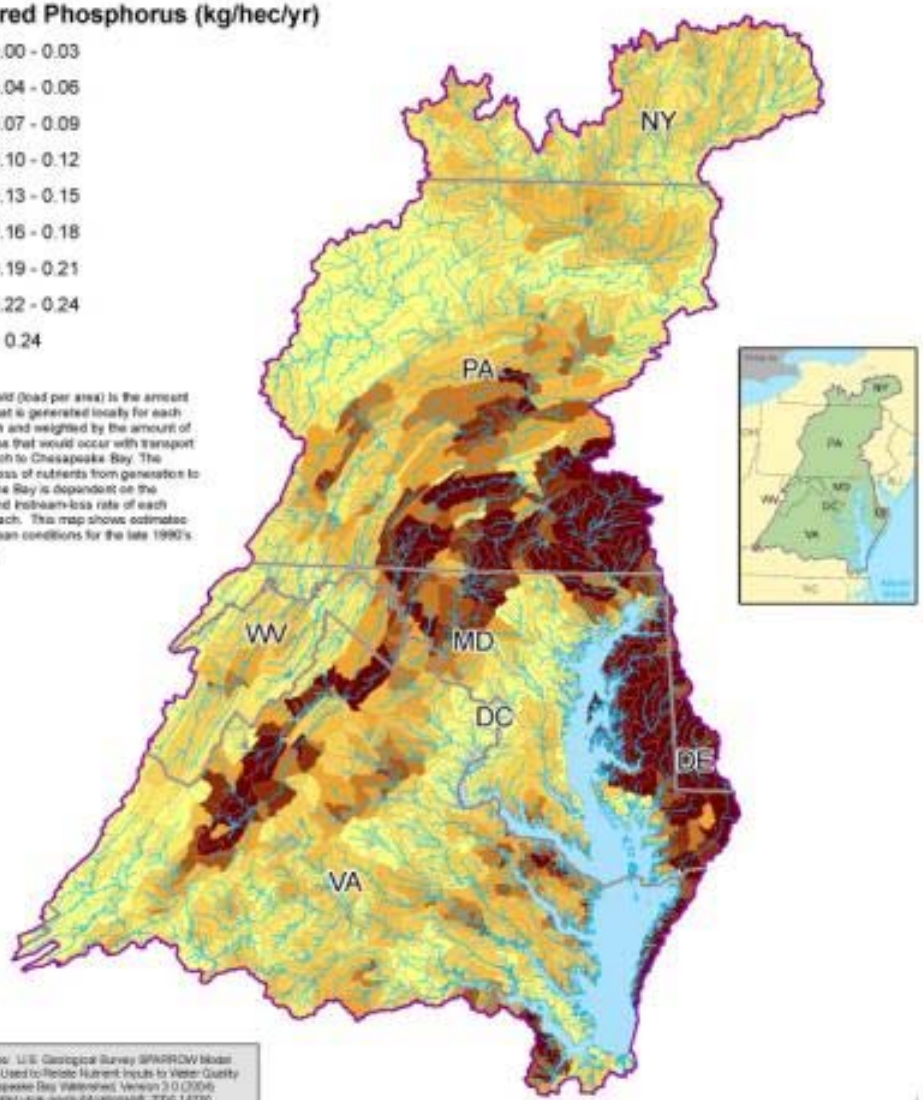
Delivered Yield to the Chesapeake Bay

Chesapeake Bay Program
A Watershed Partnership

Delivered Phosphorus (kg/hec/yr)

- 0.00 - 0.03
- 0.04 - 0.06
- 0.07 - 0.09
- 0.10 - 0.12
- 0.13 - 0.15
- 0.16 - 0.18
- 0.19 - 0.21
- 0.22 - 0.24
- > 0.24

Delivered yield (load per area) is the amount of nutrient that is generated locally for each stream reach and weighted by the amount of in-stream loss that would occur with transport from the reach to Chesapeake Bay. The cumulative loss of nutrients from generation to delivery to the Bay is dependent on the travel time and instream-loss rate of each individual reach. This map shows estimates based on mean conditions for the late 1990's time period.



Data Sources: U.S. Geological Survey SPARROW Model Digital Data Used to Relate Nutrient Inputs to Water Quality in the Chesapeake Bay Watershed, Version 3.0 (2006) (http://md.water.usgs.gov/publications/sir-2008-5030)

For more information, visit www.chesapeakebay.net
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Created by JW, 2/13/08

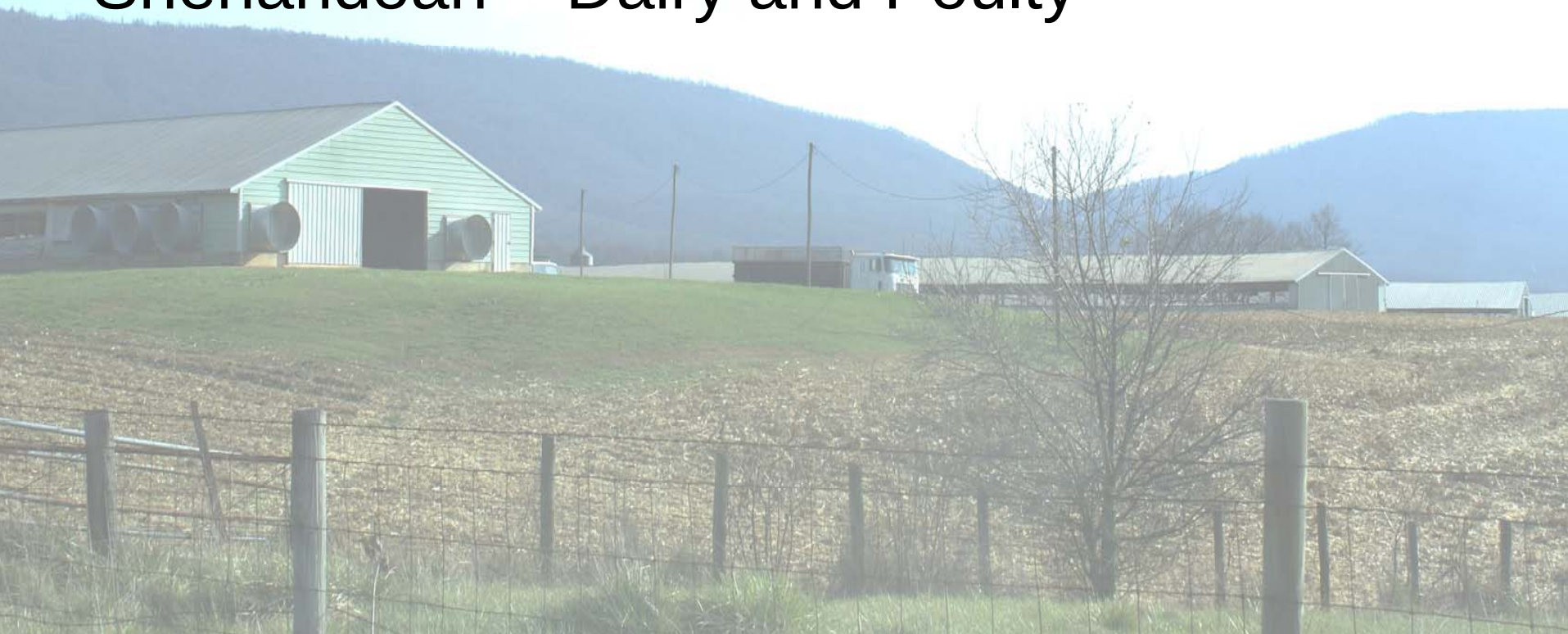
UTM Zone 18N, NAD 83

Three Priority Areas

DELMARVA - Poultry

Lancaster – Dairy

Shenandoah – Dairy and Poulty



EPA's Goals

Make sure that facilities that need NPDES CAFO permits have them

Framework in place to ensure compliance with NPDES permit

Enhancement of State Agricultural Programs

DELMARVA

Universe: Poultry

Objective: Ensure that poultry operations obtain the required permits and comply with them

Strategy: Multi-facetted

- Universe Identification
- Stewardship - Perdue
- Inspection and Enforcement
- Compliance Assistance - DPI

Result – Over 850 farms have applied for permit coverage

Future work ensuring compliance with Permit requirements

DELMARVA

- Partnership with Perdue
  - Training for growers and flock supervisors
  - Regular Assessments
  - Deviation Response
- Partnership with DPI
  - Sponsored out reach to the farm community
  - Three meetings with over a 1000 farms

Conclusions

Flexibility is not always desirable - farmers wanted clear and understandable information and guidance

One-on-One interaction a powerful tool

Enrolling the support of industry is critical: Partnerships with DPI and Perdue

Lancaster

Universe: Small Dairy and CAFO operations

Objective: Ensure compliance Federal and state requirements and evaluation of state program

Strategy: Targeted sub-watershed investigations and targeted inspections

- Sub-watersheds targeted for surface and ground water contamination
- Partnering with Conservation Districts, State, and Plain Sect Community

Lancaster County has…

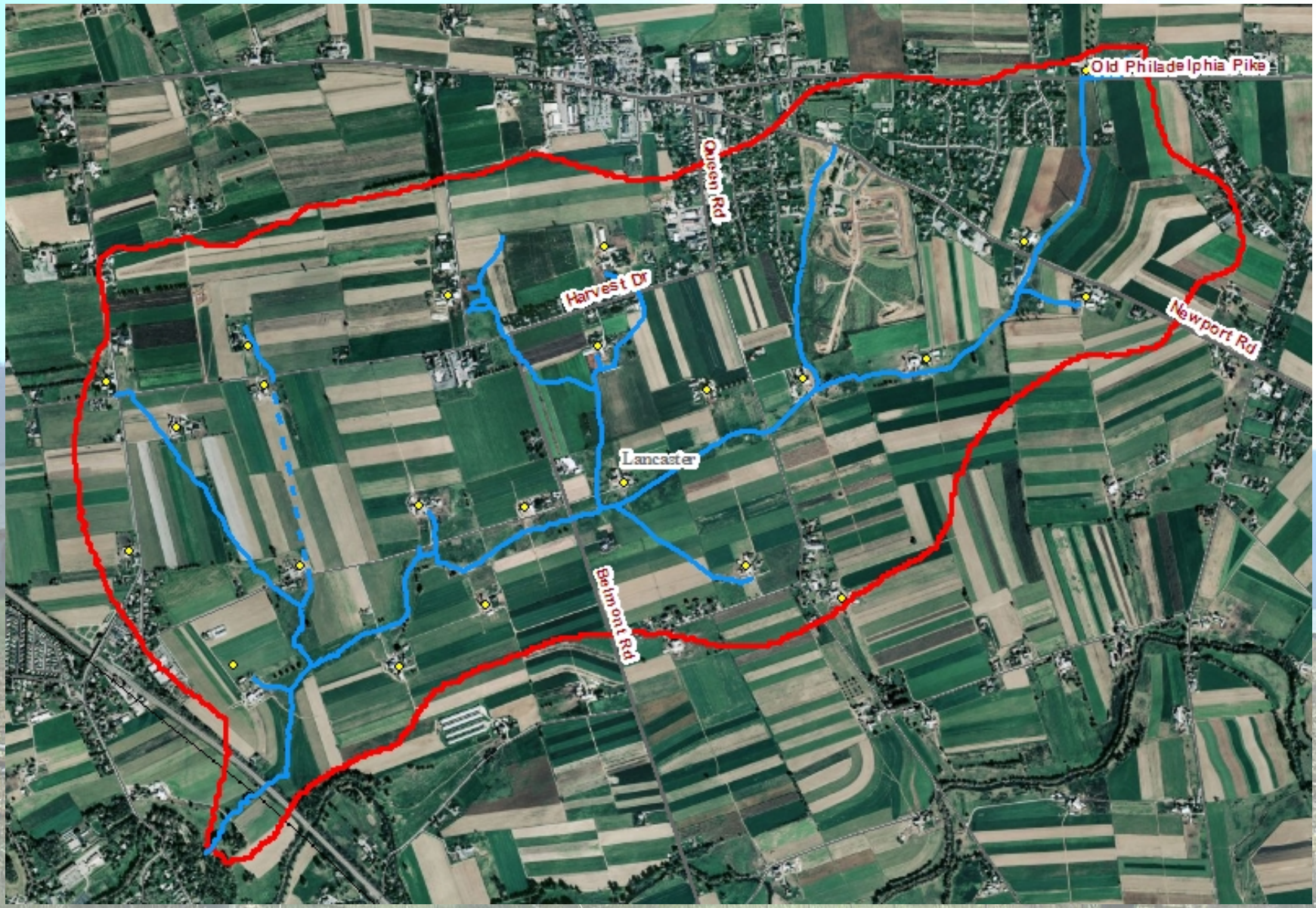
- Highest number of impacted drinking water systems
  - One of two areas in EPA Region 3 with the highest nitrate pollution levels
  - Multiple systems with nitrate MCL violations and on treatment
- The highest number of agriculturally impaired stream reaches in PA's portion of the Chesapeake Bay watershed

Overview of Watson Run

- Watershed is 2.74 mi^2
- Listed in 2004 on Pennsylvania's 303(d) List of impaired streams
- Impaired due to:
  - Nutrients
  - Organic Enrichment/ Low Dissolved Oxygen
  - Siltation
- Source of impairments identified as agriculture

Map of Watson Run with Unique Facility Identifiers

Watson Run Hydrologic Connectivity



Croping in Watson Run

205 acres of pasture

1207 acres farmed by 20 crop farmers

- 894.5 acres cropland owned
- 312.5 acres cropland rented

~589 acres corn

~578 acres alfalfa

20 acres tobacco

~20 acres soybeans/wheat

~444 acres under tillage

~763 acres under no-till/low-till

Animals in Watson Run

796 milk cows
96 dry cows
669 heifers/calves
96 horses
103 mules
46,000 pullets
20 sheep
550 pigs

Watershed Animal Density =

1.5 AEUs/acre

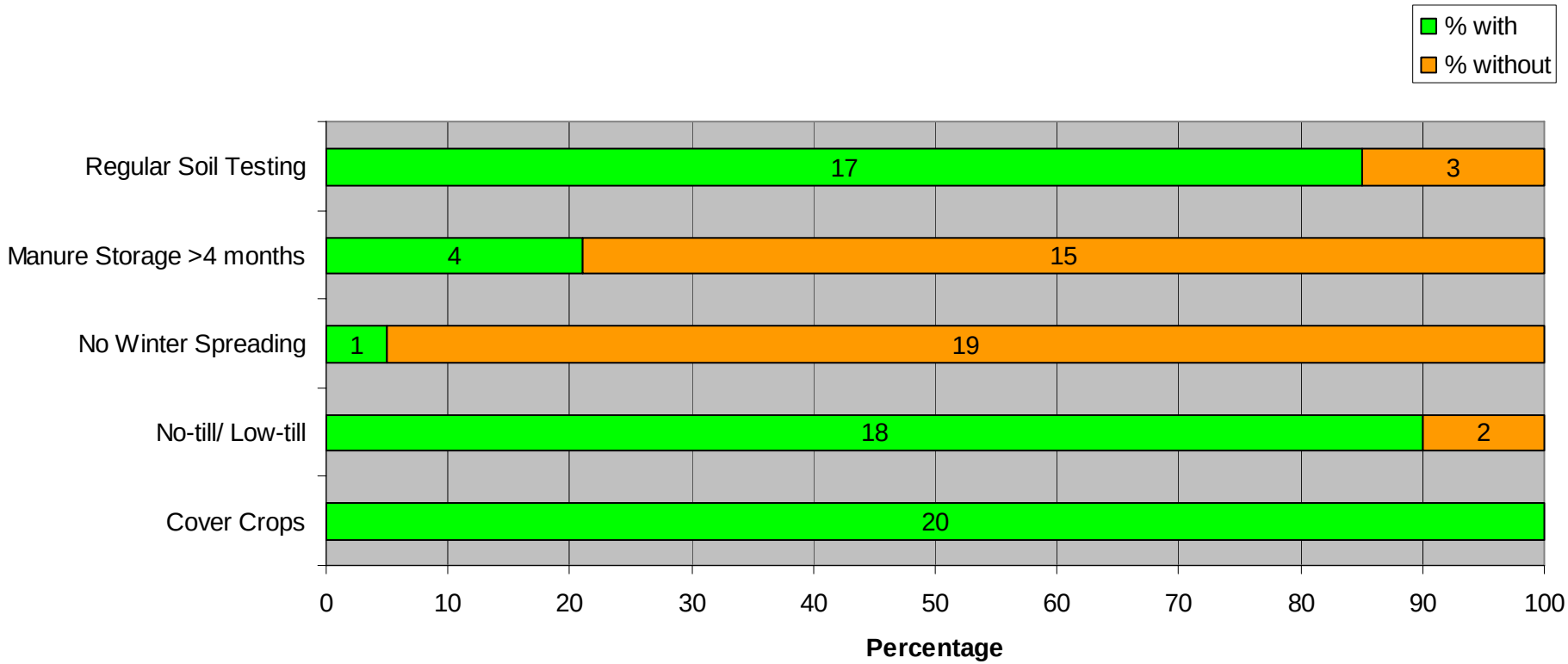
Overview of Sites

- 24 farms visited
  - 20 Animal Feeding Operations (AFOs)
    - 2 Concentrated Animal Operations (CAOs)
    - 18 dairies; 1 pullet farm; 1 dairy/swine farm
  - 20 with cropland; 4 lease out all cropland
  - 23 Plain Sect; 1 English
  - 19 Sampled Drinking Water

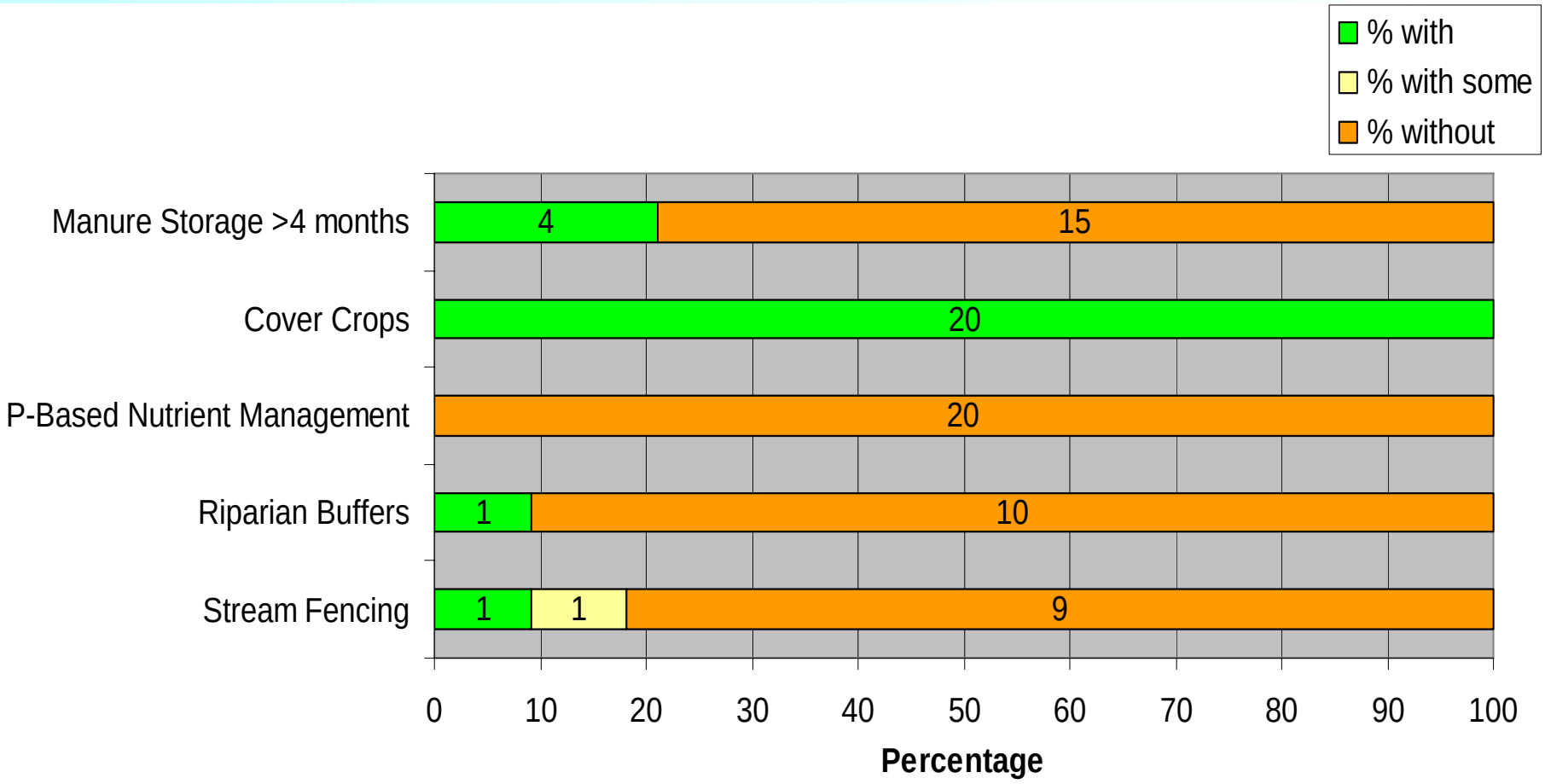
Outreach and Partnerships

- Close cooperation with the LCCD
  - Acted as the interpreter to the farm community
- Majority of Farms Plain Sect
  - Established Working Relationship with Bishops
  - Established Inspection Protocols
  - Leadership arranged inspection schedule
  - Farmers pres and post inspection

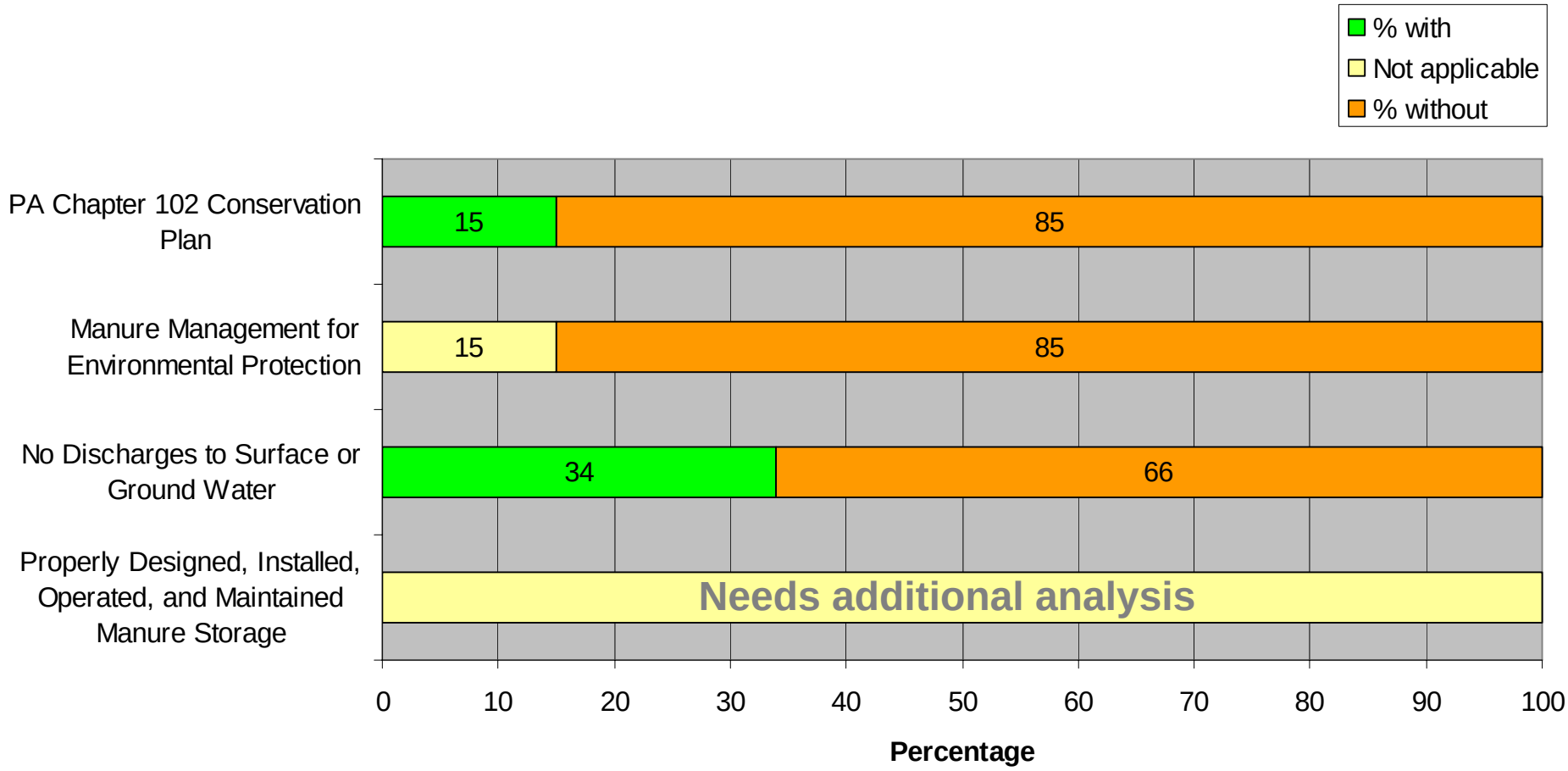
Type of Farm Practices



Chesapeake Bay BMPs



PA Baseline Compliance*



*Pennsylvania Clean Streams Law, Title 25, Chapter 83, Chapter 91, Sections 91.33 through 91.36, and Chapter 102

Watson Run

- Next Steps
  - Schedule for E&S finished by July 1
  - Manure Management Plans by September
  - Modeling on Pollutant Loads: Pre-inspection, Plan Implementation, Water Quality BMPs
- Next Steps
  - Discussion with Conservation Districts and State on improving compliance assurance program
  - Depending on findings of modeling study base program enhancements
  - Farm Community Drinking water is a concern

Conclusions

Partnership with CD and Community Leaders critical to success

Lack of evalutions has lead to high non-compliance rate and unlevel playing field.

CD role should be expanded to keep farmers out of harms way and to achieve water quality goals

Farm Community Drinking Water is a concern

Muddy Run

- Approximately 100 farms
  - Traditional inspection and follow-up
- Strategy
  - Farmers given an opportunity to sign up for required plans
  - Inspection priority to those who have not signed up
- Meetings have occurred with farmers
- Inspections scheduled to start in December

Shenandoah

Universe: Dairy and Poultry

Objectives: Evaluation of state program and compliance with federal and state requirements

Strategy:

- Outreach to Stakeholders
- Traditional enforcement response

Inspections and Enforcement

- Inspections conducted in May

Shenandoah

Traditional Compliance Assurance Approach

Farm Selection Criteria

- Combined operations
- Water Quality

7 farms (dairy, turkey, beef, broilers) inspected

Shenandoah

- Findings
  - State VPA Program appears to be effective
  - 95% of Swine and 90% of Poultry under state or federal regulation
  - 10% of Dairy
  - Dairy issues were similar to Lancaster findings
- Next Steps
  - Discussions with state on addressing Program Gaps
    - Small Dairy should be in VPA program

Conclusions

- VPA's Program has a high rate of compliance
  - Annual Inspection critical element
- Lack of dairy integration makes out reach difficult
- VPA program should be expanded to small dairy

Summary Conclusions

- Inspection programs realize programmatic goals – Important component of reasonable assurance
- Effective programs must be developed to deal with small dairy in the Bay Watershed
- Partnership with industry and community leaders are important
- Farm Community drinking water is a significant concern