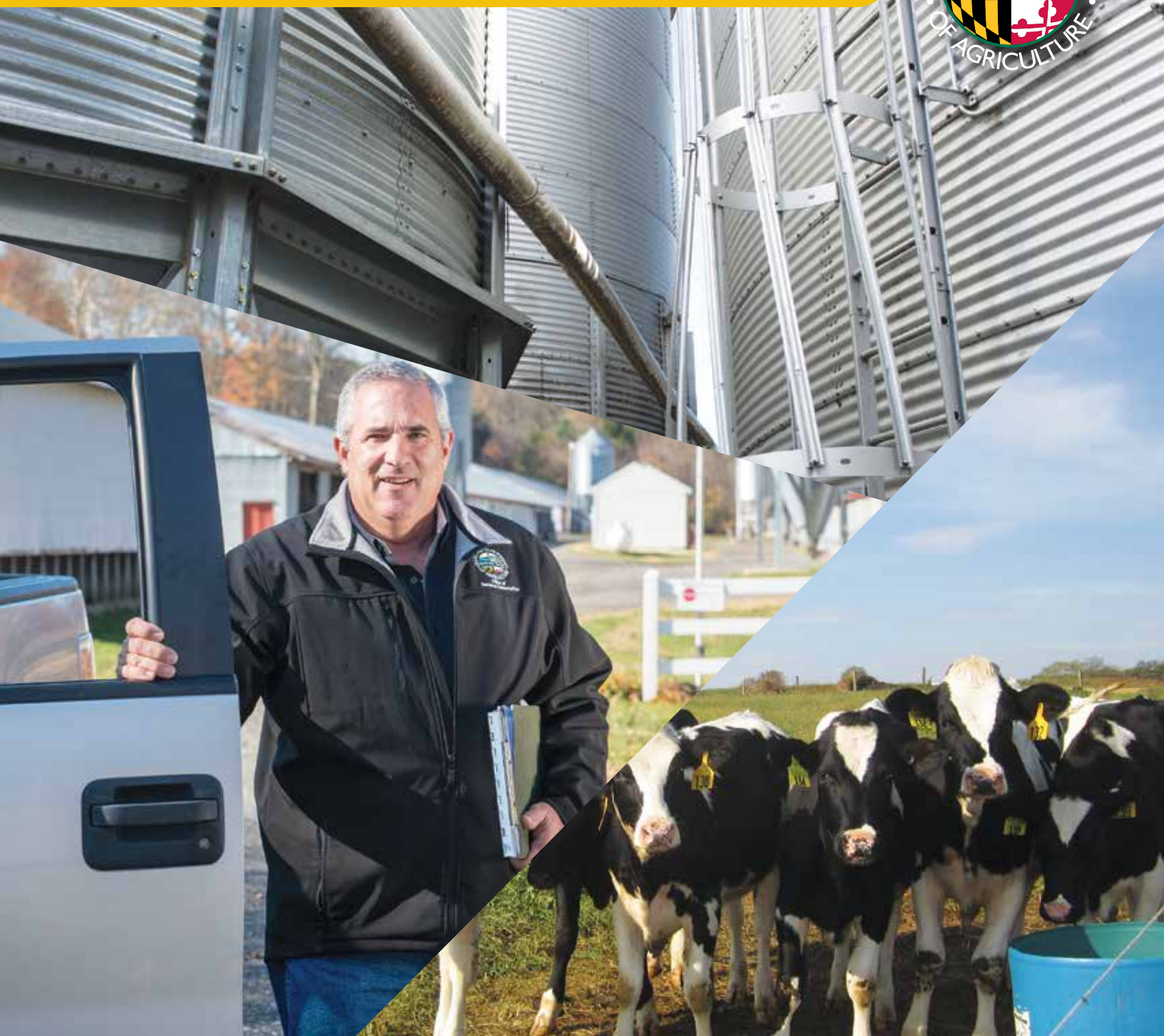


SOLUTIONS THAT WORK, for working farms



SECRETARY'S Message

Farming looks mighty easy when your plow is a pencil, and you're a thousand miles from the corn field.

~ Dwight D. Eisenhower



Every year, the department receives dozens of requests from legislators, foreign delegations, and other groups who want to visit a working farm to see how chickens are raised, crops are grown, and manure is managed. Despite their busy schedules, many farmers are willing to host these groups to help dispel some of the myths about how they care for their animals and protect natural resources.

Last spring, we visited a farmer who raises about half a million birds a year on the family's 150-acre poultry and grain farm. The farm has installed all the latest animal welfare and environmental features including automated feed and watering systems, advanced ventilation and temperature controls, vegetated windbreaks, manure storage, heavy use area protection, and more. Poultry farms practice strict biosecurity, so before we could enter the chicken houses, the group assembled in the farm's machine shop to suit up in protective gear.

While we were pulling on our blue jumpsuits and disposable boots, our host directed us to a long table in the middle of the shop that was covered with an impressive collection of environmental paperwork and reporting forms. These included the farm's Nutrient Management Plan, Annual Implementation Report, Comprehensive Nutrient Management Plan, Soil Conservation and Water Quality Plan, Nutrient

Management Voucher, Poultry Operation Record Keeping Guide, and poultry mortality records. I won't even mention the stack of animal welfare paperwork. As our visitors mulled over the documents, it was clear to me that the farmer's point was well taken—if you raise animals, you've got a lot of explaining to do, in many instances to multiple agencies, about how you manage manure and care for your animals.

For our part, the Nutrient Management Program works to ensure that all regulated farms—not just chicken farms—manage manure and other nutrient sources using sound science and the latest environmental protection practices. Overall compliance remained strong in Fiscal Year 2016, with 97.5 percent of farmers submitting annual reports on how they manage nutrients. The department continued to ramp up its focus on farms with suspected violations, performing 283 targeted on-farm audits on top of 739 random audits. Overall, the program audited 19 percent of the state's 5,340 regulated farm operators, compared with 16.7 percent the year before. During the year, the department issued \$26,000 in fines against farmers who failed to take corrective actions to address shortcomings by prescribed deadlines.

Throughout the year, program staff worked long hours to implement the state's new Phosphorus Management Tool (PMT) regula-

tions. By June 30, the department had collected soil test information for approximately 900,000 acres or 70 percent of Maryland's 1.3 million acres of farmland regulated by the Nutrient Management Program. The soil samples collected to date show that 82 percent of farm fields are not over-enriched with phosphorus and, therefore, not subject to the PMT and 1 percent are banned from applying additional phosphorus. The program continues to collect soil data for all regulated farms and will publish the latest soil data information on our website as it becomes available.

In our cities and suburbs, the department continued to train and certify lawn care professionals on ways to maintain healthy lawns without using unnecessary amounts of nutrients. By the end of the fiscal year, the department had certified 1,697 Professional Fertilizer Applicators and trained an additional 1,855 lawn care workers on responsible fertilizer practices.

Throughout the year, our talented staff worked with hundreds of Maryland farmers and land managers to practice sound environmental science and make real progress in meeting Maryland's commitment to protect and restore the Chesapeake Bay and its tributaries. I invite you to read on to learn more about our people and our programs.

Joe Bartenfelder,
Maryland Agriculture Secretary

Maryland NUTRIENT MANAGEMENT PROGRAM and the Chesapeake Bay

The Nutrient Management Program helps protect Maryland's waterways from nutrient pollution by regulating the amount, timing, and placement of commercial fertilizer products and organic nutrient sources used by farmers to grow crops and lawn care professionals to fertilize lawns. This helps ensure that nutrients applied to crops and lawns are not lost to waterways. The program also works with poultry and livestock producers to make certain that animal manure—a valuable nutrient resource—is managed in an environmentally sound manner.

Guidance is provided by the Nutrient Management Advisory Committee, which includes representatives from agricultural interests, environmental groups, the turfgrass industry, University of Maryland, and government agencies.

Agricultural Nutrient Management Program

Maryland law requires any farming operation that generates \$2,500 in gross income or has 8,000 pounds or more of live animal weight to follow nutrient management plans when fertilizing crops and managing animal manure. These plans specify how much fertilizer, manure, or other nutrient sources may be safely applied to crops to achieve yields and prevent excess nutrients from impacting waterways. To ensure the quality of nutrient management plans, the

department oversees a training, certification, and licensing program for nutrient management planners and farmers. Program staff ensure that nutrient management plans are developed, updated, and followed according to state regulations.

Turfgrass Nutrient Management Program

The Fertilizer Use Act of 2011—Maryland's Lawn Fertilizer Law—authorizes the department to train, certify, and license individuals and companies hired to apply lawn fertilizer to urban and

suburban properties including golf courses, parks, athletic fields, business grounds, school campuses, cemeteries, highway right-of-ways, and home lawns. The department's training and certification program—developed in partnership with the University of Maryland—focuses on fertilizer application restrictions, soil science, and best management practices that can be used to help protect waterways from nutrient runoff. A compliance program ensures that fertilizer applications are made following University of Maryland application and timing recommendations.



AGRICULTURAL Nutrient Management Program

"I've been involved in nutrient management for nearly 25 years, first as an Extension plan writer and for the past 15 years as a specialist with the department. I know my way around the farm."

Howard Callahan, Nutrient Management Specialist,
Kent, Queen Anne's, and Talbot counties



Phosphorus Management Tool Update

Maryland's Phosphorus Management Tool (PMT) regulations provide a multi-year process for farmers to transition from the Phosphorus Site Index to the PMT, an updated tool that can identify areas where there is a high risk for phosphorus runoff and guide the use of effective management practices in soils that are already saturated. The program began collecting soil phosphorus data in fall 2015 as required by the regulations. By the end of the fiscal year, data had been received and recorded for approximately 900,000 acres or 70 percent of Maryland's 1.3 million acres of farmland regulated by the Nutrient Management Program. Early analysis of the data reveals that 82 percent of the acreage statewide is not subject to the PMT. These farms may continue to use phosphorus

and manure based on their nutrient management plans. One percent of farm fields are restricted from receiving additional phosphorus applications. The remaining acreage must evaluate risk as the PMT is phased in and may be restricted in using phosphorus. The program continues to collect soil data for all regulated farms as it works to build a complete inventory of soil phosphorus levels to assist in future planning.

On-Farm Economic Analysis Project

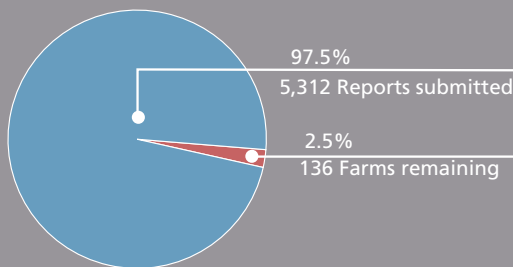
The first year of a multi-year Phosphorus Management Tool On-Farm Economic Analysis Project was completed in Fiscal Year 2016. Eight farms participated in the study, including four dairy farms and four farms that use poultry litter. Early indications show that switching to commercial fertilizer increased the cost of production. The project also

is gathering data on how organic and inorganic materials behave under extreme weather conditions.

Implementing Maryland's Revised Regulations

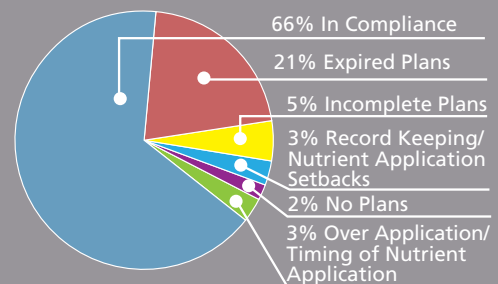
To take advantage of the latest scientific findings on nutrient movement and provide extra protection for Maryland's waterways, the department revised its nutrient management regulations in 2012 and developed a phased-in implementation schedule for certain best management practices that take time and money to implement. Farmers are now required to have stream buffers, setbacks, and livestock exclusion measures in place, incorporate manure into the soil within 48 hours of application, and follow new timing requirements for fall nutrient applications. A ban on spreading manure in winter is being phased in with complete implementation by March 1, 2020.

FIGURE 1:
Annual Implementation Reports
Submitted (as of June 30, 2016)
5,448 Regulated Farm Operations*



*Note: Some operators are required to submit more than one AIR.

FIGURE 2:
739 Random On-Farm Audits
(Fiscal Year 2016)



I have a lengthy background in soil conservation. When farmers have compliance issues, I help them work it out. In the end, most of them can see how good nutrient management and soil conservation benefit their operations.

Moana Himes, Nutrient Management Specialist,
Frederick County



Compliance and Enforcement

The department's nutrient management specialists verify that farmers are managing nutrients on their farms to protect water quality. They examine nutrient management plans submitted by farmers, analyze fertilizer receipts and required documents, and perform on-farm audits to confirm compliance with program requirements. The department is authorized to issue fines and penalties, take administrative actions, and pursue civil proceedings against farmers who fail to comply with nutrient management requirements.

NUTRIENT MANAGEMENT PLANS—New farming operations are required to submit copies of their nutrient management plans to the department. By the end of the fiscal year, the department had nutrient management plans on file for 98 percent of the state's 5,448 regulated farm operations. The department actively works to locate new farming operations and pursues enforcement actions against operators who fail to submit copies of their plans.

ANNUAL IMPLEMENTATION REPORTS—Farmers are required to update their plans before they expire and submit Annual Implementation Reports to the department by March 1 summarizing their nutrient applications for the previous calendar year. By the end of the fiscal year, 97.5 percent of regulated farm operations managing about 1.3 million acres

of land had submitted their implementation reports to the department (Figure 1).

ON-FARM AUDITS AND INSPECTIONS—During Fiscal Year 2016, enforcement specialists conducted 739 random on-farm audits (Figure 2) and 283 targeted audits (Figure 3) of farms with suspected violations for a total of 1,022 audits. This represents 19 percent of the state's 5,340 regulated farm operators (Figure 4). Sixty-six percent of the randomly selected farms were found to be in compliance, and 46 percent of the targeted farms were in compliance. The department is actively pursuing full compliance for all audited operations. In Fiscal Year 2016, the department issued \$26,000 in fines against 46 farmers who failed to take corrective actions by prescribed deadlines.

FIGURE 3:
283 Targeted On-Farm Audits
(Fiscal Year 2016)

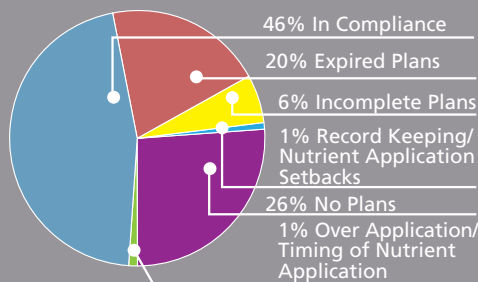
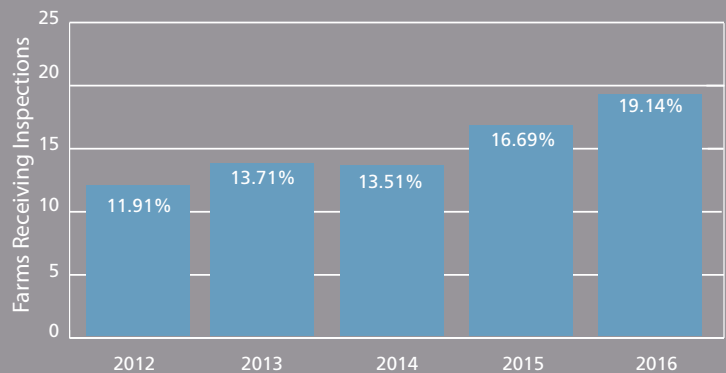


FIGURE 4:
Farm Audits and Follow-up Inspections
Percentage of Farms Receiving Inspections
(Fiscal Years 2012-2016)



"All of our nutrient management specialists have an agricultural background and experience in raising animals and producing crops. We can look at compliance issues from a farmer's perspective in order to solve a problem. I think farmers appreciate that."

Keith Potter, Nutrient Management Specialist,
Western Maryland



Certification, Licensing and Education Programs

CERTIFIED NUTRIENT MANAGEMENT CONSULTANTS—

The program trains and certifies consultants to provide farmers with nutrient management plans that balance crop nutritional requirements with the need to protect waterways from excess nutrient runoff. Managing the amount, placement, timing, and handling of commercial fertilizers, biosolids, and animal manure is emphasized. During the year, the program provided a two-day training course for individuals planning to take the certification exam. Sixty-nine new consultants were certified, bringing the total number of certified consultants available to write plans for farmers to 1,358.

UNIVERSITY OF MARYLAND CONSULTANT PROGRAM—Twenty University of Maryland consultants were funded by the department in Fiscal Year 2016. These consultants provide farmers with nutrient management plans free of charge.

FARMER TRAINING AND CERTIFICATION—The Nutrient Management Program and University of Maryland Extension train farmers who want to become certified to write nutrient management plans for their own operations. Farmers undergo about 11 hours of classroom instruction and practice in writing plans and are required to pass an exam. They work with Extension specialists to develop nutrient management plans for their operations that meet departmental requirements. During the year, the program certified 26 farmers to write their own nutrient management plans. To date, 591 farmers have been trained and certified to develop nutrient management plans for properties that they own or manage.

NUTRIENT APPLICATOR VOUCHER TRAINING—Farmers who apply nutrients to 10 or more acres of cropland are required to attend a nutrient applicator training course once every three years. Training focuses on sound management techniques for cleaner water. In Fiscal Year 2016, the department partnered with Extension to conduct 31 voucher training sessions attended by 551 farmers who wanted to obtain or renew their vouchers. Additionally, 407 farmers attended other training events to obtain their voucher credits, bringing the total number of farmers attending voucher training to 958.

CONTINUING EDUCATION—Certified nutrient management consultants are required to take 12 hours of continuing education credits every three years in order to renew their certifications. Farmers who are certified to prepare their own nutrient management plans are required to undergo six hours of continuing education every three years. In Fiscal Year 2016, the program and Extension offered 36 education classes on nutrient management topics and approved an additional 72 courses and field events sponsored by other recognized organizations. These sessions were attended by 2,811 individuals.



TURFGRASS Nutrient Management Program

"Education is so important to the success of the turf program. I want lawn care professionals to think of the department and me as a resource. We are working toward the same goal of healthy turf and a cleaner Chesapeake Bay."

Kelly M. Love,
Urban Nutrient Management Specialist



The Fertilizer Use Act of 2011

Maryland's Lawn Fertilizer Law requires lawn care professionals hired to apply fertilizer to turf to be certified by the department or work under the direct supervision of an individual who is certified. The law applies to professionals hired to fertilize home lawns, as well as individuals responsible for turf management at golf courses, public parks, airports, athletic fields, businesses, cemeteries, and other non-agricultural properties.

Both lawn care professionals and homeowners who fertilize their own lawns are required to obey fertilizer application restrictions, use best management practices when applying fertilizer to lawns, observe designated fertilizer blackout dates, and follow University of Maryland fertilizer recommendations. The Turfgrass Nutrient Management Program, with technical guidance from the University of Maryland, oversees a training, certification, and licensing program for lawn care professionals and a public education program for homeowners. Professional lawn care applicators are required to have both a pesticide certification and a nutrient application certification.

PROFESSIONAL TRAINING, CERTIFICATION & LICENSING—

In Fiscal Year 2016, the department, in cooperation with the University of Maryland, area businesses, and trade organizations, conducted 26 pre-certification training sessions and certification exams across the state for lawn care professionals. As of June 30, 2016, the program issued 922 business licenses and 1,697 Professional Fertilizer Applicator Certificates. Another 1,855 lawn care company employees were trained in turf management techniques and Bay-friendly fertilizer practices.

RECERTIFICATION TRAINING—

Professional Fertilizer Applicators are required to complete two hours of continuing education each year in order to renew their annual certifications. During the fiscal year, the program offered

42 recertification courses and approved numerous training courses offered by private industry and trade groups.

ANNUAL ACTIVITY REPORTS—

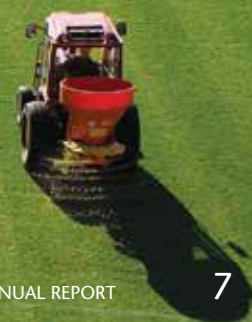
License holders are required to file an annual activity report with the program by March 1 covering the previous year. By the end of the fiscal year, the department had received activity reports from approximately 90 percent of these businesses.

ENFORCEMENT ACTIVITIES—

During Fiscal Year 2016, the program conducted 197 record reviews to assess compliance. Sixteen warnings were issued and all but two have been resolved through follow-up inspections and education.

HOMEOWNER OUTREACH—

During Fiscal Year 2016, the program continued to educate citizens about Maryland's Lawn Fertilizer Law through partnerships with the University of Maryland Master Gardeners, news releases, social media, the Internet, and public events. The program worked actively with local jurisdictions and homeowner associations to ensure that contracts for lawn care services followed Maryland's Lawn Fertilizer Law.



MARYLAND DEPARTMENT OF AGRICULTURE

Nutrient Management Offices

WESTERN MARYLAND

Allegany, Garrett and Washington counties
12407 Naves Cross Road, NE
Cumberland, MD 21502
301-777-1747, ext. 116

Frederick County

92 Thomas Johnson Drive, Suite 110
Frederick, MD 21702
301-694-9290, ext. 136

Howard and Montgomery counties

92 Thomas Johnson Drive, Suite 110
Frederick, MD 21702
301-694-9290, ext. 137

CENTRAL AND SOUTHERN MARYLAND

Baltimore, Cecil and Harford counties
2205 Commerce Road, Suite C
Forest Hill, MD 21050
410-838-6181, ext. 118

Anne Arundel, Carroll and Prince George's counties

50 Harry S. Truman Parkway, Suite 201
Annapolis, MD 21401
410-841-5949

Calvert, Charles and St. Mary's counties

26737 Radio Station Way, Suite B
Leonardtown, MD 20650
301-475-8402, ext.122

EASTERN SHORE

Kent, Queen Anne's and Talbot counties
28577 Mary's Court, Suite 4
Easton, MD 21601
410-822-8126

Caroline and Dorchester counties

28577 Mary's Court, Suite 4
Easton, MD 21601
410-822-8120

Somerset, Wicomico and Worcester counties

27722 Nanticoke Road, Unit 2
Salisbury, MD 21801
410-677-0802, ext. 4



Maryland Department of Agriculture

Office of Resource Conservation

Nutrient Management Program
50 Harry S. Truman Parkway
Annapolis, MD 21401
mda.maryland.gov



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Joseph Bartenfelder, *Secretary*

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