

# 2011 PROGRESS REPORT

# IMPLEMENTING NUTRIENT

# MANAGEMENT PROGRAMS

A Report to Governor Martin O'Malley  
and the Maryland General Assembly  
by the Nutrient Management Advisory Committee

July 1, 2011



**Maryland Department of Agriculture**  
**Office of Resource Conservation**  
**Nutrient Management Program**  
50 Harry S. Truman Parkway  
Annapolis, MD 21401  
Phone 410-841-5959  
[www.mda.state.md.us](http://www.mda.state.md.us)

Martin O'Malley  
*Governor*  
Anthony G. Brown  
*Lt. Governor*  
Earl F. Hance  
*Secretary of Agriculture*  
Mary Ellen Setting  
*Deputy Secretary*

# IMPLEMENTING NUTRIENT MANAGEMENT PROGRAMS

A Report to Governor Martin O’Malley and the Maryland General Assembly  
by the Nutrient Management Advisory Committee

July 1, 2011

## TABLE OF CONTENTS

The Nutrient Management Advisory Committee .....	1
2011 Nutrient Management Advisory Committee Members .....	2
Introduction .....	3
Executive Summary.....	3
Part I. Nutrient Management Plan Development & Implementation .....	5
Summary .....	5
Compliance With First Plan And Annual Implementation Report Filing .....	5
Plan Implementation Inspection.....	6
Incentives And Cost-Share For Nutrient Management Planning .....	7
Management Of Nutrient Application On Non-Agricultural Land.....	8
Part II: Nutrient Application And Other Education Programs .....	9
Part III: Manure Transport Project.....	11
Manure Matching Service.....	12
Project Effectiveness.....	12
Part IV. Resources Needed To Meet The Requirements Of The Law .....	13
Conclusion.....	15

## **THE NUTRIENT MANAGEMENT ADVISORY COMMITTEE**

The Nutrient Management Certification and Licensing Law of 1992 required the Department to establish a Nutrient Management Advisory Committee to be appointed by the Secretary of Agriculture. The Committee is charged with helping develop regulations and guidelines regarding nutrient management planning. The Water Quality Improvement Act (WQIA) of 1998 further defined membership and responsibilities of the Nutrient Management Advisory Committee as follows:

§ 8-804.

- (a) (1) The Department shall establish a Nutrient Management Advisory Committee. The Secretary shall appoint to the Committee representatives of the agricultural community, the environmental community, the commercial lawn care, biosolids and agricultural fertilizer industries, academia, and appropriate government units. The Secretary also shall appoint to the Committee a representative of county government from a list submitted by the Maryland Association of Counties. The President of the Senate of Maryland shall appoint to the Committee one Senator, and the Speaker of the House of Delegates shall appoint to the Committee one Delegate.
- (2) (i) The Nutrient Management Advisory Committee shall report to the Governor and the General Assembly, in accordance with § 2-1246 of the State Government Articles, by July 1 of each year on the implementation of the requirements of the Water Quality Improvement Act of 1998.
- (ii) The report required under subparagraph (i) of this paragraph shall include information regarding:
  1. the level of participation in the nutrient management plan program;
  2. additional resources that may be needed to meet the requirements of § 8-803.1 of this subtitle;
  3. the effectiveness of nutrient application education programs, and;
  4. the effectiveness of the Manure Transport Project set forth in § 8-704.2 of this title.
- (b) In consultation with the Nutrient Management Advisory Committee, the Department shall by regulation:
  - (1) Prescribe the criteria, form and content for certified nutrient management plans applicable to licensees and certificate holders;
  - (2) Establish continuing education requirements for certified nutrient management consultants and persons receiving vouchers of completion under § 8-803.3 of this subtitle, and;
  - (3) Adopt guidelines and requirements for licensees and certified nutrient management consultants on record keeping and on reporting requirements to the Department on nutrient management plans.

## 2011 NUTRIENT MANAGEMENT ADVISORY COMMITTEE MEMBERS

**Jenn Aiosa**

Chesapeake Bay Foundation

**Christy Brown**

U.S. Department of Agriculture

**Frank Coale, Ph.D.**

University of Maryland

**Valerie Connelly**

Maryland Farm Bureau

**Roy Crow**

Maryland Association of Counties

**Jere De Baugh**

Maryland Dairy Industry Association

**Mark Fuchs**

Delaware-Maryland Agribusiness Association

**Signe Hanson**

Maryland Nursery & Landscape Association

**Lynne Hoot**

Maryland Association of  
Soil Conservation Districts

**Jay Jacobs**

Maryland House of Delegates

**David Kann**

AET Consulting, Inc.

**Gary Kelman**

Maryland Department of the Environment

**Pat Langenfelder**

Maryland Farm Bureau

**Louise Lawrence**

Maryland Department of Agriculture

**Lee McDaniel**

Maryland Association of  
Soil Conservation Districts

**Jo A. Mercer, Ed.D.**

Maryland Department of Agriculture

**The Honorable Thomas L. Middleton**

Maryland State Senate

**Charles Otto**

Maryland Grain Producers Association

**Royden Powell, III**

Maryland Department of Agriculture

**Bill Satterfield**

Delmarva Poultry Industry, Inc.

**Mark Schlossberg**

Maryland Association of Green Industries, Inc.

**Trish Steinhilber, Ph.D.**

University of Maryland

**Lisa Williams**

Synagro Technologies, Inc.

## **INTRODUCTION**

The Water Quality Improvement Act of 1998 requires the Nutrient Management Advisory Committee to report to the Governor of Maryland and the Maryland General Assembly on the progress of the nutrient management program implementation by July 1 of each year. Specifically, the law requires that the following areas be addressed:

- Status of nutrient management plan development and implementation
- Additional resources necessary to assist agricultural operations in developing and implementing nutrient management plans and meeting regulatory requirements
- Effectiveness of the nutrient application education program
- Effectiveness of the Manure Transport Project set forth in §8-704.2 of this title

## **EXECUTIVE SUMMARY**

During fiscal year 2011, MDA's Nutrient Management Program marshaled resources to assure compliance with and enforcement of nutrient management regulations. MDA staff continued regulatory enforcement actions against farmers who had not completed and filed an initial nutrient management plan with the Department. Over ninety-nine percent of operations are in compliance with submitting plans. During FY 2011, MDA initiated progressive enforcement actions with the remaining five non-responsive operators. By the end of FY 2011, two of the operations remained out of compliance for filing a first nutrient management plan.

After the initial plan filing, operators are required to file an Annual Implementation Report (AIR) that summarizes their nutrient applications by crop for the previous growing season. To date, 97.3 percent of operators have met the AIR filing requirements for the 2010 growing season. It is important that work continue on implementation of plans and enforcement of regulations. During Fiscal Year 2011, 438 operations were inspected. MDA nutrient management staff levels limit the capacity to address the workload associated with 5,514 operators across the State. Adequate resources are also needed to improve and administer the database that tracks implementation and compliance. Providing MDA with the resources to report aggregated data on the performance of agriculture is essential as Maryland begins to implement and track Watershed Implementation Plans to meet TMDL requirements.

Technical assistance is an ongoing need to assure nutrient management plans are updated and properly implemented. The advisory committee supports the current menu of plan development options available to farmers, including continued funding of University of Maryland Agricultural Nutrient Management Program services and farmer training and certification programs. As of June 2011, 402 operators have been trained and certified to write plans for their own operations, although relatively few have been active in writing their own plans. Continued evaluation of technical assistance needs and examination of efficiencies and alternatives is necessary to assure responsiveness of the program to meet farmers' needs and agricultural nutrient management goals.

On May 19, 2011, Governor O'Malley signed the Fertilizer Use Act of 2011, an environmental law designed to reduce the amounts of nutrients reaching the Chesapeake Bay from lawns, golf courses and other managed turf. The law extends regulation from about 600 to over 1500 land-management companies and institutions statewide and includes new training, certification and licensing provisions. Homeowners and fertilizer manufacturers and retailers will be affected as well.

The Manure Transport Project suspended assistance to support manure transport for land application during FY2011 to assure adequate funding was available to address expansion of excess poultry litter transport out of the watershed. The Chesapeake Bay 2 year Milestone goal in Maryland is to transport 45,000 tons of poultry litter out of watershed. Manure export will assist animal operations faced with the limits imposed by phosphorus-based nutrient management plans. Increasing fertilizer costs have helped highlight the economic value of the nutrients in manure. It is anticipated that incentives to help cover manure transport costs will continue to be needed as economic and environmental factors make alternative uses for excess manure resources necessary. This program has become a model for other states.

Nutrient applicator training has helped 5,407 individuals earn nutrient application vouchers since the program began statewide in 2001. MDA and University of Maryland Extension have continued to explore new approaches to provide continuing education that is useful, informative, and convenient for busy adult learners.

*The Nutrient Management Advisory Committee recommends additional resources be provided for the efficient implementation of the program. The Committee also highlights the importance of a continuous funding source for research related to nutrient management and the need for coordination of information from research institutions across the country. Working cooperatively, government agencies and educational institutions can develop positive solutions to environmental issues while preserving the economic viability of agriculture.*

## **Part I. NUTRIENT MANAGEMENT PLAN DEVELOPMENT & IMPLEMENTATION Summary**

The Water Quality Improvement Act of 1998 (WQIA), with amendments made in 2004, requires farm operators to submit a nutrient management plan to the Maryland Department of Agriculture and to implement that plan. Deadlines were included to phase in both nitrogen and phosphorus based plans, the last being July 1, 2005, when farm operators who used manure or biosolids were required to submit and implement a phosphorus-based plan. After filing their initial nutrient management plan, operators must have and implement updated plans and keep supporting documentation with their personal files. These records must be made available to MDA's Nutrient Management Specialists for inspection.

Each year by March 1st, farm operators must file an Annual Implementation Report (AIR) to verify farm information, document nutrients applied during the previous calendar year and certify that the farm operator will have a valid nutrient management plan and will continue to follow it during the current and upcoming cropping years.

As MDA works with individuals to bring them into compliance, the numbers of operators and acres that come under the auspices of the Water Quality Improvement Act continue to change. These changes may reflect land use changes to development, owner or operator changes as well as updates to the original database as follow up visits and communication verify who must comply.

Commercial applications of fertilizers to non-agricultural land (e.g., golf courses, campuses, public grounds and parks, highway rights-of-way and property serviced by lawn care companies) are not required to have a nutrient management plan; rather the service provider or manager must keep property-specific records regarding nutrient application timing and rates and follow University of Maryland recommendations based on soil test results.

The Fertilizer Use Act of 2011 was designed to further reduce the amounts of nutrients entering the Chesapeake Bay from non-agricultural sources. Its provisions include limits on the amount of nitrogen and phosphorous in fertilizer sold to the public, establishment of a training and certification for persons who apply nutrients to lawns and managed turf, limits on the amount of nitrogen and phosphorous fertilizer that may be applied to turf, and development of a homeowner fertilizer education program. The Act will be phased in over the course of two years, with full implementation attained by October 1, 2013.

### **Compliance with First Plan and Annual Implementation Report Filing**

MDA current information indicates that 5,514 farm operators manage 1,291,912 acres and are subject to nutrient management laws. As of June 30, 2011, 5,512 have filed a nutrient management plan accounting for 1,291,780 acres as required by law. This represents 99.9 percent of applicable farm operators and 99.9 percent of farmland. MDA is currently pursuing enforcement actions against the remaining operators who are subject to enforcement efforts as explained below.

Nutrient management regulations apply to operators, not necessarily the owners of agricultural land. About two-thirds of farm acreage is rented, and the operator of any parcel of land may change from year to year. MDA continually works to update records with new operators, including equine enterprises on land that is not tax assessed as agricultural, and to eliminate parcels of land sold for development. The complexity of keeping records on various types of operations, changing land use and levels of compliance continues to challenge MDA's computer database tracking system, which is currently based on manual data entry.

Ongoing compliance tracking of nutrient management regulatory requirements is also documented through a farm operator's submission of an Annual Implementation Report (AIR). This report is designed to verify farm operation information, any changes in property farmed, the continued use of a nutrient management plan and documented fertilizer and nutrient uses during the previous calendar year. Regulations required that 5,448 operators submit an AIR for 2010 by March 1. The difference between this number and the total number of operations are the new operations that have recently filed a nutrient management plan and are not yet subject to AIR filing. As of June 30, 2011, 5,299 or 97.3 percent of AIRs covering approximately 1,265,335 acres or 98.5 percent had been received. MDA issued warning notices to 1,276 operators in mid-April, followed by penalty notices in mid-May to 439 farm operators who had not submitted an AIR.

Nutrient management implementation staff is responsible for encouraging the prompt and accurate filing of the AIR. Operators were provided with the opportunity to file an electronic AIR form and 236 users submitted an online fill-in form. Extensive promotion and training are needed to increase awareness and use of the site among operators. *The Nutrient Management Advisory Committee recommends additional resources for improved data management capacity and further development of electronic filing to improve the documentation of implementation of plans by operators.*

At the beginning of FY 2011, five operators had not filed a nutrient management plan or had not been responsive to MDA's attempts to contact them by mail or telephone. Three cases were resolved by operators submitting their nutrient management plan as required or by MDA verifying that the operation was no longer active. As of June 30, 2011, enforcement actions continue against two operators who are still out of compliance for filing a first nutrient management plan.

### **Plan Implementation Inspection**

The submission of the initial nutrient management plan is the first step in coming into compliance. Maintaining compliance requires ongoing plan implementation, record keeping, updating the plan when conditions change, and timely filing of the AIR. MDA Nutrient management specialists conduct site visits and review the implementation of plans with operators to verify that an operator is following the plan as written by a certified consultant. Six nutrient management specialists, located in six regional offices, worked with 412 eligible operators in FY 2011. Specialists provide compliance assistance, educational programs and conduct site visits for plan implementation inspection and enforcement of the regulatory requirements. As of June 30, 2011, nutrient management specialists had



completed 450 implementation reviews and inspections during the fiscal year, including certain follow-up visits. During these visits, specialists often assisted operators with more information about technical and regulatory aspects of nutrient management and helped set up record keeping systems. Specialists issued 65 warnings for operators to correct major violations and documented any minor violations to be corrected. Seventy percent of the warnings were attributed to expired plans. Follow-up inspections found that 51% of operators had come into compliance; the remainder are progressing through the enforcement process.

MDA has developed enforcement policies and procedures for plan implementation reviews. An implementation specialist schedules site visits with operators at a mutually agreeable time. The specialist mails a follow-up packet with confirmation of time and date for the visit, and fact sheets that explain the review process and a checklist of the records the operator should make available for review. Once the inspection is complete, an operator may receive a written warning for major violations such as not having a current plan, absence of actual yield records, mistiming or over application of nutrients, and mismanagement of organic wastes. If an operator fails to correct the violations within a prescribed timeframe, the enforcement actions will be followed by a charge letter describing the violations, associated fines, right to request a hearing, and other subsequent steps of the enforcement process.

#### **Incentives for Nutrient Management Planning**

Eligibility for State incentive programs is linked to an operator's compliance with nutrient management regulations. Those who are not in compliance are ineligible to receive cost-share from any program funded through the Maryland Agricultural Water Quality Cost-Share (MACS) Program. This includes the Cover Crop Program, Manure Transport Project and support for any of the best management practices eligible for state cost-share.

*The Advisory committee supports continuation and increased funding for nutrient management planning through private and public resources. Cost share incentives can help defray the cost of plan development for farmers who retain private sector consultant services and keep operators in compliance. This is especially a concern because most of the inspection violations, seventy percent are issued for failure to maintain an up-to-date nutrient management plan.*

#### **Consultant's Plan Development Review and Technical Assistance**

Certified nutrient management consultants and certified farmer operators are authorized to develop nutrient management plans. Currently two nutrient management specialists conduct plan reviews and site inspections of certified consultants; a third specialist position is currently vacant. These reviews of plans and associated records ensure the accuracy of recommendations and compliance of consultants and certified plans with the nutrient management law and regulations.

In FY 2011 specialists conducted site inspections and reviewed 203 plans of certified consultants, all of which were found to comply with regulatory requirements. Sixty-nine commercial nutrient applicators were also inspected and found to be in compliance.

Certification and licensing specialists participated in the plan review and approval process of 24 nutrient management plans required for the Maryland Agricultural Cost-Share (MACS) program eligibility. Staff reviewed 52 nutrient management plans that were a part of the cross compliance with Maryland Department of the Environment Sewage Sludge Utilization permitting process.

Technical assistance for operators by certified consultants during the process of plan development is vitally important. Nutrient management plans are site-specific and each operation presents unique management challenges. Certified consultants are charged with helping operators understand their plans. Certified consultants are encouraged to develop close working relationships with their clientele in order to optimize nutrient efficiency and crop production. The availability of technical assistance and incentives are essential if consultants are to write quality plans.

University of Maryland Extension (UME) has expressed concerns about its capacity to deliver meaningful plan development services in light of declining and unstable funding. While these services will continue to be provided through UME for FY 2012, UME has requested MDA convene discussions with stakeholders regarding a long term strategy to sustain nutrient management plan development. *The NMAC recommends MDA work within agricultural sectors to explore and develop a long term plan to provide support for plan development and consider viable funding mechanisms to support this activity.*

#### **Management of Nutrient Application on Non-Agricultural Land**

Non-agricultural land encompasses a wide range of properties, including private landscapes managed by commercial service companies, highway rights-of-way, golf courses, athletic fields, school campuses and recreational facilities. Nutrient management regulations outline the requirements for fertilizer application to a total of 10 or more acres of non-agricultural lands: use fertilizer rates and timing as recommended by the University of Maryland; keep records of each application and amount of nutrients applied; and, have current soil tests for each client or management unit. Operators are required to make these records available for inspection by the nutrient management specialist.

Non-agricultural land managers are selected for inspection randomly from among approximately 600 eligible operations statewide. Eligible operations are those that apply nutrients to a total of 10 or more acres per year. The records of twenty-seven golf courses, thirty lawn and landscape companies, and three public lands maintenance offices were reviewed in FY 2011. These sixty reviews resulted in a total of 13 warnings issued for non-compliance, including: three golf courses, and ten lawn / landscape maintenance companies. Five companies, or 38 thirty-eight percent cited did not have the required soil tests. Two companies, or 15 fifteen percent kept insufficient records, and one company, or 8 eight percent were cited for over-applying nutrients. The remaining five companies were cited for a combination of the above reasons. Operations that failed the first inspection were visited again after a prescribed time period to allow the operator to secure soil tests or adjust fertilization rates for subsequent applications. Eighteen follow up visits showed that most of the operations had come into compliance with regulations; however, one fine was issued.

## **Part II: NUTRIENT APPLICATION AND OTHER EDUCATION PROGRAMS**

Education related to nutrient application to agricultural land, as required by COMAR 15.20.06, helps farmers and growers improve efficiency and cost-effectiveness of nutrient use while protecting the environment. Those who apply nutrients to more than 10 acres of agricultural land in Maryland are required to have a nutrient applicator voucher or be a certified operator or consultant and to make applications according to the operator's nutrient management plan.

Workshops for those who apply nutrients to non-agricultural lands (e.g., lawn care companies, state land, golf courses) are delivered by MDA's urban nutrient management program in English and sometimes Spanish. Training covers the principles of nutrient recommendations, the meaning of the fertilizer guarantee, considerations in the choice of commercial fertilizer, how to determine the nutrient content of organic nutrient sources, and procedures for calibrating nutrient application equipment. While not required by law, the training sessions are fully enrolled and demand for these programs remains high. The three programs offered in FY 2011 served 121 participants.

University of Maryland Extension, with support from MDA's Nutrient Management Program, delivers nutrient applicator training workshops statewide. During FY 2011, University of Maryland Extension developed and offered thirty-nine courses to award or renew applicator vouchers, with 751 attending the trainings. Since the inception of the applicator voucher program, 5,828 vouchers have been issued. Ongoing participation and voucher renewals are dependent on the development of current and practical information.

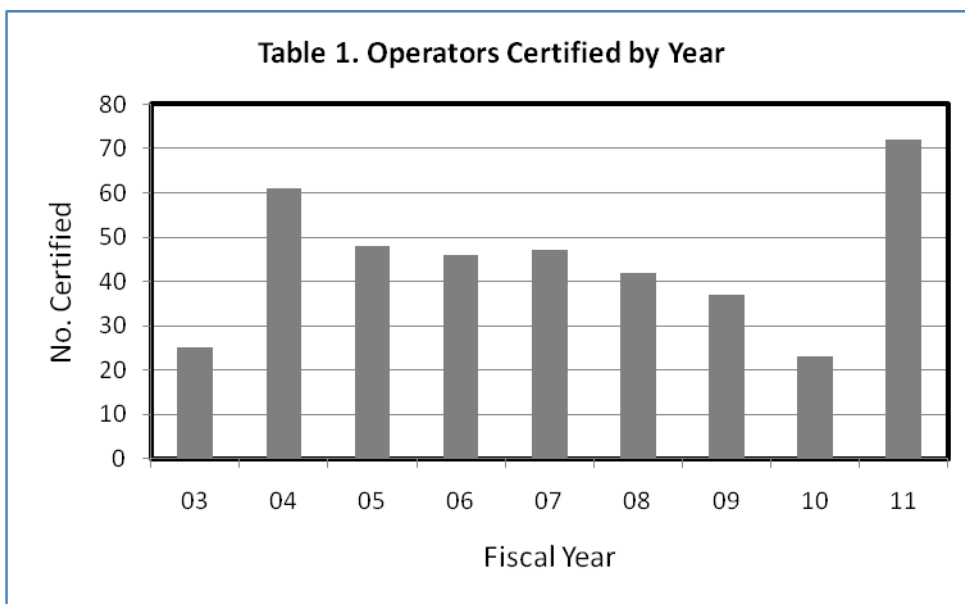
Four hundred forty-eight certified consultants or operators received continuing education credit at thirty-six MDA- and University of Maryland Extension-sponsored events. Another 694 certified individuals earned continuing education credits at 46 courses and events sponsored by other agencies and organizations. MDA and UM staff and faculty also provided outreach to the agricultural and green industries and general public at eight field days, fairs and other similar events.

Thirty-one participants completed the two-day course in preparation for the certification exam for nutrient management consultants. After the certification exam, UME-organized workshops on "How to Write a Nutrient Management Plan" presented the detailed steps of plan writing and using the plan development software program.

In response to the development of MAFO/CAFO regulations and requirements of Comprehensive Nutrient Management Planning (CNMP), a special one-day session of the certification preparation course and examination was provided to thirty personnel from five agencies and eight private consulting firms or individuals.

MDA and University of Maryland Extension have devoted considerable resources toward certifying and encouraging operators to write their own plans. To date, 402 operators have completed the training and become certified to write their own nutrient management plans. For a number of reasons, including the availability of "free" plan writing services through Maryland Extension advisors, few farmers have been writing their own plans. In the early years of the program, many farmers sought certification. As the pool of potential students dwindled, so did enrollment in farmer training and certification courses.

(see Table 1). Farmer/operator certification training for diverse operations, poultry litter and greenhouse/nursery served 80 participants, 72 of whom went on to earn certification. Certified consultants and the Extension advisors assigned to each county generate the most plans by a large margin over the certified operators. Discussions with producers suggest that farmers consider their time and skills more valuable than the fees commercial consultants charge. Extension advisors provide free plan writing services, but declines in funding since 2009 has reduced staffing from 28 in 2009, to 20 in FY 2012. With the prospect of not having a current plan due to unavailable professional services, operators are taking advantage of self-certification. In addition, special efforts to reach the equine community and other pasture-based enterprises have helped boost certification among operators.



*MDA should continue to work with Maryland Extension to ensure that the information offered to consultants and operators for meeting continuing education requirements provides useful and timely information that enhances knowledge and understanding of nutrient management concepts and technologies.*

### Part III: MANURE TRANSPORT PROJECT

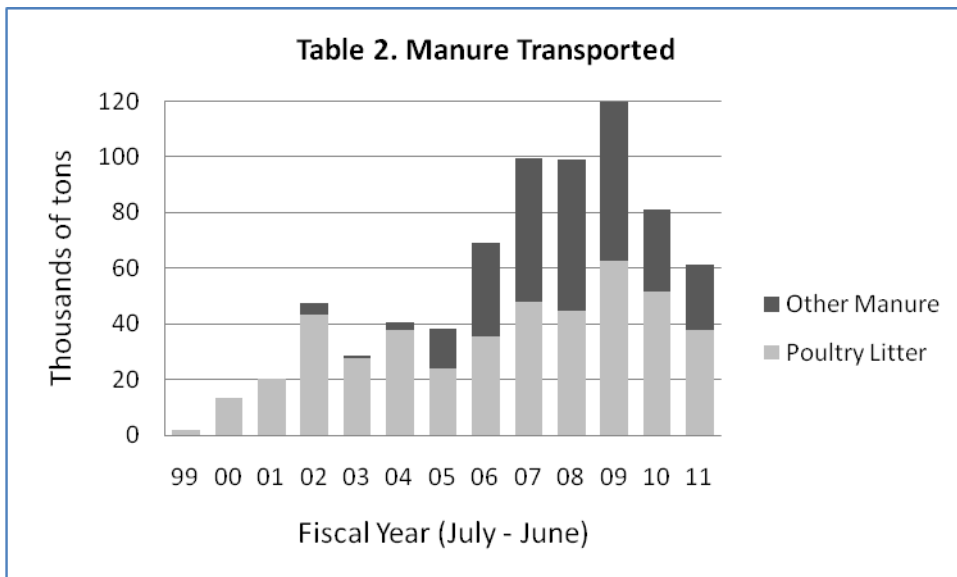
#### Implementation

The Manure Transport Project, formerly the Poultry Litter Transportation Pilot Project, was initiated in March, 1999. Legislation in 2000 modified the program, making it available to all types of animal operations statewide that are experiencing phosphorus over-enrichment or have excess manure. Manure brokers are eligible to participate in the program and cost-share funds may also be used to transport litter out of state.

The goal of the project is to protect water quality by fostering efficient land application and alternative animal waste management and use technologies such as waste-to-energy, fertilizer manufacturing, and composting. To date, poultry litter has comprised most of the manure transported.

Cost-share rates to transport poultry litter are twenty-five percent higher for farms located in Dorchester, Wicomico, Worcester, and Somerset counties. The higher rate supports Maryland’s goal of transporting twenty percent of the litter produced from the lower Eastern Shore to other regions. Dairy waste cost-share is capped at \$7,500 per operation per year due to its relatively low nutrient-to-weight ratio. During the first nine months of 2010, MDA suspended support for dairy operations, in an effort to assure adequate funding was available for reaching the Chesapeake Bay Milestone goal to increase poultry litter transported out of the watershed by 10,000 tons per year. Eligibility was restricted in 2011 to poultry litter that would be transported out of the watershed. MDA continued to pay land application and dairy contracts approved in 2010.

During FY 2011, approximately 37,807 tons of poultry litter was transported utilizing incentives from the Manure Transport Project (see Table 2). Over eighty-five percent of this litter was removed or relocated from the six lower Eastern Shore counties. Approximately 23,343 tons of manure was transported in FY 2011 from other animals, predominantly dairy cows.



Receiving operations are required to apply the manure in accordance with a nutrient management plan prepared by a certified consultant. Enterprises receiving manure that will not be land-applied must document how the manure will be used, products created, and the intended use of any by-products.

### **Manure Matching Service**

A Manure Matching Service, part of the Manure Transport Project, links farmers who produce excess manure with farmers who can use the manure. Since 2006 contact information and manure availability have been posted to the MDA website.

Experience with the Manure Matching Service indicates a continuing demand for poultry litter. Farmers registered with the service have requested more than 25,000 tons of litter. More farmers want manure than haulers can accommodate. Forty-four individuals are registered with the service, including thirty-two receiving operations and fifteen sending operations. The majority of participants are interested in receiving or sending poultry litter, although other types of manures are registered. All participants are required to re-register with the service and update their information annually.

Commercial fertilizer costs have significantly increased in the last few years, making the fertilizer value of manure even more attractive. Cost-share support for excess manure transport within and between agricultural operations makes manure management and application economically feasible. Phosphorus-based planning requirements have resulted in increased participation from dairy producers. Until alternatives for using and managing excess dairy manure are economically feasible, financial assistance for manure transport provides important environmental protections. Project termination would have negative consequences for the environment, reduce management options for farmers as they implement phosphorus-based plans, and delay efforts to develop alternative uses for manure.

### **Project Effectiveness**

The project has been operational since the spring of 1999. Participation has increased over time. The decline in 2011 is attributable to suspension of support to transport manure for land application due to reductions in funding and Chesapeake Bay goal targeting transport out of the watershed..

During the first three years of the project, most of the participants used poultry litter as a fertilizer for land application; however, in the last three years, more poultry litter has been transported for alternative uses—in FY 2011, 77 percent of the litter transported went to alternative uses such as mushroom production, composting, and processing into fertilizer products. Perdue AgriRecycle began participating in the program in August 2001, and has since transported approximately 221,152 tons of poultry litter using program assistance. Although Maryland does not offer direct subsidies or tax benefits for alternatives such as energy production, assistance with transport costs has been favorably considered. The majority of the transported manure is not land applied in the Chesapeake Bay watershed.

MDA had modified project regulations to allow the transport of manure within a dairy operation to qualify for assistance if the distance is greater than a mile. As dairy farmers made management changes to implement phosphorus-based plans, their participation had markedly increased prior to limits imposed on cost-share to dairy operations in FY2010.

A significant number of manure brokers, nutrient management consultants and soil conservation district staff use the Internet to download application forms. Increased demand continues for the Manure Transport project, driven in part by full implementation of phosphorus-based plans. Additionally the development of local Watershed Implementation Plans and revision of the Phosphorus Site Index is likely to increase demand for assistance in transporting manure. State payments for manure transport in FY 2011 were \$354,000; poultry company matching funds totaled \$294,283, for a program total of \$648,283.

#### **Part IV. RESOURCES NEEDED TO MEET TO MEET THE REQUIREMENTS OF THE LAW**

The Nutrient Management Advisory Committee supports continuation of the current available resources and has identified and recommends additional resources needed to meet the requirements of the Nutrient Management Law § 8-803.1 as specified below:

- 1. MDA should continue to work with University of Maryland Extension to provide farmers with continuing education programs** that are useful, timely and that enhance knowledge and understanding of nutrient management concepts and technologies. Flexibility in allowing related seminars, workshops or field days sponsored by other entities and approved by MDA to meet continuing education requirements remains key to the success of the program.
- 2. Improvements to MDA's computer capability for managing nutrient management database information are critical.** The capacity to handle the multiple layers of information required to track and respond individually to operator compliance queries and to capture changing patterns of agricultural land rental and management is needed. Critical information is not currently being entered into the database due to lack of personnel. A top priority of the program must be to update the system to provide online AIR submission. The Committee encourages further development of nutrient management implementation assessment metrics and procedures to ensure that regulatory enforcement, corrective measures and sanctions are administered effectively and fairly.
- 3. MDA staffing remains at a minimal level** to conduct plan and implementation reviews. Currently, eight full-time Nutrient Management Specialists conduct inspection and enforcement activities for the nearly 6,000 regulated farmers and about 130 active certified consultants. **One field inspection and one education/outreach position are vacant.** One Nutrient Management Specialist is currently charged with inspecting an estimated 600 non-agricultural operations (e.g., lawn care companies and golf courses) that manage 10 or more acres of grounds. As the Fertilizer Use Act of 2011 is phased in, the number of regulated non-agricultural operations will exceed an estimated 1,500,

with each requiring a license and at least one certified professional applicator. Training curricula and exam materials will need to be developed as well. This escalating focus on implementation and accountability means that **more personnel will be needed** to reach farmers and other land managers.

4. **Continued and expanded research is need in both traditional and specialty agricultural areas, including:**
  - the ability to quantify the effectiveness of the program from a water quality improvement perspective;
  - new technologies and information related to improving nutrient management for field crops and implementation for the plant diversity inherent in many greenhouse and nursery operations;
  - Maryland-specific Phosphorous-Site Index studies, evaluations, and recommendations, and;
  - the impact of irrigation on nutrient use efficiency.
5. **Resources are needed for programs to assist farmers in maintaining and implementing current nutrient management plans. MDA, in consultation with the NMAC, should develop a long term strategy to address nutrient management plan development needs.** These measures are necessary to assure responsiveness of the program to meet farmers' needs and agricultural nutrient management goals.
6. **Farmers and consultants need more information on soil amendments, food processing wastes and other off-farm materials that may be applied to agricultural land.** Information on these materials should include nutrient analyses, mineralization rates and sources of material. Generators and distributors of these materials, and the receiving farm operators need to understand that such information must be included in the farm nutrient management plan, and that application rates must be limited to the plan recommendations for the nutrients contained therein.
7. **MDA and the Maryland Department of the Environment must continue to coordinate their regulatory programs** to assure that the use of biosolids and all other organic nutrient sources are addressed consistently and simultaneously for the entire farm operation.
8. **The Committee continues to support the following legislative recommendations:**
  - increasing penalties for failure to have and implement a nutrient management plan and for major violations found during implementation reviews;
  - increasing penalties for non-certified or -licensed establishments and individuals who write nutrient management plans;
  - establishing penalties for violations in plan development by certified nutrient management consultants;
  - establishing penalties for violations applicable to commercial applicators; and
  - eliminating the nutrient applicator continuing education requirement for voucher renewal.



## **CONCLUSION**

Maryland farmers and the lawn care industry have risen to the challenge of managing nutrients on their operations in accordance with State laws and regulations. Their efforts need to be supported with ongoing technical and financial assistance as they work for improved environmental outcomes for all citizens of Maryland. Research, education and outreach must continue to keep nutrient management at the forefront. Enforcement continues to bring the stragglers on board. Operators need continuing support in understanding the process, keeping records and adapting nutrient management to their operation-specific conditions and changing needs.



Martin O'Malley  
*Governor*

Anthony G. Brown  
*Lt. Governor*

Earl F. Hance  
*Secretary of Agriculture*

Mary Ellen Setting  
*Deputy Secretary*



**Maryland Department of Agriculture**  
**Office of Resource Conservation**  
**Nutrient Management Program**  
50 Harry S. Truman Parkway  
Annapolis, MD 21401  
Phone 410-841-5959  
[www.mda.state.md.us](http://www.mda.state.md.us)