Department of the Environment

COMPOSTING WORKGROUP

FINAL REPORT

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Prepared for:

The Maryland General Assembly

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Background

On May 10, 2011, Governor Martin O'Malley signed House Bill 817 entitled *Environment – Composting* (Chapter 363, Acts of 2011). See Appendix A for a copy of the law. The bill became effective July 1, 2011 and directed the Maryland Department of the Environment ("MDE" or "Department"), in consultation with Maryland Environmental Service ("MES") and Maryland Department of Agriculture ("MDA"), to:

- Study composting in the State, including laws and regulations governing composting by individuals and composting businesses;
- Develop recommendations on how to promote composting in the State, including any necessary programmatic, legislative, or regulatory changes; and
- Report findings and recommendations to the General Assembly.

To conduct the study required by Chapter 363, Acts of 2011, MDE convened a Composting Workgroup that included representatives from MDA, MES, the composting industry, local governments, and other stakeholders. The Workgroup met monthly from May through December, 2012. It identified obstacles to increasing composting in Maryland, studied Maryland's current law and regulations related to composting, and heard presentations from regulators in other states. Two subgroups, a Technical Subgroup and an Education and Outreach Subgroup, met to develop recommendations for review by the entire Workgroup.

Composting facilities are operations that process biodegradable materials into a finished product called compost. The most common materials composted include yard trim, wood, manure, and food scraps. Composting can be an efficient method for recycling organic materials that might otherwise be disposed. By avoiding uncontrolled anaerobic decomposition in landfills, composting reduces the release of methane, a potent greenhouse gas. The use of compost offers numerous benefits: when incorporated into soil, it can improve soil tilth and fertility; provide a more stable form of nitrogen that is less likely to leach into water supplies; and on heavy soils, help reduce compaction and increase infiltration, thus helping to control and reduce stormwater run-off and soil erosion. Incorporation of compost into soil also stores carbon, helping to reduce atmospheric carbon. Furthermore, unlike recycling of other commodities, composting is inherently local. Composting can take place locally, providing benefits to Maryland's economy and environment.

Food scraps and yard trim together constitute a significant portion of the municipal solid waste stream, at over 27 percent according to EPA.[1] While Maryland currently recycles 66.9 percent of the estimated yard trim generated in the State, it only recycles 13.1 percent of the estimated food scraps generated. Increasing capacity to process food scraps is a major focus of this Report. Pursuant to Chapter 692, Acts of 2012, counties must meet recycling rates of 20 or 35 percent by December 31, 2015 (depending on population). Capturing additional food waste will be important in achieving these rates.

[1] EPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2010, http://www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf (Last accessed December 21, 2012).

Interest in food composting has increased in recent years. While Maryland's 2011 composting rate of 13.1 percent for food scraps lags behind recycling rates for many other types of materials in Maryland, food composting has grown tremendously in a short period. In 2010, only 5.1 percent of food scraps were composted. The dramatic increase in food composting in one year is evidence of the intense interest in this type of composting. Local governments, including Howard County, Prince George's County, Montgomery County, and the Town of University Park have food scrap composting programs or will soon establish pilots. The University of Maryland has a well established food scrap diversion program[2] and The Johns Hopkins University has begun to explore composting of food scraps as well.[3] MDE is also aware of several new or forthcoming private food composting facilities of various scales. Members of the Composting Workgroup agreed on the importance of increasing food scrap composting in the State.

Despite this growing interest, there is a current lack of capacity for processing food scraps in Maryland; existing food scrap diversion programs have mostly sent collected materials out of State for composting. Until recently there was little experience with commercial-scale food scrap composting in the State. Composting operations, except for municipal solid waste (MSW) composting, had not generally been required to obtain solid waste permits. As interest increased, however, MDE examined current law more closely and determined that many types of composting facilities fall within its solid waste regulatory scheme. Other water and air pollution regulatory requirements also apply to composters. The statutes and regulations affecting composting were established in the early 1990's or earlier and did not contemplate large-scale composting of source-separated food scraps. Stakeholders commented that confusion surrounding regulatory requirements is a major barrier to increasing capacity for composting. As such, clarification of legal requirements and creation of a clear regulatory pathway for new operations was a priority of the Workgroup. An August 2012 survey of Maryland composters conducted by the Institute for Local Self-Reliance found that regulations and permitting issues were the most frequently cited challenges to the financial viability of composting facilities and opportunities for expansion.[4] Financing and lack of market demand for compost were also mentioned. Despite these challenges, the rising interest in composting in the State is apparent; more than 70 percent of survey respondents replied that they would like to expand their operations. When asked what kind of assistance would address the facilities' challenges, the most frequent response was assistance with, or improvements to the regulations and permitting process. Grants and funding were also frequently mentioned. See Appendix I for a full summary of the survey results.

MDE and MDA each regulate aspects of composting in Maryland. Generally, MDE regulates the design and operation of compost facilities and may issue solid waste, water and air permits

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[2] Bill Guididas 11/16/2012 powerpoint at http://www/mwcog.org/committee/committee/documents.asp?COMMITTEE_ID=258 (Last accessed December 21, 2012).

[3] Johns Hopkins Bloomberg School of Public Health, "Composting FAQs," http://www.jhsph.edu/about/sustainability/recycling-and-composting/composting-faqs.html ; University of Maryland, "Recycling, Composting, and Waste Reduction," http://www.sustainability.umd.edu/content/campus/recycling.php (Last accessed December 18, 2012).

[4] Brenda Platt, Institute for Local Self-Reliance, "ILSR Compost Survey Results," December 11, 2012.

for compost facilities. MDE also approves county solid waste management plans, which must include compost facilities. Compostable materials are currently considered solid waste in Maryland. Composting facilities, therefore, may require Refuse Disposal Permits. Composting facilities are subject to the regulations governing processing facilities, which establish some design and operational requirements. However, MDE has historically required Refuse Disposal Permits only for composting facilities that accepted mixed municipal solid waste. Facilities composting properly and returning virtually all of the incoming material back to the marketplace were not required to obtain Refuse Disposal Permits. Natural wood waste (NWW) composting and sewage sludge composting are subject to separate requirements and permits.

Composting facilities generally require coverage under the General Permit for Stormwater Discharges from Industrial Activity. In some circumstances, they may require individual discharge permits. Air permits to construct or operate may be required for certain equipment used at compost facilities, such as grinders,[5] but are not required for the composting activity itself. MDA regulates registration, labeling, testing, and quality of the finished compost. MDA also requires training and certification of compost facility operators.

Discussion

The Composting Workgroup ("Workgroup") identified regulatory and non-regulatory barriers to increasing composting in the State. After considering approaches used to address these issues in other states, the Workgroup identified actions that should be taken to promote composting in Maryland.

Regulation of Composting Facilities

A central problem repeatedly raised by Workgroup members was a lack of clarity in the current law and regulations applicable to compost facilities. Composting requirements are located across various statutes and regulations implemented by different agencies, making it difficult for prospective composters to determine and satisfy regulatory obligations.

The content of the law and regulations was raised as an issue as well. The solid waste law that potentially applies to many types of composting does not sufficiently differentiate between composting (a recycling activity) and waste disposal. Nor does it account for the very different environmental risks associated with different types of compost facilities. The Workgroup expressed a preference for a tiered regulatory approach that establishes safeguards on health, safety and the environment relative to the risks presented by a particular type of composting facility.

New composting regulations could be adopted under the recycling statute to clarify that composting is not waste disposal. These regulations would establish a new composting-specific permit system that would operate in lieu of the Refuse Disposal Permit for certain facilities. To

[5] Grinders can be used at compost facilities to prepare materials for incorporation into compost piles. They are large pieces of equipment capable of processing many cubic yards of material per hour and may have several hundred horsepower. See e.g., Morbark, Inc., "Morbark® 1200 XL Tub Grinder," http://www.morbark.com/Equipment/SpecSheets/1200XL.pdf (Last accessed December 21, 2012).

eliminate confusion, all requirements for composters would be located under a single set of regulations, with reference to other applicable regulations as necessary.

Some Workgroup members were opposed to adoption of new requirements on counties, such as the institution of organics recycling goals or the requirement to address composting in the county solid waste management plans. Other members of the Workgroup favored such a requirement that counties address composting, particularly food scrap recovery.

Non-Regulatory Means of Promoting Composting

The Workgroup also recognized the importance of non-regulatory methods for encouraging composting. Education and outreach is important to encourage individuals, businesses, and institutions to divert their organics from landfills. The Workgroup also believed that State government should be a leader in promoting use of compost through its manuals and procurement policies. Technical, financial and compliance assistance would encourage adoption of new composting programs and new facilities.

Finally, the Workgroup acknowledged the need for additional funding to support an MDE education, outreach and assistance effort. However, the Workgroup did not reach agreement on specific funding mechanisms.

Recommendations

Recommendations of this Workgroup are intended to reduce barriers to responsible composting.

1. The General Assembly should pass legislation amending Article 9, Subtitle 17 of the Environment Article to authorize MDE to adopt regulations governing the design and operation of composting facilities and to exempt certain facilities subject to such regulation from the requirement to obtain a Refuse Disposal Permit.
2. The General Assembly should pass legislation amending Article 9, Subtitle 1 of the Environment Article to authorize MDE to adopt regulations exempting organic material capable of being composted from the definition of solid waste if such material is composted in compliance with the new composting regulations. This will allow MDE to permit and regulate certain composting facilities under new compost-specific regulations and outside of the Refuse Disposal Permit scheme, while maintaining the Refuse Disposal Permit as an option for the highest-risk facilities, such as MSW composting facilities.
3. Maryland should consider adapting the U.S. Composting Council (USCC) model composting regulations for use as a basis for Maryland regulations once the model regulations are finalized (expected January 27, 2013). Maryland's regulations should establish minimum performance-based standards and appropriate individual standards for composting facilities based on type of feedstock, size or volume of operations, and environmental and public health risk.
4. MDE should work to create a single application for composting that would include both discharge requirements issued by MDE's Water Management Administration (WMA) and

any requirements issued by MDE's Land Management Administration (LMA) related to solid waste or recycling. Under this system, the applicant would provide a single application for a composting facility, reviewed on the basis of feedstock type, size of operations, and environmental and public health risk.

5. Revenue sources should be specifically set aside and directed toward funding for composting education and outreach activities. Funding must also be identified to establish a composting regulatory program in Maryland. Dedicated funding for a minimum of one full time equivalent (FTE) for MDE to develop outreach and education and to promote composting in the State is necessary. These revenues may be generated by increasing revenues to special funds or by dedicating general funding. New revenue sources could include a registration fee, permit fee, or certification fee for compost facilities. In the early 1990's and again in the early 2000's, MDE's LMA had three FTEs dedicated to outreach and education for the State. Funding for specific projects to boost compost industry growth is needed in the near term, including funds for mapping and surveying large food scrap generators and developing model local zoning codes.
6. Standards for design and operations should be based on available science and established national public health and relative environmental risk assessment protocols associated with feedstock or type of composting facility. Volume of materials, area, time and temperature of processing are likely to be areas for regulation. Best management practices (BMPs) for design and operation of compost facilities will be developed. MDE should continue to work with stakeholders, including Technical Subgroup members and experts from University of Maryland, to develop and refine these standards.
7. The State should endorse a variety of compost uses in its guidance and manuals as follows:
    - MDE's Soil Erosion and Sediment Control Manual and Stormwater Design Manual should be updated to encourage the use of compost and compost products for a wide variety of sediment and erosion control and stormwater management purposes.
    - The State Highway Administration's (SHA) Materials and Technology Division should maintain up-to-date lists of specific approved compost and compost products (such as compost berms, filter socks, and blankets) for use in roadway projects and other applications.
    - MDE, MDA, and MES should work with the State Highway Administration Recycled Materials Task Force to educate SHA on the uses of compost and to encourage approval of compost for a wider variety of uses.
8. State and local agencies should take affirmative steps to explore and encourage composting and the use of finished compost, including developing pilot projects. All State and local agencies should take affirmative steps to use compost and compost products as appropriate, including use for bioretention soils, green roof soils and for roadway projects and slopes.
9. The Department of Business and Economic Development (DBED), local economic development agencies, MDA, MES, and MDE should work together to identify financial and technical assistance for companies interested in establishing and expanding composting facilities in Maryland, including grants, loans and job training programs.

The agencies should also support the compost industry by identifying end markets for compost generated in the State.

10. The Maryland Agricultural Education Foundation and University of Maryland Extension should be used as resources for composting education and technical assistance.
11. DBED and local economic development agencies should assist in identifying properties able to manage organics, including any brownfield sites, large farms, or State or locally owned property such as detention centers. Funding should be provided for DBED and local economic development agencies to carry out this task.
12. MDE, MDA, and local governments should launch an education and outreach campaign to highlight composting and compost use.
13. New composting legislation and regulations should allow flexibility to accommodate conditions that are equally or more protective than the requirements prescribed. This may be accomplished through a clearly defined variance process and/or through an approval process for pilot projects.
14. Backyard composting should be exempt from State regulation. Composting at community gardens would be exempt from a LMA compost facility permit if the site falls under an established small facility exemption threshold, which is to be determined.
15. On-farm composting should be exempt from permitting if the materials being composted are generated on site, composted on site, and used on site in accordance with MDA nutrient management requirements. A farmer who takes feedstocks from off site, composts on the farm, and uses the compost on site, should be required to register with MDE. An evaluation would be performed based on the registration information to determine if permits are required. A farmer who wants to distribute or sell his compost will likely need a general stormwater permit, must be certified by MDA, and should be subject to the same operational requirements as other composting operations, including any new LMA composting facility permit requirement. Local Soil Conservation Districts should provide model soil and water conservation plans covering pad, drainage and other requirements for composting operations. MDE stormwater requirements may supersede the soil and water conservation plan requirements, however.

Conclusions

Although the Workgroup did not address other methods of organics recovery at great length, the Workgroup generally supported food donation (for human consumption) as a priority for management of edible food scraps. Some members also supported the promotion of increased residential composting, believing that a decentralized and diverse organics recovery infrastructure that includes food rescue, backyard composting, community garden composting, and on-farm composting will play a significant role in organics diversion in the State. Workgroup members agreed, however, that Maryland should also embrace larger, centralized and regional composting facilities in order to encourage growth in the State's composting industry.

The regulatory recommendations presented here reflect the Workgroup's belief that Maryland must establish a pathway for composting of a wide variety of types and scales. The Department shares this goal and strongly supports the expansion of composting in the State. MDE also acknowledges that composting of food scraps in particular, while desirable, has the potential to generate fluids that contain potential pollutants including nutrients and biochemicals. These pollutants can impair ground and surface waters and result in increased biological oxygen demand. The regulatory scheme developed for composting must consider the potential public health and environmental hazards that may develop at poorly managed facilities, while developing standards that are appropriate and based on available science. The Department recognizes that the current regulatory environment for the composting industry is not well defined and MDE urges prompt legislative action to provide it with the authority to develop a clear regulatory separation between solid waste disposal and composting activities. MDE will draw on the momentum and expertise garnered through this Workgroup to develop future regulations with the continued input of stakeholders in 2013.

MDE recognizes the hard work of the Workgroup and Subgroup members throughout the process of this study. The diversity and extent of Workgroup members' expertise and experience was an asset to MDE throughout the process and will continue to be crucial as this report's recommendations are implemented.

Introduction

On May 10, 2011, Governor Martin O'Malley signed House Bill 817 entitled *Environment – Composting* (Chapter 363, Acts of 2011). See Appendix A for a copy of the law. The bill became effective July 1, 2011 and directed the Maryland Department of the Environment ("MDE" or "Department"), in consultation with Maryland Environmental Service ("MES") and Maryland Department of Agriculture ("MDA"), to:

- Study composting in the State, including laws or regulations governing composting by individuals and composting businesses;
- Develop recommendations for the facilitation of composting in the State, including any necessary programmatic, legislative, or regulatory changes; and
- Report findings and recommendations to the General Assembly.

In addition, the law requires MDE to maintain composting information on its website to educate the public and promote composting as a waste diversion strategy. To satisfy this requirement, MDE created a composting page on its website, containing an MDE guidance document, general information on backyard composting, links to internet resources on composting, and MDE and MDA contact information for compost-related permitting. The composting website will be updated as new resources become available. The website is located at: http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/SpecialProjects/Pages/programs/landprograms/recycling/specialprojects/composting.aspx

To conduct the study and develop the recommendations required by Chapter 363, Acts of 2011, MDE consulted with MES, MDA, and a wide range of other stakeholders through creation of a Composting Workgroup. See Appendix B for a list of members and other attendees who participated in the Workgroup.

The Workgroup met monthly from May through December, 2012. It identified existing obstacles to composting and established subject areas for discussion. It examined current Maryland law and regulations that impact composting and distribution of finished compost. State regulators from Virginia, Washington, Oregon, Minnesota, North Carolina, and Georgia presented overviews of their regulatory approaches through a conference call with the Workgroup. Copies of those presentations are provided in Appendix C. MDE also considered composting regulations from a larger selection of states. Background documents on other states' approaches were distributed to the Workgroup for consideration. For a summary of MDE's findings from other states, see Appendix D.

Two subgroups were created to tackle specific areas and develop an initial set of recommendations for consideration by the full Workgroup. The Technical Subgroup focused on regulatory standards and conditions for compost facilities and recommended changes to the statute and regulations.

The Education and Outreach Subgroup focused on non-regulatory methods of promoting composting in the State. Both subgroups met several times from September through December

2012. For a list of subgroup members, see Appendix B. Meeting notes for the subgroups and the Composting Workgroup are included as Appendix E.

Composting in the State

Background

Current Status of Composting in the State

The EPA estimates that food and yard trim together comprise 27 percent of the solid waste stream in the United States.[6] Maryland has taken recent steps to increase recycling and source reduction for all materials. In 2012, Chapter 692, Acts of 2012 passed, increasing the mandatory county recycling rates from 15 percent and 20 percent to 20 percent and 35 percent (depending on population). In addition, the legislation increased the voluntary State-wide diversion goal to 60 percent by 2020 and established a Statewide recycling goal of 55 percent by 2020. State government is required to increase its recycling rate as well, to 30 percent (from 20 percent).

In 2011, Maryland had an overall recycling rate of 44.9 percent and a waste diversion rate of 48.6 percent.[7] With respect to compostable materials, however, the State has experienced mixed success. In 2011, Maryland composted approximately 66.9 percent of the estimated yard trim generated, but only about 13.1 percent of the food scraps generated. To achieve its new waste diversion and recycling goals, the State will need to identify and pursue opportunities to capture additional types of materials. Food scraps alone constitute almost 14 percent of the waste stream in the U.S.[8] For this reason, increased composting of food scraps is a particular focus of this study.

Each county is required to have an MDE-approved plan for management of solid waste and recycling and must report annually to the Department on quantities of materials recycled. The counties have discretion to develop their own recycling programs.

Many Maryland counties and municipalities collect yard trim from residents through curbside or drop-off programs during fall and summer months, or even year-round. Counties reported about 653,494.2 tons of yard trim (leaf and grass) recycled in 2011. There are gaps in information about yard trim recycling facilities in Maryland. Private, for-profit facilities that process only natural wood waste (stumps, limbs, logs, etc.) are required to have permits from MDE. There are currently 43 permitted natural wood waste recycling facilities, though some of these are mulching rather than composting operations.[9] Yard trim compost sites, however, have not historically been required to obtain permits or notify MDE of their existence. Despite this lack

[6] EPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2010, http://www.epa.gov/osw/nonhaz/municipal/pubs/msw_2010_rev_factsheet.pdf (Last accessed December 21, 2012).
[7] The Maryland recycling rate data provided in this report are preliminary figures that are current as of December 19, 2012. These may be subject to change as the county recycling report data is finalized.
[8] Id.
[9] This includes facilities with Natural Wood Waste Recycling Facility Permits and solid waste facilities in which the Refuse Disposal Permit covers NWW recycling activities.

of information on individual facilities, it is clear from county statistics that there is significant yard trim recycling infrastructure in Maryland.

Compost that is sold or distributed in Maryland must be registered with MDA. As of the writing of this report, there were 11 composting facilities located in Maryland that have registered their compost for sale or distribution.[10] Of these, two sell their compost as a fertilizer, meaning that the company makes nutrient claims for the product. The others sell or distribute their compost as a soil conditioner. The majority of the registered compost comes from yard trim and natural wood waste facilities and one facility that processes biosolids. MDA is aware that there exist additional facilities that have not yet registered their products; it is in the process of identifying and contacting these facilities.

Interest in food composting has increased dramatically in recent years. While Maryland's 2011 composting rate of 13.1% for food scraps lags behind recycling rates for many other types of materials in Maryland, food composting has grown tremendously in a short period. In 2010, only 5.1% of food scraps were composted. The dramatic increase in food composting in one year is evidence of the intense interest in this type of composting. Howard County began piloting residential collection of food scraps in 2010 with a small group of 34 volunteer households. A larger pilot, now ongoing, collects food scraps from about 1,000 households. The County will also pilot its own composting facility for food and yard trimmings.[11] Prince George's County also plans to pilot food composting in the near future and will evaluate the food composting program for expansion on a County-wide basis on December 31, 2015.[12] The Town of University Park has piloted collection of residential food scraps for composting and is in the process of expanding its program. The University of Maryland has a well established program[13] and the Johns Hopkins University has begun to explore composting of food scraps as well.[14] Montgomery County conducted a year-long pilot project in November 2011 to collect pre-consumer food scraps from the County Executive Office Building Cafeteria in Rockville. As a result of the success of this pilot, the County continues to provide food scraps recycling collection service for the cafeteria. At least one commercial food scrap composting facility has opened recently in the State, and smaller scale composting exists in conjunction with urban food production. For a list of compost facilities known to be in operation in Maryland as of the writing of this report, see Appendix J. Members of the Composting Workgroup agreed on the importance of increasing food scrap composting in the State.

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[10] Two of these facilities produce compost under one registration by MES: the Western Branch composting facility in Prince George's County and the Dickerson composting facility in Montgomery County.

[11] Howard County, "Pilot Composting Facility," http://www.howardcountymd.gov/PilotCompost.htm (Last accessed December 18, 2012).

[12] Marilyn E. Rybak, Recycling Manager, Prince George's County, email correspondence to Hilary Miller 12/11/2012.

[13] Bill Guididas 11/16/2012 powerpoint at http://www/mwcog.org/committee/committee/documents.asp?COMMITTEE_ID=258 (Last accessed December 21, 2012);

[14] Johns Hopkins Bloomberg School of Public Health, "Composting FAQs," http://www.jhsph.edu/about/sustainability/recycling-and-composting/composting-faqs.html ; University of Maryland, "Recycling, Composting, and Waste Reduction," http://www.sustainability.umd.edu/content/campus/recycling.php (Last accessed December 18, 2012).

Despite this growing interest, there is a current lack of capacity for processing food scraps in Maryland; existing food scrap diversion programs have mostly sent their collected materials out of State for composting. Until recently there had been minimal experience with commercial-scale food scrap composting in the State.

Except for municipal solid waste (MSW) composting facilities, composting operations, have not generally been required to obtain solid waste permits. As interest increased, however, MDE conducted a closer examination of current law and determined that many types of composting facilities fall within its solid waste regulatory scheme. Other requirements relating to water and air pollution also apply to composters. The statutes and regulations affecting composting were adopted in the early 1990's or earlier and did not contemplate large-scale composting of source-separated food scraps.

Stakeholders commented that confusion surrounding regulatory requirements is a major barrier to increasing capacity for composting. As such, clarification of existing legal requirements and creation of a clear regulatory pathway for new operations was a priority of the Workgroup. An August, 2012 survey of Maryland composters conducted by the Institute for Local Self-Reliance found that regulations and permitting were the most frequently cited challenges to the financial viability of composting facilities and opportunities for expansion.[15] Financing and lack of market demand for compost were also frequently mentioned. Despite these challenges, the rising interest in composting in the State is apparent. More than 70% of survey respondents replied that they would like to expand their operations. When asked what kind of assistance would address these challenges, the most frequent response was assistance with, or improvements to, the regulations and permitting process. Grants and funding were also mentioned frequently.

Composting of other materials is also being explored in Maryland as well. The Maryland State Highway Administration composts deer and other road kill and applies the compost to road cuts and other lands not frequented by people. The Workgroup embraced this practice and wanted to ensure that any regulatory barriers should be reduced for this activity. The Workgroup also noted anecdotal evidence that farm composting and poultry composting is occurring in Maryland. However, the number of farms that compost or the size of these composting operations is not known with certainty. Dr. Gary Felton, of the University of Maryland, Environmental Science and Technology Department, offered the following general waste generation estimates:

- A small dairy farm with approximately 50 head of cattle would generate about 5,500 pounds of manure per day or 1,004 tons of manure per year. This would translate to about 1,239 cubic yards of manure per year. If this farm used this manure together with approximately 15 percent food scraps in its composting operation, it would generate approximately 1,425 cubic yards of composting feedstock per year.

- A small poultry (chicken) farm with approximately 28,000 to 36,000 birds per house would generate between 5,880 and 7,560 pounds of manure per day or between 1,073 and 1,380 tons of manure per year. This would translate to between 1,325 and 1,703 cubic

[15] Brenda Platt, Institute for Local Self-Reliance, "ILSR Compost Survey Results," December 11, 2012.

yards of manure per year. With 15 percent food scraps added,between 1,524 – 1,959 cubic yards of feedstocks would be available for composting each year.

Other methods of addressing unused food were raised during Workgroup discussions. While the members decided these issues were outside the scope of this Study, they wished to emphasize the importance of source reduction and food donation. Employment of best management practices in the industrial, institutional, and commercial sectors can greatly reduce the amount of surplus food that is discarded. Where surplus food cannot be avoided, these sectors should work with the Maryland or Capital Area Food Banks, local shelters and similar organizations to connect edible surplus with those in need. EPA Region 3 works to address these issues through its Food Recovery Challenge and may be a source of information and assistance for generators of food scraps.

MDE researched food donation in December 2012 and made the following findings:

- The Maryland Food Bank, which serves all counties except Prince George's and Montgomery, distributed 11,550 tons of food in its fiscal year 2011.[16]

- The Capital Area Food Bank, which serves Prince George's and Montgomery Counties, Washington DC, and Northern Virginia, projected 15,000 tons of food distribution for 2012.[17]

- Manna Food, the major local food bank serving only Montgomery County, distributed 1,808 tons of food in its fiscal year 2012.[18]

- Manna Food reports that of the food it distributed in FY 2012:

    - 54% (about 970 tons) was donated by grocery stores and wholesalers;
    - About 19% (345 tons) was donated by community members;
    - About 3.5% (63 tons) came from local farms and farmer's markets; and
    - About 23.5% came from other sources (purchased with donations, USDA contributions, etc.)

- The total estimated annual food distribution from major food banks in Maryland is approximately **18,587 tons**. [19]

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[16] Maryland Food Bank FY 2011 Annual Report, http://www.mdfoodbank.org/atf/cf/%7Bd63ba49b-d699-407e-a9ce-aa4293e06a68%7D/MFB021_MORE_WEB.PDF (Report covers period July 1, 2010 – June 30, 2011)
[17] Capital Area Food Bank, 2012 Capital Area Food Bank Statistics, http://docs.com/OPFD (Last accessed December 21, 2012).
[18] Manna Food 2012 Annual Report, http://www.mannafood.org/uploads/file/Annual%20Report%202012.pdf (Last accessed December 21, 2012).
[19] Calculated based on FY2011 data from Maryland Food Bank and 2012 data from Capital Area Food Bank; Montgomery and Prince George's are calculated as a portion of Capital Area Food Bank distribution based on their share of food insecure population in its service area. Food insecure populations come from Feeding America, Map the Meal Gap (2010), http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap.aspx (Last accessed December 21, 2012).

- According to Feeding America, the food insecurity rate in Maryland was 12.8% in 2010.[20]

- The estimated meal gap for Maryland is around 106 million meals or **68,903 tons** of food.[21]

- In comparison, an estimated 954,744 tons of food waste was generated in Maryland in 2011, with about 127,870 tons recycled.

- This leaves approximately 826,875 tons of discarded food left to capture.

- Only 8.3% of the remaining food waste disposed in 2011 would need to be captured to completely close the meal gap in Maryland.[22]

- The following is a small selection of grocery stores and large generators that donated food to the Maryland Food Bank, Capital Area Food Bank, and/or Manna Food during 2011-2012.

Food Lion	Weiss	Bloom	Fresh Market
Harris Teeter	Safeway	Whole Foods	Trader Joe's
Shoprite	Walmart	Aramark	Giant Food
Walgreens	Wegmans	Sam's Club	Target
Shoppers Food Warehouse			

- Other significant food donors to these food banks include: [23]

    - Food manufacturers or processors (Pepperidge Farm, Perdue, Tyson, etc.);

    - Restaurants (Red Lobster, Outback, etc.);

    - Schools and universities;

    - Hospitals; and

    - State and federal agencies.

- The Capital Area Food Bank has reported that its two largest local donors are Giant Food and Safeway.[24]

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[20] Feeding America, Map the Meal Gap (2010).
[21] Based on Maryland Food Bank meal gap estimates by county, Maryland Food Bank FY 2011 Annual Report; Montgomery and Prince George's are calculated proportionate to their number of food insecure people.
[22] Not all currently discarded food would be possible to capture through donation, even if waste related to expired/rotten food could be prevented (e.g. inedible portions of meat and vegetables removed during processing).
[23] These may include food from food drives in addition to surplus/unsellable food.
[24] Capital Area Food Bank, Fact Sheet, http://www.capitalareafoodbank.org/fact-sheets/

- The Maryland Food Bank has 27 partner farms, which, through the Farm to Food Bank program, provide food donations from surplus crops, final sweep gleanings, or planned donations.

Opportunities for Expansion

An additional 826,875 tons of uncaptured food scraps is estimated to be available each year for composting in Maryland. This material represents a large, untapped resource that could move the State toward its waste diversion and climate change goals. If half of the food scraps generated in Maryland were recycled, the Maryland Recycling Act (MRA) recycling rate would have been 50.0 percent in 2011 as opposed to the actual 44.9 percent rate. If all food scraps generated in Maryland were recycled, the MRA recycling rate would have been 57.0 percent in 2011, putting Maryland above its 55% recycling goal for 2020.

Enhanced food scrap recycling would also have significant impacts on GHG emissions. In 2011, 212,094 Metric Tons Carbon Dioxide Equivalent (MTCO2E)[25] were avoided due to food scrap recycling and 25,219 MTCO2E were avoided due to yard trim recycling.[26] Total GHG emissions avoided due to organics recycling were 237,313 MTCO2E. These statistics demonstrate that food scrap recycling is disproportionately important in meeting climate change goals; even though the quantity of yard trim recycled was over five times that of food scraps, food scrap recycling provided over 8 times the GHG avoidance benefits of yard trim recycling. In 2011, there were 826,875 uncaptured tons of wasted food scraps. If these food scraps were composted, this would generate an additional 469,525 MTCO2E in avoidance relative to landfilling and combusting those materials.[27]

A 2007 carbon credits verification audit of a food scraps composting facility in Nantucket, Massachusetts measured a reduction of 0.872 MTCO2E for every wet ton of food scraps diverted to composting.[28] In addition, some greenhouse gas or carbon exchanges may provide credits for food scraps and other organics that are diverted from landfills.[29] These credits may be saleable at climate gas exchanges, generating small revenue streams for landfill operators and composters.

Besides diverting materials from landfills and incinerators and reducing GHG emissions, composting provides a finished product with environmental benefits and economic value. New compost facilities and increased organics diversion will contribute job growth to Maryland's economy through the establishment of new composting businesses. Compost improves soils, making them better able to retain moisture, retain nutrients, and resist erosion and potentially

[25] In comparison, EPA estimated the total U.S. GHG emissions in 2010 at 6,822 million metric tons carbon dioxide equivalent. See EPA, "Greenhouse Gases Overview," http://www.epa.gov/climatechange/ghgemissions/gases.html (Last accessed December 21, 2012).
[26] EPA Warm Model.
[27] Id.
[28] Subler, S. "Carbon Credits for Composting: Case Study in Nantucket", EPA Region 4 Resource Conservation Challenge Workshop, Washington, D.C., March 2009.
[29] Correspondence with Jeffrey Dannis, December 5, 2012.

reduces the need for chemical fertilizers and irrigation, which can be costly. Some communities with needs for significant aquatic ecosystem protection (like the Soils for Salmon Initiative in the Columbia River watershed in Washington State) now require a minimum amount of organic matter in the soil to reduce non-point source water.[30] Food composting is a virtually untapped opportunity for business growth in Maryland. Clarity of the regulatory structure will make Maryland much more attractive to the commercial composting industry.

The possibility for a large expansion in food composting in a relatively short period of time is exemplified by the Ohio EPA Food Scraps Recovery Initiative. The initiative was launched in 2007 to increase the volume of food scraps diverted from landfills in the State by eliminating obstacles and building commercial composting capacity.[31] The initiative began with a series of stakeholder meetings designed to increase awareness, identify specific barriers (e.g. areas of needed regulatory improvement), and to share ideas. Stakeholders included individuals from federal, state, and local governments as well as grocery store, restaurant, hospital, waste hauling, and organics processing industry representatives.

In October 2009, Ohio revised its code language to exempt all solid waste accepted by composting facilities from state disposal fees. Then, in September 2011, Ohio further revised its code language to provide incremental tiers for compost facility license fees. Finally, on April 2, 2012 new composting regulations became effective that provided a more flexible and understandable process for permitting food composting facilities. Ohio EPA has been progressive in providing the composting industry with compliance assistance via their website, fact sheets, tools, and direct technical assistance.

The success of the initiative is demonstrated by the increased capacity for food scraps processing in the State. The number of food composting facilities has increased from three in 2006 to 25 in 2012. This increased capacity and participation by residents and businesses has resulted in a 337 percent increase in food scraps recovered at composting facilities in the first six years of the initiative.[32]

Several Workgroup members also expressed an interest in expansion of composting at farms and community gardens. With regulatory clarity, new opportunities may arise for collaboration between community gardens, farmers' markets, and farms to produce compost from a mixture of food scraps and agricultural materials. There is a need for soil amendments in many areas of the State and the use of compost could improve soil conditions on agricultural land and at community gardens.

Summary of Laws and Regulations Governing Composting in the State

Background

[30] See Soils for Salmon Initiative, http://www.soilsforsalmon.org; http://www.buildingsoil.org (Last accessed December 18, 2012).
[31] Ohio EPA, Ohio Food Scraps Recovery Initiative, http://www.epa.ohio.gov/ocapp/food_scrap/food_scrap.aspx (Last accessed December 21, 2012).
[32] Correspondence with Melissa Pennington, EPA Region 3, December 6, 2012.

MDE and MDA each regulate aspects of composting in Maryland. Generally, MDE regulates the design and operation of compost facilities and issues solid waste, air, and water permits. It also approves county solid waste management plans, which must address compost facilities. Within MDE, the Land Management Administration, Water Management Administration, and Air and Radiation Management Administration each issue permits, create regulations, and conduct enforcement with the potential to impact compost facilities. MDA regulates registration, labeling, testing, and quality of the finished compost. It also requires training and certification of compost facility operators. The following is an overview by topic of the laws and regulations pertaining to composting.

Solid Waste and Recycling (MDE)

Solid waste law and regulations are relevant to composting because by statute, compostable organic materials are considered solid wastes in Maryland. Environment Article, § 9-101(j)(2)(ii). In contrast, "compost" is not solid waste. What constitutes compost is determined by reference to the product standards established by MDA. §§ 9-101(j)(3)(ii); 9-1701(b).

Refuse Disposal Permit

Any person that installs, materially alters, or materially extends a refuse disposal system must have a Refuse Disposal Permit. Environment Article, §9-204(d). Refuse disposal systems include facilities such as landfills and incinerators, but also include "solid waste processing facilities" and "solid waste acceptance facilities." The term "solid waste acceptance facility" is defined elsewhere in the Environment Article to include "any plant whose primary purpose is to dispose of, treat, or process solid waste." §9-501(n). Facilities that have the primary purpose of processing compostable materials are therefore solid waste acceptance facilities potentially in need of Refuse Disposal Permits.

MDE regulations adopted under §9-204 elaborate on the procedures for obtaining a Refuse Disposal Permit and provide some design and operational requirements. Corresponding regulations are found at COMAR 26.04.07. Broad performance standards that apply to all refuse disposal systems prohibit handling waste in a manner that creates a nuisance, is conducive to vector infestation, pollutes the air, causes a discharge to waters of the State (without a discharge permit), impairs the quality of the environment, or creates a hazard to public health, safety, or comfort. COMAR 26.04.07.03A. The processing facility regulation, which specifically mentions composting facilities, provides a permit exemption for "processing facilities constructed and operated for private use located at schools, apartment houses, industries, hospitals, commercial establishments, individual residences, farms, and similar locations." COMAR 26.04.07.23A(2).

The processing facility regulation also contains procedures for obtaining a Refuse Disposal Permit, general design and operational requirements for processing facilities, and a few provisions specific to composting plants. The following are major points:

- A permit applicant must first submit to MDE a letter describing the project, and if advised to proceed, must submit engineering plans and specifications prepared by a certified engineer. COMAR 26.04.07.23B(1).

- A permit may not be issued until the applicant provides a statement from the local government that the facility is consistent with the county solid waste management plan. COMAR 26.04.07.23G.
- Processing facilities must have an impervious surface for tipping, loading, and unloading areas, with any drains connected to a sanitary sewer or other permitted treatment center. COMAR 26.04.07.23D(11).
- Composting may be done outdoors in a manner approved by the Department, while most other types of processing facilities must be enclosed. COMAR 26.04.07.23D(1).
- Compost products that are offered for sale or distribution must be "non-pathogenic, free of offensive odors, biologically and chemically stable, and free of injurious components or particles." COMAR 26.04.07.23E(1).
- Solid waste must be kept free of vectors and offensive odors before, during, and after composting and the facility must be kept in a clean, sanitary condition. COMAR 26.04.07.23E(2).

It should be noted that while these solid waste facility requirements apply to compost facilities, Maryland has had limited experience permitting source-separated organics facilities such as food scrap composting facilities. MDE has permitted MSW composting facilities using the Refuse Disposal Permit in the past. However, yard trim composting facilities have not historically been required to obtain Refuse Disposal Permits. Those located at permitted landfills are covered under the landfill's refuse disposal permit.

County Solid Waste Planning

Each county is required to have a solid waste management plan approved by the Department. The counties must review their plans at least every three years and submit revisions when necessary. The statute provides that the plans must "deal with […] solid waste acceptance facilities," §9-503. This is confirmed in the regulation, which states that the plan must include information concerning solid waste acceptance facilities such as "major composting sites." COMAR 26.03.03.03D(5). Solid waste acceptance facilities generally must be addressed in the plan or an amendment *prior* to their installation or extension. §9-511. However, a private facility accepting only wastes generated at the owner's operation may instead be included at the next scheduled review of the plan, as long as the facility generally conforms to the plan. COMAR 26.03.03.05B.

Natural Wood Waste

Recycling of natural wood waste is addressed separately in Title 9, Subtitle 17 of the Environment Article, which deals with recycling. Natural wood waste (NWW) is defined by the statute as tree and other natural vegetative refuse, including "tree stumps, brush and limbs, root mats, logs, and other natural vegetative material." § 9-1701(i). A natural wood waste recycling facility is one that provides recycling services for NWW, excluding nonprofit or government organizations or individuals or businesses providing recycling of their own materials. §9-1701(j). Section §9-1708 sets forth the requirements for operating a NWW recycling facility, including the requirement for a NWW recycling facility permit issued by MDE. NWW recycling facilities are limited to accepting NWW (and therefore cannot mix NWW and food scraps, for example). They must be operated to prevent health hazards, minimize nuisances,

limit discharges to those permitted by a discharge permit, and control dust. Fire prevention and control measures must be employed.

MDE's regulations on NWW recycling facilities are found at COMAR 26.04.09. The regulations contain some broad performance standards similar to those in the solid waste regulations discussed above. The regulations also provide that a NWW recycling facility may obtain either an individual or a general NWW permit. To obtain coverage under the general NWW permit, the operator must submit a notice of intent (NOI) certifying that the facility will comply with the terms of the general permit. Finally, the regulations contain some design and operational requirements. Processing must take place in an area that is enclosed, screened, or buffered, but an impervious surface is not required. Other requirements relate to fire control and sanitation. COMAR 26.04.09.07.

As stated above, COMAR 26.04.09.03B(2) specifically restricts NWW recycling facilities to the acceptance of wood waste. This is largely because materials that are finer and contain more nutrients than wood waste tend to promote spontaneous combustion when composted in the large pile sizes allowed for in NWW composting. However, the Department recognized that NWW composters had a desire to compost other materials, as well. Therefore, MDE has allowed NWW composters to designate those areas which were part of the permitted NWW composting operation, and allowed composters to perform composting of other materials in areas outside of those designated for NWW. It is anticipated that this would continue under future clarifications of the composting regulatory framework.

Other Recycling Provisions Applicable to Composting

Title 9, Subtitle 17 of the Environment Article contains some other provisions relevant to composting, including definitions. First, "composting" is defined as "the controlled biological decomposition of organic waste material in accordance with the standards established by the Secretary under this title." §9-1701(c). "Compost" is defined as the product of composting in accordance with standards established by the Secretary of Agriculture. "Recycling" is also defined and specifically includes composting. §9-1701(m)(2). This definition has created some confusion, because while composting is recycling, compostable materials are solid wastes, the processing of which may require a Refuse Disposal Permit under current law. Most other types of recycling facilities in Maryland receive source-separated materials and are not currently required to obtain a Refuse Disposal Permit.

Part III of Subtitle 17 is entitled *Composting*. It provides that the Part is not intended to regulate or interfere with composting by a consumer or farmer of "safe" compost to be used by that consumer or farmer. §9-1721. An operator of a refuse disposal system may not accept for final disposal truckloads of separately collected yard waste, unless the operator provides for composting or mulching of the yard waste. §9-1723. MDE has the authority to adopt regulations to implement Subtitle 17. § 9-1702.

Sewage Sludge

Utilization (including composting) of sewage sludge requires a separate Sewage Sludge Utilization Permit and is not handled through the Refuse Disposal Permit system. Environment

Article, §9-231. This includes composting where any amount of the mixture is composed of sewage sludge. The sewage sludge management regulations (COMAR 26.04.06) and the permit itself impose requirements to address pathogen control, sampling and analysis, and other design and operational issues.

Water (MDE)

Discharges of pollutants to waters of the State, as well as construction or operation of facilities that could cause such discharges, are prohibited without discharge permits. Environment Article, §§ 9-322; 9-323. Waters of the State include both surface and groundwater. §9-101(l). The federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES) provisions also set minimum requirements in this area. Any facility conducting certain industrial activities must obtain a NPDES permit for stormwater discharges. If there is absolutely no exposure of pollutants to stormwater (e.g. a completely indoor compost facility), a facility may file a "no exposure" certification and avoid stormwater permitting obligations. Compost facilities are covered industrial activities (under SIC code 2875) if their primary activity is manufacturing compost from outside materials for sale or trade. MDE is authorized to issue NPDES permits and provides coverage under a General Permit for Storm Water Discharges Associated with Industrial Activity. However, the Department may require individual permits instead for particular facilities. In addition, discharges of pollutants or wastewater from composting operations to either surface or groundwater require a State discharge permit.

The regulations at COMAR 26.08.04 lay out what must be contained in discharge permits, including technology-based controls and water quality-based controls, though specific requirements are contained in the permits themselves. MDE's Water Management Administration has also published a guidance document outlining requirements for food composting operations. While this document does not carry the force of law, it provides an indication of the types of design and operational requirements that may be required by the Department through its discharge permitting authority. Requirements include a pad with a permeability rating no greater than 1×10^{-7} centimeters per second, setbacks, and incorporation of all incoming food scraps within 72 hours.

The guidance also makes several exceptions to the requirements. Small composting operations under 5,000 square feet in size that implement best management practices (BMPs) and obtain coverage under the stormwater general permit need not follow the design and operational requirements set forth in the guidance. Where food and crop residuals from farming operations are composted on a site owned by the owner of the farm, the compost is used solely on the farm, and general performance standards are followed, the facility is not subject to stormwater requirements. Finally, food scrap composting need not follow the design and operational guidance nor obtain a stormwater permit (unless considered SIC code 2875) where it occurs within an aggregate area not greater than four hundred square feet, subject to basic performance standards.

The guidance document described above was published in February, 2012 and represents the way laws and regulations are currently implemented by MDE as of the time it was published. As part of the Workgroup process and in response to comments that the guidance is too restrictive to promote food scrap composting, MDE has decided to revisit the guidance and revise it to better

reflect the approach recommended by the Workgroup. As such, this guidance is subject to change. A full discussion of the issues raised pertaining to the guidance document is found below in the recommendations sections. See Appendix G for a copy of the existing guidance.

Air (MDE)

Each air pollution source requires a permit to construct (PTC) before it can be constructed or modified. COMAR 26.11.02.02. The process of composting or the compost facility itself does not qualify as a source of air pollution subject to the requirement for a PTC. However, some equipment that may be used at a compost facility may be required to have a PTC, such as aeration, sorting, grinding, screening, drying, or bagging equipment. Electric-powered equipment and mobile sources do not need PTCs. COMAR 26.11.02.10. A PTC might be required for the following:

- Any internal combustion engine with an output of 500 brake horsepower (373 kilowatts) or greater. This includes engines for electric generation or to power equipment.
- Any internal combustion engine used to generate electricity for sale or load shaving as defined in COMAR 26.11.36.01B regardless of size. This includes temporary, non-emergency generators.
- Any internal combustion engine used to power equipment where the equipment requires a PTC. For example, a PTC for a crusher equipped with a 250 horsepower engine should include applicable requirements for the engine in addition to the crusher.

In addition, permits to operate (PTO) may be required for certain equipment. Specific sources subject to the PTO are listed at COMAR 26.11.02.13. MDE may also require other sources to obtain PTOs, if it determines they could potentially have significant impacts on air quality.

Product Regulation and Operator Certification (MDA)

Under the Maryland Commercial Fertilizer Law, compost is included within the definition of a soil conditioner. Agriculture Article, §6-201(cc)(2). The statute requires registration and labeling of compost that is sold or distributed in the State and requires payment of a fee on registered compost. The statute also gives MDA the authority to adopt regulations setting registration requirements and compost classifications.

MDA regulations on compost are located at COMAR 15.18.04.01 - .12. Compost facilities must be supervised by an operator certified by MDA through a written exam. Operator certification must be renewed every three years, which can be accomplished by completion of an approved training course.

Samples of compost must be taken periodically and tested for pH, metals and inorganic pollutants, PCBs, man-made inerts, and film plastic. Agricultural or yard waste compost must be tested every quarter or every 20,000 tons of compost, unless results are within the allowable limits, in which case it can be tested once annually. For other types of compost, the operator must develop a quality control plan approved by MDA. MDA establishes the testing schedule

for the first 15 months, with the results used to inform subsequent testing schedules. COMAR 15.18.04.04.

Compost is classified based on whether it falls within certain limits for the parameters above. General use compost has the lowest parameter limits (except for pH) and can be distributed to the general public. Limited use compost can be distributed for use by commercial, agricultural, institutional, or governmental operations, but not the general public. It is only for use where contact with the general public is unlikely. Restricted use compost is allowed to have higher levels of trace metals or inorganic pollutants than the other two classes. It can only be distributed "for use as a final, intermediate, or alternate daily landfill cover" or "on marginal land or in land reclamation efforts," subject to cumulative loading limits. It may not be distributed to the general public. COMAR 15.18.04.05. General and limited use compost, but not restricted use compost, that is made from either manure or MSW must pass a process to further reduce pathogens (PFRP). For composting, this means that windrows must attain at least 55 ºC for 15 days, during which there must be 5 turnings. Aerated static piles and in-vessel composting must attain 55 ºC for three days. COMAR 15.18.04.05; 26.04.06.08.

Compost must have a label containing the volume, brand, classification, manufacturer's name and address, and origin. On the labeling or invoice, any recommended uses or restrictions must be listed, including the restrictions associated with limited and restricted use classifications. COMAR 15.18.04.06. Semiannually, the registrant of each product must report the tonnage distributed within the State and pay a fee of $0.25 per ton. COMAR 15.18.04.07.

Recommendations to Promote Composting in the State

Regulation of Composting Facilities

Issue: Regulatory Structure and Definitions

Background

The Workgroup identified several regulatory barriers to composting that must be addressed to better promote composting:

- A regulatory structure that does not recognize varying levels of environmental risk;
- Lack of clarity and certainty in the current law and regulations, including, but not limited to, compost pad requirements;
- Treatment of compostable materials as solid wastes;
- Perceived complexity and length of time required for the permit process; and
- Absent or outdated definitions.

Except for NWW and sewage sludge composting, all types of composting potentially fall under the solid waste statute administered by MDE and may be subject to the Refuse Disposal Permit requirement. As interest in additional feedstocks such as food scraps grows, Maryland must reassess whether this existing solid waste regulatory scheme is appropriate for all compost facilities. In addition, as diversion rates for traditional recyclables increase and the State strives

to meet increasing waste diversion goals, composting will likely emerge as a significant method for managing large quantities of the State's organics. This will require more composting facilities in a broader variety of settings and scales of operations, potentially including facilities that are larger in scale than previously experienced. The regulatory system should be equipped to deal with this new variety of facilities without stifling growth of the composting industry.

Because of these issues, the Workgroup considered new regulatory schemes that could reduce barriers to entry in the composting industry, fit a wider variety of facility types, and increase clarity to regulated parties.

Discussion

To evaluate potential regulatory schemes for composting, the Workgroup studied other states' approaches and a draft set of model state composting regulations created by a U.S. Composting Council (USCC) task force (See Appendix F). A common thread among other states and the USCC model was a tiered system of regulation, in which permit obligations and corresponding design and operational requirements are tailored to the degree of risk posed by each type of facility. The Workgroup broadly supported this tiered concept. This approach is intended to promote composting by reducing administrative and financial barriers for lower-risk compost facilities while remaining protective of the environment in higher-risk situations.

The Technical Subgroup extensively considered the draft USCC model rules, which establish several tiers of facility types based on the feedstocks accepted. Each tier is subject to different design and operational requirements. Costlier and more extensive requirements (such as an impermeable composting pad) increase with the environmental risk of the feedstocks accepted. The model rules also establish exemptions from the requirements for smaller facilities. While the Subgroup suggested some revisions to better fit Maryland, it generally endorsed an adaptation of the model rules to serve as the basis for any new Maryland regulations.

The Technical Subgroup also discussed how a new tiered scheme could fit into the current legal structure to increase clarity for prospective composters. Many members believe that the multitude of provisions potentially applicable to composting make it difficult for a prospective composter to determine what is required. As discussed above, requirements exist across recycling, solid waste, water pollution, and agriculture statutes, as well as in numerous MDE and MDA regulations implementing these statutes. Members cited uncertainty about when solid waste provisions apply to composting and noted a lack of a single entity within State government for answering composting questions. Members also raised the interaction of water and solid waste requirements, administered by MDE's Water Management Administration and Land Management Administration, respectively, as a source of confusion.

The Workgroup favored a legal structure that would present all composting-related requirements in one place. MDE provided the example of its Coal Combustion Byproducts (CCB) regulations, which became effective in 2008. These regulations pull together in a single location all requirements for conducting various activities with respect to CCBs. The regulations create new CCB-specific requirements and reference applicable requirements elsewhere in law and regulations. COMAR 26.04.10. The Technical Subgroup supported a similar approach for

composting that would lay out compost-specific requirements and refer to other regulations (such as water or solid waste regulations) where applicable.

The Technical Subgroup discussed at length where these new composting facility regulations could fit under the law. The statute currently designates compostable materials as solid wastes. Environment Article, § 9-101(j). This fact places composting facilities within the regulatory scheme for solid waste facilities (see above for an analysis of current law). However, in keeping with the risk-based approach and acknowledging that some composting facilities will not warrant a permitting system as burdensome as the Refuse Disposal Permit, the Technical Subgroup sought to remove many types of composting from the purview of the solid waste statute. Composting is a form of recycling rather than disposal, so the stakeholders felt that any compost-specific regulatory scheme should be located under the recycling statute at Environment Article, Title 9, Subtitle 17. As a result, the Workgroup supported statutory amendments that would authorize MDE to exclude certain compostable materials from the definition of "solid waste" if such materials are composted in accordance with new compost-specific permits under the recycling statute.

A Workgroup member raised the issue of calculation of recycling rates under the Maryland Recycling Act (MRA) if certain compostable materials will be excluded from solid waste. Only materials that are in the "solid waste stream" are included in calculating a county's MRA recycling rate. Environment Article, §§ 9-505; 9-1701(p). The Workgroup agreed that revisions to the statute that would allow MDE to exclude materials from solid waste should be written in such a way that food scraps, yard trim, and other organics continue to be counted toward counties' MRA recycling rates. Some other materials, such as land clearing debris, which are listed in § 9-1701(p), are currently excluded from the MRA recycling rate calculation and should continue to be excluded after any statutory revisions related to composting.

The Technical Subgroup also considered some aspects of composting law that should not change under the proposed approach. Many stakeholders felt that the natural wood waste recycling industry is functioning well under the current NWW recycling requirements. The requirements address fire as a primary risk of these facilities and allow for simple facility design (e.g. composting on the ground without a pad). As a result, the Technical Subgroup decided that the NWW regulatory scheme should be left unchanged. The Technical Subgroup decided the same for sewage sludge composting, which is subject to law and regulations that take into account the specific risks of sewage sludge. Finally, the Workgroup acknowledged that some aspects of water permitting for compost facilities would not change under the recommended approach. Federal law requires permitting and certain standards for stormwater discharges from industrial activities (including compost manufacturing). Under most circumstances, compost facilities that sell compost will therefore require stormwater discharge permits. However, the specific requirements under a discharge permit and whether the permit may be general or individual may vary with composting facility risk. The protection of groundwater will be one factor in determining which type of permit would be required.

Some members of the Workgroup suggested eliminating the parallel permitting processes of LMA and WMA. These members preferred a single entity that would conduct compost facility permitting under a combined water and recycling or solid waste permit. The other states studied generally maintain separate entities within their environmental agencies to oversee water and

solid waste permitting for compost facilities. A regulator from North Carolina commented that the diversity of expertise needed to develop controls for water protection and solid waste necessitates specialization and therefore is better suited to separate oversight. However, there are several states, such as Wisconsin and Maine that include both stormwater and solid waste requirements within a comprehensive compost facility license. The Technical Subgroup considered sample licenses from these states. Many members appreciated this simpler process and the clarity it affords prospective composters. Ultimately, the Technical Subgroup agreed that the process for obtaining MDE compost-related permits should involve a single application by the composter. Within MDE, WMA and LMA would still have separate responsibility for evaluating the application and permitting the facility, likely using separate stormwater and composting permits, but would coordinate these permitting responsibilities as efficiently as possible. The existing general stormwater permit would be used to cover most composting facilities, except where an individual discharge permit addressing groundwater and surface water protection is warranted by risk.

The Workgroup also discussed definitions in the current regulatory scheme that should be updated and new terms that should be defined. Varying definitions of "composting" and "compost" in the Environment and Agriculture Articles have created some confusion and the Workgroup members agreed that these should be made consistent across laws and regulations.

A final regulatory matter discussed was the existing ban on acceptance of loads of separately collected yard trim for disposal. Solid waste facilities may accept separately collected yard trim only if they will provide for composting of the material. The Workgroup took note of past attempts to weaken or eliminate this ban so that some yard trim, including woodier materials, could be combusted for energy recovery. The Workgroup generally agreed that the existing ban should remain in place to ensure that yard trim continues to be made available for composting in the State.

Recommendations

1. The General Assembly should pass legislation amending Article 9, Subtitle 17 of the Environment Article to authorize MDE to issue regulations governing the design and operation of composting facilities and to exempt certain facilities subject to such regulation from the requirement to obtain a Refuse Disposal Permit.
2. The General Assembly should pass legislation amending Article 9, Subtitle 1 of the Environment Article to authorize MDE to issue regulations exempting organic material capable of being composted from the definition of solid waste if such material is composted in compliance with the new composting regulations. This will allow MDE to permit and regulate certain composting facilities under new compost-specific regulations and outside of the Refuse Disposal Permit scheme, while maintaining the Refuse Disposal Permit as an option for the highest-risk facilities, such as MSW composting facilities.
3. Changes to the statute recommended here should be written in such a way that organic materials that were previously included in county recycling rate calculations under the MRA (such as food scraps and yard trim) continue to be counted. Those materials, such as land clearing debris, which are not currently counted, should continue to be excluded from MRA recycling rates after the statutory amendments.

4. When drafting composting regulations, revising statutory language, creating guidance materials, or conducting outreach, MDE should treat composting as recycling rather than a solid waste disposal activity, recognizing that composting is a manufacturing process that transforms what otherwise would be solid waste into a beneficial product. Public perception of composting is important to the success of the composting industry and language developed by MDE should treat composting differently than disposal.
    - MDE should strive to separate the terms "compost" and "waste."
    - Materials used in the composting process should be called "materials," "byproducts," "residues," "feedstocks," or a similar term, rather than "wastes." For example, food that would otherwise be discarded should be called food residuals, food scraps, food byproducts, or food materials, but not food wastes.
5. The following terms should be defined or better defined:
    - Solid waste: In any composting regulations, the definition of solid waste in the solid waste statute (Environment Article, § 9-101(j)) rather than the definition in the hazardous waste statute should be referenced.
    - Composting and Compost: Definitions of composting and finished compost should be harmonized between the Environment and Agriculture Articles and across all regulations. The General Assembly should pass legislation amending the definition of composting at Environment Article, § 9-1701(c) to clarify that composting is an aerobic process.
    - Leachate and Stormwater: Both terms are defined for specific purposes in MDE regulations and in federal law. Any definitions of "leachate" or "stormwater" used in composting regulations should be consistent with existing definitions.
    - Feedstock: MDE should adopt new regulations defining composting feedstocks and categorizing them according to their relative environmental risks. See the section on Permitting Tiers below for the proposed feedstock categories.
    - Fertilizer and Compost: In drafting new regulations, MDE should consider distinguishing compost from other fertilizers and ensure that each is defined in a manner consistent with the nutrient management program and other State statutes and regulations.
    - Source separated organics: This term should be defined roughly as "Organics separated from non-compostable material at the point of generation and kept separate from municipal solid waste."
6. Facilities that compost sewage sludge, along with any other material such as food scraps or wood waste, should continue to be regulated under the sewage sludge regulations and law. Septage that is composted would also be regulated under the water management regulations and law if it meets Class A or Class B sewage sludge standards. 40 C.F.R. Part 503, Appx. B.
7. Facilities that compost mixed municipal solid waste (MSW) should be required to obtain a Refuse Disposal Permit from MDE.
8. Where possible, discharges from compost facilities should be covered under the general permit for stormwater discharges rather than an individual discharge permit.
9. MDE should work to create a single application for composting that would include both discharge requirements issued by WMA and any requirements issued by the LMA related to solid waste or recycling. Under this system, the applicant would provide a single

application for a composting facility, reviewed on the basis of feedstock type, size of operations, and environmental and public health risk.
10. The existing ban on disposal of separately collected yard trim, found in Environment Article, § 9-1724, should be kept in place.
11. Any recommendations by the Subcommittee are intended to reduce barriers to responsible composting.

Issue: Permitting Tiers

Background

As discussed above, virtually all of the dozens of states studied for this Report use a multi-tiered approach to permitting compost facilities. More extensive permit requirements correspond with facilities that pose the greatest environmental risk. Tools such as permits-by-rule, general permits, registrations, and conditional exemptions from some permit requirements cover the lower-risk facilities. The Workgroup favored such an approach because it reduces administrative and financial burdens to compost facilities where those burdens are not necessary to protect public health and the environment.

In order to take this approach, Maryland would need to delineate tiers of facilities based on environmental risk. Other states primarily use feedstock type and size to determine risk level. Feedstocks that have a greater potential for contaminants and pathogens or that are wetter and higher in nitrogen have a greater potential to pollute waters or result in poor quality compost. Larger facilities may be more susceptible to management difficulties, which can lead to problems like odors and fires. Size may be measured in volume of incoming materials, weight of incoming materials, weight or volume of compost produced, weight or volume of materials on site at a given time, or the size of the area used for composting.

Oregon takes a different approach to establishing risk level. All facilities composting over a certain threshold quantity of materials are subject to an initial screening process to determine the degree of environmental risk they pose. Considerations include, specifically, potential adverse impacts to surface and ground water and potential odor problems. Low-risk facilities are subject to a minimal registration and must follow basic performance standards. Higher risk facilities are required to provide an operations plan for approval and are subject to the full permitting process. The rules adopt performance standards that clearly describe the environmental standards every composting facility must meet. Operators have the responsibility and flexibility to design, construct, and manage their operations – subject to agency approval – to meet the performance standards. O.A.R. 340-096-0060; 340-096-0070; 340-096-0080.

Discussion

The Technical Subgroup discussed ways of defining facility tiers. The members agreed that feedstock type was one of the greatest determinants in the environmental risk of a facility. The Subgroup placed feedstocks into four types that range from lowest to highest risk, largely based on physical contaminants and pathogen-carrying properties. In completing this exercise, the Subgroup relied in part on the USCC model rules, which also establish risk-based feedstock

categories. However, the Subgroup deviated at times from the USCC model rules' categories to better fit Maryland's organics stream. The Subgroup spent considerable time and effort honing the feedstock categories because while other states and the USCC model tended to set tiers based on feedstock and size, there was significant variability in the feedstock definitions, the metric used to define scale of operation, and the way feedstock type and scale are combined to define tiers.

In general, the lowest risk feedstocks are materials like yard trimmings that tend to have low levels of pathogens and contaminants. These were designated Type One materials. Type Two materials include most source-separated organics, though manures and industrial food processing materials must be Department-approved to fall into this category. This "Department-approved" language was used because the Technical Subgroup recognized that in some cases, these materials could have an atypically high environmental risk. For example, manure with especially high moisture content may produce more liquids that could pollute water and cause odors. Ordinary pre- and post-consumer food scraps such as residential food materials and cafeteria discards would fall under Type Two. Type Three materials are potentially higher in contaminants and pathogens than Type Two. The Technical Subgroup also chose to add an additional feedstock category (Type Four) to the USCC's three categories. Type Four feedstocks are those that would be dealt with outside of the composting permit process and regulations because of their unique risks. These include sewage sludge, septage, and used diapers, which have pathogen risks, and mixed MSW, which contains large amounts of contaminants. Composting of Type Four feedstocks would be handled through the existing Sewage Sludge Utilization Permit and Refuse Disposal Permit.

The Technical Subgroup also extensively discussed exemptions. Three main types of exemptions were considered:

- Residential backyard composting;
- On-farm composting; and
- Size-based or de minimis exemptions from LMA permits.

With respect to backyard composting – composting of household organics on residential property by the occupants – the Workgroup easily agreed that homeowners should be exempt from any State regulation. Homeowners would also not be required to register their compost with MDA, since the compost would not be sold or distributed.

On-farm composting required more discussion. Generally, the Workgroup considered on-farm composting to be an important means of diverting organic materials and believed it should be encouraged. Many of the other states surveyed included some level of exemption for farm-based composting. However, members of the Technical Subgroup noted that composting facilities located on farms could pose very different risks depending on the origin and final disposition of the materials. On one hand, a farmer might compost agricultural materials generated on the farm in order to produce compost for use around the same farm. Quantities and types of feedstocks used on the farm would be limited by the nature of the site and the confines of the farm's nutrient management plan. On the other hand, a farmer could combine materials generated on site with materials collected from off site, such as food scraps. And, having this additional source of feedstocks, the farmer may then be able to produce enough compost for off-site sale or

distribution. In this case, both the feedstock types and quantities of material would essentially be unlimited. Little would differentiate this farm from any commercial compost facility.

As a result of these discussions, the Technical Subgroup developed an approach to on-farm composting that would be flexible enough to account for the scenarios described above:

- Farms that compost only materials generated on site and use the resulting compost on site would be exempt from MDE permitting requirements and MDA registration.
- Farms that take materials from off site but use all the resulting compost on site would be required to submit a short registration form. MDE would use the registration to screen the farm for risk, determining whether a compost facility permit would be required. Again, neither a stormwater permit nor MDA registration would apply here regardless, since no compost is distributed or sold.
- Farms that take off-site materials and sell or distribute finished compost would be subject to compost facility permitting (and would also be subject to stormwater permitting and MDA registration).

The Technical Subgroup considered additional exemptions from a composting permit based on the quantity of incoming materials. These exemptions would not affect the requirement to obtain coverage under the stormwater permit; as mentioned above, this is driven by whether the facility is a commercial operation and if its operations are covered, rather than the size of the operation. The Subgroup examined size-based exemptions for food composting in 11 other states and a Subgroup member proposed a set of exemptions based on cubic yards of material accepted per year. The Subgroup also looked at exemptions in the USCC model rules, which are based on Oregon's exemptions. The exemption quantities would vary based on the feedstock type. Volume was determined to be a better measurement than tons for the purpose of exemptions, since small facilities tend not to have load and weigh scales. The Subgroup also determined that Type Four feedstocks (sewage sludge, MSW, etc.) should not be exempt, regardless of size.

Although no consensus was reached, the structure of the exemptions and the quantities last under discussion by the Technical Subgroup were:

- Type One Feedstocks: exempt from permit if accepting under 5,000 cubic yards;
- Type Two Feedstocks: exempt if under 1,000 cubic yards; and
- Type Three Feedstocks: exempt if under 500 cubic yards.

The USCC task force was contacted and established that its size-based exemptions were not intended to be additive, but instead apply separately for each feedstock type (using the quantities above, a facility could accept 4,000 cubic yards of Type One feedstocks plus 900 cubic yards of Type Two). Some Subgroup members thought the proposed exemption for Type Two materials was too large. Some members suggested a specific exemption for small amounts of food when mixed with larger amounts of yard trim. Subgroup members also suggested that there be a caveat to the exemptions that would allow MDE to require a composting facility permit where the Department finds a facility that would otherwise be exempt is creating risk of adverse impact to public health or the environment. The current statute and regulations are broad and empower MDE to require a permit to protect resources; it is believed that the authority already exists for compelling these types of facilities to get a permit.

Finally, some members of the Workgroup suggested exemptions specifically aimed at any generators composting their own materials on-site, similar to the proposed exemption for on-farm composting discussed above. This would allow generators to handle organic materials on site in circumstances where organics collection service is not available. Examples may include community gardens, businesses, and multi-family properties. The Workgroup did not reach an agreement with respect to this issue.

Recommendations

1. Backyard composting should be exempt from State regulation. Composting at community gardens would be exempt from a LMA compost facility permit if the site falls under the small facility exemption threshold, which is to be determined.
2. All composting facilities, whether exempt from permitting or not, must be operated in such a manner that noise, dust, and odors do not constitute a nuisance or health hazard and do not cause or contribute to surface water or ground water pollution.
3. On-farm composting should be exempt from permitting if the materials being composted are generated on site, composted on site, and used on site in accordance with MDA nutrient management requirements. The Workgroup recommends that even though these operations would be exempt, farmers should be required to have minimum composting training in order to operate a composting operation. A farmer who takes feedstocks from off site, composts on the farm, and uses the compost on site, should be required to register with MDE. An evaluation would be performed based on the registration information to determine if permits are required. A farmer who wants to distribute or sell his compost would likely need a general stormwater permit, must be certified by MDA, and should be subject to the same operational requirements as other composting operations, including any new LMA composting facility permit requirement. Local Soil Conservation Districts should provide model soil and water conservation plans to covering pad, drainage and other requirements for composting operations. MDE stormwater requirements may supersede the soil and water conservation plan requirements, however.
4. Composting feedstock categories should be similar to those in the draft USCC model rules, tailored to Maryland's waste stream, and grouped by relative risk as follows:
    a. Type One Feedstocks:
        i. Yard waste, as defined in Environment Article, §9-1701; and
        ii. Other materials determined by the Department to pose a low level of risk from hazardous substances, physical contaminants (such as plastic, glass, rubber, twist ties, etc.), and human pathogens.
    b. Type Two Feedstocks:
        i. Source-separated organics such as from grocery stores, restaurants, and residential curbside programs, including but not limited to pre- and post-consumer food scraps, yard trimmings, and non-recyclable paper;
        ii. Department-approved animal manure and bedding to the extent these materials are not regulated under MDA or CAFO permits. Department approval will be based on factors such as moisture content, with manures that contain less than 60 percent moisture considered less risky;
        iii. Department-approved industrially produced food processing materials, including industrial poultry and seafood residuals;

iv. Manufactured organic materials such as waxed-corrugated, non-coated paper and compostable products; and
v. Other materials that the Department determines pose a low level risk from hazardous substances and a higher level of risk from physical contaminants, and human pathogens, compared to Type One feedstocks.

c. Type Three Feedstocks:
i. Industrially produced by-products not included in Type Two, such as Department- approved industrial dissolved air floatation (DAF) materials;
ii. Dead animals, unless composted on a farm or at a controlled site (such as State Highway Administration roadside composting);
iii. Other Department-approved manures (such as those containing more than 60 percent moisture); and
iv. Other materials the Department determines pose a low level of risk from hazardous substances and a higher level of risk from physical contaminants and human pathogens, compared to Type One and Type Two feedstocks.

d. Type Four Feedstocks: Sewage sludge, biosolids, septage, used diapers, and mixed MSW. These materials would be required to obtain a sewage sludge utilization permit or a Refuse Disposal Permit.

Issue: Design and Operational Standards

Background

The design and operation of compost facilities is important to ensuring the success of the composting industry in Maryland. Well run facilities that produce good quality products enhance the reputation of the compost industry and encourage consumers to purchase compost. Conversely, improperly run facilities can produce offensive odors, harbor vectors, and harm water quality, all of which contribute to a negative perception of composting and make it difficult to site new facilities.

Existing solid waste regulations contain some design and operational requirements for processing facilities (including composting facilities), such as:

- The facility shall be operated in a manner which prevents air, land, or water pollution, public health hazards, or nuisances. Dust resulting from the operation shall be controlled at all times. All solid waste shall be confined to the unloading area.
- The facility shall be adjacent to access roads that are paved or surfaced.
- Waste tipping, loading, and unloading areas shall be constructed of impervious material which is readily cleanable. Drains shall be connected to a sanitary sewer system or other permitted treatment facility.
- For composting facilities specifically, solid waste intended for composting shall be maintained in a condition free of insects, rodents, and offensive odors before, during, and after the composting operation. The plant shall be maintained in a clean and sanitary

condition. Insects, rodents, or other vectors shall be controlled by appropriate measures. COMAR 26.04.07.23.

Current WMA guidance elaborates on design and operational requirements for *food scrap* composting facilities to protect water quality. These requirements include leachate collection and storage systems, incorporation of food scraps within 72 hours of receipt, and setbacks (100 feet from waters of the State, 50 feet from a property line, and 200 feet from an off-site dwelling except with consent). In addition, the guidance provides that the processing and staging areas of food composting facilities must have a surface with a permeability rating no greater than 1×10^{-7} centimeters per second. This would require concrete or plastic lining under an earthen or asphalt pad. The surface must be at least two feet above the seasonal high groundwater table.

Discussion

The Technical Subgroup supported the general approach in the USCC model rules, which establishes design and operational requirements that progressively increase in protectiveness with increases in facility risk. The model rules do this by creating facility tiers, which correspond to the feedstock categories discussed above. For example, a Tier One facility may accept only Type One feedstocks, while a Tier Two facility may accept Type One and Type Two feedstocks. The Technical Subgroup considered the design and operational requirements in each tier and made comments to the model rules. In general, the Subgroup agreed that MDE should consider the USCC's model design and operational requirements as a basis for creating new composting regulations. However, the requirements should be adapted to fit Maryland and to address the comments made by the Technical Subgroup.

The Workgroup also discussed whether requirements should be performance-based or prescriptive. Performance-based requirements clearly describe the environmental standards every composting facility must meet. For example, the facility shall not cause an unsafe discharge of stormwater runoff, shall operate in a manner to prevent odors that cause adverse impacts beyond its boundaries, and shall achieve human pathogen reduction. Performance-based rules give operators the responsibility and flexibility to design, construct, and manage their operations – subject to agency approval – to meet the performance standards. Conversely, prescriptive requirements lay out in detail the specific things a facility must do. For example, a prescriptive requirement may be to compost on an impermeable surface meeting certain specifications. Most of the states studied by the Workgroup contain some mixture of both prescriptive and performance-based standards. Often, a set of basic performance standards requiring protection of human health and the environment underlie more specific requirements laid out for each type of facility. Some members appreciated the flexibility of performance-based standards, which allow for innovation. However, others noted that prescriptive requirements are simpler and may save the operator the time and expense of hiring an engineer to design proper controls. The Workgroup determined that new composting regulations should include a combination of both performance-based and prescriptive requirements for design and operation. However, the Workgroup stressed that these requirements should be science-based where the science is available or otherwise based upon sound, data-driven reasoning and rationales so that requirements are tied to addressing identified risks. A summary of design and operational requirements in the other states studied is provided in Appendix D.

During the first meeting of the Workgroup, members expressed concern that the existing WMA food composting guidance included overly-strict design criteria, especially with respect to the impermeable pad. The use of an impermeable pad for composting as suggested by MDE's current guidance was aimed at protecting groundwater from contamination. However, this requirement has been identified by the composting community as a significant financial impediment to the growth of composting beyond existing yard trim and natural wood waste infrastructure. MDE understands that the wide variety of feedstocks available for composting combined with the potential range of scales of operation create a broad spectrum of risk intensity with regard to nitrate/nitrite and other potential contaminants to waters of the State. MDE is currently working with the Technical Subgroup to develop appropriate pad and BMP requirements based on the risk-based tiered approach to regulating composting operations. Further research is needed to determine the types of measures necessary to prevent environmental impacts from compost facilities.

The Technical Subgroup also briefly discussed various compost quality topics, including persistent herbicides. Persistent herbicides have become an issue in other states when yard trimmings or manure containing certain types of herbicides make their way into compost facilities. Herbicides used on grain that is fed to animals can still be present in the animals' manure. While many types of herbicides, pesticides, pharmaceuticals, and pathogens break down in the heat of the composting process, there are some types of herbicides that are known to persist even after proper composting. The resulting compost is then sold for landscaping or agricultural use, where it damages or kills plants. This problem is complex and implicates issues of herbicide labeling, feedstock collection, and compost testing. USCC, the U.S. EPA, and other entities are conducting research and attempting to come up with solutions, both regulatory and non-regulatory. MDA already has the authority to regulate the content of finished compost that is sold or distributed. The Workgroup agreed that MDA should use its expertise to look into this issue further and determine the best approach. MDA should issue specific action levels for herbicides of concern that would be appropriate for quantifying the suitability of finished compost.

Two main operational issues were identified in the collection of organics for composting:

- Whether plastic bags should be permitted for collection of yard trim; and
- Whether collection frequencies for organics should be mandated.

The plastic bag issue drew mixed opinions. Currently, the means of collection, including the bin type, is decided by the local governments that provide yard trim collection. In some counties, residents are prohibited from using plastic bags to set out (or drop off) their yard trimmings, while in other counties plastic bags are acceptable. Alternatives to plastic bags are paper bags, no container, or use of an existing container that could be labeled for yard trim collection. Plastic bags add significant costs to composting facilities, which must remove bags by hand or machine prior to composting or shred open the bags and compost them with the yard trimmings, screening out the plastic at the end. Equipment to effectively screen plastic film from finished compost is costly and requires labor and maintenance. The Institute for Local Self-Reliance reports that as much as 25 percent of composting facility operations' costs may be attributable to removal of plastic bags. Some pieces of plastic remain in the finished compost, which may

result in a less desirable product. Valuable compost is also lost during the screening process, thereby reducing product as well as diversion levels. In addition, pieces of plastic bags blow out of compost piles and off site, creating litter and maintenance problems. However, plastic bags may be considered cheaper or preferred by residents, encouraging more participation where plastic bags are permitted. Compost facility operators hesitate to refuse yard trimmings in plastic bags because they do not want to lose the material to other facilities that will accept the plastic bags.

The Workgroup discussed whether a ban on the set-out of yard trimmings in plastic bags should be instituted on a statewide level. Several members opposed this on the ground that collection of trash and recyclables is generally the province of local governments, which should be able to make this decision individually based on local conditions and preferences. Others noted that Minnesota has passed State legislation to address this issue in the Twin Cities metropolitan region. Since there was continuing disagreement on this issue, MDE surveyed the counties on their preferred approach. The results were similarly divided; of 17 counties that responded, nine were opposed to a Statewide ban, while eight were in favor. See Appendix K for detailed survey results. A Workgroup member involved with the National Capital Region Organics Task Force noted that that group had reached consensus in favor of banning plastic bags for yard trim collection. Because of this, and because the results of the MDE survey were close, the member was opposed to any recommendation against a plastic bag ban for yard trim. For collection frequencies, the Workgroup generally agreed that counties should individually specify the minimum frequency for collection of organics. More frequent collection can reduce odor or vector risks posed by materials set out for collection.

Recommendations

1. Maryland should consider adapting the USCC model composting regulations for use as a basis for Maryland regulations once the model regulations are finalized (expected January 27, 2013). Maryland's regulations should establish minimum performance-based standards and appropriate individual standards for composting facilities based on type of feedstock, size or volume of operations, and environmental and public health risk.
2. New composting legislation and regulations should allow flexibility to accommodate conditions that are as safe, or safer, than the requirements prescribed. This may be accomplished through a clearly defined variance process and/or through an approval process for pilot projects.
3. Local jurisdictions should determine the types of containers that may be used for collection of organics from residents. Container types should not be mandated at the State level.
4. The State should create a contract under which State and local agencies may purchase paper bags. This will create an incentive for local jurisdictions to use paper bags for collection of yard trim by allowing them to provide paper bags to residents at a reasonable cost. The Technical Subgroup prefers use of non-plastic bags for yard trim collection, but does not recommend that this be mandated at the State level.
5. Local jurisdictions should dictate methods for collection of residential and commercial materials that are source-separated for composting, including the frequency of collection.
6. Standards for design and operations should be based on available science and established national public health and relative environmental risk assessment protocols associated with feedstock or type of composting facility. Volume of materials, area, time and

temperature of processing are likely to be areas for regulation. Best management practices (BMPs) for design and operation of compost facilities will be developed. MDE should continue to work with stakeholders, including Technical Subgroup members and experts from University of Maryland, to develop and refine these standards.

7. MDE and MDA should consider compost quality problems caused by persistent herbicides in the composting process and address the issue through changes to regulations or policies.

Non-Regulatory Methods of Promoting Composting

Issue: Education, Outreach, and Messaging

Background

Large increases in composting will require behavioral changes and increased awareness on the part of the public. Individuals, businesses, and institutions that generate compostable materials must understand which materials are compostable, how they can compost, and why it is important to do so. Composting of food is in its early stages in Maryland, making education and outreach especially crucial in spreading awareness to food scrap generators. Food composting may also be susceptible to negative perceptions based on lack of information. Finally, education on the uses of compost encourages consumers to purchase and use compost themselves, ensuring that demand keeps pace with growing composting infrastructure.

Currently, counties operate composting education and outreach programs to varying extents. In 2010, 11 counties conducted ongoing, multifaceted public education programs on grass-cycling or home composting of yard trimmings. Ten of these also distributed yard trimmings publications to at least 30 percent of their single-family residents. However, only four counties maintained food composting bin distribution programs for residents and only three conducted workshops on proper food composting techniques. Three counties maintain permanent food composting demonstration sites. Maryland lacks a coordinated, statewide public outreach campaign on composting. The county programs that do exist tend to target individuals, while large generators are also important audiences for composting education. The University of Maryland, Penn State University, and Virginia Tech teach the Better Composting School which is designed to educate compost operators on the management of large facilities. MDE maintains a composting page on its website, but does not currently have the resources to conduct a more thorough educational effort.

Discussion

The Education and Outreach Subgroup agreed that education and outreach efforts should be made on both the State and local levels to promote composting. The Subgroup suggested that MDE serve as a clearinghouse of information and resources that can be used in composting education and outreach. The University of Maryland should also serve as a resource in the education of composters. It maintains a website for composting resources and courses at http://compost.umd.edu/ . In addition, the Subgroup agreed that MDE should create a set of outreach materials for use by local governments. To create consistent messaging in Maryland,

counties should adapt these materials for their own programs and supplement them where needed. In proposing this approach, the Education and Outreach Subgroup considered the example of electronics recycling programs that were created by the states with the assistance of EPA Region Three. The Subgroup also considered Massachusetts Department of Environmental Protection's Organics Action Plan, which includes a public education and outreach strategy for increasing organics processing capacity.

The Workgroup also discussed ways that MDE's website can be used to promote composting. While a composting page was created on MDE's website in response to 2011 House Bill 817, members suggested that the website be enhanced and improved on a continuous basis with new information. In addition, some members commented that the website's current tone is incompatible with promoting composting; it leads with potential risks of composting rather than the benefits of composting and compost use.

Finally, the Workgroup identified a few overarching policies that should be adopted by the State. The first is the concept that composting is too often associated with solid waste activities. In reality, composting is recycling and produces a valuable product that itself provides environmental benefits. To encourage perception of composting as recycling rather than disposal, many members agreed that the term "waste" should not be used when referring to compostable materials. For example, the term food scraps should be used rather than food waste. The members discussed the fact that "waste" is already used to describe compostable materials in several places in the current law. For example, "yard waste" is defined in the recycling statute. The Workgroup agreed that without sacrificing clarity and consistency in the law, the term waste should be separated from composting wherever feasible. This general rule should apply to any outreach and education materials or guidance created by MDE or MDA.

The second overarching policy would establish a hierarchy of methods for managing food materials. EPA created a Food Recovery Hierarchy diagram that depicts an order of environmental preference for potential uses of food scraps. Other states have adopted this hierarchy in policy documents and legislation. The hierarchy places source reduction at the top (most preferred), followed in order by feeding people and animals, various industrial uses, composting, and incineration or landfill. Some Workgroup members recommended that Maryland should adopt the hierarchy as its policy with respect to food scraps, especially as increasing food recovery is a particular focus of this Study. In addition, some members stressed that while increasing composting of food scraps is important, it is also important to prioritize food donation for any edible food that can be "rescued" to feed hungry people. Others believed that since the hierarchy endorses uses other than composting, it is outside the scope of this Study and is not a method of promoting composting in the State. At least one member also noted that this hierarchy is subject to some dispute because some argue that anaerobic digestion should not be preferred to composting. The EPA hierarchy, listed below, includes anaerobic digestion combined with soil amendment production as a higher priority than composting. It should be noted that anaerobic digestion and composting are not mutually exclusive; solid residuals from the digestion process are often composted and used as a soil amendment.

Recommendations

1. Recommendations of this Workgroup are intended to reduce barriers to responsible composting.
2. Maryland should adopt a food recovery hierarchy and considering as an example following U.S. EPA food recovery management hierarchy[33]:
    a. Source reduction;
    b. Feed hungry people;
    c. Feed animals;
    d. Industrial uses (fats for rendering; oil for fuel; food discards for animal feed production; anaerobic digestion combined with soil amendment production or composting of the residuals);
    e. Composting; and
    f. Incineration or landfill.
3. When drafting composting regulations, revising statutory language, creating guidance materials, or conducting outreach, the State should treat composting as a recycling activity as opposed to a solid waste disposal activity. Public perception of composting is important to the success of the composting industry and language developed by the State should treat composting differently than disposal.
    - The State should strive to separate the terms "compost" and "waste."
    - Materials used in the composting process should be called "materials," "byproducts," or a similar term, rather than "wastes." For example, food that would otherwise be discarded should be called food residuals, food scraps, food byproducts, or food materials, but not food wastes.
4. MDE, MDA, and local governments should launch an education and outreach campaign to highlight composting and compost use:
    - MDE should develop basic outreach and educational materials to share with the counties and municipalities so that the local governments can tailor these materials to their own needs.
        - These materials should include a logo, messages, posters, FAQ's, and web materials.
        - A symbol for organics recycling should be developed, promoted, and used to market organics recycling in Maryland.
        - MDE, MDA, and local governments, where possible, should actively use a variety of media (including print, television, radio, and social media) to promote composting, use of compost, and use of compostable products.
        - Education should include "how-to" guides and should contain information on appropriate composting feedstocks, food rescue and diversion, and new technologies such as anaerobic digestion.
        - Case studies should be used in education and outreach materials wherever possible to illustrate successes.
        - Maryland should participate in International Composting Awareness Week in May.
        - Outreach materials could include the following messaging:
            - If something was grown in the ground, it should be returned to the ground as compost.

[33] EPA, "Food Recovery Hierarchy," http://www.epa.gov/epawaste/conserve/smm/images/FoodRpng_700pxw.png

        - Composting of organic materials reduces solid waste disposal fees for potential wastes.
    - Counties and municipalities should work with MDE, MDA, MES and other local governments to develop their own outreach and education methods for composting. MDE should serve as a clearinghouse of information and resources used by other counties.
    - Local health officials should be encouraged to learn about and promote safe composting practices.
    - State and local governments should discuss BMPs for facility development and siting with environmental advocates and project proponents to address any concerns.
    - MDE and local governments should assess and support development of on-site food scrap solutions at schools, universities, hospitals, and correctional facilities, wherever feasible.
    - Outreach and education efforts should be specifically tailored to reach key audiences, such as farmers, solid waste planners, industry, and elected officials. Education aimed at the general public should address backyard composting, particularly in counties where this is not already occurring. Partnerships with Environmental groups, including the Chesapeake Bay Foundation, Alice Ferguson Foundation, League of Conservation Voters, and others should be sought to leverage resources and educate Marylanders about composting.
    - Maryland schools should include composting as part of their curriculums.
5. MDE should maintain an informative and evolving website to include composting BMPs. MDE's website should lead with the benefits of composting and the uses of finished compost. Maryland should link to the U.S. Composting Council website and other helpful resources. MDE should work with the Northeast Maryland Waste Disposal Authority to expand the existing mdrecycles.org website to include a specific composting section. MDE, MES, and MDA composting websites should link to one another.

Issue: Technical, Financial, and Compliance Assistance

Background

Technical, financial, and compliance assistance would promote composting in the State in several ways. Counties could use assistance to institute or expand collection programs, establish county-run composting facilities to handle residential materials, and conduct outreach and education. Commercial composters could use grants and technical assistance to expand capacity, implement best management practices, or test burgeoning technologies. Farmers and large generators could use assistance in setting up on-site composting programs.

Despite the benefits of grant programs, outreach and education campaigns, technical assistance, and compliance assistance, these activities require sustained funding that is not currently available to MDE, MDA, or MES. In addition, MDE anticipates that the rate of new composting facilities will increase, requiring increased resources for the Department to permit composting facilities and enforce the law. At the same time, changes to the regulatory scheme proposed in this report would require the Department to develop new regulations and guidance. These facts make identification of additional resources important to support growth of the compost industry.

Discussion

The Workgroup discussed how the State could assist counties in increasing composting. Counties are important targets for assistance because they provide composting services as well as interact with private composters in their jurisdiction. Counties also play a crucial role because they develop and implement county solid waste management plans (SWMPs), which lay out how each county will achieve its required recycling rates. While MDE approves the plans against minimum criteria required by the law, counties make individual decisions about how to manage their waste and recyclables.

The Workgroup considered a few means of encouraging counties to take steps to increase composting. One suggestion was to add food scrap composting to the list of items counties must address in their SWMPs. This suggestion was intended to induce counties to take a close look at composting and determine whether it would be feasible. While some members supported this suggestion, representatives from several counties who took part in the Workgroup strongly opposed it. They argued that when counties have been required to address an item in the past, MDE has required detailed amendments to the plans, costing counties large amounts of time and resources with very little substantive change in recycling programs. There was some disagreement about the value of addressing items in the SWMPs; MDE maintains that in the past, the requirement has resulted in counties considering or beginning activities in which they were not previously engaged (such as school recycling). In response to these discussions, the Board of the Maryland Recycling Network, a group that represents various recycling professionals and 19 counties, approved a motion on October 16, 2012 that opposed any requirement for counties to amend SWMPs. See Appendix H.

The Workgroup also briefly discussed the possibility of establishing a goal for organics diversion, similar to the Statewide and county goals established in Chapter 692, Acts of 2012. While there was at least some support for this within the Education and Outreach Committee, the full Workgroup did not agree on establishing numerical goals for organics recycling.

The Workgroup ultimately agreed that the State should encourage (rather than require) counties to increase composting as a means of reaching their newly increased recycling rate requirements. The State would do this by providing technical assistance and guidance to counties.

In addition to providing assistance to counties, the Workgroup discussed how the State could assist composting businesses. Members repeatedly mentioned the barriers caused by a confusing patchwork of laws, regulations, guidance, and agencies dealing with composting. The Education and Outreach Subgroup stressed the need for accessible, clear permitting guidance regardless of the final structure of composting regulations. The Education and Outreach Subgroup considered a few other states' approaches to compliance assistance; members particularly liked the Wisconsin webpage and guidance documents.[34] Other methods of assisting the compost industry were discussed as well, including grants, loans, job training, assistance with BMPs, and identification of end markets.

[34] Wisconsin DNR, Composting Rules and Regulations, http://dnr.wi.gov/topic/Recycling/regs.htm (Last accessed December 20, 2012).

A theme across Workgroup and Subgroup discussions was the need for funding to undertake the education, outreach, and assistance activities described in this report. Members agreed that these activities would provide significant incentives for development of new composting infrastructure and would remove some of the existing barriers to growth in the composting industry. However, there was some disagreement about how these activities should be funded. Current sources of funds that could legally be used to promote composting (such as the State Recycling Trust Fund) are insufficient to fund additional compost-related activities. MDE does not currently receive permitting or annual fees for compost facilities. MDA receives a small registration fee ($15-30) on each brand of compost registered, as well as an inspection fee of 25 cents per ton of compost distributed in Maryland. Revenue from these fees funds inspectors and chemists within MDA's State Chemist Section. An MDE composting facility permit fee was suggested, but the Workgroup was unable to agree on this. Some composters participating in the workgroup opposed any new fees on compost facilities because MDA already collects a per-ton fee on distribution. Some members of the Workgroup also opposed the creation of a disposal fee levied on landfills and incinerators, a tool used by many states to fund their recycling programs and grants. EPA Region Three posted questions on the national State Compost Forum to obtain information on the ways other states fund their composting programs. Several states, including Connecticut, South Carolina, New York, Virginia, Georgia, Idaho, and Wisconsin responded to the survey. The responses were varied. Some states have permit or registration fees for compost facilities while other states have no fees on composting facilities. Some use revenues from other special fund sources, mostly solid waste or water program funding, to cover composting program costs.

Recommendations

1. The State should provide technical assistance and guidance documents to encourage development of composting programs at the local government level and could also recommend a voluntary goal for increasing composting in the State. Counties and State agencies should include composting (especially food scrap recovery) as part of their individual strategies for meeting the increased county and State agency recycling goals established in Chapter 692, Acts of 2012. A mandatory goal for organics diversion is not recommended at this time, nor is a requirement that counties address composting in their recycling plans.
2. MDE, MDA, and MES should:
    i. Identify specific composting contacts within their agencies to help people work through the permitting system, share guidance documents, and provide technical advice;
    ii. Create a flow diagram or schematic to depict various types of composting operations and the steps to get permits or registration required of each; and
    iii. Regardless of the final structure of the new composting regulations, provide clear guidance to the regulated community regarding compliance with all relevant State regulations. Compliance assistance information provided by the State of Wisconsin

should be used as an example.[35] Ohio EPA's food recovery initiative is another example.[36]

3. The Department of Business and Economic Development, local economic development agencies, MDA, MES, and MDE should work together to identify financial and technical assistance for companies interested in establishing and expanding composting facilities in Maryland, including grants, loans, and job training programs. The agencies should also support the compost industry by identifying end markets for compost generated in the State.
4. The Natural Resources Conservation Service and local soil conservation districts should promote composting best management practices and use of compost, providing technical and financial assistance to composters and farmers wherever possible.
5. The Maryland Agricultural Education Foundation and University of Maryland Extension should be used as resources for composting education and technical assistance.
6. Revenue sources should be specifically set aside and directed toward funding for composting education and outreach activities. Funding must also be identified to establish a composting regulatory program in Maryland. Dedicated funding for a minimum of one FTE for MDE to develop outreach and education and to promote composting in the State is necessary. These revenues may be generated by increasing revenues to special funds or by dedicating general funding. New revenue sources could include a registration fee, permit fee, or certification fee for compost facilities. In the early 1990's and again in the early 2000's, MDE's LMA had three FTEs dedicated to outreach and education for the State. Funding for specific projects to boost compost industry growth is needed in the near term, including funds for mapping and surveying large food scrap generators and developing model local zoning codes.

Issue: Compost Use and Procurement

Background

Expanding the use of compost in Maryland can have many benefits. Compost improves soil structure, porosity, and bulk density, thus creating a better plant root. It increases infiltration and permeability of heavy soils, reducing erosion and runoff. It improves water-holding capacity in sandy soils, reducing water loss and leaching, and it supplies significant quantities of organic matter as well as beneficial microorganisms. It can even bind and degrade specific pollutants.[37]

Growth in the composting infrastructure in Maryland will require strong markets for finished compost. Compost has a variety of uses, including landscaping, organic farming, sediment and erosion control, and stormwater management. Compost can be made into products such as compost filter socks, blankets, and berms, which can be used in construction and road work in lieu of traditional sediment and erosion control devices. In addition, it can be mixed for use in bioretention soils or green roofs. A major obstacle to encouraging compost use is that people, businesses, and agencies are largely unaware of these uses.

[35] Id.
[36] Ohio EPA, Food Scrap Recovery Initiative, http://www.epa.ohio.gov/ocapp/food_scrap/food_scrap.aspx (Last accessed December 20, 2012).
[37] Ron Alexander, *Compost Use on State Highway Applications.*, The Composting Research and Education Foundation and US Composting Council.

Maryland has made strides in promoting use of recycled products through its State government procurement practices. A price preference of five percent applies to recycled materials included on an Acceptable Recycled Products List published twice per year (though compost is not among the products listed). The Green Maryland Act of 2010 created the Maryland Green Purchasing Committee. The Committee has already developed a Best Practices Manual for Environmentally Preferable Purchasing as well as Purchasing Guidelines. Agencies responsible for maintenance of public lands must give preference to the use of compost in land maintenance activities paid for with public funds. The Green Maryland Act also required DGS to study the use of compost as a fertilizer on DGS-operated property. Finally, it set a goal for DGS to increase the percentage of landscaped area fertilized by compost each year. State Finance and Procurement Article, § 14-409. In its 2011 Report to the General Assembly, the Green Purchasing Committee recommended that DGS work with MES to develop specifications for compost purchasing. The State Highway Administration, Office of Materials Technology maintains a Qualified Products List of products that are used for road projects. The list includes compost and is available online.[38]

Discussion

Several members of the Workgroup acknowledged that the public and some State and local agencies are unaware of the various uses for compost. The Workgroup identified some State documents that could be used to highlight additional compost uses. MDE publishes manuals for soil erosion and sediment control and stormwater management. These manuals are used by private contractors to design and plan construction projects and are incorporated by reference into State regulations. Local soil conservation districts and local governments approve all local soil conservation and stormwater management activities. They currently lack incentives to promote the use of compost for stormwater management and erosion and sediment control because these uses are not currently incorporated into the State-issued manuals and must be approved at the State level by MDE. Use of compost for a wide variety of purposes within these manuals published by MDE would educate readers and encourage use of compost. The Education and Outreach Subgroup examined the State Highway Administration's list of qualified products and determined that while it does include compost, it needs updating. In addition, it was unclear whether compost products (filter socks, blankets, berms) were listed among the qualified products, because there was very little description of each product. Several members of the Workgroup attended meetings of the State Highway Administration (SHA) Recycled Materials Task Force and determined that it would be beneficial to work with that Task Force to encourage additional compost uses by SHA.

The Education and Outreach Subgroup also reviewed the 2011 Green Purchasing Committee Report. It agreed with the Committee's recommendation that standards should be developed for procurement of compost. The Subgroup also believed that handling compost procurement through a Statewide contract would make it easier for State and local agencies to purchase compost. The Subgroup discussed establishment of a procurement preference for Maryland-produced compost (over compost produced out of State) as a way to grow the Maryland compost

[38] State Highway Administration, Office of Materials Technology, Qualified Products List, http://www.roads.maryland.gov/omt/QPL.pdf (Last accessed December 21, 2012).

industry. A few members were concerned that this may be against Maryland's procurement policies or that it would cause other States to follow suit, reducing out-of-state demand for Maryland compost.

Recommendations

1. The State should endorse a variety of compost uses in its guidance and manuals as follows:

    - MDE's Soil Erosion and Sediment Control Manual and Stormwater Design Manual should be updated to encourage the use of compost and compost products for a wide variety of sediment and erosion control and stormwater management purposes.
    - The State Highway Administration's Materials and Technology Division should maintain up-to-date lists of specific approved compost and compost products (such as compost berms, filter socks, and blankets) for use in roadway projects and other applications.
    - MDE, MDA, and MES should work with the State Highway Administration Recycled Materials Task Force to educate SHA on the uses of compost and to encourage approval of compost for a wider variety of uses.
2. Purchasing of compost should be encouraged in the following ways:
    - The Green Maryland Act of 2010 required DGS to study the use of compost and to increase the percentage of landscaped area fertilized by compost each year. MDE, MDA, and MES should work with the Green Purchasing Committee to facilitate increased purchase of compost for State projects.
    - DGS, MES, and MDE should work together to develop specifications for a Statewide procurement contract allowing State and local governments to purchase MDA registered compost with a potential for a price preference for Maryland-produced compost.
    - DGS, MES, and MDE should promote the purchasing of compost and compost products under the State contract to other State and local agencies. They should also provide training for these agencies regarding the uses of compost.
    - All State and local agencies should take affirmative steps to use compost and compost products as appropriate, including as bioretention soils, green roof soils, and for roadway projects and slopes.
3. Because nutrient management requirements are new and as Marylanders may not understand the applicability of the law, MDA should provide guidance that describes how and when these regulations apply to the use of compost as a fertilizer or soil amendment. The guidance document should be included on MDE's composting website.

Issue: Large Generators of Organics

Background

Universities, correctional facilities, supermarkets, hospitals, stadiums, food manufacturers, and government agencies are concentrated sources of food scraps. These facilities provide the opportunity to capture large quantities of materials for composting on- or off-site. Other states

have begun to target large generators for composting programs. In Massachusetts, an Organics Action Plan recommended mapping large generators across the State, creating sector-specific BMPs, and establishing pilot, technical assistance, and loan programs for large generators.[39] The ultimate goal of the plan is a ban on disposal of commercially generated organics. Vermont has gone a step further with legislation passed in 2012 that requires large generators located within 20 miles of a compost facility with sufficient storage or management capacity to separate their food scraps and arrange for composting. The amount of food scrap generation that subjects a generator to this requirement will decrease over time from 104 tons per year in 2014, to any food scraps in 2020.[40]

Discussion

The Workgroup agreed that large generators should be priorities for outreach, education, and technical assistance. The Workgroup also considered the Massachusetts Plan and particularly supported its proposal for a survey that would identify and map large generators. This effort would provide information to assist the composting industry in sourcing materials and determining optimal locations for siting new facilities. It would also allow haulers and generators to cooperate on efficient routes for collection of organics.

Facilities used by State and local agencies are also potentially large sources of organics. The Green Maryland Act of 2010 required DGS, to the extent practicable, to compost all landscape debris on State property under its operation for use as a fertilizer in landscaping activities. The Workgroup supported establishment of additional composting programs by State and local agencies. The Workgroup also saw composting by State and local agencies as a way that these agencies could meet increased State government and county recycling rates required by Chapter 692, Acts of 2012.

Recommendations

1. In addition to supporting the private composting industry, State and local governments should lead by example, identifying opportunities to divert their own organics through composting:
    - County and State agencies should be encouraged to compost as part of their strategies to increase their recycling rates as required in Chapter 692, Acts of 2012.
    - The Green Maryland Act of 2010 required DGS, to the extent practicable, to compost all landscape debris on State property under its operation for use in landscaping activities. DGS, MES, and MDE should work with State agencies to develop composting programs, including pilot programs, for yard trim and food scraps generated from State facilities.
2. Outreach, education, and technical assistance should first target large generators of food scraps and public facilities.
3. MDE, MDA, and MES should identify an entity to conduct a survey in Maryland that will identify large generators of feedstocks, such as food scraps. These generators should

[39] MassDEP Organics Study and Action Plan, May 10, 2012, http://www.mass.gov/dep/public/committee/orgplanf.pdf (Last accessed December 21, 2012).
[40] 10 V.S.A. § 6605k.

be mapped in order to facilitate connections with composters and establishment of efficient hauling routes. MDE, MDA, and MES should seek the financial and technical assistance of DBED in conducting the survey. Universities may also be contacted for assistance. Using information generated from the survey, a "waste exchange" system for compostable materials should be established.

Issue: Siting of New Facilities

Background

Identifying proper locations for composting facilities involves a variety of environmental and economic considerations. For the composting infrastructure to grow in Maryland, prospective compost operators must be able to find properties suitable for composting and obtain the appropriate local approvals. At the first meeting of the Workgroup, stakeholders noted local zoning difficulties for compost facilities. Some counties lack specific provisions for composting activities, especially composting of materials other than yard trimmings. In some cases, an operator must obtain a special exception to use a site for composting and the process for obtaining a special exception can be arduous and costly. Under current law, counties must include solid waste acceptance facilities such as compost sites in their Solid Waste Management Plans. As part of the application process for a refuse disposal permit, counties must certify that a proposed composting facility is consistent with the SWMP. Some county officials that were part of the Workgroup noted that amending the SWMP to include a composting facility is a long process. In some cases, amendments to the SWMP must be approved by the county council.

Discussion

In order to gauge the local processes applicable to siting of compost facilities, MDE conducted a survey of counties. The survey asked local planning and zoning officials how they define, classify, and limit the location of composting facilities. Most counties did not respond. Among those that did, processes for compost facility zoning tended to vary greatly, but several themes emerged. Most counties do not define composting. Howard County's definition describes only composting of yard trimmings. Counties tend to consider composting an agricultural use, so composting facilities tend to be permissible within agriculturally zoned areas. See Appendix K for detailed survey results.

The Workgroup discussed this lack of consistency and general failure to address zoning of composting facilities at the local government level. Ohio EPA has worked to address this issue among local jurisdictions in the State and has produced a model zoning code and guidance for promoting urban agriculture and composting.[41] While the Ohio document focuses mainly on composting as an accessory use to community gardens, the Workgroup favored Ohio's general approach of providing sample zoning language and guidance to assist counties.

[41] Ohio EPA, Urban Agriculture, Composting, and Zoning, http://www.epa.ohio.gov/portals/34/document/guidance/GD%201011_UrbanAgCompostingZoning.pdf (Last accessed December 21, 20120).

The Workgroup also identified a role for the Department of Business and Economic Development (DBED) and local economic development agencies in siting facilities. During an Education and Outreach Subgroup meeting, the members noted that the Eastern Correctional Institute in Westover, Maryland plans to open an anaerobic digester for farm materials in 2013. The Subgroup believed that additional sites like this one should be identified to host composting of materials generated in the surrounding area. In addition to other correctional centers, brownfield sites, farms, and government properties were suggested as potential options. The Workgroup suggested that DBED and local agencies assist in identifying these properties.

Recommendations

1. DBED and local economic development agencies should assist in identifying properties able to manage organics, including any brownfield sites, large farms, or State or locally owned property such as detention centers.
2. The State should recommend model local zoning and land use language to facilitate local composting facility approvals. Ohio EPA, for example, has published a model zoning code for promoting composting and organics diversion.[42]

Conclusions

The regulatory recommendations presented here reflect the Workgroup's belief that Maryland must establish a pathway for composting of a wide variety of types and scales. The Department shares this goal and strongly supports the expansion of composting in the State. MDE also acknowledges that composting of food scraps in particular, while desirable, has the potential to generate fluids that contain potential pollutants including nutrients and biochemicals. These pollutants can impair ground and surface waters and can exert a large oxygen demand on waters they may enter. The regulatory scheme developed for composting must consider the potential public health and environmental hazards that may develop at poorly managed facilities, while developing standards that are appropriate and based on available science. The Department recognizes that the current regulatory environment for the composting industry is not well defined and MDE urges prompt legislative action to provide it the authority to develop clear regulations. MDE will draw on momentum and expertise garnered through this Workgroup and intends to develop future regulations with the help of continued stakeholder engagement in 2013.

MDE recognizes the hard work and thoughtful input of the Workgroup and Subgroup members throughout the process of this study. The diversity and extent of Workgroup members' expertise and experience was an asset to MDE throughout the process and will continue to be crucial as this report's recommendations are implemented.

[42] Id.

Appendix A

Chapter 363

(House Bill 817)

AN ACT concerning

Environment – Composting

FOR the purpose of requiring the Department of the Environment to maintain certain information on its Web site related to composting for certain purposes; requiring the Department, in consultation with the Department of Agriculture and the Maryland Environmental Service, to study certain matters related to composting and to make certain recommendations related to the promotion of composting, including certain information; requiring the Department, on or before a certain date, to report its findings and recommendations under the study to the General Assembly including a certain summary; and generally relating to composting.

BY adding to
Article – Environment
Section 9–1722
Annotated Code of Maryland
(2007 Replacement Volume and 2010 Supplement)

WHEREAS, Composting extends the life of landfills by diverting organic material from the landfills and providing a less costly alternative to conventional methods of treating contaminated soil; and

WHEREAS, Composting organic material that has been diverted from landfills reduces the formation of leachate and the production of methane in the landfills; and

WHEREAS, Composting filters pollutants in stormwater runoff, preventing the pollutants from reaching surface water resources; and

WHEREAS, Composting has been shown to prevent erosion and silting on embankments parallel to creeks, lakes, and rivers and to prevent erosion and turf loss on roadsides, hillsides, playing fields, and golf courses; and

WHEREAS, Composting reduces or eliminates the need for chemical fertilizers and promotes higher yields of agricultural crops; and

WHEREAS, The composting process degrades and in some cases completely eliminates wood preservatives, pesticides, and both chlorinated and nonchlorinated hydrocarbons in contaminated soils; and

WHEREAS, The average U.S. household generates 650 pounds of compostable material every year; and

WHEREAS, Individuals, businesses, and groups interested in composting or expanding a composting operation have expressed confusion about the current State laws and regulations governing these activities; and

WHEREAS, Better understanding of and communication about the laws and regulations governing composting may increase composting in the State; now, therefore,

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That the Laws of Maryland read as follows:

Article – Environment

9–1722.

THE DEPARTMENT SHALL MAINTAIN INFORMATION ON ITS WEB SITE TO EDUCATE THE PUBLIC ABOUT COMPOSTING AND TO PROMOTE COMPOSTING IN THE STATE AS A PART OF THE DEPARTMENT'S EFFORTS TO ENCOURAGE WASTE DIVERSION.

SECTION 2. AND BE IT FURTHER ENACTED, That:

(a) The Department of the Environment, in consultation with the Department of Agriculture and the Maryland Environmental Service, shall:

(1) study composting in the State, including any laws or regulations governing composting by individuals or businesses, including businesses offering composting services; and

(2) make recommendations about how to promote composting in the State, including any necessary programmatic, legislative, or regulatory changes.

(b) On or before January 1, ~~2012~~ 2013, the Department of the Environment shall report its findings and recommendations to the General Assembly, in accordance with § 2–1246 of the State Government Article, including a summary of the laws and regulations governing composting.

SECTION 3. AND BE IT FURTHER ENACTED, That this Act shall take effect July 1, 2011.

Approved by the Governor, May 10, 2011.

Appendix B

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
MEMBERS

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Richard Keller, Maryland Environmental Service

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Delores Milmoe, Audubon Naturalist Society

Delegate Heather Mizeur, Maryland General Assembly

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Terry Bennett, Allegany County Department of Public Works

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Jessica Weiss, GrowingSOUL

Appendix C


MINNESOTA COMPOST RULES
Ginny Black
Source-separated Organics Coordinator
Minnesota Pollution Control Agency
July 2012


Current Rule
Backyard, exempt
Yard Waste, permit by rule
Solid Waste Compost Facility, full permit

Yard Waste Compost Facility

- Permit by rule process
- Requires period turning
  - Aerate
  - Maintain temperatures
  - Reduce pathogens
- Less than 3 percent inerts, < 4mm
- Control run-off/run-on
- Testing of finished product not required
- Unlimited use of finished product
- Annual report

Solid Waste Compost Facility

- MSW feedstocks, manures, biosolids…..
- Controlled access points
- Training plan
- Designated delivery area
- 10^{-7} pad for tipping/mixing/active compost area/curing area
- Leachate/storm water management systems
- Salvageable/recyclable materials properly stored and removed weekly
- Residuals properly stored and removed weekly
- Meet PFRP
  - Windrows: 21 days at 55° C, turn every 3-5 days
  - Static aerated pile: 7 days at 55° C
  - In-vessel: 3 days at 55° C

Source-separated Organics (SSO) Compost Facility Concept

- New facility feed stocks:
  - Yard waste
  - Wood waste
  - Food waste
  - Non-recyclable paper
  - Industrial/manufacturing food residual – human food production
  - No fish waste, animal waste, meat by-products generated from industrial sources, sanitary products, diapers, sewage sludge, biosolids, septage

SSO Compost Facility Concept

Pad Design

- Hard packed all weather surface (tipping/mixing, active, curing and finished storage area)
  - 5′ to water table
  - Any combination of the following soils:
    - Sandy clay loam, loam, silt loam, silt, sandy clay loam, clay, silty clay
- Pad: 1′ low permability soils (tipping/mixing, active)
  - < 5′ from water table
  - Low permeability soils meeting MNDOT specs for surface aggregate
  - Other: concrete, asphalt or geomembrane
  - Only under the tipping/mixing and active compost area (PFRP)
  - All weather drivable surface in curing and finished storage area)

SSO Compost Facility Concept

- General Ops requirements
  - Secure site
  - Secures recyclable materials, trash, rejects
  - Process to Further Reduce Pathogens requirements
    - Windrows: 15 days at 55° C, turn every 3-5 days
    - Static aerated pile: 7 days at 55° C
    - In-vessel: 3 days at 55° C
- Feed stock management plan
- Contact/Storm Water Management plan
  - NPDES standards must be followed
- Odor minimization plan

SSO Compost Facility Concept

- Training plan
- 24 contact hours of training within 12 months of employment, then every 5 years
- 5 contact hours every year
- Acceptable list of courses approved by the Commissioner

- Contact hour = 50 minutes

Finished Compost Testing

- Testing required
  - 503 metals test
  - pH
  - Particle size
  - NPK
  - Soluble salts
  - Maturity
- Class I: ≤ 503 metals standards
- Class II: ≥ 503 metals standards.

DEQ Compost Program

Revised Rules Facilitate Food Scraps Composting

Biocycle West Coast Conference 2012

Portand, Oregon

April 17, 2012

Bob Barrows

Waste Policy Analyst

Oregon Dept. of Environmental Quality

DEQ Compost Program

Purpose of DEQ Rules

- Protection of surface water, groundwater, and public health
- Flexibility for operators
- Site specific permitting framework
- Address issues about agricultural composting facilities

DEQ Compost Program

Compost Rule Summary

- Provides performance standards all composting facilities must meet
- Provides initial risk screening for all composting facilities
- Provides for exemptions
- Two permitting tracks for facilities with different risk levels
- Clear requirements for facilities that must provide an operations plan
- Special rules for leachate control structures, groundwater protection, odor management, and pathogen reduction

DEQ Compost Program

Environmental Performance Standards

- Requirements for all composting facilities, regardless of size, location, etc.
- Standards for protection of surface water, ground water, prevention of offensive odors, prevention of vectors, and pathogen reduction

DEQ Compost Program

Feedstock Definitions

- Type 1: Vegetative wastes including yard and garden wastes, wood wastes, crop residues, vegetative food wastes, etc.
- Type 2: Animal manure and bedding
- Type 3: **Food waste** (source-separated) which includes meat, eggs, dairy, etc.

DEQ Compost Program

When is a Compost Facility Permit Needed?

- Type 1 & 2 Feedstocks
  > 100 tons per year
- Type 3 Feedstocks
  > 20 tons per year
  or
  > 40 tons per year if using in-vessel system

DEQ Compost Program

Agricultural Composting Facilities

- All composting facilities are regulated according to the same requirements and procedures
- Eliminating duplicative regulatory entities, CAFO composting operations are regulated under CAFO permits and plans by Oregon Dept. of Agriculture

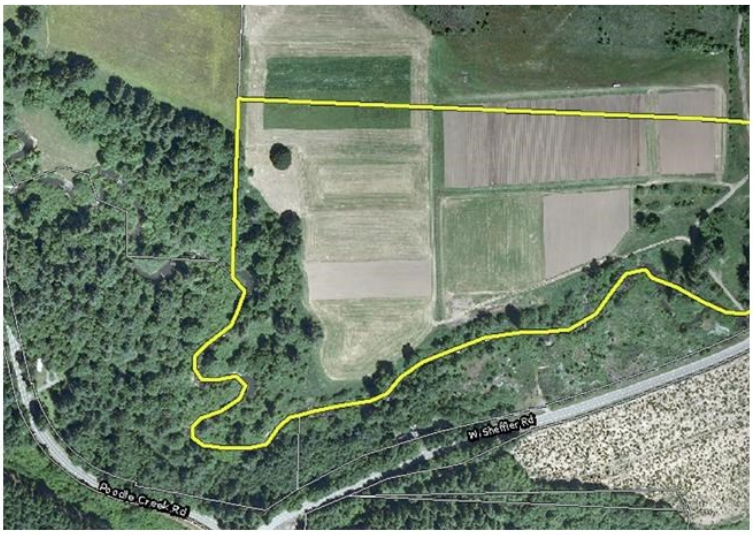
Conversion Technology Rulemaking

Compost Environmental Risk Screening

- Reasons for screening:
  - Recognize that environmental risk differs between sites;
  - Identify and focus efforts on sites that pose environmental risk
- Factors DEQ will examine in screening process
  - Groundwater, Soil, Surface Water, Odor
- Two types of Permits, based on risk designation
  - Registration or Individual Composting Permit

DEQ Compost Program

Risk Screening - Wintergreen Farm



DEQ Compost Program

DEQ Permitting Process

Step	Action Item	Rough timeline
1	Composter gathers information and submits "**complete" application** to DEQ.	**Days to months**. Will take longer amount of time if site needs conditional land use approval.
2	DEQ conducts an environmental **risk screening**	**1 week - 1 month; Avg. = 2 weeks.**
3	DEQ **risk screening response**: •Registration Compost permit (low risk); or •Individual Compost permit (some risk); will need Operations Plan review and additional fees.	**Avg. = 1 week** Registration permit - no further information needed. Individual permit - may take composter weeks to a month to submit necessary Operations Plan and/or other materials.

DEQ Compost Program

DEQ Permitting Process cont'd

Step	Action Item	Rough timeline
4	DEQ drafts a **composting permit**;	To Draft permits **2 weeks**> Registration permit **2 weeks – 1 mo.**> Individual permit
	DEQ conducts **public comment period**.	Public Comment Period **30 days**> Registration **35 days**> Individual Compost permit
5	DEQ **responds to comments**; **issues permit** as long as no significant issues raised.	1 - 3 weeks; **2 weeks average**.

DEQ Compost Program

Fees

- Application screening fee - $150
- Operations Plan review and approval fee based on size of operation (when required)
- Engineering review fee - $500 (when required)
- Individual Composting Facility Permit will pay an annual tonnage fee based on size
- Registration permit - no annual compliance fee

DEQ Compost Program

Groundwater/ Surface Water Protection

- Rule provides standards for facilities that propose using infiltration to manage leachate and/or stormwater
- Protections will be based on site characteristics
- Includes use of bioswales, filter strips, crop irrigation, etc.

DEQ Compost Program

Leachate Collection System Design

- No discharge; except with a water quality permit
- Rule provides design and construction standards for facilities that choose to use engineered structures to hold and manage leachate and/or stormwater (protective surfaces, tanks, ponds)

DEQ Compost Program

Pathogen Reduction

- Rule provides standards and testing protocols for human pathogen reduction
- E-coli and/or salmonella
- Does not apply to ag operations producing compost for on-farm use

DEQ Compost Program

Odor Management

- Use Odor as management tool
  - Bad odor is often indicator of composting site upset conditions
- Rule provides a process and requirements for responding to odor complaints
  - Ag operations less subject to this rule

DEQ Compost Program

Oregon Permitted Composting Facilities

- Rules effective Sept. 2009
- PRC - First food scraps permit, April 2010
- 47 permitted facilities
- 2/3 Registration
- 14 new farms
- 11 receiving food scraps of 13 permitted

DEQ Compost Program

Foodscraps Issues

- Pent up food scraps demand
- Does demand exceed composting system improvements and capacity expansions in the Metro area?
- Land use issues for Metro composters
- Odor issues
- Compostable plastics & food service items
- Feedstock contamination - Market demand for clean, high quality compost

DEQ Compost Program

Questions?

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DEQ Solid Waste Policy Analyst
Eugene, OR
541/ 687-7354
barrows.bob@deq.state.or.us

Compost Rule Model Template and USCC Partnership

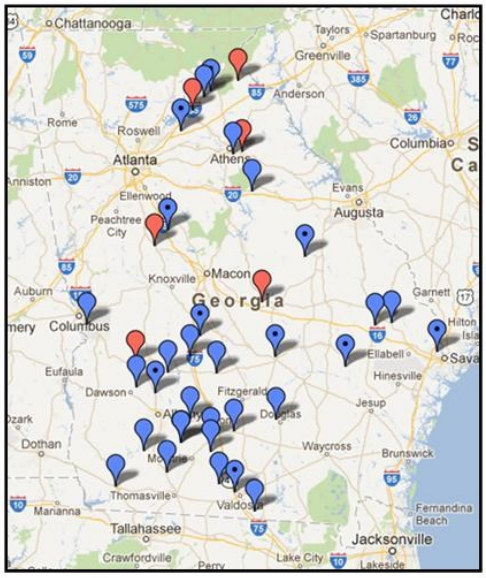
Current Regulations and Permitted Facilities

Exempt Facilities

- Yard trimmings and backyard composting
- On-site processing of agricultural residuals

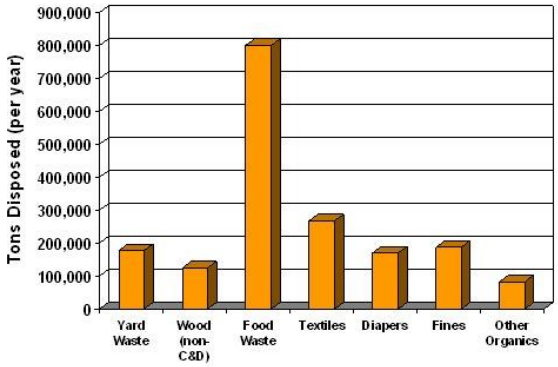
Permitted Facilities

- Current rule regulates composting facilities either through a notification process (permit-by-rule) or a solid waste handling permit
  - **32 Permit-by-Rule Facilities** (blue markers)
  - **6 Full Solid Waste Handling Permits** (red markers)



What Prompted the Proposed Amendments in Georgia?

- Solid waste disposal trends in Georgia
  - 11.67 million tons of waste disposed in municipal solid waste landfills in FY 11
  - At more than 800,000 tons per year, food residuals represent one of the largest waste streams disposed in municipal solid waste landfills
- Capacity to compost food residuals is <10% of what is needed



3

Georgia's Approach to Managing Food Residuals

- In 2007, EPD initiated a public-private partnership to further the diversion of food residuals from landfills

4

Georgia's Approach to Managing Food Residuals

- Industry felt SW Rules hindered expansion of compost industry
- SW rules lacked flexibility in the permit structure to address emerging composting technologies in the marketplace and to set requirements based on materials processed
  - Definitions outdated or nonexistent
  - Permitting hindered at local level by terms such as "waste"
  - Permitting requirements addressed a limited number of feedstocks
  - Lack of clarity about exempt facilities
  - Level of detail needed in plans not clearly stated
  - Same siting, design and operating criteria applied to all facilities
  - No flexibility to permit facilities based on feedstock or type of system; need tiered permit structure

5

Stakeholder Process (3 Months)

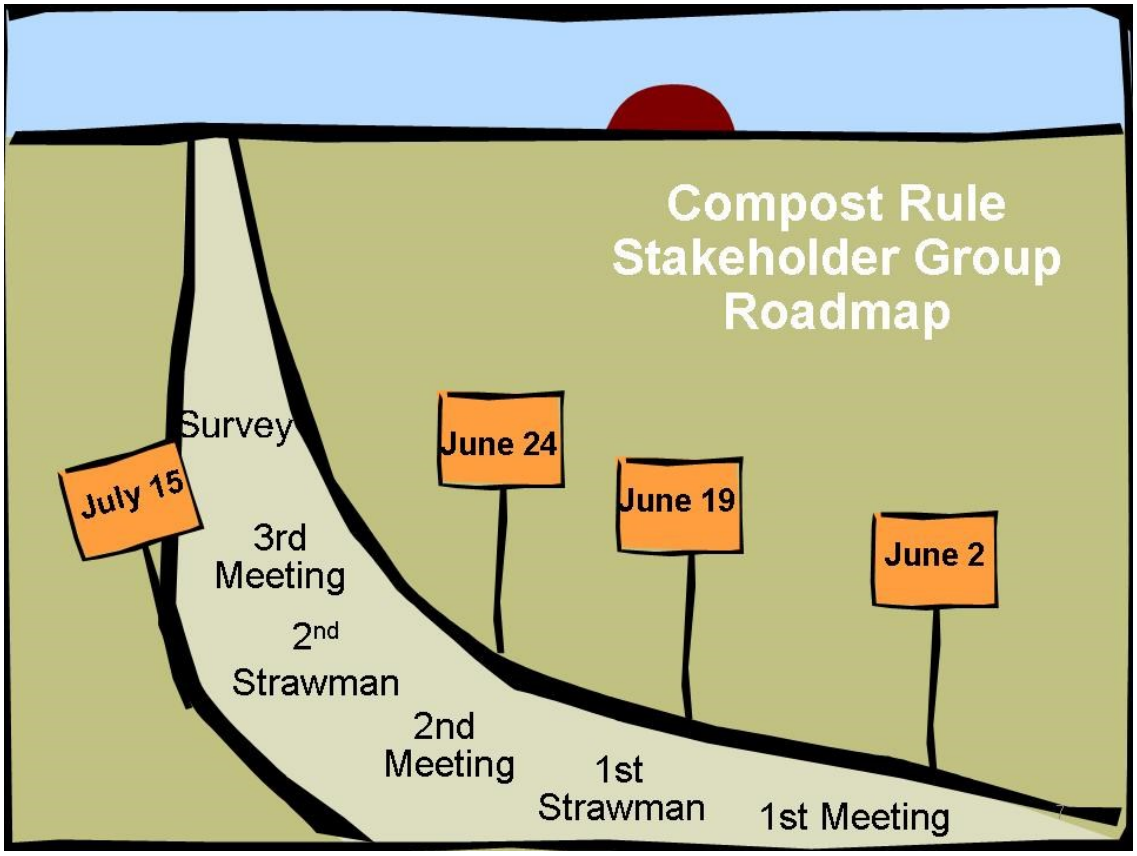
Third Party Facilitator

Representatives from:

- Trade Associations
- Government Agencies
- Industry/Facility Operators
- USCC
- Generators/End-Users
- Research/University

Role is to advise EPD

6


Compost Rule
Stakeholder Group
Roadmap
Survey
July 15
3rd
Meeting
2nd
Strawman
2nd
Meeting
June 24
June 19
June 2
1st
Strawman
1st Meeting


COMPOSTABLES
MAR 3 2004

8

9

10

11

Proposed Amendments

- Proposed amendments address the barriers identified during the stakeholder process
- Adds and amends definitions, including:
  - **Food residuals**
  - **Agricultural residuals**
- Adds new section for exemptions
- Creates four feedstock categories
- Adds process to make a determination about feedstock that is not otherwise classified

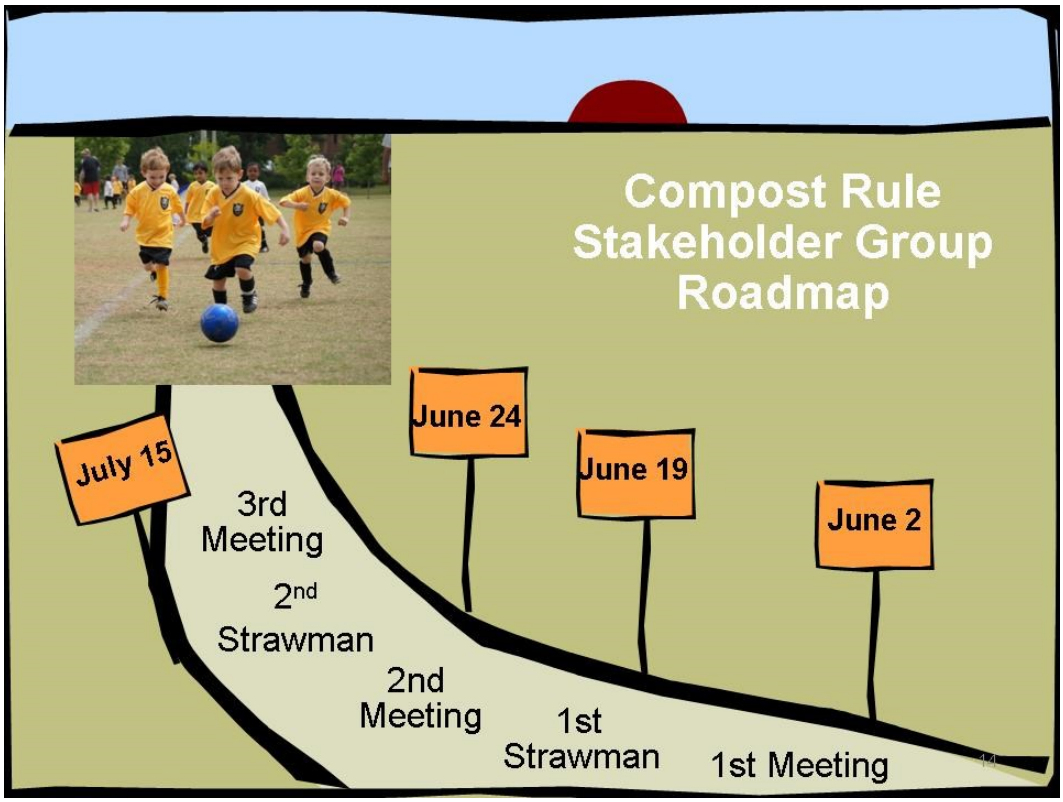
Category D Feedstocks

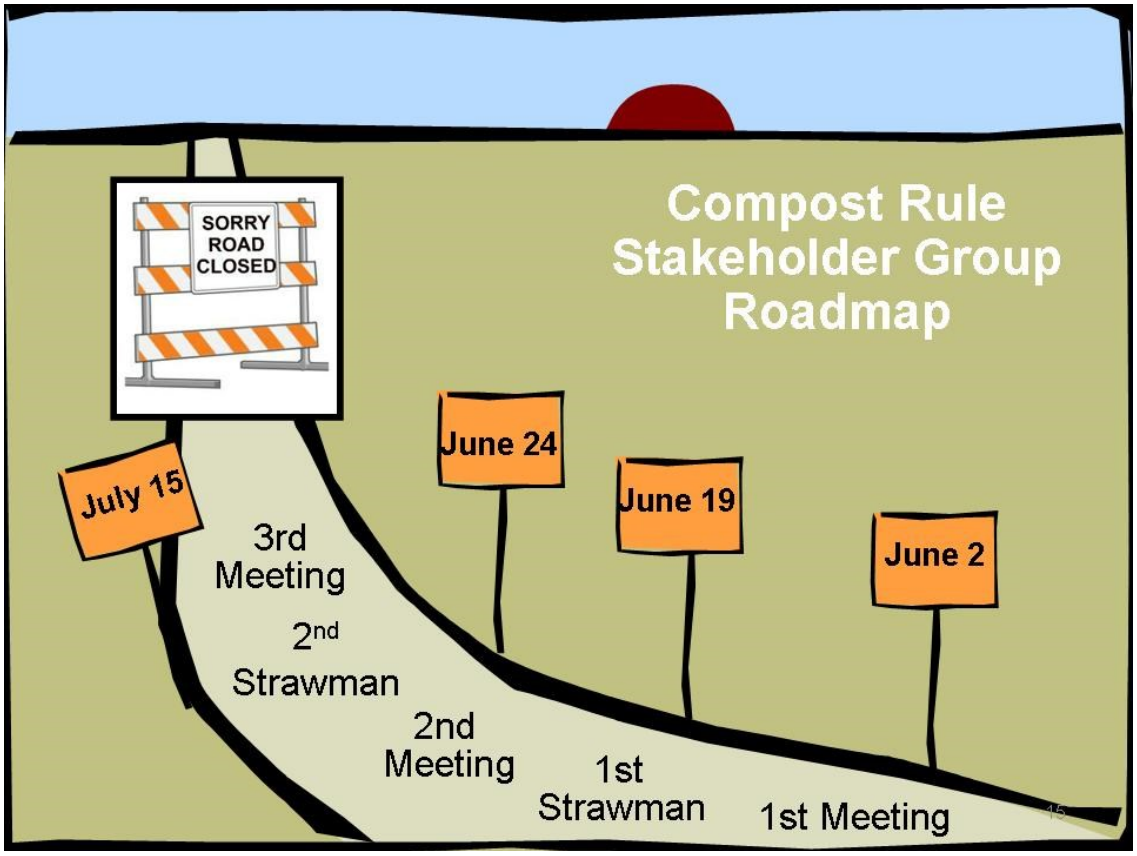
12

Summary of Proposed Changes

- Adds a tiered permit structure based on feedstock categories
  - § Classes are based on knowledge of material flow, current permitted facilities, and increased risk of human pathogens
  - § Find right balance (descriptive vs. prescriptive)
- Adds specific design and operating requirements for each tier
- Includes requirements for permit-by-rule
- Clarifies requirements for various technologies and systems
- Adds new section for testing requirements based on feedstock and tier

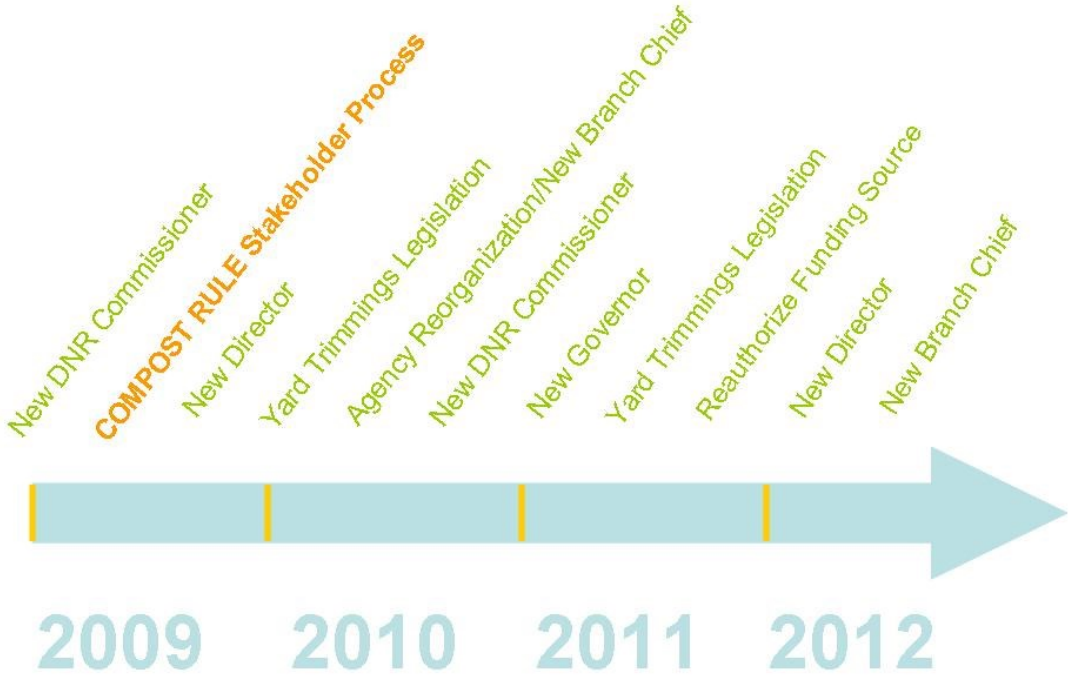
13




Compost Rule
Stakeholder Group
Roadmap
SORRY
ROAD
CLOSED
July 15
June 24
June 19
June 2
3rd
Meeting
2nd
Strawman
2nd
Meeting
1st
Strawman
1st Meeting
15


New DNR Commissioner
COMPOST RULE Stakeholder Process
New Director
2009
2010
2011
2012

16


New DNR Commissioner
COMPOST RULE Stakeholder Process
New Director
Yard Trimmings Legislation
Agency Reorganization/New Branch Chief
New DNR Commissioner
New Governor
Yard Trimmings Legislation
Reauthorize Funding Source
New Director
New Branch Chief
2009
2010
2011
2012

17

States Revising Rules*

Alabama	Minnesota	South Carolina
California	Nebraska	Tennessee
Florida	*New Jersey*	Virginia
Georgia	*North Carolina*	Vermont
Kentucky	New York	Washington
Maine	*Ohio*	Wisconsin
Massachusetts	*Oregon*	
Michigan	*Pennsylvania*	

Based on informal survey conducted in October 2010. States in italics were known to be revising their rules in 2009; however, no response from the state had been received when the list was compiled.

Part 503 Rule

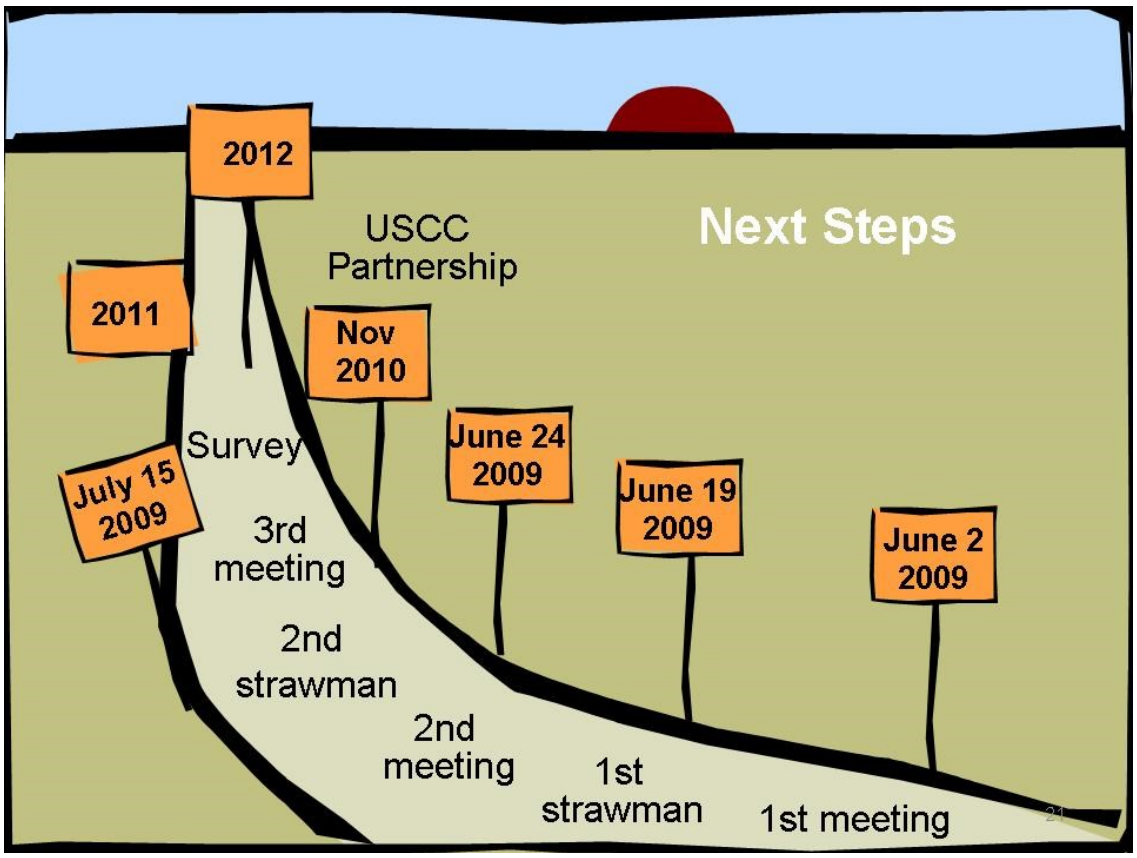
Metal Concentrations (ppm)	
Arsenic	41
Cadmium	39
Chromium*	1,200
Copper	1,500
Lead	300
Mercury	17
Molybdenum*	18
Nickel	420
Selenium*	100 (36)
Zinc	2,800

*Rule amended: removed Mo (1994); removed Chromium, relaxed Se (1995)

Not Following 503
Arkansas
Florida
Illinois
Minnesota
New York
Tennessee
Rhode Island
Virginia
Washington

Following 503
Colorado
Louisiana

Following 503 ver. 1993
California
Iowa
Maryland
North Carolina



USCC/EPD Partnership

- Ensure Georgia's proposed rule changes are science-based, while verifying similar rules have been effective
- Share information and research
- Simplify and expedite the rule revision process
- Process
  - Surveys
  - In-depth interviews
- Deliverables

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Research Shows…

- **The majority of stakeholders interviewed supported:**
  - Tiered approach with more stringent requirements for higher risk facilities
  - Different requirements for in-vessel operations
  - Conditional exemptions
  - More stringent requirements for facilities handling biosolids
  - Case-by-case analysis for groundwater monitoring based on a number of criteria
  - Groundwater monitoring decreasing over time once history of compliance has been established
  - No set time limit on storage of finished product
  - Using USCC STA protocols for testing

Timeline and Progress To Date

- Project officially kicked off in February 2012
- Task Force members represent different regions, technologies, and regulatory structures
  - Regulatory agency personnel
  - Private operators
- Task Force members provide feedback during monthly webinars
  - § Find right balance (descriptive vs. prescriptive)
  - Iterative process
- Draft template is scheduled for for review by Task Force in August 2012

Structure of Template

- **Definitions**
- **Exemptions**
- **Feedstock categories**
- **Three tiers based on feedstock categories**
- **Testing requirements**

Feedstock Categories

- **Type 1** feedstocks include source-separated yard and garden residuals, nonpainted, nontreated wood wastes, agricultural crop residues, and other materials the department determines pose a low level of risk from hazardous substances, physical contaminants and human pathogens.
- **Type 2** feedstocks include vegetative food wastes, meat and source-separated mixed food waste, department-approved industrially produced vegetative food waste, and other industrially-produced food processing materials, and manufactured organic materials such as waxed-corrugated, noncoated paper and compostable products that the department determines pose a low level of risk from hazardous substances and a higher level of risk from physical contaminants and human pathogens compared to Type 1 feedstocks.
- **Type 3** feedstocks include MSW, biosolids, and industrially-produced by-products not covered in Type 2. They also include other materials the department determines pose a low level of risk from hazardous substances and a higher level of risk from physical contaminants and human pathogens compared to Type 1, 2 feedstocks.
- To be categorized later: Manure and bedding and mortalities

Placeholder Tiers

Tier 1: Facilities that process Type 1 feedstock only

Tier 2: Facilities that process Type 1 and 2 feedstocks

Tier 3: Facilities that process Type 1, 2 and 3 feedstocks

Example of Tier 1 Operating Standards (Draft)

- Operation and management of composting facilities shall be under the supervision and control of an individual properly trained in the operation of such facilities at all times during normal operating hours.
  - Will define trained as "must receive training or have documentation of training within the first year of operation and have a certificate of completion of training. Appropriate training includes training courses such as … or as approved by jurisdictional health department."
  - Not intended to be 24/7
- Require a sign at the entrance of the facility that lists:
  - Permit number
  - Feedstocks accepted and materials prohibited
  - Hours of operation
  - Emergency contact information

Tier 1 Operating Standards

- Compost processing times and temperatures shall be sufficient to reduce pathogens, and produce satisfactory compost, essentially free of both odors and unstable organic matter, for the market intended in accordance with the approved site operating plan
  - Define "pathogen reduction"
    - Specifically reference PRFP time/temperature
    - Provide options
    - Do not have specific parameters
  - Underlined words are open to subjectivity
- Prescriptive vs. Descriptive
  - A site operating plan shall be completed and available for review
    - Define intent and allow operator to define how they meet intent
  - The composting area should have run-on and run-off control and slope of "x" percent

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Differentiating Requirements in Tiers 2 and 3

- **Pad or protective surface requirements, e.g., under all areas proposed for composting and curing**
- Siting (e.g., prescribed buffer distances)
- Feedstock management
- Leachate management
- Storm water management
- **Groundwater monitoring**
- Maximum windrow size and spacing matches requirements of available equipment

30

www.gaepd.org

Presentations and Primers

- Composting 101
- Biobased Packaging 101
- Organics and Climate Change

Guidance Documents

Tools/Resources

- Recovered Materials Advisory Notice (Summary)
- Calculators

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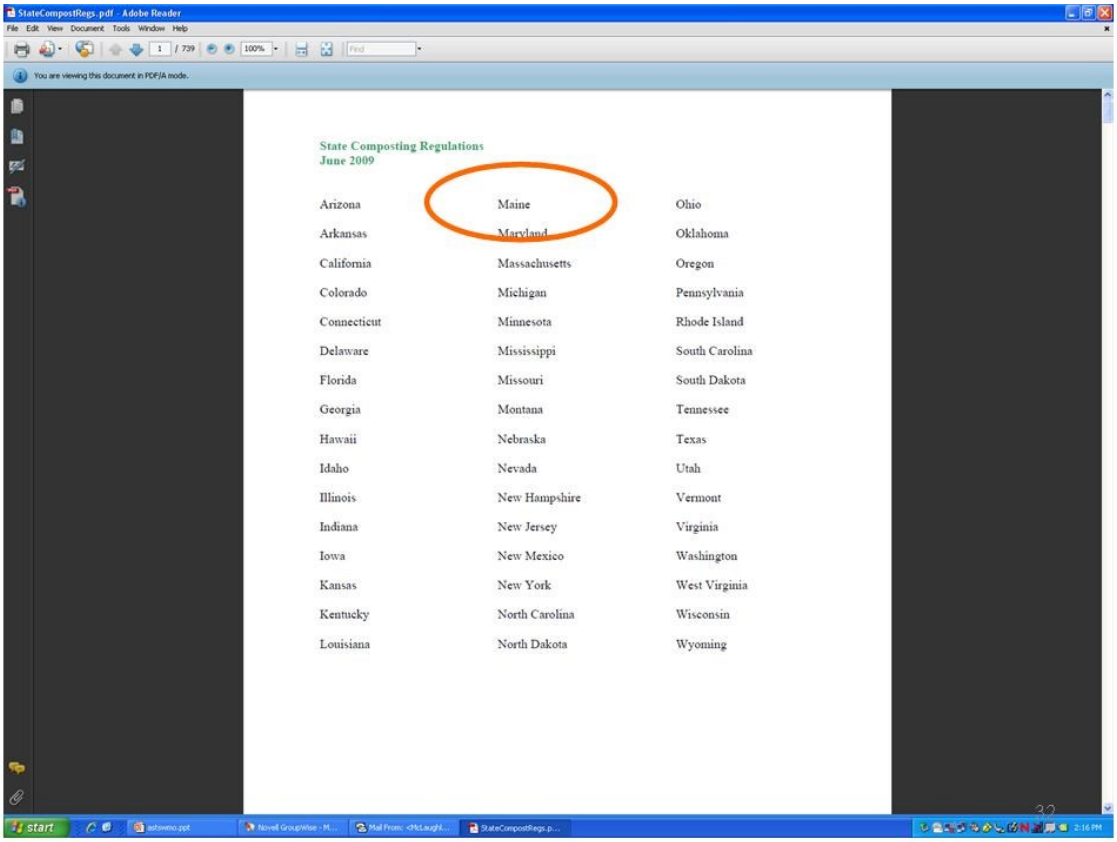

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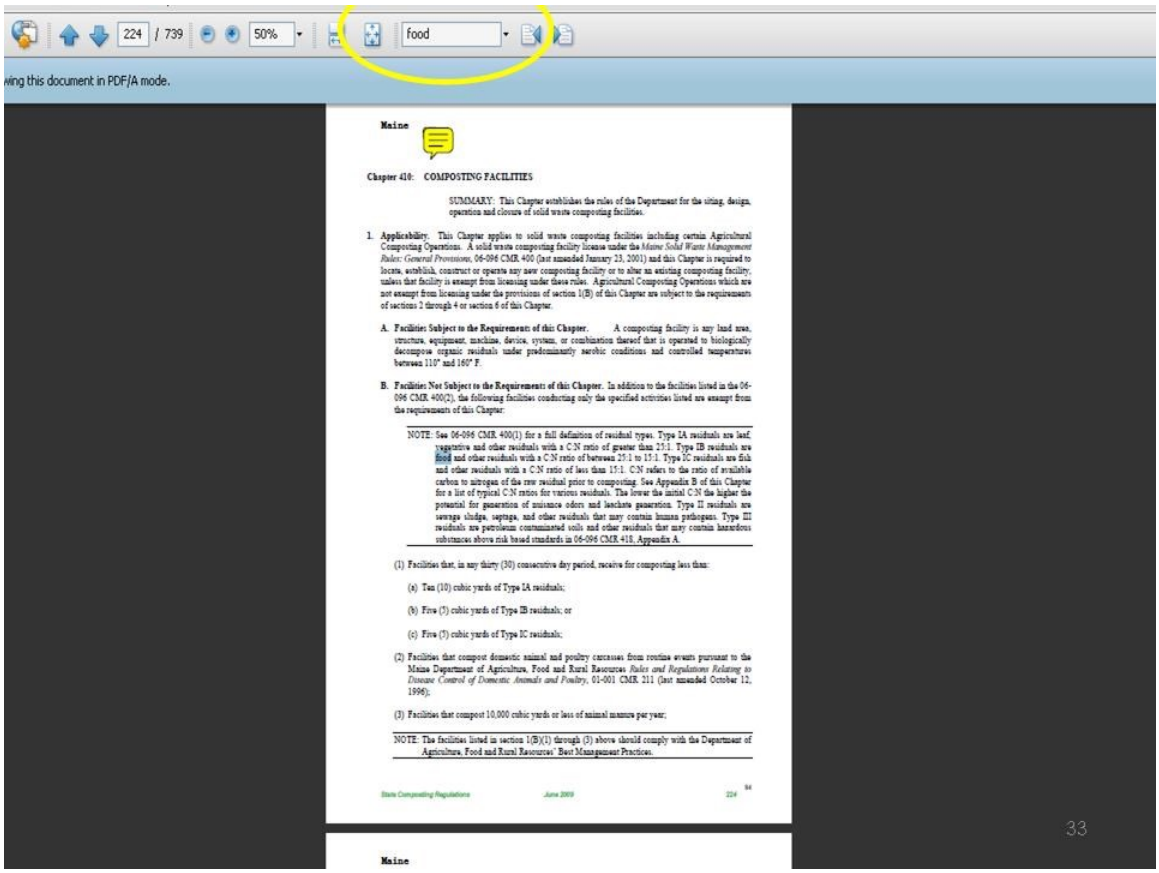
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Maine
Chapter 410: COMPOSTING FACILITIES
SUMMARY: This Chapter establishes the rules of the Department for the siting, design, operation and closure of solid waste composting facilities.
1. Applicability. This Chapter applies to solid waste composting facilities including certain Agricultural Composting Operations. A solid waste composting facility license under the Maine Solid Waste Management Rules: General Provisions, 06-096 CMR 400 (last amended January 23, 2001) and this Chapter is required to locate, establish, construct or operate any new composting facility or to alter an existing composting facility, unless that facility is exempt from licensing under these rules. Agricultural Composting Operations which are not exempt from licensing under the provisions of section 1(B) of this Chapter are subject to the requirements of sections 2 through 4 or section 6 of this Chapter.
A. Facilities Subject to the Requirements of this Chapter. A composting facility is any land use, structure, equipment, machine, device, system, or combination thereof that is operated to biologically decompose organic residuals under predominantly aerobic conditions and controlled temperatures between 110° and 160° F.
B. Facilities Not Subject to the Requirements of this Chapter. In addition to the facilities listed in the 06-096 CMR 400(2), the following facilities conducting only the specified activities listed are exempt from the requirements of this Chapter.
NOTE: See 06-096 CMR 400(1) for a full definition of residual types. Type IA residuals are leaf, vegetative and other residuals with a C:N ratio of greater than 25:1. Type IB residuals are food and other residuals with a C:N ratio of between 25:1 to 15:1. Type IC residuals are fish and other residuals with a C:N ratio of less than 15:1. C:N refers to the ratio of available carbon to nitrogen of the raw residual prior to composting. See Appendix B of this Chapter for a list of typical C:N ratios for various residuals. The lower the initial C:N the higher the potential for generation of nuisance odors and leachate generation. Type II residuals are sewage sludge, septage, and other residuals that may contain human pathogens. Type III residuals are petroleum contaminated soils and other residuals that may contain hazardous substances above risk based standards in 06-096 CMR 418, Appendix A.
(1) Facilities that, in any thirty (30) consecutive day period, receive for composting less than:
(a) Ten (10) cubic yards of Type IA residuals;
(b) Five (5) cubic yards of Type IB residuals; or
(c) Five (5) cubic yards of Type IC residuals;
(2) Facilities that compost domestic animal and poultry carcasses from routine events pursuant to the Maine Department of Agriculture, Food and Rural Resources Rules and Regulations Relating to Disease Control of Domestic Animals and Poultry, 01-001 CMR 211 (last amended October 12, 1996);
(3) Facilities that compost 10,000 cubic yards or less of animal manure per year;
NOTE: The facilities listed in section 1(B)(1) through (3) above should comply with the Department of Agriculture, Food and Rural Resources' Best Management Practices.
State Composting Regulations June 2009 224
Maine
33

For more information

Stephanie Busch
stephanie.busch@gaepd.org
www.gaepd.org
www.gaepd.org/Documents/fwd.html

State Listserv:
compost_gov-subscribe@lists.epa.gov

North Carolina
Water Quality Permitting for Composters
July 11, 2012 conference call

Your mission: The Maryland Composting Workgroup is charged to recommend statute, rule, or policy revisions to encourage the development of composting.

My mission today: Provide an overview of North Carolina's experiences in revising our water quality permitting program for the composting industry.

Remaining slides:

- What are we NOT talking about?
- What's the potential water quality problem?
- Our public process: COSAG
- Technical and regulatory principles.
- Outcomes.

Maryland Conference Call, July 2012

What are we NOT talking about?

- Mulch-only sites
- Storm debris-only sites
- On-farm composting
- Animal mortality composting
- Back-yard composting
- Retail outlets for compost
- DOT use of compost on cut and fill slopes
- Home owner use of compost
- Small Type 1 yard waste facilities (2 acres, 6000cy/q)

SWANA, April 2011

What's the potential water quality problem?

Selected pollutant concentrations in site runoff from various composting sites:

Pollutant measure	Reported range for compost sites	Raw sewage range	Stormwater permit benchmark
COD	98 - 4400 mg/L	110 – 400 mg/L	120 mg/L
TSS	2 – 5000 mg/L	100 – 350 mg/L	100 mg/L
Fecal coliform bacteria	200-24,000,000 Count/100 ml	1,000,000 - 10,000,000	1000 Count/100 ml
Ammonia	0.1 – 1600 mg/L	12 – 50 mg/L	5.6/7.2 mg/L (Trout/non-trout)
Phosphorus	0.7 – 250 mg/L	4 – 15 mg/L	2 mg/L

North Carolina Composting Council, On-Farm Composting, October 2010
SWANA, April 2011

Our public process: The COSAG
December 2009 – September 2010

- Session Law 2009-322, signed by Gov. Perdue 7/2009.
- A steering committee self-formed to assist NCDENR.
- Steering committee interviewed COSAG members for an understanding of the issues, and desired endpoints.
- Steering committee hired a paid facilitator to manage the process.
- Eight public COSAG meetings; probably twice that many steering committee meetings; several Monitoring committee meetings. 20 to 30 attendees at every COSAG meeting.
- The COSAG input to DENR took the form of 20 proposals as to the implementation of revised water quality permitting procedures. **Unanimous approval** of the proposals was obtained in the working meetings.
- DENR's vote was in every case part of the unanimous consent.

SWANA, April 2011

Technical and regulatory principles

- Try to revise our water quality program without new law or rules.
- Stormwater vs. wastewater: NPDES federal definitions.
- Acknowledge that existing facilities may have difficulties in compliance that new facilities will not.
- Municipal operations vs. private sector operations. Yard waste facilities vs. other types of composters.
- Consider the financial impact on selected subsets of the industry.
-

Maryland Conference Call, July 2012

Outcomes

- Unclear if we have accomplished revisions to the water quality permitting of composters without new legislation.
- As recommended by the COSAG, a new combined wastewater and stormwater permit is available.
- As recommended by the COSAG, our program allows existing facilities an extended time for compliance, but requires new facilities to be compliant on day one.
- As recommended by the COSAG, DWQ has changed our implementation of state regulations on non-discharge systems at compost facilities.
- As recommended by the COSAG, ~120 small Type 1 yard waste facilities are excused from DWQ regulation for the first permit cycle, and perhaps beyond.
- Permit applications are rolling in, more or less in accordance with the publicized due date of July 1, 2012.

Maryland Conference Call, July 2012

Who can help me?

- Contact DWQ Stormwater Permitting Unit in Raleigh. ***(Ken Pickle: ken.pickle@ncdenr.gov, (919) 807-6376)***
- Contact DWM Solid Waste Composting and Land Application Branch in Raleigh. ***(Michael Scott: michael.scott@ncdenr.gov, (919) 508-8508)***
- Check the DWQ and DWM websites.
- Check the COSAG website at:

  http://portal.ncdenr.org/web/mw/sw/stakeholder

END

SWANA, April 2011

DWQ Report #3 to the Compost Operation Stakeholder Advisory Group

Compost runoff characterization data
February 17, 2010

Mecklenburg Co. Compost Central (Type 1 feedstock)
DWQ stormwater permit #NCS000382
DMR Data 2002, 2003, 2007, 2008, 2009

	2002 (outfalls 01, 02)	2003 (outfalls 01, 02)	2007[1] (outfall 01)	2008[1] (outfall 02)	2008 (outfalls 01, 02)	2009 (outfalls 01, 02)	Raw sewage range*
Biological Oxygen Demand, BOD (mg/L)	14.3, 50.8	22.3, 31.4	28	3.6	19, 32	130, 90	110-400
Chemical Oxygen Demand, COD (mg/L)	486, 244	842, 247	270	98	700, 310	480, 290	250-1000
Fecal coliform, (#/100 ml)		44,000, 43,000	170,000	1600	300,000, 74,000	93,000 5,900	1,000,000–10,000,000
Ammonia, (mg/L)	0.61, 0.10	0.42, 0.77	0.46	<0.10	0.34, 0.14	0.012, 0.12	12-50
TKN (mg/L)	15, 5.3	19, 5.8	5.9	2.0	8.2, 6.6	7.0, 3.3	
Nitrate+Nitrite (mg/L)	0.14, 0.59	0.24, 0.25	0.15	0.16	0.48, 7.0	<0.05, <0.05	
Phosphorus (mg/L)	3.61, 1.76	10.4, 1.95	2.5	0.11	3.6, 1.7	4.2, 2.8	4-15
pH (SU)			-	6.38	6.5 (02)	6.75 (02)	
Oil &Grease (mg/L)			14	<5.0	6.6, 6.3	<6.0	
Total Suspended Solids, TSS (mg/L)			49	2.6	290, 110	89, 23	100-350

* Wastewater Engineering, Third Edition, Metcalf and Eddy, 1991, p.109-110.

1 Drought conditions in late 2007 prevented the collection of a sample from outfall #02. Compost Central successfully collected a sample in early 2008, for the year 2007, from outfall #02.

Brooks Farm Composting Facility (Type 3)
DWQ stormwater permit #NCS000371
Permit Application, DMR Data, and DWQ sampling data

	1998[1], 1999	2000	2001[2] (two events)	2003[3], 2004	2005 (DWQ sample)	Raw sewage range*
Biological Oxygen Demand, BOD (mg/L)	160, 130	250	<11, <14	482, 122	168	110-400
Chemical Oxygen Demand, COD (mg/L)	1220, 1600	1360	3130, 372	4040, 1960	3065	250-1000
Fecal coliform, (#/100 ml)	>600,000 13x10e6	>1600	164,000, 6500	82,000, 206,000	54,864	1,000,000 – 10,000,000
Ammonia, (mg/L)	- 104	91.3	69, 15	11.3, 96.5	102.4	12-50
TKN (mg/L)	156, 87.1	119	157, 29.2	175, 158	198	
Nitrate+Nitrite (mg/L)	124, 91.5	14.9	32.8, 21.4	17.3, 15.8	47	
Phosphorus (mg/L)	1.19, 1.75	0.96	1.5, 0.7	3.5, 1.1	4.4	4-15
pH (SU)	7.6, 7.6	7.9	7.7, 7.1	7.6, 7.62	7.63	
Oil &Grease (mg/L)	<5.0 -					
Total Suspended Solids, TSS (mg/L)	57 -		28, 114	518, 204		100-350

* Wastewater Engineering, Third Edition, Metcalf and Eddy, 1991, p.109-110.

1 This 1998 data was submitted with the initial permit application. Samples were received at the laboratory at 13 degrees C, instead of required 6 degrees C; consultant directed the lab to complete the analyses, and the applicant submitted the data.

2 Drought conditions in the next year, 2002, prevented collection of discharge samples.

3 A second sampling event in 2003 is not reported in this data set because the consultant reported that he sampled from a ditch on site, rather than from a discharging flow.

Wallace Farm Composting Facility (Type 3)
DWQ stormwater permit #NCS000525
DMR Data

	Dec 2008	June 2009	Raw sewage range*
Biological Oxygen Demand, BOD (mg/L)	5	7.1	110-400
Chemical Oxygen Demand, COD (mg/L)	153	101	250-1000
Fecal coliform, (#/100 ml)	2200	6000	1,000,000 – 10,000,000
Ammonia, (mg/L)			12-50
TKN (mg/L)	4.9		
Nitrate+Nitrite (mg/L)	0.98		
Phosphorus (mg/L)	1.1	0.59	4-15
pH (SU)	7.8	6.7	
Oil &Grease (mg/L)			
Total Suspended Solids, TSS (mg/L)	400	510	100-350

* Wastewater Engineering, Third Edition, Metcalf and Eddy, 1991, p.109-110.

Clean Washington Center study data[1]
Published January 2000

	'Yard debris'[2] contact runoff[3] range	Raw sewage range*
BOD (mg/L)	390 – 32,000	110-400
COD (mg/L)		250-1000
Fecal coliform, (#/100 ml)	110 – 4,900,000	1,000,000 – 10,000,000
Ammonia, (mg/L)	23 - 1600	12-50
TKN (mg/L)	85 - 2600	
Nitrate+Nitrite (mg/L)		
Phosphorus (mg/L)	10 - 170	4-15
pH (SU)		
Oil &Grease (mg/L)		
TSS (mg/L)	2000 – 20,000	100-350
Copper (mg/L)	0.07 – 0.8	
Potassium (mg/L)	170 - 4500	
Zinc (mg/L)	0.1 – 1.5	

* Wastewater Engineering, Third Edition, Metcalf and Eddy, 1991, p.109-110.

1 Compost Facility Requirements Guideline, British Columbia Ministry of Water, Land and Air Protection, March 2004, p. 6-2. This guideline was produced to assist composters in complying with the British Columbia Organic Matter Recycling Regulation, 2002. British Columbia cites the earlier work by the Clean Washington Center, and reproduces their data in this Guideline.

The source documents are, Evaluation of Compost Facility Run off for Beneficial Reuse – Phase 1, and same title - Phase 2, Clean Washington Center, January 2000.

2 The data here is reported as originating from 'yard debris composting ' sites; however it appears that the British Columbia Ministry of Water, Land and Air Protection defines yard debris sites more broadly than we do in North Carolina. The sites are described as: a large yard debris and food waste composter, a yard debris site, a site composting manures and brush, and a zoo manure composting site.

3 In this Guideline British Columbia treats non-contact runoff as stormwater, and all other contact waters as 'leachate'.

Oregon study by CH2M Hill [1]
Published May 2004

	Compost Leachate[2]	Compost Runoff[3]	Compost Stormwater[4]	Raw sewage range*
BOD (mg/L)	>41	20 - 3200	4 – 940	110-400
COD (mg/L)	56			250-1000
Fecal coliform, (#/100 ml)	<0.02 – 50,000	200 – 24,000,000	12 – 400,000 (E. Coli)	1,000,000 – 10,000,000
Ammonia, (mg/L)	0.44 – 34.3	0.43 - 1600		12-50
TKN (mg/L)		14 - 3000		
Nitrate+Nitrite (mg/L)	0.96 – 120	0 - 8		
Phosphorus (mg/L)	0.07 - 9	4 - 170	0.57 – 250	4-15
pH (SU)	7.8	6.7 – 9.5	5.3 – 8.2	
Oil &Grease (mg/L)			ND – 23	
TSS (mg/L)		1100 – 20,000	18 - 5000	100-350
Aluminum (mg/L)	0.33			
Copper (mg/L)		0.033 - 0.82	ND – 0.45	
Iron (mg/L)	0.57			
Lead (mg/L)	0.01		0.02 -0.53	
Potassium (mg/L)	2.7	170 - 4600		
Zinc (mg/L)	0.11	0.1 – 1.5	ND – 2.4	

* Wastewater Engineering, Third Edition, Metcalf and Eddy, 1991, p.109-110.

1 Commercial Composting Water Quality Permit Development, prepared for Oregon DEQ Land Quality and Water Quality Divisions, by CH2M Hill, May 12, 2004.

2 Data reported in this column is combined from Tables 2-2, 2-3, and 2-4 on pages 7-9. Several types of facilities are represented in the data, including facilities receiving yard waste, food waste, and manure.

3 Data reported in this column is combined from Tables 2-5 and 2-6 on pages 11-12 from several types of facilities receiving yard waste, food waste, and manure. Note that in the Oregon study, 'runoff' is a non-specific catch all description of the ultimate disposal of the fluids, not a description of the source of the fluids. Runoff is specifically defined in the study as potentially containing stormwater, process stormwater, leachate, and washwater.

4 Data reported in this column is from Table 2-7 on page 13. This is data from multiple years of sampling at a 'green feedstock' site (yard debris, wood waste, vegetative food waste) in Oregon. We note that the table is labeled "Stormwater Data", but it is not clear from the study whether this data is from what North Carolina would call, 'non-contact' stormwater only, or whether it includes both of the Oregon categories of Stormwater (non-contact) and Process Stormwater (contact). North Carolina currently considers contact flows (Oregon's Process Stormwater) as wastewater.

Interim period water permitting

- DWQ must issue interim permit extensions to: Composters applying for *renewal* of their DWQ permit; *provided that* there have been no significant changes to the DWM permitted quantities, feedstocks, and composting methods. <*Exception for: water quality violations*> No instances so far since July 2009. **Still none.**

- DWQ must establish appropriate permit coverage on a case-by-case basis for: Composters *renewing* DWM permits, but *without any* DWQ water quality permit. DWQ has advised the majority of sites to wait for this process to conclude.

- DWQ must address new water quality permit applications on a case-by-case basis for: Composters applying for the first time to DWM and DWQ. No applications for water permits received so far. **Still none.**

COSAG, December 2009/September 2010; **SWANA, April 2011**

Part I - Overview of SL 2009-322

- Directs NCDENR to revise our water quality permitting procedures for the composting industry.
  - Promised by DWQ and outlined by stakeholder proposals.
  - **A key item is the General Permit, NCG240000.**
- Directs NCDENR to convene this stakeholders group for the specific purpose of providing input and assistance to NCDENR in this task.
  - Done.
  - **COSAG was unanimous on 20 directives to NCDENR.**
- Specifies a schedule for NCDENR to accomplish these main directives, and other detailed directives in the law.
  - On schedule, so far. **Mostly.**

COSAG, December 2009/September 2010; **SWANA, April 2011**

Other Requirements in SL 2009-322

- NCDENR must establish standard stormwater and wastewater treatment and volume reduction practices. DWQ promised. **In Progress. Partial.**
- NCDENR must clarify the distinction between wastewater and stormwater. Done.
- NCDENR must consider scientifically valid information from North Carolina sites and sites in other states. Done.
- NCDENR must establish materials thresholds above which water quality permitting is required. Done for small yard waste facilities.
- NCDENR must consider whether low-risk subsets of the industry are candidates for reduced or expedited permitting procedures. Done; small yard waste facilities; General Permit coverage promised.
- NCDENR must consider the economic impact of regulatory decisions. Done in the COSAG generally; done wrt hydrogeological studies. **Delayed implementation on existing sites until July, 2012.**
- NCDENR must consider the size of an operation, the feedstocks, the composting method, the quantity and quality of discharges, the water quality of the receiving waters, and operating and maintenance requirements for treatment methods. Done specifically for most of the listed considerations; maintenance requirements to be addressed in DWQ treatment measures fact sheets.

COSAG, December 2009/*September 2010;* **SWANA, April 2011**

Remaining NCDENR Deliverables

- Progress Report to the Environmental Review Commission of the NC Legislature. **Not yet requested. Anticipate that the request will come.**
- Summary report of the COSAG process and process outcomes. This will be the 'record document' of our work together. **In progress. Edits due 4/22/2011.**
- DWQ/DWM permitting process flow diagram. **80% partial.**
- DWQ General Permit for stormwater and wastewater discharges. **Out for comments now. Anticipated available by July 1, 2011.**
- DWQ – APS Director's Policy on the additional flexibility for land application without a hydrogeological study. **DWQ committed. In progress.**
- DWQ water quality treatment BMP fact sheets for ready reference by composters and consultants. Similarly for volume control measures. **80% partial.**
- Jan 1, 2011 and Jan 1, 2012 notification letters to DWM and DWQ composting permittees on the requirement to submit water quality control permit applications by July 1, 2012. **First letter out March 2011.**
- Dissemination to composters that 'finished' compost will be determined by a Solvita, or like determination. **Not yet universally communicated. Contained in the General Permit.**
- NCDENR participation in two continuing committees: a sort of 'Continuity Committee', and a 'Monitoring Data Review Committee.' **Partial.**
- Final revisions to the documents posted on the DWM portal – specifically the DWQ Report #1 and DWQ Report #3, plus any others. **Not yet accomplished.**

COSAG, September 2010; **SWANA, April 2011**

Potential Problems from Process Water at Composting Facilities

- Nitrogen (nitrate/nitrite)
- Total Phosphorus
- Soluble Salts
- Biological Oxygen Demand-(BOD)
  - Amt. of O_2 req'd by bacteria to decompose organic matter in water
- Chemical Oxygen Demand-(COD)
- Total amount of O_2 needed to completely oxidize organics
- Total Suspended Solids-(TSS)
- Pathogens (fecal coliform & salmonella)
- Heavy Metals (Cu, Pb & Zn)
- Oils and Grease
- pH

COSAG slide from NC Chapter US Composting Council; SWANA, April 2011

Part V – COSAG Work Products – page 1 of 6

- The early first product was the unanimous agreement in principle to revise the water quality permitting program via administrative, i.e. staff, actions rather than via new rules or new legislation, *if at all possible*.
- Twenty 'proposals' that received unanimous approval in the final wording form. I've grouped them in the slides that follow by related and similar ideas.
- Remember, according to the Session Law, the intent of the stakeholder group, COSAG, was to provide input to NCDENR as to how we should implement our revised water quality permitting program.

SWANA, April 2011

Part V – COSAG Work Products – page 2 of 6

- Permit application timing recommendations to NCDENR
  - *Proposal #1*: **New facilities** should apply for DWQ and DWM permits essentially concurrently.
  - *Proposal #2*: **Existing composting facilities** should apply for the appropriate DWQ permit not later than July 2012, regardless of the status of DWM permit renewal.
- General Permit coverage recommendations to NCDENR
  - *Proposals #12 and #12a*: Small yard waste facilities should be excused from permitting, except on a substantiated complaint basis.
  - *Proposals #10 and #18*: Large yard waste facilities, Type 2 facilities, and small Type 3 facilities should be eligible for coverage under the General Permit.
- Individual permit coverage recommendations to NCDENR
  - *Proposal #9*: Large Type 3 (manures) and Type 4 (sludges) and the DWQ Residuals Distribution facilities (WWTP sludges) should be required to obtain individual permits.

SWANA, April 2011

Part V – COSAG Work Products – page 3 of 6

- Clarifications on permit coverage recommendations
  - *Proposal #11*: Clarification: Small Type 2 and small Type 3 facilities may already qualify, and should be eligible for the No Exposure Exclusion from Permitting. Many are fully enclosed.
  - *Proposal #19*: Clarification: Small Type 2 and small Type 3 facilities *without any discharges at all* should not be subject the federal NPDES permitting program, neither as to any requirement to have a permit, nor as to apply for the No Exposure Exclusion from Permitting.

Part V – COSAG Work Products - page 4 of 6

- Monitoring recommendations to NCDENR
  - *Proposal #13*: Clarification: Small yard waste facilities should be excused from monitoring, as a consequence of being excused from permitting.
  - *Proposal #8*: Stormwater monitoring recommendations
    - Quarterly monitoring is the base-line recommendation. DWQ should implement a step-down provision to reduce the monitoring frequency upon four consecutive sample results within the stormwater benchmarks.
    - Parameters: TSS, COD, fecal coliform, TN, TP, Cu, Pb, Zn, pH, total rainfall.
    - DWQ should revise the toxic metals benchmarks when they become available from the current Triennial Review process with EPA.
    - DWQ will collect and analyze data periodically and should share the data with the COSAG Monitoring Committee in its continuation form.

Part V – COSAG Work Products – page 5 of 6

- Key regulatory interpretations and definitions recommendations
  - *Proposal #5a*: DWQ should interpret existing rules to allow the land disposal of process wastewater under the less stringent residuals disposal rules. Also, *although only alluded to in Proposals #5a and #16*, DWQ and DWM should formalize an inter-agency agreement to allow on-site disposal of process wastewater under only the DWM permit.
  - *Proposal #6:* DWM and DWQ should define a new term, 'finished compost', to allow the discharges from that material to be permitted as a stormwater instead of as a wastewater. This relaxation to be based on continuing reduced potential to pollute.
  - *Proposal #7:* DWQ should adopt the following nomenclature for waters generated at a compost site:
    - a '**stormwater discharge**' is water that has not contacted materials while they are in process, or that has contacted finished product only;
    - a '**process wastewater discharge**' is water that has contacted materials in the process;
    - waters that do not leave the site are '**process waters**', provided there is no groundwater impact.

SWANA, April 2011

Part V – COSAG Work Products – page 6 of 6

- Other recommendations to NCDENR
  - *Proposal #3:* NCDENR should prepare flow charts of the permitting process.
  - *Proposal #4:* Clarification: DWQ should clarify that wastewaters may be discharged to a POTW, or treated on site before discharge to surface waters.
  - *Proposal #14:* DWQ should develop a list of 'approved' BMPs for treatment.
  - *Proposal #15:* DWQ should develop recommendations for volume reduction practices.
  - *Proposal #16:* DWQ and DWM should clarify that enforcement for unpermitted discharges resulting from a rainfall event in excess of the 25-year, 24-hour storm will be based on whether the facility was designed and operated in accordance with pre-existing DWM and DWQ design requirements as to freeboard, proper operation, and design basis. This is consistent with current NCDENR practice.
  - *Proposal #17*: DWM and DWQ should participate in and support an effort led by the NC Chapter of the US Compost Council , SWANA, and others, to pursue certification, or like licensing of compost facility operators.

SWANA, April 2011

Part VI – The General Permit

- Out for public comment now. Public comment period ends May 18, 2011. Your organization has commented on it.
- Remember, the General Permit is available to Large Type 1 yard waste facilities, Type 2 facilities, and small Type 3 facilities.
- Existing facilities must apply by July 2012.
- This permit is for surface water discharges only. Not spray fields, not pump and haul.
- You must control pollutants below two trigger values called 'benchmarks' for stormwater discharges, and called 'permit limits' for wastewater discharges.
- You must have a written site stormwater management plan.
- You must report your sampling results to DWQ.

Part VII – Questions and contacts

?

Composting in Virginia

Overview of Virginia Solid Waste Management Regulations pertaining to Compost activities

Kathryn Perszyk, Solid Waste Permit Coordinator
Virginia Department of Environmental Quality

VA Statute & Regulations

- Code of Virginia
  - Waste Management Act, 10.1-1400
- Virginia Administrative Code
  - Solid Waste Management Regulations, 9 VAC 20-81
    - Definitions, Section 10
    - Exclusions/Exemptions, Section 95
    - Exempt Yard Waste Compost Facilities, Section 397
    - Solid Waste Compost Facilities, Sections 310-360
      - Permit Submission Requirements, Section 410.A.
  - Sewage Collection & Treatment Regulations, 9 VAC 25-790
    - (Design of) Compost Facilities, Section 570
    - Proposed Amendment to Biosolids Regulations

VSWMR Definitions

- **Composting** - manipulation of the natural process of decomposition of organic materials to increase the rate of decomposition.
- Feedstocks
  - **Category I** – plant or plant-derived pre-consumer materials
  - **Category II** – animal-derived waste
  - **Category III** – animal and post-consumer food wastes with pathogen potential
  - **Category IV** - other
- **Vermicomposting** - the controlled and managed process by which live worms convert organic residues into fertile excrement.

VSWMR Definitions cont.

- **Vegetative waste** – decomposable materials generated by yard and lawn care or land-clearing activities and includes, but is not limited to, leaves, grass trimmings, woody wastes such as shrub and tree prunings, bark, limbs, roots, and stumps.
- **Yard waste** – a subset of vegetative waste and means decomposable waste materials generated by yard and lawn care and includes leaves, grass trimmings, brush, wood chips, and shrub and tree trimmings. Yard waste shall not include roots or stumps that exceed 12 inches in diameter.

VSWMR Exemptions

- Composting sewage sludge at treatment plant of generation w/o addition of other solid wastes
- Composting of household waste at residence of generation
- Composting for educational purposes, no more than 100 cy of material at any time; > 100 cy requires DEQ approval
  - Universities composting dining hall wastes, tie to class
  - Festivals with public education component
  - R&D projects, ex. DOT R&D assessing effectiveness of animal mortality composting

VSWMR Exemptions cont.

- Composting animal carcasses at farm of generation
  - GM 02-2009: On-site composting of routine animal mortality
- Composting veg/yard wastes generated on site where compost generated is used on site
- Composting pre-consumer food waste/kitchen culls generated on site, composted in containers
- Vermicomposting of Cat I, II, III materials in containers; offsite materials > 100 cy requires DEQ approval
- Composting sewage sludge w/ or w/o solid waste when permitted under VPA or VPDES permit

Items to consider

- Broader exemption to allow composting of all on-site generated materials, maybe tied to a qty of waste
  - Restaurants composting all food wastes, not just pre-consumer, in enclosed containers
  - Industries generating organic wastes, such as spent hops from beer production
  - Federal bases composting various on-site wastes
- Consider allowing agricultural operations and/or veg waste composters to compost poultry litter under exemption (poultry are not herbivorous)

VSWMR Exempt Yard Waste Composting

9 VAC 20-81-397

1. Agricultural Operations

- Accepting yard waste generated off-site, provided that:
  - Total time for composting and storage < 18 mo prior to field application or sale
  - Only yard waste is received
  - Total yard waste received < 6,000 cy in any consecutive 12-mo period
  - All applicable local ordinances/standards are satisfied
  - Operation poses no nuisance or potential threat to HHE
  - Owner submits DEQ Form YW-3

2. Agricultural Operations

- Accepting only yard wastes and manures from herbivorous animals generated offsite, provided that:
  - Composting area setbacks
    - 300 ft setback from property boundary
    - 1,000 ft setback from occupied dwelling
    - Cannot be located in designated flood plain
  - Operation has at least 1 ac or ground suitable to receive YW for each 150 cy of finished compost
  - Total time for composting and storage < 18 mo prior to field application or sale
  - Qty of offsite manures is limited to achieve C:N ratio of 25:1 to 40:1; manures incorporated w/in 24 hrs of receipt
  - Owner/Operator submits DEQ Form YW-4
  - Annual reporting if > 6,000 cy of waste received in any consecutive12-mo period, DEQ Form YW-2

3. Owners of Property

- Accepting yard waste generated offsite for purpose of producing compost, provided that:
  - No more than 500 cy of YW received in any consecutive 12-mo period
  - No compensation received for accepting YW
  - All applicable local ordinances/standards are satisfied
  - Operation poses no nuisance or potential threat to HHE

Solid Waste Compost Facilities

Applicability, Siting, Design, Finished Product Testing
Permit submission requirements and fees

Applicability

- Owner/Operators of facilities producing compost from municipal solid waste/refuse or combinations thereof with animal manures
- Cannot use solid waste containing hazardous waste, regulated medical waste, or nonbiodegradable waste
- Types of facilities
  - Type A: enclosed vessel
  - Type B: windrow or aerated static pile method
  - Any compost method w/o prior operational performance in the US will require experimental permit
- Category I or Category II-IV

9 VAC 20-81-310.A.

Siting Requirements

- Adjacent to/have direct access to paved/surfaced roads
- Must be outside areas subject to base floods
- No facility shall be closer than:
  - 50 ft to it's property boundary (100 ft buffer to composting activity);
  - 200 ft to any residence, health care facility, school, recreational park area, or similar public institution
  - 50 ft to any perennial stream or river
  - 50 ft to any wetland (applies to storage of solid waste in piles)
- Sites shall provide adequate room to minimize traffic
- Have area and terrain to allow for proper run-on, run-off, and leachate management
- No Type B facilities in geologically unstable areas or where site topography is heavily dissected

9 VAC 20-81-320

Design Requirements

- Handling area and equipment to segregate and store noncompostable components; covered area for Cat II-IV
- Areas for mixing, composting, curing, screening, and storing shall be graded to prevent run-on, collect run-ff, and provided w/ drainage system; hard surfaced if w/in 2ft of high water table
- Where Cat IV is received, or >1,000 total tons/qtr of Cat II & III, all receiving, mixing, composting, curing, screening, and storing shall have 1 of the following:
  - Asphalt or concrete area draining to wastewater storage, treatment, or disposal facility
  - Asphalt or concrete diked or bermed area for run-on, run-off , leachate control with a sump with either gravity drain or pump system
  - 6" lime stabilized clay/soil w/ $1x10^{-7}$ cm/sec lab permeability can be substituted for asphalt/concrete
  - 12" compacted gravel pad underlain by 60-mil HDPE w/ leachate collection and leak detection

9 VAC 20-81-330.A.

Design Requirements cont.

- Engineering controls must be installed for Cat I and Type B Cat II-IV sites
  - Springs, seeps, and other groundwater intrusions
  - Gas, water, or sewage lines under active areas
  - Electrical transmission lines above/below active areas
- Roads serving the unloading, handling, composting, and storage areas shall be usable under all weather conditions.
- Cat II-IV facilities shall have:
  - auxiliary power, standby equip, or contingency arrangements
  - For uncovered sites, calculations for sizing surface water control features to be based on 1-hr rainfall intensity and 10-yr return period

9 VAC 20-81-330.A.

Finished Product Testing

Applicable to Cat II-IV Facilities

Amt Finished Compost (tons/365 day period)	Frequency*
< 320	1/yr
320 ≤ Amt < 1,653	1/qtr (4/yr)
1,653 ≤ Amt < 16,535	1/60 days (6/yr)
≥ 16,535	1/mo (12/yr)

*After 2 yrs, facility can request a reduced frequency

- Compost stability (1 method only)
  - Temperature decline
  - Reheat potential using Dewar Compost Self-Heating Flask
  - Specific oxygen uptake
  - SolvitaTM Compost Maturity Test
  - Carbon dioxide evolution
- Organism testing, for Cat III & IV facilities (all methods)
  - Parasites, helmith ova
  - Bacteria pathogens, fecal coliform or Salmonella sp. Bacteria

9 VAC 20-81-340.A.

Finished Product Testing cont.

Metals testing for facilities accepting Cat IV feedstocks

Metals	Concentration, mg/kg dry solids
Arsenic	41
Cadmium	21
Copper	1,500
Lead	300
Mercury	17
Molybdenum	54
Nickel	420
Selenium	28
Zinc	2,800

Permitting: Permit-by-Rule

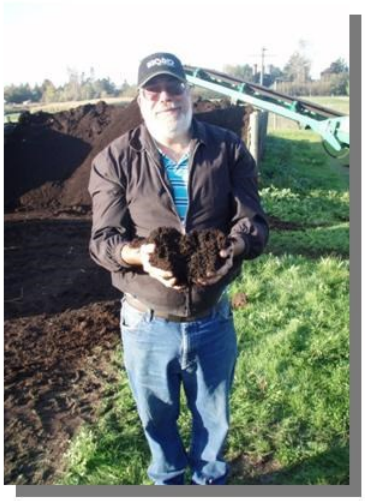
- Notice of Intent
  - Letter w/ site and area maps
  - Disclosure Statement
  - Local Gov't certification
- Certification of siting standards
- Certification of SWMP consistency
- Operations Manual Certificate
- Description of type of facility and feedstocks
- P.E. Certificate for:
  - Design/Construction standards
  - Closure Plan standards
- Demonstration of legal control
- SCC Certification
- Closure cost estimates / proof of FA
- Public participation results
- Permit fee ($390)

9 VAC 20-81-410.A.

Fees

- New Permit & Permit Modification
  - $390, 9 VAC 20-90-120
- Annual operating fees
  - $1,200, but subject to annual adjustments based on the Consumer Price Index, 9 VAC 20-90-115

COMPOSTING TODAY
A whole new ball game



Chery Sullivan

DEPARTMENT OF ECOLOGY
State of Washington

Team Players

- Producers
  - Composters
- Consumers
  - Residential
  - Commercial
- State Government
  - Rules
  - Technical Assistance
- Local Government
  - Policy
  - Rules
  - Implementation
- Universities
  - Research

Compost Rules

- WAC 173-350-220
  - Environmental and human health
  - Consistent regulation
  - Compost quality

Game changers

- Increased pressure for recycling all organic materials
- "Compostable" plastics
- Decreased demand for compost

New game plan - Contamination

Contamination

What we have in rule:

- < 1% weight inerts

What we propose:

- < 1% weight inerts, not to exceed .1% plastic
- Plan to reject loads if there is more than 5% by volume of any type of contamination or plan to keep contaminated loads separate from clean loads

Odors

Odors

What we have in rule:

- Nuisance odor plan

What we propose:

- Nuisance odor documentation and weather monitoring
- Facility maintenance directly related to odor management
- Progressive odor management planning
- Putrescent feedstock management plan

Composted material

Composted material

What we have in rule:

- Meet the standards

What we propose:

- Meet the standards
- Distribute off-site

Conditional Exemptions

Exemptions

What we have:

- 10 exemptions based on feedstock volume, type, and source, processing methods, and distribution of composted material

What we propose:

- Simplify and expand - 4 exemptions based on feedstock volume, and type

Crossing the finish line

- Informal public comment
- CR 102 September 2012
  - Formal proposal
  - Public hearings
  - Public comment
- CR 103 December 2012
  - Rule adoption

Ready, set…

Organics Specialist

Chery Sullivan

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Chery.sullivan@ecy.wa.gov

Solid Waste Rules under development

http://www.ecy.wa.gov/programs/swfa/rules/rule350.html

Appendix D

Summary of Approaches in Other States

In conducting this Study, MDE and the Composting Workgroup considered approaches taken by other states with respect to composting. Regulatory approaches were compared across states, with particular attention to states that had recently or are currently updating their regulations to address food composting.

Regulatory Approaches

MDE examined composting regulations and draft regulations in 17 states that address composting specifically. The states were: Virginia, Pennsylvania, Washington, Oregon, Ohio, Georgia, Massachusetts, New York, California, Iowa, Maine, Minnesota, Delaware, Vermont, Florida, North Carolina, and Wisconsin. In addition, officials from Georgia, Virginia, Washington, North Carolina, Minnesota, and Oregon presented their approaches in more depth to the Workgroup. Finally, the Technical Subgroup considered a limited portion of a draft model permitting regulation written by a task force headed by the U.S. Composting Council. A full draft was not yet available at the time of consideration. Several themes, discussed below, emerged from this research.

Permit Tiers and Exemptions

All states surveyed require a permit or approval from the state environmental agency for some at least some types of compost facilities. However, all states had exemptions from the permit requirement for certain types of "low-risk" facilities such as backyard compost sites, on-site composting of farm waste, and other small operations. And, almost all states also had multiple permit tiers, consisting of a full permit and a lower tier with lesser administrative, design, or operational burdens. These lower tiers were accomplished through a variety of mechanisms, including notifications, registrations, permits-by-rule, conditional exemptions, categorical certifications, "reduced procedures permits," and general permits.

The lower tiers are used to align the level of controls with the environmental risk of the facility. This promotes composting by removing excessive financial barriers from the startup of facilities that pose low or moderate levels of environmental risk. It also clarifies requirements that will apply to various types of facilities.

The two major determinants used to divide facilities among permitting categories were the size of the facility and the types of feedstocks used. Facility size can be measured by the weight or volume of feedstocks accepted per year, the annual throughput of materials, the amount of material on site at a time, or the area of the facility. Often size and feedstock are both used to determine the level of regulation. Oregon has a unique approach; it undertakes a multi-factor preliminary screening process that is facility-specific and determines the permitting track for each facility.

Feedstock Categories

Feedstocks were often grouped into categories by environmental risk. These categories were then subject to different levels of permitting or different siting, design, or operational requirements. The risk level assigned to a given feedstock appears to be based on factors such as level of contamination, pathogens, likelihood of causing odors, moisture content, and nitrogen content. At the lower end of risk is yard trim and natural wood. The higher end of risk consists of mixed municipal solid waste, sewage sludge, fats, oils, greases, and DAF skimmings. Food scraps and manures typically fall somewhere in the middle, with preconsumer and vegetative food scraps considered less risky than postconsumer and meat food scraps.

Design Standards

Design standards are important in preventing water pollution at compost facilities. However, states have considered these controls carefully because they also have the potential to greatly increase the cost of starting a new compost site. Perhaps the biggest issue raised in this area is the type of surface for tipping, storage, and composting areas. Generally, states have again taken a tiered approach to require impervious surfaces only where warranted by the feedstock or volume. Most states require a surface meeting permeability rating of 1×10^{-7} or $^{-6}$ centimeters per second for at least some facilities. However, many reduce this requirement to a suitably sloped surface capable of withstanding expected loads for less risky facilities. Here, the risk may also take into account the soil type or distance from the water table. Additional design requirements include features that collect and contain leachate and divert stormwater runon from the composting areas.

An alternative approach taken by a minority of states is to include performance standards in lieu of detailed or prescriptive requirements. For example, the Massachusetts draft regulations would require full permit applicants to incorporate best management practices, operate in a manner that prevents unpermitted discharges, and not pose a threat to health, safety, or the environment. The applicant would address these items in the application and the state environmental department would evaluate the proposal against the standards. The draft regulations do not include a requirement for any particular surface type. This approach is more flexible and may allow operators to innovate cheaper ways of achieving the same level of protection. Conversely, because exact specifications are not spelled out in the regulations, there may be more uncertainty for those deciding whether to enter the market.

Operational Requirements

Odor control is an issue consistently addressed in the regulations. This is an important regulatory issue if composting is to be promoted because odor complaints and public resistance are top reasons for compost businesses to fail. Odors may also signal underlying management problems that could lead to other environmental risks. Many states require compost facilities to develop, submit to the state, and implement a plan of

operation including measures for preventing and controlling odors. The Oregon regulations outline a process for responding to odor complaints. In Washington, operators must develop an odor plan that includes methods for communicating with neighbors and identifies progressive steps that can be taken if odors are detected off-site. The plan must specifically address how the operator will deal with high-moisture materials or those with a high potential to cause odors. Odor is sometimes also addressed in other operational requirements, such as the requirement that food scraps or other putrescible feedstocks be incorporated into the composting process within 1 day of receipt.

Time and temperature requirements are used to reduce pathogens in the finished compost. Most states adopt the EPA requirements for sewage sludge composting found at 40 C.F.R. Part 503 (App. B). For windrow systems, these require maintaining the materials at 55 degrees C for 15 days, during which the piles are turned 5 times. For aerated static piles and in-vessel composting, the materials must be kept at 55 degrees C for 3 consecutive days. A few states simply require the process to be consistent with BMPs.

Product Specifications

Contamination, including plastic content, of the finished compost was frequently addressed in the regulations. Washington, for example, revised regulations to encourage recycling of a broader range of organic materials, but acknowledged that there may be new risks of contamination associated with larger and more varied streams of feedstocks. In its draft regulations, it would tighten its limit from less than 1% inerts by weight to less than 0.1% plastic and 1% total inerts. Operators would also be required to have a plan for rejecting or separating loads with over 5% contamination by volume. In comparison, MDA requirements currently allow up to 2% (by weight) manmade inerts in the finished compost (for compost that will be marketed). Film plastic may be an issue for incoming yard trim contained in plastic bags and food scraps may have higher levels of plastic, rubber bands, non-compostable service ware, and other physical contaminants.

Most states also require testing of finished compost for metals, pathogens, and stability where the compost will be sold or distributed off site. Sampling frequency is variable, from 1 to 12 times per year depending on the quantity produced.

Water Permitting

The above requirements are typically found within states' solid waste regulations or as a standalone chapter on composting or organics management (which may include other activities such as mulching and anaerobic digestion). States also have water permitting requirements that potentially apply to compost facilities. As discussed above, compost manufacturing may fall within the NPDES permitting requirements for stormwater associated with industrial activity. States may also separately permit discharges of leachate (water that moves through and out of the feedstock or active composting piles) or contact water (rainwater that has contacted raw, in-process, or finished materials).

Generally, these water permits are required in addition to any solid waste or composting facility permit and are not incorporated into a single multi-media permit.

North Carolina and California have taken unique approaches to water permitting of compost facilities. North Carolina recently created a combined NPDES general permit that covers both stormwater and wastewater discharges from compost facilities. Rainwater that contacts finished compost meeting quality requirements is considered stormwater rather than wastewater. Stormwater management requires implementation of BMPs and testing against benchmarks (which are not binding limits, though an exceedence may trigger additional BMPs). Wastewater is subject to effluent limitations (where an exceedence violates the permit). Any required solid waste permits are separate and must be obtained through a different part of the agency.

California's State Water Resources Control Board has authority to issue NPDES permits and state water permits (called Waste Discharge Requirements or WDRs). The NPDES program is similar to other states, with a general permit available for stormwater from industrial sources. The state program, which includes discharges to groundwater, has the ability to issue general WDRs or waivers. A draft general WDR was issued specific to compost facilities. It has several tiers that depend on feedstocks and includes requirements such as an impervious surface, collection of wastewater and reuse in the process, and semiannual sampling of wastewater from detainment ponds.

Non-Regulatory Approaches

MDE and the Composting Workgroup also reviewed some non-regulatory approaches to promoting composting in other states. The Massachusetts Department of Environmental Protection conducted an organics study and developed an Action Plan[1] to meet the State's goal of diverting 35% of food scraps from disposal by 2020.

To address the lack of information on sources and quantities of food scraps, the Plan suggests determining accurate percentages of organics in the waste stream, obtaining sector-specific information on food scrap generation, and developing a baseline and monitoring protocol to charge progress.

To strengthen collection infrastructure and separation by generators, the Plan suggests:

- Developing BMPs for collection programs specific to various sectors (hospitals, supermarkets, etc).
- Providing technical assistance and grants for food collection programs, first at large public generators, and then at large private generators.
- Providing technical assistance for food manufacturers and processors.

To encourage growth in organics hauling services, the Plan suggests:

- Providing financial assistance to haulers to start organics collection services.
- Providing resources to start cooperative collection routes among small generators.

[1] MassDEP Organics Study and Action Plan, May 10, 2012.

- Creating grant programs for municipal residential collection of organics and backyard composting.

To increase processing capacity, the Plan suggests:

- Educating the public on composting and anaerobic digestion, and specifically addressing potential areas of public concern.
- Providing grants and training to encourage composting by municipalities.
- Developing anaerobic digestion facilities on State property.
- Providing low interest loans, pre-permitting consultation, and funding for private development of composting and anaerobic digestion facilities.
- Researching and testing technologies for on-site food scrap management, such as in-vessel composting.

Finally, to encourage use of end products of composting, the Plan suggests working with the State Department of Transportation to increase compost use in highway construction projects. It also suggests encouraging municipal governments to adopt procurement policies favoring compost and holding compost marketing workshops for composters.

In addition to the action items above, Massachusetts and Vermont have both contemplated bans on disposal of compostable organics. While the Massachusetts proposal is still in the planning phase, Vermont has already passed legislation that will require solid waste facilities to separate yard trim and food scraps from solid waste and will ban landfilling of these items.[2] Food residual generators located within 20 miles of a permitted organics management facility will be required to separate food residuals from solid waste and either manage them on site or transfer them for separate management. This requirement will be phased in over time, with larger generators obligated first, so that by 2020 anyone generating food residuals will be subject to the requirement. The landfill bans on yard trim and food scraps will be effective beginning 2016 and 2020, respectively.

[2] Vermont Act 148 of 2012, available at http://www.leg.state.vt.us/docs/2012/Acts/ACT148.pdf

Appendix E

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
MAY 9, 2012 1:30 – 3:30 P.M.

Members in Attendance: Laura Bankey/National Aquarium, Vinnie Bevivino/Chesapeake Compost Works, Warren Bontoyan/Maryland Department of Agriculture (MDA), Craig Coker/Coker Composting and Consulting, Jeremy Criss/Montgomery County Department of Economic Development, Philip Davidson/MDA, Benny Erez/Eco City Farms, Bob Ernst/Harford County Division of Environmental Affairs, Gary Felton/University of Maryland, Justen Garrity/ Veteran Compost, Maclane Gibson/Maryland Environmental Service (MES), Mike Giuranna/EPA Region 3, Pam Kasemeyer/Maryland Delaware Solid Waste Association, Andrew Kays/Northeast Maryland Waste Disposal Authority, Richard Keller/MES, Keith Losoya/Waste Neutral Group, Chaz Miller/National Solid Wastes Management Association, Pat Millner/United States Department of Agriculture, Simone Myrie/Delegate Mizeur's Office, Melissa Pennington/EPA Region 3, Brenda Platt/Institute for Local Self Reliance, Alan Pultyniewicz/Montgomery County Department of Environmental Protection, Thomas Sprehe/KCI Technologies, Inc., Bill Teter/Calvert County Office of Recycling, Evelyn Tomlin/Howard County Bureau of Environmental Services, Mike Toole/Recycled Green Industries, Clyde Trombetti/Baltimore County Department of Public Works, Michael Virga/US Composting Council, Jessica Weiss/Growing Soul, Harold Wiggins/Paterson Environmental Holdings, Hilary Miller/Maryland Department of the Environment (MDE).

Members not in Attendance: Phil Harris/Frederick County Department of Solid Waste Management, Dolores Milmoe/Audubon Naturalist Society, Delegate Heather Mizeur, Charlie Reighart/Baltimore County Department of Public Works, James Wood/MidShore Regional Recycling Program.

Others in Attendance: Andrea Baker/MDE, Gary Borandi/B&B Site Management, John Bronson/Topsoil, ETC, David Brosch/City of University Park, Kristen DeWire/MDE, Jeff Fretwell/MDE, Rose Harrell/Maryland Food Center Authority, Carol Holko/MDA, Kaley Laleker/MDE, Dave Mrgich/MDE, Tom Nasuta/MDE, Dan Negroni/B&B Site Management, Rosewin Sweeney/Venable, Horacio Tablada/MDE.

The Composting Workgroup (hereinafter CWG) convened May 9, 2012 at 1:30 pm at MDE Headquarters.

Horacio Tablada, Director of the Land Management Administration at MDE made introductory remarks to the group. He noted that MDE specifically requested that the

CWG be convened in 2012 so that the Department would have time to more fully devote to the issue. He also mentioned the Howard County food scrap recovery pilot program.

Introductions were then made among workgroup members and the interested parties present.

Hilary Miller provided an overview of the requirements of 2011 House Bill 817, which gave rise to the CWG. First, the bill requires that MDE maintain information regarding composting on its website to promote composting and educate the public. It was noted that the Department's composting website was updated in July 2011. In the future, the Department hopes to update the site again and provide more resources online as a result of the study and workgroup discussions. The bill also requires MDE to conduct a study of composting in the State and develop recommendations to promote composting in the State, including necessary regulatory, statutory, or programmatic changes. The study is to be carried out in consultation with MDA and MES. The timelines and deadlines for the study were reviewed, with the first outline and draft recommendations to be distributed September 14, 2012 and the final report due to the General Assembly on January 1, 2013.

Next, selected provisions of Maryland law regarding composting were briefly described. Phil Davidson of MDA, State Chemist Section, clarified that compost is only a subset of all soil conditioners regulated by MDA and that most soil conditioners are not the result of composting. There was an inquiry about natural wood waste recycling facilities, and Hilary Miller clarified that these facilities are addressed under separate provisions from other compost facilities. It was noted that natural wood waste recycling could potentially be discussed at a later meeting, and would be best presented by someone in the Solid Waste Program, which was not represented at the meeting.

The discussion was then opened to the workgroup members. MDE requested that members identify their priority topics of concern to be covered in future workgroup meetings. The following issues were identified by workgroup members:

- The use of compost for erosion and sediment control, and whether such use is allowed under new guidelines.
- The nutrient trading program currently in development by MDE, and whether use of compost-amended soil could be established as a credit in that program.
- A complete discussion of the MDE guidance, last updated February 2012, regarding food waste composting facility requirements. Brenda Platt offered copies of the guidance, which is also available on the Department's website.
- A ban on the use of plastic bags for setting out organics for curbside collection.
- A discussion of the model permitting regulations, which are currently in development through a partnership including the Georgia EPD, University of Georgia, U.S. Composting Council, and others. The model regulations should be available by mid-summer.
- A discussion of the approach in the Massachusetts draft regulations, which differentiate the source-separated organic portion of municipal solid waste. These

materials are no longer regulated solid wastes and do not need to go through the solid waste management structure.

- Virginia's "product threshold" approach, in which composting is a regulated process, but at a certain point the resulting substance is no longer regulated.
- Performance-based standards for compost facilities, which are less prescriptive, more flexible, and allow operators to determine the appropriate methods of achieving a designated level of protection. Example states are Oregon, Washington, Georgia, and Ohio.
- The possibility of a webinar in which key regulators in other states could share their experiences in composting regulation with the CWG. Brenda Platt stated that she had discussed this with several regulators who would be willing to participate.
- Carve-outs within regulations for small-scale and on-farm composting. Pennsylvania regulations were cited as an example of regulations that encourage on-farm composting.
- The concept of a permit-by-rule for certain lower-risk facilities, such as small-scale food scrap composting. The applicant would certify that he is in conformance with performance standards and would then be automatically allowed to operate. Verification of compliance would be left to quarterly inspections. It was noted that in Maryland, general permits sometimes fulfill a similar role to the permit-by-rule. The threshold for a "low-risk" designation was discussed briefly and it was noted that states use different criteria, such as cubic yards of material, etc.
- Zoning obstacles to starting a composting operation and methods of reducing those barriers. It was noted that this issue is local. In Howard County, composting falls within a zoning category for yard waste processing and facilities composting other materials must receive a special exception. In Montgomery County, a special exception process is also required, but it is possible to compost as an accessory use to a farm. Obtaining special exceptions can be difficult and in some cases the operator must pay an annual fee to maintain the exception. Bob Ernst noted that Harford County has no zoning classifications specific to composting.
- Inclusion of composting facilities in county solid waste management plans. It was suggested that counties be allowed to make a temporary amendment to allow the issuance of a permit quickly so the facility can get up and running, with a full amendment of the plan to follow.
- The inappropriateness of allowing acceptance of grass clippings contaminated with pesticides at compost facilities without impervious surfaces, but not allowing acceptance of food waste at such facilities.
- Presentation of a list of model policies other than permitting regulations that would encourage organics recycling. For example, State procurement policies requiring purchase of Maryland-produced compost may promote composting.

- Distribution of language from other states' regulations to the CWG.
- The need to develop and disseminate a more organized, thorough, static list of requirements of the State and counties for beginning a new compost facility; ways that counties can act as facilitators rather than obstacles to entry of new facilities.
- A clearer depiction of MDE's current law and practices with respect to compost facilities, in order to allow the CWG to determine whether changes should be made. There should be a more in-depth discussion of the various levels of legal requirements (i.e. the statute, regulations, and guidance/interpretation). Key definitions should also be established across the group to ensure there is a common starting point for discussions.
- Ways to address co-composting of sewage sludge and other feedstocks, which are currently dealt with separately.
- The economic impacts to small scale organics haulers and composters of the updated MDE guidance. A member stated that only large haulers can afford to participate and they are currently shipping materials out-of-state. The "carbon footprint" of this long-distance hauling should be considered.
- Justen Garrity of Veteran Composting discussed challenges of operating a food waste composting facility in Harford County. He noted a reluctance to make investments in the business or to expand in ways requiring a loan because the regulatory environment is perceived as uncertain. The facility is regulated by MDE, MDA, the town, and the county. It would be helpful to bring various departments together to provide consistent information.
- Establishment of a single regulatory unit that deals with composting, rather than various areas within the Departments. It was noted that a "one-stop" permitting service was once offered, but was eliminated years ago due to funding concerns.
- Creation of guidance for generators on separation and storage of organics for composting.
- Outreach and education.
- Internal composting education for regulators; potential for required training of new regulatory staff.
- How to address composting on various scales (homeowners, small businesses, large businesses) in the recommendations. MDE staff noted that it would be unlikely to regulate homeowner composting, though the counties sometimes do. For example, in Baltimore County, food scraps may not be composted by a homeowner if they come in contact with the ground. In addition, homeowners associations sometimes adopt policies that discourage composting.
- How to address anaerobic digestion (with or without subsequent composting of digestate) in any regulations. There are currently no regulations specific to anaerobic digestion in Maryland. Massachusetts has drafted regulations that specifically deal with food scraps in digesters.

- Creation of a diagram of steps that need to be taken for a new facility to begin operating, including MDE, MDA, and county requirements.
- A clear delineation of which requirements are in the statute and which are in the regulations. MDE noted that it can recommend changes in the statute where appropriate, but cannot circumvent statutory requirements, some of which have long been in place. For example, organic materials are considered solid waste before they are composted, a principle that is found in the statutory definition of solid waste. Finished compost, however, is not solid waste.
- Clarification of the scope of the refuse disposal permit requirement, and in what cases a facility is not required to obtain one. The thresholds should be made quantifiable and non-arbitrary.

The meeting was concluded with a summary of the topics suggested and the plan for subsequent meetings:

- MDE will compile the suggestions and concerns provided at this meeting and separate them into categories to be addressed at future meetings.
- The next meeting will focus in depth on the current status of the laws, regulations, and guidance. Appropriate staff from various areas of MDE will be on hand to answer any questions.
- MDE will distribute the following to the CWG for the next meeting:
    1. A listing and categorization of topics to be addressed in subsequent meetings;
    2. A compilation of composting laws and regulations in other states.
- A webinar with key regulators from other jurisdictions will be planned, possibly for July.

The meeting was adjourned at 3:30 p.m.. The next meeting will be held June 6, 2012 at 1:30 p.m. at MDE Headquarters.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
JUNE 6, 2012 1:30 – 3:30 P.M.

Members in Attendance: Jeremy Criss/Montgomery County Department of Economic Development; Philip Davidson/MDA; Warren Bontoyan/MDA; Craig Coker/Coker Composting; Evelyn Tomlin/Howard County Department of Public Works; Phil Harris/Frederick County Department of Solid Waste Management; Gary Felton/University of Maryland Extension Service; Brenda Platt/Institute for Local Self-Reliance; Andrew Kays/Northeast Maryland Waste Disposal Authority; Harold Wiggins/Paterson Environmental Holdings; Justen Garrity/Veterans Compost; Mike Toole/Recycled Green; Jessica Weiss/GrowingSOUL; Don Birnesser/KCI Technologies (alternate for Tom Sprehe); Vinnie Bevivino/Chesapeake Compost Works; Charlie Reighart/Baltimore County Department of Public Works; Bob Ernst/Harford County Division of Environmental Affairs; Melissa Pennington/EPA Region III; Mike Guiranna/EPA Region III; Simone Myrie/Delegate Mizeur's Office (alternate for Delegate Heather Mizeur); Benny Erez/Eco City Farms; Richard Keller/MES; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Alan Pultyniewicz/Montgomery County Department of Environmental Protection; Charles Reighart/Baltimore County Department of Public Works; Bill Teter/Calvert County Office of Recycling; and Hilary Miller/MDE.

Members Not in Attendance: Maclane Gibson/MES; Chaz Miller/National Solid Wastes Management Association; Keith Lasoya/Waste Neutral Group; Pat Millner/USDA; Dolores Milmoe/Audubon Naturalist Society; Laura Bankey/National Aquarium; James Wood/Midshore Regional Recycling Program; Tom Sprehe/KCI Technologies; Mike Virga/U.S. Composting Council; and Heather Mizeur/State Delegate.

Others in Attendance: Tom Nasuta/MDE; Loree Talley/City of College Park; Kaveh Hosseinzadeh/MDE; Steven Worrel/MDE; John Bronson/Top Soil ETC; Natalie Wolff/MDE; Bobbie Bell/Institute for local Self-Reliance; Ed Dexter/MDE; Horacio Tablada/MDE; Kristen DeWire/MDE; Kaley Laleker/MDE; Ed Stone/MDE; Mario Cora/MDE; Ed Gertler/MDE; Jeff Fretwell/MDE; Steve Johnson/MDE; and Mike Eisner/MDE.

The Composting Workgroup (hereinafter CWG) convened its second meeting at 1:30 p.m. at MDE Headquarters.

The meeting notes for the May 8, 2012 meeting, distributed in advance by e-mail, were approved with no corrections. They will be finalized and sent out to the e-mail list.

MDE and MDA staff provided an overview of current Maryland law and regulations. Phil Davidson of MDA, State Chemist Section, explained the requirements implemented by MDA regarding compost. The following is a summary of his presentation:

- The law deals with compost as a subset of soil conditioners, which are addressed under the fertilizer statute. There is no part of the statute specific to compost, but there are specific compost regulations, which are located at COMAR 15.18.04.
- Product registration is required for finished compost that will be distributed. The applicant must obtain lab analysis of the compost before it can be certified. The analysis must show the concentration of about 10 metals listed in the regulations (COMAR 15.18.04.05), which are based on the EPA's rule for sewage sludge at 40 CFR Part 503. Though MDA has not in the past required applicants to test for pathogens, it will do so going forward.
- A label is required for compost to be registered. For compost distributed in bulk, the label can be a paper describing the bulk load.
- The label requirements are different for compost than for other soil conditioners. Not all soil conditioners are composted. Soil conditioners can include materials like DAF (Dissolved Air Flotation) skimmings and brewery byproducts and materials that cannot be composted.
- Two instruction sheets and sample labels were distributed – one for compost, and one for soil conditioners. For compost, the label must include the classification of the compost. The classification depends on the metals content and can be either general, limited, or restricted. General use compost is the most frequently registered and can be purchased and used by anyone. Limited use compost may only be used by government or commercial entities. Restricted use compost has higher levels of metals and may be used for things like reclamation of mined lands. The classification system is located at COMAR 15.18.04.05B- D. A compost label must also include the brand of the compost and the origin of the material. The origin of the material cannot be too general (e.g. "made from compostable materials") or MDA will reject the label. The label requirements for compost are found at COMAR 15.18.04.06.
- MDA conducts inspections of composting sites to ensure that each facility is composting properly (correct moisture, temperature, etc.) and that there are records and documentation.
- There is a registration fee of $15 per year per brand for bulk compost. There is also a tonnage fee of 25 cents/ton of compost produced.
- Facility operators must be certified, which requires passing a test administered by MDA. The test is administered twice a year, though arrangements may be made to take the test at other times if necessary, since a facility cannot be operated until it has a certified operator. The test is based on the Maryland law and regulations pertaining to composting and the "On-farm Composting Handbook."
- Operator certification is valid for a 3 year period, during which the operator must take a class. Composting classes are not offered by MDA, but must be approved by MDA. Acceptable classes are generally several days long. Mr. Davidson stated that he will share information on available classes in the future. Operators who have taken a class must save documentation of their attendance to submit

with certification renewal. Operators who do not attend a class within the 3 year period, or who attend and fail to produce documentation of attendance, must retake the test. Only one person at a given organization or facility needs to be certified.

- If a compost or soil conditioner is marketed with a nutrient claim, it must be registered as a fertilizer. Fertilizers sell at higher prices, but must have batch consistency.

Mr. Davidson then took questions about MDA's regulation of compost:

Question: If a composter sells bulk compost by volume, how would this be addressed on the label (which requires the net weight of the product)?

Answer: If a composter sells bulk compost by the cubic yard, the composter will need to take a representative yard of compost and weigh it to obtain a volume-to-weight conversion. This is required not only for labeling purposes but because the tonnage reporting and fee requirement is by weight. For bulk compost, a shipping paper or invoice that accompanies a load may be considered part of the label if it states the weight of the load. In this case there is no need to pre-print the weight on the label.

Question: How many credit-hours are necessary for the compost course required during the first three years of operator certification?

Answer: There is no firm hour requirement, but MDA generally has found that in order to provide adequate instruction, the course should be several days. A 4-hour course was rejected, for example.

Question: Is the requirement that compost "pass" a process for further reducing pathogens demonstrated by documentation of time and temperature in the composting process or by lab test for fecal coliform?

Answer: Time and temperature documentation is sufficient.

Question: Does the certified operator need to be on-site?

Answer: No, the certified operator may be off-site but accessible.

Question: MDA is amending its nutrient management regulations and compost will seemingly fall under requirements for fertilizer. How will this impact the use of compost?

Answer: Horacio Tablada and Pam Kasemeyer noted that public notice of these proposed changes will appear in mid- to late-June. There will be a subsequent 30-day comment period. Brenda Platt stated that the CWG may want to weigh in on these changes. MDE staff stated that this issue is somewhat separate and may be outside the scope of the CWG, given the time limitations of the group. However, there is time tentatively

scheduled for the November meeting of the CWG to discuss nutrient management and nutrient trading regulations. Any nutrients added to land in an agricultural context must be applied pursuant to a nutrient management plan approved by MDA and prepared by a certified planner. Phil Davidson offered to follow up by e-mail with anyone who wanted to know more about these regulations.

Phil Davidson then asked the group whether compost is generally sold to be used on agricultural land or for suburban landscaping uses.

Mike Toole noted that vineyards purchase compost frequently, but for some farmers, there is too much acreage to feasibly use compost. Some farmers compost their own materials. Craig Coker stated that farmers are valuable customers because they provide a high-volume output for finished compost. Most composters consequently try to keep some large farms as customers and use of compost in agriculture may be increasing. Benny Erez noted that organic farmers typically use compost as a nutrient source.

Next, Ed Dexter presented Maryland's solid waste statutes and regulations related to composting. The following is a summary of his presentation:

- Solid waste is defined in the statute at Environment Article (EA), §9-101. Organic, compostable materials are explicitly considered solid waste, while finished compost is not.
- A refuse disposal system requires a refuse disposal permit before it may operate. EA §9-204(d). The definition of "refuse disposal system" includes solid waste processing facilities and any other solid waste acceptance facilities. EA §9-201. Solid waste acceptance facility is defined in EA §9-501 and includes plants whose primary purpose is to dispose of, treat or process solid waste. It follows from these definitions that solid waste acceptance facilities, which would generally include compost facilities, are refuse disposal systems that could require refuse disposal permits.
- If the composting process will use any amount of sewage sludge, a sewage sludge permit is needed. EA §§9-204; 9-233.
- If a commercial composting operation composts natural wood waste, a natural wood waste permit is needed under EA §9-1708. Government entities are not required to obtain a permit, but are encouraged to follow the regulations to avoid fire.
- Recycling is defined in the statute at EA §9-1701 to include composting. However, the fact that an activity is considered recycling does not mean that it is exempt from solid waste or other permit requirements.
- The area of the statute dealing with yard waste defines compost, composting, and yard waste in EA §9-1701. For something to be considered compost, it must be a product of composting done in accordance with the MDA requirements. Also in the yard waste part, production of safe compost by a consumer or farmer for that person's own use is excluded from regulation.

- Separately collected loads of yard waste may not be accepted at refuse disposal systems unless the operator provides for composting or mulching of the yard waste.
- Potential environmental impacts of composting that have been observed in the State are leaching of bacteria and nutrients into groundwater, odors, vectors, and fires. Nuisance conditions such as odors are the biggest cause for complaints.
- MDE regulations address sewage sludge composting in COMAR 26.04.06; natural wood waste composting in COMAR 26.04.09; and solid waste composting in COMAR 26.04.07.
- While the processing facility regulations address composting and generally require a refuse disposal permit for these facilities, the Department has not always required compost facilities obtain refuse disposal permits in the past. The determination is currently facility-specific and is based on a variety of factors, such as the type and origin of feedstocks and the size of the facility.
- The processing facility regulation is located at COMAR 26.04.07.23 and includes permitting and operation requirements for processing facilities. Some of these requirements are specific to compost facilities. There is no permit fee, but the permit application must be prepared by a professional engineer, which does involve some cost to the applicant. Typical review time for the permit is 9 months and the facility must be included in the county solid waste plan prior to permit issuance.
- The regulations specifically provide that unlike other processing facilities, composting may be done outside "in a manner approved by the Department." Some general compost quality requirements apply, regardless of whether MDA requirements apply.
- MDE is currently reviewing its composting laws and regulations with the goal of improving clarity and encouraging composting in an environmentally protective manner. The CWG is intended to play a role in this effort.

Ed Dexter then took the following questions:

Question: Jessica Weiss noted that there are no regulations regarding urban composting and that often schools partner with farms where their materials are composted. The finished compost is then brought back to the schools for use. Ms. Weiss asked whether under current law, there would be an issue with bringing materials from off-site onto the farms.

Answer: Yes, potentially, because the origin of feedstocks is one factor that has been used in determining, on a facility-specific basis, whether a refuse disposal permit is required. However, the Department would consider changes that would make these partnerships easier and is interested in looking at these kinds of issues as part of the CWG.

Question: Jessica Weiss asked whether there are specific requirements for composting outdoors "in a manner approved by the Department," which is the language used in the regulations. If not, it would be helpful to have a list of all the requirements.

Answer: No. There is a fact sheet available on the website, though it needs updating. Facility-specific factors that were mentioned in the presentation currently determine the exact requirements for facilities. The Department cannot develop precise requirements without first hearing what a composter proposes to do and how, so the Department suggests meeting with staff to discuss a particular facility.

Question: Melissa Pennington asked whether there are any design requirements in place to address the environmental concerns that were listed.

Answer: In the past, design requirements have been facility-specific. In a future CWG meeting, we will look at design requirements in other states. Developing more concrete design requirements may be a task for the CWG.

Ed Stone then presented water-related statutes and regulations on composting. The following is a summary of his presentation:

- MDE has broad authority to regulate discharges. The definition of discharge is broader than the federal definition because it includes placing of a pollutant in a location where it is likely to pollute water.
- The major potential discharges associated with compost operations come from (1) releases of pollutants to surface waters from storm water runoff and (2) releases to groundwater from leachate infiltration (particularly with food composting). The definition of leachate in the current guidance needs to be improved.
- Pollutant is defined in the statute and regulations at EA §9-101(h) and COMAR 26.08.01.01. The definition includes deposit of organic matter. A pollutant must render waters of the State harmful or detrimental.
- Potential water impacts from compost operations include violation of state water quality standards and loading caps and leaching of nitrogen and bacteria into groundwater. When nutrients are released into surface water, dissolved oxygen and ammonia levels can become a concern.
- The U.S. Clean Water Act and federal regulations at 40 CFR Parts 122,123 and 124 provide the permit requirement for discharges of pollutants to waters of the U.S. A Maryland statute additionally requires a permit for discharges to groundwater. EA §§9-322; 9-323.
- Stormwater that comes into contact with compost manufacturing operations or liquid that passes through a food composting pile (leachate) are potential sources of discharge that would require a permit.
- Stormwater discharge permits are also required for certain industry categories. At least one of these, Standard Industrial Category 2875, applies to compost manufacturing.
- Surface water discharge permits contain technology-based controls as well as water quality based protection. Prevention of exposure of materials to storm water is a common technology based control.
- Groundwater discharge permits also contain effluent limits for land-applied wastewater. The guidelines for land application in COMAR 26.08.02.09 include

buffers, storage requirements, management plan requirements, and groundwater monitoring wells.

Ed Stone then took the following questions and comments from CWG members:

Question: Craig Coker asked whether there is a point in the composting process in which the compost becomes a product rather than a waste, and after which water contacting the compost would not be wastewater. He noted that North Carolina has recently undertaken an effort to define this threshold.

Answer: Ed Stone stated that material could not be considered a product when it leaves the site in an uncontrolled manner. North Carolina's approach will be considered at the next meeting on other states' compost laws.

Comment: For compost used on a farm as a soil conditioner, there is a lack of clarity about which agencies would regulate the activity. Existing cooperative agreements with MDE and local soil conservation districts should be used as a model for working with farmers on compost-related issues.

Question: Is field runoff from applied compost regulated by MDE?

Answer: MDE has broad authority, but it is attempting not to over-regulate farming operations. This workgroup is particularly concerned with production facilities rather than places where the compost is used.

Question: When will nutrient trading guidance be developed?

Answer: MDA is moving forward with nutrient trading regulations and guidance. Currently MDA has some rules in place and has developed an online system to promote nutrient trading. The TMDLs (Total Maximum Daily Loads) have loading caps for nutrients. New sources of nutrients would need to be offset. Preventing exposure and preventing release through design can be used to eliminate the need for this offset, with purchase of credits being a last resort.

Question: Is there a threshold storm event above which stormwater would not be subject to the nutrient offset requirement? Does the offset requirement apply to stormwater coming into contact with finished compost?

Answer: The offset requirement may not apply to stormwater created by a storm that would constitute an emergency. The offset requirement does apply to stormwater coming into contact with finished compost; there is no distinction between finished and unfinished materials.

Question: Will there be restrictions on land application of compost?

Answer: These restrictions are in the MDA nutrient management regulations, revisions of which will be published this month. The regulations address all nutrient applications in an agricultural context and apply to the place of application, not the place of compost production.

Comment: MDA and MDE regulatory boundaries of regulation should be made more clear.

Mario Cora then presented air-related statutes and regulations that may impact composting operations. The following is a summary of his presentation:

- A permit to construct is required for new sources and may be issued for an individual unit or a process line. Sources subject to permits to construct are listed in COMAR 26.11.02.09 and include air pollution control equipment. There are some sources exempt from permits to construct, but composting is not among them.
- Air pollution is defined at COMAR 26.11.01.01B(2). Air pollution must be injurious to human, plant, or animal life or property or must create a nuisance. CO2 is not a regulated pollutant in this context. Because the main releases to air from a well-run compost facility are water, heat, and CO2, the composting process itself does not cause "air pollution."
- However, certain pieces of equipment commonly used at compost facilities may require permits to construct (e.g. aeration systems, sorting systems, grinders, shredders, screening equipment, bagging equipment).
- Mobile sources and electric powered equipment generally do not require permits to construct. Internal combustion engine powered equipment with greater than or equal to 500 brake horsepower might need a permit, however.
- A permit to operate also exists, but not all sources that require permits to construct will also require permits to operate; for some sources, the permit to construct also serves as a permit to operate (for example, a shredder). COMAR 26.11.02.13 lists sources subject to a permit to operate.
- General prohibitions on creation of nuisances (specifically odors) are located at COMAR 26.11.06.08 - .09.

Mario Cora then took the following questions:

Question: Craig Coker asked whether a biofilter treating air from an aerated static pile system with a blower would be an "air pollution control device" subject to a permit to construct.

Answer: Typically not, but the answer turns on why the biofilter is installed and what substances the filter is preventing from entering the air. If it is installed to deal with a regulated air pollutant (such as hydrogen sulfide), a permit may be required. If it is used as a proactive method to deal with nuisance odors, a permit would not be required.

Question: Brenda Platt asked which compost facilities in the State have required air permits.

Answer: Mr. Cora noted that he has not come across one. The process itself does not require a permit, though the equipment might. Ed Dexter stated that in the 1980's a sewage sludge composting facility and a municipal solid waste composting facility both had air permits for engineered scrubbers, not biofilters. Mike Toole noted that many facilities have permits for equipment. Mobile sources like loaders do not require permits.

Question: Mike Guiranna asked whether there have been any problems with odor at Maryland facilities.

Answer: Complaints sometimes come in to air staff or to solid waste staff. If there is a complaint, air will work with the other administrations that permit or regulate the facility (land, water) to determine whether the facility is complying with those regulations. A facility with nuisance odors likely also has other operational problems that need to be addressed.

Hilary Miller then discussed a listing of proposed discussion topics for each future meeting, based on the topics suggested by the CWG members at the May meeting. The schedule was distributed by e-mail to the CWG. This schedule is tentative and may need to be adjusted as time requires.

The next meeting will be held July 11, 2012 at 1:30 at MDE Headquarters and will address other states' approaches to regulation of compost facilities. Documents on other states laws and regulations will be e-mailed to the CWG prior to the July meeting. In addition, MDE is in the process of seeking some key regulators from other states to speak to the group in July through webinar or conference call.

The meeting was adjourned at 3:35 p.m..

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

FINAL MEETING SUMMARY
JULY 11, 2012 1:30 – 3:30 P.M.

Members in Attendance: Jeremy Criss/Montgomery County Department of Economic Development; Philip Davidson/MDA; Warren Bontoyan/MDA; Phil Harris/Frederick County Department of Solid Waste Management; Brenda Platt/Institute for Local Self-Reliance; Andrew Kays/Northeast Maryland Waste Disposal Authority; Harold Wiggins/Paterson Environmental Holdings; Mike Toole/Recycled Green; Don Birnesser/KCI Technologies (alternate for Tom Sprehe); Vinnie Bevivino/Chesapeake Compost Works; Charlie Reighart/Baltimore County Department of Public Works; Bob Ernst/Harford County Division of Environmental Affairs; Mike Guiranna/EPA Region III; Simone Myrie/Delegate Mizeur's Office (alternate for Delegate Heather Mizeur); Benny Erez/Eco City Farms; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Alan Pultyniewicz/Montgomery County Department of Environmental Protection; Bill Teter/Calvert County Office of Recycling; Keith Lasoya/Waste Neutral Group; Maclane Gibson/MES; Chaz Miller/National Solid Wastes Management Association; and Hilary Miller/MDE.

Members Not in Attendance: Pat Millner/USDA; Dolores Milmoe/Audubon Naturalist Society; Laura Bankey/National Aquarium; James Wood/Midshore Regional Recycling Program; Tom Sprehe/KCI Technologies; Mike Virga/U.S. Composting Council; and Heather Mizeur/State Delegate; Craig Coker/Coker Composting; Evelyn Tomlin/Howard County Department of Public Works; Gary Felton/University of Maryland Extension Service; Justen Garrity/Veterans Compost; Jessica Weiss/GrowingSOUL; Melissa Pennington/EPA Region III; Richard Keller/MES.

Others in Attendance: Tom Nasuta/MDE; Nanci Koertinh/Grant County Mulch, Inc.; Lisa Williams/Synagro; Martha Hynson/MDE; Steven Worrel/MDE; John Bronson/Top Soil ETC; Gemma Evans/Howard County BES; Bobby Bell/Institute for local Self-Reliance; Kaley Laleker/MDE; Jeff Fretwell/MDE.

The Composting Workgroup (hereinafter CWG) convened its third meeting at 1:30 pm at MDE Headquarters.

The meeting was devoted entirely to presentations by speakers from other states' composting regulatory agencies. A summary of each presentation follows.

Stephanie Busch – Georgia Environmental Protection Division

The current Georgia regulations divide facilities into exempt facilities and permitted facilities. Exempt facilities include yard trimmings and backyard composting and on-site processing of residual agricultural materials. Permitted facilities are either covered by a permit-by-rule (PBR) or require a full solid waste handling facility permit. The PBR

basically covers facilities that are managing the byproduct of their process. For example, correctional facilities composting food residuals from a cafeteria would be covered by the PBR. There are currently 32 PBR facilities and 6 full solid waste permitted facilities in the State.

Beginning in 2007, Georgia engaged in a public-private partnership to identify and address barriers to increased composting capacity. Industry members responded that the current regulatory scheme took too long to navigate, was too inflexible, did not adequately address emerging technologies such as gore covers and in-vessel methods, lacked definitions or contained outdated ones, and addressed an incomplete list of feedstocks. Further, some of the requirements were too stringent for certain feedstocks considering their risk.

In 2009, a 3-month stakeholder process was initiated and resulted in a new set of draft composting regulations. The draft regulations would create new definitions, new exemptions, a new set of 4 feedstock categories, and a tiered system with 6 facility tiers. The word "waste" was replaced with "residuals" when discussing potential feedstocks. The tiers were created according to feedstock type and risk of human pathogens. New testing requirements were established and vary by feedstock and tier.

Finalization of the rules was delayed because of a series of agency changes. The Division took that time to do more research about some of the points of inconsistency among other states' rules and the scientific support for certain provisions. This effort became a partnership with the U.S. Composting Council and others to conduct research and develop a science-based set of model composting rules. Surveys were conducted across states and in the private and public sector – they revealed that there was broad support for a tiered permitting approach.

In late August, the results of the U.S. Composting Council partnership will be published. A national template rule will contain definitions, exemptions, three feedstock categories, three tiers based on feedstocks, and operational requirements. The requirements are mostly descriptive rather than prescriptive (no specific pad material, etc.).

Based on the Georgia experience, Stephanie Busch recommended looking at other states requirements, but stressed the importance of vetting them within the state and inquiring about the rationale behind other states rules. She also mentioned that it is necessary to find the right combination of descriptive versus prescriptive requirements – for Georgia, there was agreement that the rules should be generally descriptive, but that certain provisions needed to be prescriptive to ensure clarity and certainty for the regulated community.

More resources can be found at the division's website: www.gaped.org

Kathryn Perszyk – Virginia Department of Environmental Quality

The statute that deals with compost facilities is the Waste Management Act at Code of Virginia 10.1-1400. The Regulations are at 9 VAC 20-81. The regulations were updated in 2011 to add more flexibility and exemptions.

Under the regulations, there are four categories of feedstocks:

- I: plant-derived preconsumer materials
- II: animal derived materials
- III: animal and post-consumer food wastes with pathogen potential
- IV: others

New exemptions were added as part of the 2011 revisions. The following facilities are exempt under the regulations:

- Composting sewage sludge at treatment plant of generation without addition of other solid wastes; composting sewage sludge when permitted under a VPA or VPDES permit.
- Composting of household waste at the residence of generation (backyard composting)
- Composting for educational purposes with no more than 100 cy of material at any time (more material would require DEQ approval)
- Composting animal carcasses at the farm of generation
- Composting of vegetative and yard wastes generated on site where the compost generated is used on site
- Composting pre-consumer food waste/kitchen culls generated on site, composted in containers
- Vermicomposting of Category I, II, III materials in containers. If offsite materials are over 100 cy, DEQ approval is required.

Based on Virginia' experiences, some additional activities to consider for exemption might be:

- On-site composting of postconsumer food waste by restaurants
- Composting by industries of byproducts (e.g. spent hops at a brewery)
- Poultry litter composting
- Composting on federal bases

There are also three types of exempt yard waste facilities that require registration and include specific requirements. These can be found at 9 VAC 20-81-397.

Solid waste composting facilities may be either type A or B. Type A facilities are in-vessel, while type B are either windrow or ASP facilities. New methods require an experimental permit. Siting requirements are the same for all feedstocks and contain setbacks and runon/off and leachate management. The design requirements vary by feedstock. For facilities handling category II - IV feedstocks, there must be a covered handling area for material segregation. Facilities must have a hard surface if they are within 2 feet of the water table. A pad (with several material options) is required for handling of category IV feedstocks or over 1,000 tons/quarter of category II and III feedstocks. General operational requirements apply. Testing is required unless the

facility only handles category I feedstocks. The specific testing requirements vary by category as well.

A permit by rule is available for any non-exempt facilities and requires a notice of intent, siting certification, operations manual (not reviewed by DEQ), local government certification, feedstock types, proof of financial assurance, public meeting, a fee of $390 and an annual fee of $1200.

Ginny Black – Minnesota Pollution Control Agency

The current rule in Minnesota has been in place for 30 years. The rule is in the process of being amended because it has become a barrier to expansion of the compost industry.

The current rule has three levels; backyard composting is exempt, yard waste composting is covered by a PBR, and all other composting requires a full solid waste permit. While there are 121 yard waste facilities permitted, there are only 8 solid waste composting facilities and 5 are supported by significant public investment. One of the other two is not regulated because it is within a Native American community.

The revisions would create a new type of facility called a source-separated organics composting facility. The category would include yard waste, wood waste, food waste, and industrial food residuals from human food manufacturing. It would not include fish, animal waste, meat by-products, diapers, or sewage sludge. The revisions would also broaden the backyard exemption to cover urban farm operations and community gardens with up to 80 cy on site at a time.

Yard waste is permitted through a PBR, with few requirements. Operators must aerate piles, follow PFRP requirements, control runon/runoff, and there must be less than 3% inerts. No testing, pad, or stormwater management requirements apply.

Solid waste compost facilities are those that compost MSW and manure. They must have an impermeable (10^-7 cm/sec) pad for tipping, mixing, composting, and curing areas. The requirement is similar to a landfill liner. They must have a leachate/stormwater management system, and residuals must be removed weekly. They must follow the federal PFRP, except that for windrows the time at elevated temperature is 21 days.

The new SSO compost facility category needs only an all-weather surface if there is 5 feet to the water table and the site has certain types of soil. If the facility cannot meet these criteria, it must have a low permeability pad (concrete, asphalt, geomembrane) that brings it to 5 feet from the water table. For the curing and storage areas, the surface must be raised to 5 feet above the water table, but need only be an all-weather surface. The facility must meet the federal PFRP standard, with a 15 day time at elevated temperature for windrows. The facility must prepare a feedstock management plan, contact water and stormwater plan, odor plan, and training plan. Contact water needs to be segregated and treated; non-contact water is treated as stormwater. The term leachate is not used to

describe contact water, because tests revealed that even water coming off raw materials is similar to stormwater.

Finished compost must be tested. Mercury and lead limits are lower than the federal Part 503 limits. pH, particle size, NPK, soluble salts, maturity, and PCBs (only because of a previous lab error indicating PCBs in compost) must be tested. There is no particular rationale for the 5 foot to water table rule; it came from the landfill rule, which itself was somewhat arbitrary.

Questions:

Mike Guiranna asked whether Minnesota has considered any revisions that would encourage indoor composting. Ginny Black responded that their approach has been to set minimum environmental standards and allow operators to decide their methods. One exception would be that static piles are not allowed.

Brenda Platt asked how the Agency arrived at the flexible pad design requirements. Ginny Black responded that in 2008 the Agency gave a grant to an operator to collect water samples from his yard and food waste site. There was nothing of concern in the samples, and after visiting various facilities, it seemed that an all-weather surface was working fine. Soils tend to be tight in the State; the 5 feet requirement is a precaution because there are no groundwater monitoring requirements. The sites are much more accessible for remediation, if needed, than a landfill. More testing of rain and snowfall on materials will be coming in the future.

Ken Pickle – North Carolina Department of Environment and Natural Resources

Ken Pickle discussed the development of a new general NPDES permit specifically for compost facilities.

The new compost-specific requirements were created in response to applications for stormwater discharge permits for compost facilities received in 2005 and 2006. There are about 170 permitted facilities, 120 of which are small yard waste facilities requiring notification. The NPDES permit applies to manufacturing facilities and not the use of the finished compost. The permit does not apply to on-farm, backyard, retail outlets, or type 1 (yard waste) facilities.

The Division of Water Quality recognized a potential problem with TSS, fecal coliform, ammonia, COD and phosphorus in runoff from some compost sites. In some cases and for some pollutants, concentrations can be equal to or greater than those seen in water coming from raw sewage. Even finished compost cannot be assumed safe for water quality. In response to these concerns, a public process was initiated in 2009 to address water permitting for compost facilities. A paid facilitator was hired to guide the process through a stakeholder group; this was helpful to avoid perceptions that the regulator controlled the process. The group made 20 unanimous recommendations. The changes did not involve new regulations or statutory amendments.

Relevant federal regulations for NPDES permitting are found at 40 CFR Part 122. 40 CFR §122.2 provides the definition of process wastewater and 40 CFR §122.26 provides the definition of stormwater. Based on these definitions, whether a flow is treated as one or the other does not depend on the pollutant strength of the flow but rather on what the flow has contacted. Discharges from compost facilities are rainfall driven, but if they touched materials during the process, they are wastewater discharges. For water quality purposes, there is no reason to regulate different feedstocks differently.

The new general permit is a combination permit for both stormwater and process wastewater discharges. The time to compliance is written into the permit. The legislature stepped in recently and excused Type 1 (yard waste) facilities from the NPDES permit program; originally the general permit would exempt only Small Type 1 facilities.

Because of the very broad expertise that would be required to handle both solid waste and water permitting, Mr. Pickle stated that it would not be feasible for the same program to handle both. Water quality and solid waste divisions can work in parallel and do not necessarily need to be that closely related.

The Division has also changed its implementation of the regulations on non-discharge. If water is pumped off site and applied, the permitting is handled by the Division of Water Quality.

Chery Sullivan- Washington State Department of Ecology

Washington is currently in the process of revising its composting rule. The formal comment period will start in September. The previous composting regulation, located at WAC 173-350-220, was created in 2003 with a large advisory group. At that time, the priority was to provide consistent regulation and establish quality standards. Since then, there has been increased pressure for organics recycling and collection from large institutions. Compostable plastics have caused some quality issues. Meanwhile, decreased demand for compost in the poor economy has resulted in growing stockpiles of finished compost, which can lead to water and odor issues. Increases in organics collection has led to pressure to manage more material more quickly, which itself can lead to problems.

The regulations currently require that compost have no less than 1% by weight of inerts. The revisions propose to add that no more than 0.1% by weight may be plastics, because plastics are so lightweight. In addition, operators must reject loads with over 5% by volume contaminants or have an acceptable plan for separating contaminants from compostable materials.

The regulations currently require development of an odor plan. The revisions propose requirements for nuisance odor documentation, weather monitoring, a feedstock management plan, and a progressive odor management plan (containing steps to be taken

when nuisance odors become an issue). Finally, a cover would be required for aerated static piles.

Currently, composted material is no longer solid waste once it meets testing standards. The Department is proposing that in addition, the material must be distributed off site before it is considered not solid waste. There are special requirements for managing finished piles on site. This is a controversial element of the revisions because facilities with large finished compost piles might incur costs.

The revisions will simplify and expand the conditional exemptions. The revised exemptions will consist of 4 exemptions based on feedstock volume and type. The exemption for in-vessel composting will be expanded to 20 cy; yard waste facilities will be able to have up to 500 cy at a time, with 2,500 cy throughout in a year.

All facilities must meet overarching performance standards. The Department prefers a performance-based rather than prescriptive rule because it allows for innovation. Adoption of the revisions is expected in December 2012.

General Questions

General questions were taken by some of the presenters.

Brenda Platt asked whether the other states have one "point person" for compost issues, since the lack of one was raised as an issue at a previous CWG meeting.

In Virginia, there are different groups involved, but the solid waste group is a central contact for composting issues. In Georgia, water and land departments handled compost issues separately, except for composting at sewage treatment plants, which is handled exclusively by water. There is also a "one-stop" permitting center. In Washington, there is a Governor's Office of Regulatory Assistance, but there is no composting expert there yet. In North Carolina, the issues are handled separately by water and waste divisions.

Mike Toole asked what methods the other states have found effective in encouraging composting, since the mission of the CWG is to identify policies that would promote and encourage composting in the state.

Ken Pickle (NC) responded that the stakeholder group there did not have the same mission. However, one member of the steering committee was part of a non-regulatory division that did have the mission of encouraging composting. It was useful to have this presence, though the point of the group (to develop an additional permit) would be viewed by some as discouragement. Washington has provided grants to local governments for waste reduction and recycling projects. Specifically, they have looked for alternatives to burning materials. The conditional exemptions have also been beneficial. Permit conditions can be difficult but are protective. In Georgia, the main driver of the rulemaking was encouraging composting. They eliminated troublesome definitions and added tiers. They have worked with DOT to develop markets for the

product as well. Stephanie Busch (GA) also noted that Pennsylvania has used general permits to encourage on-farm composting, and Vermont, Connecticut, and Florida are other states to look into. Brenda Platt noted that Massachusetts published an organics recovery plan, which she will provide for distribution.

Mike Guiranna asked whether the states have demonstration permits.

North Carolina does, for a 12 – 24 month period, but after that the facility would need to obtain a permit. In Washington, the county health district can issue demonstration permits. Georgia has issued some; more information is available on the website. In Virginia, experimental permits are available, for example, to test new feedstocks.

The Powerpoint presentations will be distributed to the group, including the Oregon presentation by Bob Barrows, which was not presented at the meeting.

The next meeting will take place August 8, 2012 at 1:30 pm at MDE, and will cover (tentatively) local government concerns, coordination with State Agencies, and operational concerns.

The meeting was adjourned at 3:30 pm.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
AUGUST 8, 2012 1:30 – 3:30 P.M.

Members in Attendance: Jessica Weiss/Growing Soul; Mike Toole/Recycled Green; Chaz Miller/ National Solid Wastes Management Association; Bob Ernst/Harford County Division of Environmental Affairs; Harold Wiggins/Paterson Environmental Holdings; Alan Pultyniewicz/Montgomery County Department of Environmental Protection; Andrew Kays/ Northeast Maryland Waste Disposal Authority; Simone Myrie/Alternate for Delegate Mizeur; Brenda Platt/Institute for Local Self-Reliance; Gary Felton/ University of Maryland Extension Service; Craig Coker/Coker Composting and Consulting; Mac Gibson/MES; Justen Garrity/Veteran Compost; Benny Erez/Eco City Farms; Hilary Miller/MDE.

Members not in Attendance: Jeremy Criss/Montgomery County Department of Economic Development; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Richard Keller/MES; Patricia Millner/USDA; Keith Lasoya/Waste Neutral Group; Phil Davidson/MDA; Delores Milmoe/Audubon Naturalist Society; Laura Bankey/National Aquarium; Michael Virga/U.S. Composting Council; Vinnie Bevivino/Chesapeake Compost Works; Charles Reighart/Baltimore County Department of Public Works; Bill Teter/Calvert County Office of Recycling; Jeffrey Dannis/Howard County Department of Public Works; James Wood/Queen Anne's County Department of Public Works; Thomas Sprehe/KCI Technologies; Melissa Pennington/EPA Region III; Mike Giuranna/EPA Region III; Phil Harris/Frederick County Department of Solid Waste Management; Warren Bontoyan/MDA.

Others in Attendance: David Mrgich/MDE; Ed Gertler/MDE; Paul Hlavinka/MDE; Tom Nasuta/MDE; Loree Talley/City of College Park; Marilyn Rybak/Prince George's County; Mary Lynn Wilhere/DC Department of the Environment; Ed Dexter/MDE; Horacio Tablada/MDE; Kristen DeWire/MDE; John Bronson/Topsoil ETC; Terry Goolsby/Clozynergy; Kaley Laleker/MDE; Steve Worrell/MDE; Mike Eisner/MDE; Martha Hynson/MDE; Clyde Trombetti/Baltimore County Solid Waste Management; Heather Barthel/MDE; Jeff Dannis/Howard County Bureau of Environmental Services.

The Composting Workgroup [hereinafter CWG] convened its fourth meeting at 1:30 pm August 8, 2012 at MDE headquarters.

Hilary Miller asked for comments or corrections to the July 11 draft meeting notes, which were distributed previously to the CWG. There were no revisions. Hilary Miller stated she would finalize the notes and send out the final version by e-mail. She then asked if there were any questions about the Powerpoint presentations given by other state regulators, presented at the July 11 meeting and e-mailed to the CWG afterward. There were no questions.

The meeting consisted of a discussion of topics raised during the first meeting of the CWG.

The first discussion topic was local government concerns. The CWG began by discussing zoning obstacles to siting compost facilities, zoning classes applicable to compost facilities, and the process for obtaining a special exception. Craig Coker stated that he raised the topic of zoning in the first CWG meeting because few jurisdictions have definitions of composting in their zoning ordinances. This can make it difficult to site new facilities. Ed Dexter stated that MDA regulations have definitions of "composting" and "compost facility," which may be useable by counties looking to better define the terms in their zoning ordinances. Craig Coker had a copy of the MDA definitions on hand and read them, as follows:

"Composting" is the aerobic degradation of organic matter to make compost.
"Composting facility" means a facility where solid waste or organic material is processed using composting technology, including:

(a) Physical turning;
(b) Windrowing; and
(c) Aeration or other mechanical handling of organic matter.

COMAR 15.18.04.01B

Hilary Miller asked whether any members present from county governments were aware of the existence of local definitions of "compost facility." Marilyn Rybak of Prince George's County stated that she would look into this and report back. Alan Pultyniewicz of Montgomery County stated that the County underwent a revision of the zoning ordinance two years ago. At the time of the revision, the term "composting and mulch operations" was already included in the zoning code. It was also noted that State law also contains a definition of "composting" in §9-1701 of the Environment Article.

Hilary Miller stated that MDE would survey local planning departments to determine whether zoning ordinances contain definitions of composting or compost facility, and if so, whether a compost facility would be classified as an agricultural, commercial, or industrial use.

Next, the discussion moved to the experience of existing composters in siting their facilities. Mike Toole stated that he had acquired land for a compost facility with the original intent of obtaining a Natural Wood Waste permit and that the land was zoned heavy industrial. John Bronson of Topsoil ETC stated that his facility was also zoned industrial and is located in Anne Arundel County. He did not know whether there was a specific definition for composting in that County. Craig Coker commented that some jurisdictions adopt elaborate definitions as a method of regulating compost facilities on the local level. The definitions serve as a threshold to exclude certain facilities that do not meet the definitions. Alan Pultyniewicz commented that in Montgomery County composting on a farm has a different definition than composting generally. Craig Coker noted that there may be more rigorous definitions for nonagricultural areas.

The group then discussed the process for obtaining special exceptions to zoning classifications. It was noted that a compost facility would be unlikely to require a special exception in areas zoned as agricultural. In Howard County, the zoning regulations mention yard waste composting, but there is no definition of yard waste. Hilary Miller asked whether county health departments would have any involvement in siting of compost facilities generally. It was stated that at least in Howard County, there may not be much involvement of the health department. Craig Coker stated that in some places, the health department does have jurisdiction over the collection of organics. In Massachusetts, revisions to the State regulations would eliminate the requirement for health department approval of compost facility sites. This is meant to streamline the process of siting a new facility by removing the requirement for a "determination of need." Craig Coker stated that he has obtained special exceptions on behalf of several clients. The process is used to help the local government fully understand the project and add operational conditions, such as days and times of operation. In general, the process allows local officials to provide input to the operational plan of the facility. Hilary Miller asked whether, in cases where a special exception is obtained, the facility would have looser regulatory requirements. Craig Coker answered no, and stated that the special exceptions tend to deal only with the operations of the facility.

Next, the discussion turned to inclusion of compost facilities in county solid waste management plans, which are required by State statute. Kristen DeWire described MDE's conclusion that compost facilities must be included in county plans. The statute requires any solid waste acceptance facility to be included in a county solid waste plan. The definition of "solid waste acceptance facility" (SWAF) includes a facility with the primary purpose of processing solid waste. The statute explicitly includes compostable materials within the definition of "solid waste." Since compost facilities have a primary purpose of processing solid waste, they are SWAFs and require inclusion in the county solid waste plan.

Hilary Miller noted that MDE has not always required inclusion of compost facilities in the past, probably because MDE was characterizing them as recycling facilities. Marilyn Rybak stated that Prince George's County does have composting facilities in its plan, but only the ones run by the County. Other compost facilities, like the College Park facility, are not in the plan. The situation is the same in Harford County and Montgomery County. Ed Dexter commented that in addition, the statute requires any facilities that are "refuse disposal" facilities to be in the plan. However, Natural Wood Waste facilities have not been required to be included in the past. Some may be in county plans, while some may not. The county-owned facilities are generally in the solid waste plans, but these do not require separate NWW permits.

Terry Goolsby asked whether, when the CWG refers to composting, it means composting of yard waste or of food waste. Hilary Miller replied that the CWG is discussing composting of all organics. Terry Goolsby asked whether there were any authorized food waste facilities already in the Prince George's County plan. Marilyn Rybak stated that there are only yard waste facilities so far, but that the County is in the process of

proposing to accept food waste at one of its yard waste facilities. Terry Goolsby commented that since food waste composting is already occurring on farms, it should be allowed to continue on farms without subjecting it to solid waste regulation. Hilary Miller stated that on-farm composting and whether it should be subject to solid waste permitting is part of what the CWG is discussing for this study. Ed Dexter clarified that the definition of solid waste in the Environment Article includes materials capable of being composted, while finished compost is not solid waste. This indicates that all compost facilities could be regulated under the solid waste requirements and subject to the refuse disposal permit. However, up until this point, only MSW compost facilities have been treated as solid waste facilities. Most composting in the State has historically been yard waste, but other materials may be subject to separate requirements (e.g. sewage sludge). With respect to food waste and manure composting, MDE has seen a few examples of environmental impacts that suggest the Department should look more closely at how to regulate these facilities, at least those operating on a commercial scale.

Brenda Platt asked whether Veterans Compost and other smaller scale facilities would be considered SWAFs. Kristen DeWire replied that they would be, as the statute is currently written. Brenda Platt noted that this may be something for the CWG to address, since small facilities perhaps should not be treated as SWAFs. She identified two separate issues to address: (1) whether counties should be accounting for composting activities in their solid waste management plans; and (2) whether compost facilities should be considered solid waste facilities, regardless of size. Craig Coker noted that the solid waste management plan requires approval by the highest body in the county, and the process to adopt or revise a plan can be long and arduous. Instead, he recommended that there be more of a registration process for inclusion of compost facilities in solid waste management plans. Kristen DeWire noted that inclusion in the plan helps the county when reporting to the State on its diversion of organics. Hilary Miller stated that when the CWG gets to the point of defining types of facilities, it should determine whether all types of facilities need to be in the solid waste management plans.

If a facility is on a farm and composts its own waste exclusively for its own use, it would not need a solid waste permit. That waste is not part of the solid waste stream and is not part of a refuse disposal system. But, if the site accepts materials from off-site or sells or distributes compost, it may need a permit. Craig Coker noted that some farms take in outside materials but do not distribute the resulting compost off-site. Hilary Miller asked the group whether on-farm composters tend to be smaller-scale and whether any farmers actually use compost on their farm fields. Mike Toole noted that chicken farmers compost frequently. Jessica Weiss provided the example of a small urban farm that hopes to encourage children to bring in vegetative food scraps from home for composting. Hilary Miller noted that this activity would likely be limited by size rather than the origin of the material, but that this CWG can make recommendations on whether activities like this should require a permit. Ed Dexter stated that how the composting is done has a big impact on the possibility for environmental harm; the bigger the facility and the more the material, the more the risk. An exception to this would be in-vessel composting, which is cleaner but more cost-intensive.

On the topic of farm composting, Terry Goolsby commented that the group should consider expanding its consideration to larger on-farm facilities. Ed Dexter stated that MDE is not attempting to limit the size of composting facilities, but trying to ensure that composting is done properly, regardless of size. Some methods may be more risky than others, and in general larger facilities are more risky than smaller ones. Gary Felton stated that in Maryland, the average farm is 260 acres. A small dairy may produce 2,500 lbs of manure per day, which can easily be composted. Food waste can be added to the manure and it may or may not create problems, depending on how it is done. Ed Dexter noted that animal feeding operations (AFOs) are already covered under State and Federal regulatory programs providing good protection. Perhaps there could be a point under which a facility already registered under the AFO program could compost without a separate permit.

Terry Goolsby stated that USDA has hosted "Agstar" events in Baltimore. She questioned why this program was hosted in Maryland when the State seems to only be in preliminary stages of addressing food composting. Craig Coker clarified that Agstar is an EPA program to promote digestion of manure primarily and food waste incidentally. The program focuses on recovering energy from anaerobic digestion of these materials. Hilary Miller stated that requirements for anaerobic digestion are another topic to address and the requirements may be different from aerobic composting. Ed Dexter stated that MDE was recently asked about a large anaerobic digestion project proposed for Maryland. He noted that it would likely need a refuse disposal permit. That project would include a digestion stage, with traditional composting of the digestate.

The CWG then moved to the next discussion topic, which was coordination amongst State and local agencies. Hilary Miller stated that in the past, there has been inefficient communication among administrations at MDE. However, this has since been remedied and various MDE administrations would all have a role in permitting compost facilities. MDE still needs better coordination with MDA. As for communication with local agencies, Ed Dexter noted that for facilities with refuse disposal permits, communication is required by statute. MDE must send an application to a local government to obtain approval that the project is in accordance with the solid waste management plan. By the time the permit is actually issued by MDE, the facility must be in the solid waste management plan. For other types of facilities, communication is not as clear. For example, one Natural Wood Waste facility had been operating under the general permit for years before it was discovered by the county that it was in violation of a local zoning ordinance.

Hilary Miller asked whether any local governments have concerns with the permitting or approval process and coordination with the State. Marilyn Rybak and Mac Gibson both stated that it does not make sense now to go forward with any new projects while MDE is in the process of making decisions regarding regulation of composting. Some states have a "one-stop shop" for permitting that includes state and local permits. Hilary Miller noted that each county and some municipalities in Maryland have different requirements. However, MDE may be able to create links on its permit webpages to local government permitting information. Marilyn Rybak stated that this would probably work for Prince

George's County. Harford County may be revisiting its own composting regulations at the same time as the State, so its requirements could change. In Howard County, planning and zoning is independent of permitting. Hilary Miller stated this would be a longer-term project. Mac Gibson suggested that there could be a website where each county periodically updates what is required of a compost facility. Andrew Kays suggested that when MDE issues a permit for a compost facility, a copy should go to the county to notify it of the issuance. Currently the issuance is posted on the MDE website, but counties are not specifically notified. Hilary Miller stated that if this type of notification was provided for compost facilities, it would likely be requested for all permits. It was suggested that EPA's Resource Conservation Challenge may have grant money available for putting together a website to serve as a model for other states.

Brenda Platt provided some examples of good websites to consider (Georgia, U.S. Composting Council, Massachusetts). Oregon also has a two-page fact sheet outlining its new regulations, which is a good example of a clear, brief explanation of requirements. In general, most states have composting websites, but they do not contain local requirements. It may be beneficial to make local definitions consistent across counties if there are not currently any definitions.

The next broad discussion topic was operational concerns for collection, processing, storage, transportation, and use of finished compost. The CWG started by discussing operational concerns in collection of organics. Hilary Miller reiterated that at the point of collection, compostable materials are defined as solid waste in Maryland and potential problems with materials during collection are pests, disease vectors, and leachate from containers. Collection containers, such as plastic bags, may also have an impact on compost quality.

In Montgomery County, collection is governed by the county solid waste authority only for materials collected by the County. For example, yard waste collected by the County may not be contained in plastic bags. In Prince George's County, yard waste is permitted to be collected in plastic bags. Hilary Miller asked whether plastic bags are a big problem to composters. Benny Erez stated that he does not accept any plastic bags, even those that are compostable plastic. Only paper bags are permitted. All others end up in the finished product. Another option is to put the compostables in a reusable container without a bag. Mike Toole stated that he received material from an MES contract that came with a great deal of plastic. The finished product is not so much degraded as to make it unsuitable, but plastic bags are difficult to deal with operationally. Most of the material was from institutions and at least half of it was contained in plastic. Mac Gibson noted that at two MES-run facilities, one facility receives most of its material in plastic bags and the other receives almost no plastic. The facility with plastic bags is able to screen out 99% of the plastic, resulting in an end product almost identical to the other facility. The main issue with plastic bags is their propensity to blow off site. Citizens want to use plastic bags. Harford County-run facilities accept plastic and screen it out at the end of the process. The main problem there is also the wind-blown plastic. In Harford County, there were two attempts to ban plastic bags for yard waste, but they both failed for lack of political will. Horacio Tablada stated that the CWG could make

recommendations about ways counties should address plastic bags, but ultimately it is a county-by-county determination.

Brenda Platt mentioned that labor costs of dealing with plastic can constitute 25% of the total operating costs at some facilities. Because of this and the problem of migration of plastic off site, the Organics Task Force has supported local policies banning plastic for segregated yard waste. It can also be very costly to screen plastic from a finished product and result in loss of material. Minnesota bans setout of yard waste in noncompostable bags in a State bill that is effective only in certain parts of the State.

Craig Coker stated that in the Charlotte, North Carolina metropolitan area it costs $75,000 per year for workers to manually debag yard waste. To screen the plastic out on the back end requires vacuum equipment, which is not perfectly efficient. Some plastic ends up in "overs" that otherwise could be sold as mulch. Costs to screen plastic can be estimated as follows: $6-8 per yard to rescreen at ¼ in, plus $50,000 capital cost.

Jeff Dannis of Howard County stated that there is a benefit to removing the plastic in the form of a premium for a plastic-free product. Who should absorb the cost of pulling out plastic should be a jurisdictional decision, not a Statewide one. Plastic is a challenge on the receiving end because it is small portion of the weight, but is large in volume. Facilities lose out on material if they refuse to accept plastics. As an alternative to bans, educational efforts could emphasize that it is better to provide materials in paper or reusable containers. Jeff Dannis stated that he would check to see whether a cost-benefit analysis was done for Howard County on a plastic bag yard waste ban. In Howard County, food waste may not be in plastic, but yard waste may. The plastic from the yard waste then contaminates the food waste while it is transported together in the truck. In Seattle, it is suggested that citizens place newspapers on the bottom of a reusable bin and food waste above it, so that the bin is kept cleaner and the person emptying the bin knows they have fully emptied it when they see the newspaper.

Alan Pultyniewicz noted that reusable bins may be optimal in a residential setting, but commercial settings may require bags. For example, in an office building a bag may be needed to facilitate collection in situations where bins cannot be cleaned every day. Jessica Weiss noted that she has worked with Chipotle, which puts compostables into compostable plastic bags. The materials are taken out of the bags before composting and the bags are composted separately.

It was noted that MDA certifies finished compost. It requires that the product have no more than 2% dry weight of manmade inerts. Several people agreed that this was a fairly large amount.

Brenda Platt stated that some new bins are available to contain food waste at stores or groceries for weeks between collections. The BioBin is an example; it is a 3 cy steel box with aeration piping and a blower. It keeps the material aerobic and prevents odors. The bins cost around $15,000 each. They may be an option for commercial or institutional settings, but probably not counties because of the cost. Other options discussed were

freezing household food waste and placing it in a paper bag just prior to collection and sealing a bag around a bin with a rubber band and reusing the bag a few times.

The agenda for the next CWG meeting was discussed. Brenda Platt reminded the group that the U.S. Composting Council model permitting regulations would be released by the end of August. These could be taken up at the September meeting. She also raised the suggestion of rescheduling the November 7 meeting to avoid conflicts with a Trash Summit, which some CWG members will be attending. Hilary Miller stated that she would look into dates for rescheduling.

In response to today's meeting, MDE will:

- Look into the possibility of posting links to county requirements on its website;
- Survey counties on their planning, solid waste, and licensing requirements for compost facilities and check with counties about their zoning definitions for compost facilities;
- Obtain data on the costs of plastic bag removal;
- Look into dates for rescheduling the November meeting.

At the next CWG meeting, the CWG will:

- Begin with a discussion of the U.S.C.C. model permitting regulations;
- Continue with the discussion of operational concerns, including processing, storage, transportation, and use of finished compost.

The next meeting of the CWG will take place September 12, 2012 at 1:30 pm at MDE headquarters. The meeting was adjourned at 3:35 pm.

Next meetings of the CWG are scheduled at follows:

Wednesday, October 3, 2012 1:30 p.m.
Thursday, November 1, 2012 1:30 p.m. **NOTE DAY AND DATE CHANGE**
Wednesday, December 5, 2012 1:30 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
SEPTEMBER 12, 2012 1:30 – 3:30 P.M.

Members in Attendance: Andrew Kays/ Northeast Maryland Waste Disposal Authority; Charles Reighart/Baltimore County Department of Public Works; Bob Ernst/Harford County Division of Environmental Affairs; Mike Toole/Recycled Green; Alan Pultyniewicz/Montgomery County Department of Environmental Protection; Phil Harris/Frederick County Department of Solid Waste Management; Richard Keller/MES; Simone Myrie/Alternate for Delegate Mizeur; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Vinnie Bevivino/Chesapeake Compost Works; Melissa Pennington/EPA Region III; Mike Giuranna/EPA Region III; Jessica Weiss/Growing Soul; Brenda Platt/Institute for Local Self-Reliance; Craig Coker/Coker Composting and Consulting; Phil Davidson/MDA; Jeremy Criss/Montgomery County Department of Economic Development; Hilary Miller/MDE.

Members Not in Attendance: Patricia Millner/USDA; Keith Lasoya/Waste Neutral Group; Delores Milmoe/Audubon Naturalist Society; Laura Bankey/National Aquarium; Michael Virga/U.S. Composting Council; Bill Teter/Calvert County Office of Recycling; James Wood/Queen Anne's County Department of Public Works; Thomas Sprehe/KCI Technologies;; Warren Bontoyan/MDA; Chaz Miller/ National Solid Wastes Management Association; Harold Wiggins/Paterson Environmental Holdings; Gary Felton/ University of Maryland Extension Service; Mac Gibson/MES; Justen Garrity/Veteran Compost; Benny Erez/Eco City Farms.

Others in Attendance: Lisa Williams/Synagro; Steven Worrell/MDE; Ed Dexter/MDE; Tom Nasuta/MDE; Mike Eisner/MDE; John Bronson/Topsoil ETC; Carol Holko/MDA; Loree Talley/City of College Park; Jeff Dannis/Howard County Bureau of Environmental Services; Don Birnesser/KCI Technologies; Paul Hlavinka/MDE; Ed Gertler/MDE; Kristen DeWire/MDE; Andrea Baker/MDE; David Mrgich/MDE; Kaley Laleker/MDE.

The Composting Workgroup (CWG) convened its fifth meeting at 1:30 pm September 12, 2012 at MDE headquarters.

The July 11 meeting notes were finalized and distributed to the CWG in advance of the meeting. Hilary Miller asked for comments or corrections to the draft August 8 meeting notes, also distributed in advance of the meeting. There were no comments. The August 8 notes will be finalized and distributed to the CWG by e-mail.

USCC Model Regulations Update

Brenda Platt gave an update on the forthcoming model permitting regulations developed by a group headed by the U.S. Composting Council. The model regulations were

originally planned to be released at the end of August and ready for CWG discussion at this meeting, but the release has been delayed. The regulations establish three categories of feedstocks, from lower to higher risk. Category 1 consists of materials like yard waste. Category 2 includes meat. Category 3 will include biosolids. The model regulations will also include exemptions for small facilities and will address design considerations (compost pads, etc.). They will possibly be released by the October meeting of the CWG.

Formation of Technical Subcommittee

Next, Hilary Miller proposed the formation of a technical subgroup of the CWG. The technical subgroup will consider standards to be incorporated into any revisions of MDE's composting regulations. It will look at the approaches of other states presented in earlier meetings of the CWG, the USCC model regulations, and MDE's existing regulations. The technical subgroup will also consider comments from the broader CWG. There will be approximately 2 meetings of the subgroup prior to the October 3 meeting, with the objective of preparing standards and conditions for the regulations, probably in bullet form rather than regulatory language. Volunteers for the technical subgroup were taken and the following is a preliminary list of technical subgroup members:

Carol Holko/Phil Davidson/Warren Bontoyan - MDA
Vinnie Bevivino – Chesapeake Compost Works
Craig Coker – Coker Composting & Consulting
Jeffrey Dannis – Howard County
Don Birnesser – KCI Technologies
Mike Giuranna – EPA Region 3
Melissa Pennington – EPA Region 3
Jeremy Criss – Montgomery County
Brenda Platt - ILSR
Pam Kasemeyer - MDSWA
Mike Toole – Recycled Green
Jessica Weiss – Growing SOUL
Steven Worrell – MDE
Paul Hlavinka – MDE
Mike Eisner – MDE
Ed Dexter – MDE

Scheduling was discussed and it was decided that the meetings of the technical subcommittee would be ½ day each and would be held in person at MDE, with call-in capability for a limited number of people. Hilary Miller stated she would e-mail subgroup members regarding meeting times. Craig Coker asked whether the subgroup would consider anaerobic digestion (AD) as part of the potential regulations. Hilary Miller stated that there are already standards for AD for sewage sludge in the regulations. Ed Dexter stated that AD would probably be viewed as "processing" and would likely be addressed under the existing regulatory requirements for processing facilities. While

composting facilities now fall under the processing facility regulations as well, MDE is looking to separate those out for more specific requirements.

Operational Concerns: Collection

The CWG then continued its discussion of operational concerns. The first topic was operational concerns in organics collection. Hilary Miller raised the topic of bans on plastic bags for the collection of yard waste. This issue was raised by a member during the first meeting of the CWG. Craig Coker asked whether this would be a local (rather than State) issue. Hilary Miller confirmed that it currently is a local issue, though the State could seek authority over this issue if it was determined to be necessary to improve compost quality. Several members noted that compost quality should be addressed with a standard on compost quality (i.e. the percent plastics in the end product) rather than by banning collection in plastic bags. Brenda Platt noted that ILSR did a survey in the Washington DC area and found that with respect to plastic bags, there was no level playing field for compost operators. It has become a competitive issue among facilities, which has led many facilities to accept plastic bags. This results in a loss of product and additional costs. She also noted that Minnesota is the only state she is aware of that has a state law regarding plastic bags. It applies only to the Twin Cities area. One option for Maryland would be to have a state law that applies only to urban areas. Another issue for a plastic bag ban for yard waste collection would be whether it applies to commercial as well as residential collection. Craig Coker commented that it is difficult to get all plastic fragments out of the finished compost. This can detract from quality and consumer interest in the product. Others noted that while plastic bags may impact quality, this should be left a local issue. Alan Pultyniewicz questioned who would enforce such a ban, especially for commercial collection. Where residents bring their material themselves, enforcement would also be difficult.

Next, the group discussed the frequency of organics collection. Hilary Miller noted that this issue can have public health implications and that typically it is a local issue, but could be addressed by the CWG. Jeff Dannis suggested that the CWG state merely that each local jurisdiction should have a policy for collection frequency. Michael Toole noted the CWG's purpose of studying ways to promote composting in Maryland, and questioned how mandating a certain collection frequency or banning plastic bags could promote composting. Hilary Miller stated that part of promoting composting may be to educate the public on how to properly and safely compost. Ed Dexter noted that MDE has a general enforcement duty in the statute to protect the public from nuisances relating to solid waste. He provided the example of citizen drop-offs. While MDE does not require permits for these sites, if there is a complaint at one of them, MDE will enforce the law. The approach may be similar with respect to organics collection. The CWG may want to suggest that counties decide how to deal with things like collection frequency ahead of time. This is especially true because complaints can put a composting facility out of business. Hilary Miller stated that the CWG could suggest that MDE not regulate collection frequency but state that counties and municipalities should.

Pam Kasemeyer commented that the CWG can include these collection-related recommendations but these should be secondary to other issues in the report. She acknowledged that there are political concerns surrounding the interface between State and local responsibility regarding waste management. Jeremy Criss suggested that the CWG recommend a model where MDE demonstrates it has acted on a complaint or a problem by cooperating with a local jurisdiction. For example, when there is a water quality complaint, MDE works with the local soil conservation district. There is an MOU between the county and MDE that shows these problems are being addressed, but with sensitivity to local policies. Ed Dexter noted that there is already a relationship between local health departments and the State Department of Health and Mental Hygiene (DHMH). MDE has an MOU with DHMH delineating the responsibility between MDE and local health authorities. If there were a complaint, MDE would fall back on this agreement. The complaint may be referred to a county health department. Jeremy Criss stated that Montgomery County would not object to extending that arrangement.

Vinnie Bevivino made the general comment that all of these operational issues surrounding collection would be better addressed through performance standards than "top down" regulations. For example, the State should regulate the quality of end compost rather than banning plastic bags, and prohibit nuisances rather than specifying collection frequencies. Craig Coker pointed out that MDA already has a 2% maximum on film plastic in finished compost, and that this standard needs to be tightened. Carol Holko stated that MDA is looking at their regulations right now. She suggested that it will also be necessary to address impediments to composting by making BMPs available, rather than just regulations.

Jessica Weiss commented that composting should be approached as recycling and that the public should be educated to think of composting as recycling. She offered one example, in which complaints were drastically reduced when organics were collected in blue recycling totes rather than in trash bins. Ed Dexter noted that MDE wants to promote composting, but must put reasonable controls on the process based on problems that have been confronted in the past. This will prevent opposition by the public and make composting businesses more likely to succeed. One member questioned whether MDE's Water Management Administration has fully recognized that materials become a product at some point. Andrea Baker stated that even if something is a "product," that does not mean the law will allow it to be discharged to water without a permit.

Alan Pultyniewicz commented that these collection requirements are already addressed in local law, so the CWG should just provide BMPs. Brenda Platt stated that capacity for food waste has been one of the biggest impediments for composting, so the CWG is looking at permitting issues. But, it should also look at what non-regulatory policies can be used to encourage composting, such as procurement and BMPs for use of compost for soil erosion. She mentioned a Massachusetts Organics Action Plan that contains funding, BMPs, and other policy tools that can be used to promote composting. Melissa Pennington commented that unless there is somewhere to take materials, these other policies cannot increase composting. So, the capacity issue needs to be addressed first.

Formation of Education and Outreach Subgroup

In order to address some of the non-regulatory methods of promoting composting, the CWG decided to form another subgroup to develop recommendations related to education and outreach. Once the technical subgroup meets, it will identify items best addressed through means other than regulations. These items will then be taken up by the education and outreach subgroup. The education and outreach subgroup will also review the Massachusetts Organics Action Plan as a starting point. In addition, since the USCC is already doing education and outreach, the subgroup should consider coordinating with it. Members also raised the importance of education and training as a way of promoting good composting and elevating the profession. Vinnie Bevivino suggested mandating that counties divert more organics from the landfill. Jessica Weiss and Brenda Platt volunteered to work on the education and outreach subgroup. A final list of education and outreach subgroup meetings will be forthcoming.

Operational Concerns: Processing

Next, the CWG discussed operational concerns during the processing phase. Craig Coker suggested imposing design standards that recognize Maryland's 3 separate physiographic provinces. Hilary Miller raised some other issues that should be addressed relating to processing: time and temperature requirements, when a waste becomes a product, and permitting tiers for different materials and volumes. Ed Dexter noted that there are different risks associated with different sizes of compost facilities. Large facilities have caused most of the problems seen in the past. Very small-scale composting should have lower design and operational requirements. Exemptions should also be addressed; Craig Coker suggested linking exemptions to training. While MDA has requirements for composter certification, MDE could cover situations where MDA regulations do not (e.g. production of compost that is not distributed to the public). Ed Dexter noted that the technical subgroup should also look at the existing requirements in the processing facility regulations. Melissa Pennington commented that processing standards should address whether the processing is done in-vessel or outside.

Hilary Miller raised the issue of standards for water protection. Mike Eisner stated that MDE would look at thresholds for testing of water for contamination, how the leachate will be collected and treated, and possibly which feedstocks are being used. He also stated that MDE could suggest BMPs, which, if followed, would cause MDE to be less concerned about water quality.

Jessica Weiss raised the issue of on-farm composting as opposed to commercial composting. Craig Coker stated that if a farm is composting material that came from on the farm and the compost is used on the farm, the MDA rules do not apply. He stated that there should be some way to ensure that on-farm composters not subject to these rules are knowledgeable about composting. Jeremy Criss mentioned the issue of transportation of horse manure from farm to farm for composting and how that would be regulated. Jeff Dannis stated that there should be clarity on when composting ties in to the nutrient management plan required by MDA. Vinnie Bevivino commented that the

volume/size issue and any related exemptions should be sufficient to address on-farm composting. He stated that the regulations should fall back on size to determine the level of requirements that apply. There was some discussion about whether any size-related exemptions or tiers should be based on volume of materials or on area of the facility. Craig Coker noted that in Virginia, a compost facility managing less than a certain number of tons per year is much easier to get permitted. Vinnie Bevivino stated that size categories should probably be based on volume rather than area. Brenda Platt noted that where area is used, it is likely because this is easier for an inspector to determine on the spot.

Kristen DeWire stated that the technical subgroup should address leachate management, composting surfaces (impervious or not) and separation of wastewater/leachate from stormwater. Craig Coker stated that the CWG should look to the North Carolina approach to leachate and stormwater management. Another member stated that the CWG should define finished compost. Hilary Miller commented that some of the existing Maryland sewage sludge requirements could be used to guide this effort. However, Vinnie Bevivino commented that sewage sludge requirements, particularly the time and temperature requirements, were developed only to deal with pathogens, not to protect water quality. It was noted that a finished product could still pollute water, but should possibly be treated differently than incoming raw materials.

Operational Concerns: Storage

The CWG briefly discussed issues in the storage of finished compost and raw materials. Craig Coker noted that in Virginia, storing the finished product for over 12 months is considered speculative accumulation. Ed Dexter noted that in Maryland, when a material is claimed to be a product rather than a waste, MDE looks at whether the operator can demonstrate a market for the material and show there is turnover. The type of surface for storage of materials should also be addressed in the technical subgroup.

Operational Concerns: Use of Finished Compost

Next, the CWG discussed the use of finished compost. It was noted that this issue is primarily within the purview of MDA. Craig Coker stated that composters in Maryland would benefit from having research by University of Maryland on the benefits of compost-amended soils. Research should look at all 3 provinces and show the benefits for soil quality and water quality. Funding to promote the benefits of compost-amended soils would also be helpful. Craig Coker also mentioned that the USCC has recently restarted its research foundation, which may be able to get involved in this research or fund it. Michael Toole stated that using this research, the State should promote use of compost by the State Highway Administration (SHA) and other State agencies. Ed Dexter noted that SHA has in the past decade worked to increase the used of recycled materials in highway design. Phil Harris stated that many in local government are looking to SHA to set an example for compost use. Brenda Platt noted that the Organics Task Force has looked at this and recently hosted a presentation about the Soils for Salmon program in Washington. In addition, ILSR has information on BMPs for

compost use and will be discussing these at a roundtable at the Trash Summit in November. She stated that it would be beneficial for SHA to attend the roundtable. Ed Dexter stated that he would mention this to them. Steven Worrell asked whether there are any studies on the use of compost for erosion control. Craig Coker stated that he knows of some.

Announcements and Next Meetings

Hilary Miller stated that meeting dates for the technical and outreach/education subgroup will be scheduled and sent out to people who volunteered. Documents for consideration will be e-mailed to the subgroups prior to meeting so that members have time to review them. MDE is still working on a survey of local zoning officials (discussed at the last CWG meeting). Brenda Platt stated that she would be e-mailing an announcement about a webinar to discuss creation of a Master Composter program in this area. Craig Coker announced that USCC is planning a 5-day composting course to be held in Baltimore in September 2013.

The next meetings of the CWG will be held at MDE on:

Wednesday, October 3, 2012 1:30 p.m.
Thursday, November 1, 2012 1:30 p.m. **NOTE DAY AND DATE CHANGE**
Wednesday, December 5, 2012 1:30 p.m.

The meeting was adjourned at 3:30 pm.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
OCTOBER 3, 2012 1:30 – 3:50 P.M.

Members in Attendance: Mike Toole/Recycled Green; Harold Wiggins/Paterson Environmental Holdings; Vinnie Bevivino/Chesapeake Compost Works; Charles Reighart/Baltimore County Department of Public Works; Bob Ernst/Harford County Division of Environmental Affairs; Chaz Miller/National Solid Wastes Management Association; Brenda Platt/Institute for Local Self-Reliance; Benny Erez/Eco City Farms; Andrew Kays/Northeast Maryland Waste Disposal Authority; Jeff Dannis/Howard County Bureau of Environmental Services; Phil Davidson/MDA; Phil Harris/Frederick County Department of Solid Waste Management; Gary Felton/University of Maryland Extension Service; Melissa Pennington/EPA Region III; Delegate Heather Mizeur/Maryland General Assembly; Simone Myrie/Delegate Mizeur's Office; Jessica Weiss/Growing Soul; Richard Keller/MES; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Mike Giuranna/EPA Region III; Jeremy Criss/Montgomery County Department of Economic Development; Hilary Miller/MDE.

Others in Attendance: Denice Curry/Prince George's County; Paul Hlavinka/MDE; Edward Dexter/MDE; John Bronson/Topsoil ETC; Adam Schwartz/Chesapeake Compost Works; Steve Worrell/MDE; Tom Nasuta/MDE; Lisa Williams/Synagro; Mary Lynn Wilhere/D.C. Department of the Environment; Don Birnesser/KCI Technologies; Kristen DeWire/OAG/MDE; Andrea Baker/OAG/MDE; Jeffrey Fretwell/MDE; Mike Eisner/MDE; Mario Cora/MDE; Kaley Laleker/MDE.

Members Not in Attendance: Patricia Millner/USDA; Keith Lasoya/Waste Neutral Group; Delores Milmoe/Audubon Naturalist Society; Laura Bankey/National Aquarium; Michael Virga/U.S. Composting Council; Bill Teter/Calvert County Office of Recycling; James Wood/Queen Anne's County Department of Public Works; Thomas Sprehe/KCI Technologies; Warren Bontoyan/MDA; Mac Gibson/MES; Justen Garrity/Veteran Compost; Alan Pultyniewicz/Montgomery County Department of Environmental Protection; Craig Coker/Coker Composting and Consulting.

The Composting Workgroup (CWG) convened its sixth meeting at 1:30 p.m. October 3, 2012 at MDE headquarters.

Hilary Miller asked the CWG for comments or edits to the September 12 draft meeting summary, which was distributed prior to this meeting. She stated that comments may be e-mailed to her for one week, after which the notes will be finalized and resent to the CWG.

Discussion of Technical Subcommittee Meetings and Draft Recommendations

Hilary Miller then provided a summary of the meetings of the Technical Subcommittee (TS), which had met twice since the last meeting of the CWG. The TS members reviewed numerous documents, including the presentations from other states, the MDE and MDA presentations on current law and regulations, requirements in sewage sludge permits in Maryland, a compilation of relevant definitions in Maryland and other states, the MDE food composting guidance document, and a partial draft of model composting regulations being developed by the U.S. Composting Council. As a result of the TS discussions, Hilary Miller put together some draft recommendations containing proposed feedstock categories. Brenda Platt noted that the feedstock categories will be used to apply different design and operational requirements depending on feedstock type. The TS did not yet consider the content of the design and operational requirements, so the categories may need to be tweaked again after that step. Ed Dexter stated that the TS decided the tiered system of regulations should also take into account the size of the operation. The levels of regulation could be presented in a table listing feedstock category on one axis and size on the other.

Hilary Miller stated that during the TS meetings, the subcommittee discussed definitions at length. The draft recommendation #4 lists terms that the TS decided need to be revised or created in the statute or regulations.

Jessica Weiss noted that an on-farm exemption is addressed in draft recommendation #16. She asked whether any consideration was given to whether material can be brought onto a farm to be composted under this exemption. Hilary Miller responded that the TS did discuss this with respect to farmers who lease land. A farmer with control over two pieces of land through ownership or lease could exchange materials between the two without losing the exemption. Michael Toole stated that there would be a preamble stating that new or existing sites would be reviewed and a determination made about whether the exemption would apply.

Jessica Weiss then asked about community gardens and urban farms and whether they would be exempt facilities. Hilary Miller stated that while the TS agreed on exempting backyard composting, there was no consensus about community gardens. Many people on the TS believed the availability of exemption should depend on the size of the community garden or urban farm. Brenda Platt agreed, noting that in the tiered system proposed by the TS, community gardening would be addressed through the size and feedstock tiers like any other facility. Smaller community gardens would therefore be subject to less regulation than larger ones. Jessica Weiss asked whether there would be any difference in the definitions or treatment of urban farms versus community gardens. Jeff Dannis and Ed Dexter stated that the TS had intended the determination to be based on the size and type of feedstock rather than where the material originated or where it is composted. Environmentally, the risks do not differ based on where the material originated.

The CWG next turned to draft recommendations #'s 2 and 3. Melissa Pennington stated that the TS had a long discussion about whether compost should be included in the statutory definition of solid waste (as it currently is). The TS looked at a lot of

information and considered a few different ways to address this issue. In an effort to treat composting more like recycling rather than a solid waste activity, a new composting regulation would be created under the Recycling statute (Environment Article, Title 9, Subtitle 17). It would be a "framework" regulation that would contain references to requirements applicable to each type of facility. Some existing systems would be left as they are, such as the sewage sludge regulations for composting of sewage sludge. The framework composting regulation would also refer to the solid waste regulations where appropriate (for the highest risk facilities, such as mixed MSW composting). This idea was modeled on similarly formatted MDE regulations. MDE already has the authority to write regulations pertaining to composting under the Recycling statute. Environment Article, §9-1702(c).

Timing and Schedule for Recommendations

Brenda Platt asked whether, with the report due at the end of December, 2012, any statutory changes suggested would be put forth in time for the 2013 legislative session. Delegate Mizeur, who sponsored the bill giving rise to this composting study, addressed the CWG. She thanked the CWG members for participating. She stated that the bill originated after Brenda Platt, one of her constituents, raised the issue of confusion in the law and regulations pertaining to composting. She commented that it should not be made too difficult to compost in the State, and that she appreciated the CWG's efforts to identify the activities that should not be regulated. In terms of timing, anything the CWG can get done by the end of December would be helpful in the 2013 legislative session. For a bill to be guaranteed a hearing, it must be filed by the second week in February. If the CWG lays out what needs to be done legislatively, then Delegate Mizeur or MDE could introduce the necessary legislation. Regulatory changes can go forward on a parallel track but would likely take longer to finalize because of required procedures. If some aspects of the recommendations cannot be completed by December, the life of the CWG could likely be extended.

Phil Harris asked Delegate Mizeur what she believed to be the top impediment to composting in the State. She responded that there needs to be more education about composting. Municipal collection programs similar to the Howard County pilot need to be encouraged. However, to make progress in commercial-scale composting, the law and regulations applicable to composters must be clarified. Compostable materials are largely sent to landfills because there is ambiguity about how to regulate composting. The regulatory landscape is currently so confusing and uncertain that it discourages investment in composting.

All-in-One Permits

Melissa Pennington suggested increasing clarity by creating a combined composting permit, rolling in all required permits in one document. Currently, there are separate permitting schemes for land, water, and air permits. Andrea Baker commented that if a

NPDES permit is required, MDE must follow the federal permitting process. Water permitting is done by MDE staff members that specialize in this issue. Ed Dexter stated that LMA and WMA can coordinate required hearings where possible and notify the applicant when he or she needs to obtain a permit from another part of MDE. However, sometimes differing processes for permitting are required by statute. Also, it is beneficial to have the person reviewing permit applications to be an expert in their area, rather than a "jack-of-all-trades." Hilary Miller commented, however, that regulations can reference other sections of the statute and other regulations. The TS recommends a section in COMAR that will tell the prospective composter every requirement he or she needs to follow. But, it may do so by referring to other regulations with separate permitting processes.

Melissa Pennington responded that Maryland should at least develop a clear, readable permitting guide. Jeremy Criss suggested that this should be accomplished through a diagram. Andrea Baker stated that there are existing fact sheets relating to composting, but that these would need to be revised in response to any changes made to the law or regulations. However, before any permitting guide can be created, the regulations need to be written.

Benny Erez commented that there should be one contact person to walk prospective composters through the process of obtaining all necessary permits. Hilary Miller stated that MDE used to have a permit service center, which no longer exists because funding was lost. However, MDE staff that deals with composting can put applicants in contact with the right person within the other administrations. Lisa Williams asked which program within MDE would implement the proposed composting regulation. Hilary Miller responded that the Office of Recycling implements the subtitle under which that regulation would be created.

Hilary Miller then mentioned that MDE's recent practice to address composting site proposals has been to have the applicant meet in person with representatives of all administrations that may be involved. Harold Wiggins stated that this process was helpful to him. Vinnie Bevivino agreed that it is better to present the project to all areas of MDE at one time. However, he stated that at some points during the process he asked questions to which the answers were unknown or unclear. He stated that it is important to eliminate "gray areas" in the law and regulations to reduce this problem in the future.

Brenda Platt suggested that a specific guidance document be tailored to farmers to encourage on-farm composting. She also suggested that the CWG recommend that MDE be provided resources to reinstitute a permitting center.

On-farm Composting

The CWG briefly turned back to on-farm composting. Vinnie Bevivino commented that the CWG needs to define what constitutes a "farm" for the purpose of the on-farm exemption. This is necessary to avoid a "loophole" in which operators could lease farmland solely for use as a compost facility in order to receive the exemption. Jeremy

Criss stated that locally, this is determined by whether the property is zoned as agricultural land and whether it is agriculturally assessed by the Department of Assessments and Taxation. Gary Felton noted that in State law, a farm is already defined in the Agriculture Article. A member suggested that a size limit should apply, even to the on-farm exemption. Andrea Baker stated that in many states, even the exempt facilities are subject to some conditions, and the same would likely be true here.

Discussion of Draft TS Recommendations, Continued.

The CWG returned to discussing the draft recommendations by the TS. Richard Keller asked what was intended by recommendation #2, which stated "[e]fforts need to be made to promote composting as recycling." He stated that this recommendation is vague, includes no action items, and will be ineffective without outlining more concrete steps. Michael Toole clarified that this recommendation arose from a discussion about whether composting is a solid waste activity or recycling. Many members of the TS felt that composting should not be considered a solid waste activity. Jessica Weiss stated that when an activity is referred to as recycling, the public is more receptive to it. Richard Keller noted that if this is the intent, the recommendation should state instead that composting is not a solid waste activity. Melissa Pennington remarked, however, that according to the statute, compostable materials are solid wastes. Andrea Baker noted that the decision to place any new composting regulations under the recycling statute might influence understanding of composting as a recycling activity rather than solid waste. In comparison, most states regulate composting within their solid waste regulations, which may perpetuate a perception of compost as solid waste.

Hilary Miller stated that she would revise the language in draft recommendation #2 to be clearer. Other methods of promoting composting as recycling will be fleshed out by the Education and Outreach Subcommittee.

Brenda Platt commented that in draft recommendation #4, compost should not be treated as a fertilizer within the definitions. Gary Felton disagreed and it was noted that this is a topic for future discussion by the TS. Kristen DeWire commented that in draft recommendation #4, it should be specified whether the terms to be defined or redefined would be in the statute or regulations.

Draft recommendations #'s 5 and 6 were discussed very briefly. Recommendation #5 provides that composting with any amount of sewage sludge should continue to be regulated under the sewage sludge regulations, which will be left unchanged. Recommendation #6 provides that mixed MSW compost facilities would be required to obtain a refuse disposal permit under the existing scheme. MSW is therefore not categorized in the proposed feedstock categories.

Draft recommendation #7 contains the proposed feedstock categories. Hilary Miller stated that the CWG or TS needs to further discuss and categorize poultry and seafood residuals. Charlie Reighart commented that throughout the regulations and documents created for this study, feedstocks should not be referred to as wastes (yard wastes should

be yard trim, for example). Jessica Weiss objected to designation of vegetative food scraps as Type 2, while garden vegetable residuals and grass clippings are in Type 1. She stated that she considers grass clippings more problematic than food because grass may have pesticides. She further stated that placing food waste in a riskier category impedes educational efforts by making it more difficult to do education on composting of food waste and by teaching people that food waste is a less desirable feedstock. However, Hilary Miller noted that educational efforts aimed at students would not be impacted because these are generally aimed at encouraging composting at the students' homes and backyard composting would be exempt from regulation regardless of feedstock. Jessica Weiss also stated that there are too few nitrogen sources in Type 1. Hilary Miller stated that the rationale for inclusion of food waste in Type 2 was that supermarkets typically combine all types of food scraps together (meat, etc) and some of the contents of this mixture would be problematic at a Type 1 facility. In other words, commercial food waste was the main concern. Ed Dexter also explained the relative lack of nitrogen rich feedstocks in Type 1, noting that with addition of more nitrogen, there is more risk to water quality. Chaz Miller noted that the categories are based on U.S. Composting Council recommendations. Some facilities will only want to compost grass and leaves; these are simpler operations and need not be addressed with complex regulation. The categories do not serve to prohibit composting of any materials, but merely to group them with other materials of similar risk. Ed Dexter also noted that size will be a factor in addition to feedstock, so small facilities accepting food may not bear much more regulation than Type 1 feedstocks. Brenda Platt suggested looking at New York regulations, which allow for a limited amount of food waste in the lower-risk category.

Draft recommendation #11 suggests that counties address organics diversion and compost use in their 10-year solid waste management plans. Charlie Reighart was concerned that counties would be required to spend too much time fulfilling this requirement. He stated that previous requirements to address other issues in the county plan, such as public school recycling, ended up consuming hundreds of hours and served only to document things that substantively were already being done. Pam Kasemeyer suggested removing the requirement to address use of compost in local procurement contracts on the grounds that additional people would need to be involved and the whole effort could get "bogged down" by this one issue.

Draft recommendation #12, which deals with education and outreach efforts, will be fleshed out in the Education and Outreach Subcommittee.

Draft recommendation #16 contains the proposed on-farm exemption. Jeremy Criss and Jessica Weiss reiterated that the CWG needs to consider the possibility of bringing materials from off-site. Jessica Weiss provided the example of scraps from farmers' markets that are brought to an on-farm composting site. Ed Dexter and Vinnie Bevivino stated that "farm" needs to be better defined. Benny Erez stated that even exempt farmers need to have some kind of training on how to compost properly. Brenda Platt suggested including some general performance standards applicable to exempt facilities.

Education, Outreach, and other Non-Regulatory Methods

Vinnie Bevivino stressed that the CWG should consider ways to promote the use of finished compost. Mike Giuranna suggested that the Department of Business and Economic Development could collaborate on this effort. Hilary Miller stated that the Agency does not do that kind of thing anymore, but that the CWG could still recommend it. Simone Myrie asked how Howard County educated residents about its food waste collection pilot. Richard Keller stated that homes selected for the pilot were given containers and specific instructions. The instructions were also printed on the lid of the container as a reminder to residents. Post cards about the program were distributed and information is available on the website. Michael Toole commented that the key to the program is that it is voluntary. If the program was mandatory and participants did not self-select, enthusiasm would be lower.

Hilary Miller asked for additional members for the Education and Outreach Subcommittee and stated that two more meetings of the TS are scheduled. She also stated that she would send a revised version of the TS recommendations based on the CWG discussion.

The next meeting of the full CWG is Thursday, November 1, 2012 at MDE.

The meeting was adjourned at 3:50 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
NOVEMBER 1, 2012 1:30 – 3:30 P.M.

Members in attendance: Mike Toole/Recycled Green; Maclane Gibson/MES; Jessica Weiss/GrowingSOUL; Brenda Platt/ILSR; Andrew Kays/Northeast Maryland Waste Disposal Authority; Alan Pultyniewicz/Montgomery County; Bob Ernst/Harford County; Charlie Reighart/Baltimore County; Denice Curry/Prince George's County; Ted Streett/MES; Mike Giuranna/EPA Region 3; Melissa Pennington/EPA Region 3; Jeremy Criss/Montgomery County; Benny Erez/Eco City Farms; Justen Garrity/Veterans Compost; Carol Holko/MDA; Phil Davidson/MDA; Chaz Miller/National Solid Wastes Management Association; Simone Myrie/Office of Delegate Mizeur.

Others in attendance: Craig Stuart-Paul/Fiberight; Loree Talley/City of College Park; Ed Dexter/MDE; Steven Worrell/MDE; Paul Hlavinka/MDE; Kristen DeWire/OAG; Ed Gertler/MDE; Tom Nasuta/MDE; Mike Eisner/MDE; Dave Mrgich/MDE; Hilary Miller/MDE; Kaley Laleker/MDE.

The seventh meeting of the Composting Workgroup (CWG) met on November 1, 2012 at 1:30 p.m. at MDE.

Hilary Miller began by reviewing the October 3 meeting summary, which was distributed to CWG members in advance of the meeting. There were no comments on the October 3 meeting notes. She asked for any edits to be sent to her by e-mail.

Final Report and Timing

Next, Hilary Miller addressed timing for the final report required to be submitted to the General Assembly, which will contain the results of the CWG's discussions. She stated that after this meeting, if there is sufficient consensus on the recommendations, she would put tentative recommendations into the draft report and distribute it to the CWG. The group will have a chance to review the entire report before it is submitted. She noted that in the past, reports to the General Assembly have not always been submitted on time. However, Delegate Mizeur (the sponsor of the composting study bill, 2011 HB 817) has stayed informed of the CWG's progress throughout the process.

The format of the report will roughly be as follows:

- Executive Summary
- Overview
- Lists of members, interested parties
- Summary of CWG discussions
- Recommendations
- Appendices with meeting notes and important documents that were considered

Additional meetings of the Education and Outreach Subgroup (EOS) and Technical Subgroup (TS) will be held on November 5th and 19th, respectively. The final report will not contain draft regulations, but will contain general recommendations on the content of any future regulations.

Farm Definitions

Carol Holko had provided some existing farm-related definitions from Maryland agriculture law and regulations. These were printed and distributed to the CWG at the meeting. The issue of how to define "farm" had been raised at earlier meetings and is relevant because the TS has proposed a permit exemption for certain types of on-farm composting facilities. There was some previous discussion that if "farm" is not adequately defined, this exemption could be used to evade permit requirements on land that is not actually used as a farm. For example, a large commercial composter could attempt to lease land that is zoned agriculturally to operate a compost facility, where there is no other farming activity actually taking place.

Carol Holko noted that the term "farm" is not exactly defined in existing agriculture law. The related definitions vary and have completely different purposes; there are no definitions that are overarching and cover all program areas.

Jessica Weiss commented that the definitions of agricultural products do not explicitly include compost. However, Hilary Miller noted that the definition at Agriculture Article § 10-601 includes "any agricultural, horticultural, vegetable, or fruit product of the soil," which may be broad enough to include compost. Jessica Weiss commented that the definition should allow for the soil itself being the product of an agricultural activity.

On the topic of potentially illegitimate uses of the farm exemption, Ed Dexter stated that only the large operations are likely to create issues. Andrea Baker noted that MDE and the TS has contemplated additional limitations or conditions that would apply to any exemption. Size would be one of these and may limit any significant damage from attempts to wrongly take advantage of the on-farm exemption. Justen Garrity commented that the issue might rest on whether the compost is sold. Anyone seeking to compost commercially will be selling the product and would need to obtain a permit. He noted that he is in this position and does not see an issue with getting a composting permit if the compost is to be sold.

The CWG briefly discussed whether there exist large farms in Maryland that would be likely to be interested in doing large-scale composting alongside large-scale agriculture. Jeremy Criss noted the importance of the agricultural industry in the State; it is the State's largest industry in terms of the number of people employed. While there are many smaller farms, large-scale farms do exist to a lesser extent. Ed Dexter provided an example of a recent proposal for an anaerobic digestion, composting, and hydroponic greenhouse project that would have been very large. Hilary Miller stated that while we know there exist large farms in Maryland, we do not know whether they are composting

or interested in composting. Carol Holko surmised that there are more on-farm composters than one might expect. Benny Erez was concerned that exempt farmers would not necessarily know how to compost the right way and stressed that they need education on proper composting methods, even though they may not need a permit. A member commented that in some other countries, farms frequently collect food waste from off site for composting.

Hilary Miller informally surveyed the group on whether the CWG should define agriculture. Most people did not raise their hands. Mike Giuranna stated that it depends whether there will be an on-farm composting permit. Jeremy Criss mentioned that there is a tax code definition of farm and some of the agriculture definitions draw from it. Hilary Miller stated that she would research this further.

Education and Outreach Recommendations

The CWG moved on to discuss the draft EOS recommendations, which were considered at the previous meeting of the EOS. Hilary Miller had revised the draft recommendations based on the EOS discussion, but the recommendations are still subject to revision. The following comments and issues were raised with respect to the EOS recommendations:

- A few minor changes were suggested for the recommendation that urges MDE to treat composting as recycling rather than solid waste disposal. Chaz Miller stated that the language "environmentally friendly" should be eliminated where it was used to describe recycling activities because it implies that solid waste disposal activities are not environmentally friendly. Benny Erez suggested another term that could be used in place of "waste" to describe composting feedstocks: byproducts.
- The recommendation that State and county agencies take steps to promote compost use and composting had been revised to include more specific examples of actions that should be taken. Jeremy Criss added that on-farm compost facilities should work with local soil conservation districts and NRCS. Ted Streett agreed, stating that NRCS provides technical assistance. Benny Erez noted that NRCS also provides funding to implement BMPs.
- There was some discussion on sanctioning compost use in Watershed Implementation Plans (WIP), stormwater management or sediment and erosion control manuals, and State Highway Association guidance. The existing recommendation suggested that WIPs encourage use of compost as a soil amendment. A member commented that compost blankets and filter socks should also be encouraged. Mike Toole stated that SHA only allows use of compost from manufacturers on a pre-approved list. The list is outdated and needs to be revised. Brenda Platt commented that in Washington, the stormwater management and sediment control manuals include use of compost. Maryland's manual is available on the website. Local soil conservation districts also implement the manual in Maryland, which is referenced in the sediment control regulations. Site-specific plans for construction products are submitted to the local soil

conservation district, which reviews them in accordance with the manual. Additional soil amendments that are not in the manual may be proposed for individual projects. The CWG could recommend a revision of the manual to emphasize compost use, though Kristen DeWire noted that the manual had been revised recently in 2011. The WIP is not as specific and may not be as appropriate for encouraging compost use. Mike Toole suggested that the recommendation on compost uses should be very generic to accommodate additional uses such as bioretention soils and green roofs. Another member suggested that WMA's industrial stormwater general permit include use of compost socks for sediment and erosion control. Ed Dexter stated that he had met with the SHA recycled materials task force recently. Brenda Platt gave a presentation on compost use at the same meeting. It was clear that many in the audience were not previously aware of the uses of compost.

- The CWG discussed quality standards that should be used for compost that is approved, recommended, or used by State and local governments. Brenda Platt commented that the U.S. Composting Council's Seal of Testing Assurance promotes good quality compost. However, Mike Toole noted that the Seal of Testing Assurance is expensive to obtain. Justen Garrity suggested that instead, MDA registration should be used as a sufficient indicator of compost quality, since it incorporates testing requirements. However, others noted that this is already a legal requirement for any compost that will be distributed, so it is not necessary to include this as a recommendation.
- A member suggested that in addition to education and outreach using television or radio, a mixture of media should be used to reach the public, including social media. Maryland Agricultural Education Foundation and the University of Maryland Extension were also mentioned as potential avenues for compost education and outreach.
- Bob Ernst recommended removal of language suggesting that State or local government facilities may be required to divert organics. He preferred that the language be changed from "required" to "encouraged."
- One of the recommendations stated simply that CWG recommendations are intended to reduce barriers to the composting industry. The CWG discussed this recommendation briefly. Some members noted that particular recommendations would likely be considered to present barriers to the composting industry because they will impose additional standards for compost facilities and/or finished compost. As a result, the CWG decided to change the recommendation to specify that recommendations are intended to reduce barriers to *responsible* composting.
- Mike Toole mentioned that Massachusetts had set a goal for diversion of a certain volume of additional organics from the waste stream. Several members seemed to support development of an organics diversion goal for Maryland, tied to the Statewide waste diversion goal. However, there was no agreement on whether there should be a numerical goal, and this issue will be discussed further by the EOS.

- A food management hierarchy was included in the recommendations, similar to hierarchies endorsed by Vermont and the U.S. EPA. The CWG discussed whether this should be included at all. Mike Eisner and Mike Toole commented that the hierarchy is not really a recommendation, since it does not call for any particular action. However, Hilary Miller stated that the recommendations will be presented to the legislature, and it is important that the legislature understands that some methods of managing food are environmentally preferable to others. Brenda Platt agreed, stating that this recommendation would encourage establishment of the hierarchy as a State policy.
- One of the recommendations suggested that the State take various actions to increase food donation. Carol Holko and Mike Eisner felt that food donation was not properly a subject of the CWG and that this recommendation should be removed to keep the report on topic. However, the recommendation had been included to suggest a development of a broader food recovery initiative that would focus on both donation and composting of food scraps. There was no decision on this issue, which will be further discussed by the EOS. A similar issue was raised in response to a recommendation encouraging source reduction.
- The CWG discussed the potential parties that could take responsibility for a proposed survey of large food scrap generators, which was suggested in one of the recommendations. The CWG named MDE, MDA, the MES GIS group, or University of Maryland as potential contributors to the survey.
- Brenda Platt suggested eliminating the recommendation that dealt with enhancing MDE's composting website. She argued that since 2011's HB 817 already required MDE to maintain composting information on its website, MDE should already be moving forward with any updates or improvements to the website. It should not need to recommend this action and wait for approval since it already has this mandate. However, Hilary Miller noted that the additional content and updates that are suggested here would require additional staff that MDE does not currently have. The recommendation was intended to stress the importance of providing this information and the need for additional resources to improve the website and other outreach.
- The CWG discussed the recommendation that suggests identifying additional revenue sources to fund education, outreach, and grants. A member added promoting Maryland compost infrastructure to the list of activities that should be funded with additional revenue. Mike Toole commented that the focus should be on strengthening end markets. Justen Garrity noted that compost distribution is already "taxed" by MDA for certified compost on a per-ton basis. He stated that he would not support any additional fees on compost or composters. He also commented that the CWG and the recommendations should not linger on the issue of grants and other outreach activities since there is no money available. Phil Davidson and Carol Holko confirmed that per-ton fees on compost sales are used to fund activities of the State Chemist, including salaries for chemists and inspectors. Simone Myrie stated that it would be helpful if the CWG highlighted the amount of the funding that would be necessary to maintain the education and

outreach programs proposed in the recommendations. Melissa Pennington stated that she would request this information from other state composting programs.

- The recommendations suggest that the State provide information to local zoning agencies on how to facilitate compost facility approvals. Melissa Pennington commented that Ohio has developed a model zoning code relating to compost facilities for local governments to use (Available at http://www.epa.ohio.gov/portals/34/document/guidance/GD%201011_UrbanAgCompostingZoning.pdf)
- Brenda Platt suggested including additional recommendations adapted from the Massachusetts Organics Action Plan section on public education. Specifically, she proposed recommending development of a FAQ to address concerns with composting facilities and informational materials to educate the public on new composting and anaerobic digestion technology. These actions are aimed at addressing public opposition and "not in my backyard" attitudes resulting from misinformation about composting.
- Jessica Weiss questioned whether counties using incinerators would want to encourage removal of organics from the waste stream. Several members noted that food waste is a poor fuel. However, several people from MDE stated that some counties have argued for removal of the State's yard waste ban so that yard waste could be used in waste to energy facilities. Brenda Platt suggested that the CWG include a recommendation that the current yard waste ban stay in place.
- The EOS will examine DGS's report on composting and compost use by State agencies.

Technical Subgroup Recommendations

The CWG briefly discussed the revised draft recommendations of the TS. The following comments were made:

- The recommendations propose that Maryland adopt the U.S. Composting Council model composting regulations and suggests that Maryland regulations should be performance-based. Melissa Pennington stated that the USCC model regulations are not intended to be adopted as they are. The TS has only been able to review drafts of the model rules and Maryland-specific edits will need to be made before the rules could be adopted. Ed Dexter stated that regulations cannot be entirely performance-based. He noted that sometimes regulations that are extensively performance-based can actually increase costs to regulated parties who must come up with their own facility designs to meet the standards.
- With respect to the recommendation suggesting an on-farm exemption, a member stated that it should be made clear that this exemption would apply to "captive" facilities – those that compost feedstocks generated on site and use the compost on site. A member also suggested moving this recommendation so that it is located with the other exemption recommendation (for backyard composting).

Scheduling

The next (and last scheduled) meeting of the CWG is **December 5, 2012 at 1:30 p.m. at MDE**. However, Hilary Miller stated that she would schedule an additional meeting after the December 5 meeting so that rooms will be available in the event that another meeting is needed. It was tentatively decided that Monday, December 17 in the afternoon was the best time for an additional meeting. Hilary Miller will send an e-mail confirming this date and time to the CWG.

The meeting was adjourned at 4:00 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY FINAL
DECEMBER 5, 2012 1:30 – 3:30 P.M.

Members in attendance: Mike Toole/Recycled Green; Jessica Weiss/GrowingSOUL; Brenda Platt/ILSR; Andrew Kays/Northeast Maryland Waste Disposal Authority; Alan Pultyniewicz/Montgomery County; Bob Ernst/Harford County; Charlie Reighart/Baltimore County; Ted Streett/MES; Mike Giuranna/EPA Region 3; Melissa Pennington/EPA Region 3; Jeremy Criss/Montgomery County; Phil Davidson/MDA; Chaz Miller/National Solid Wastes Management Association; Simone Myrie/Office of Delegate Mizeur; Richard Keller/MES; Harold Wiggins/Paterson Environmental Holdings; Marilyn Rybak/Prince George's County; Jeff Dannis/Howard County; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Don Bernesser/KCI Technologies; Phil Harris/Frederick County; Gary Felton/University of Maryland; Hilary Miller/MDE.

Others in attendance: Loree Talley/City of College Park; Tom Nasuta/MDE; Ed Dexter/MDE; Mike Eisner/MDE; Steven Worrell/MDE; Ed Gertler/MDE; Dave Mrgich/MDE; Brian Ryerson/Fiberight; Kitty McIlroy/Baltimore County; John Bronson/Topsoil ETC; Bob Reading/Prince George's County; Andrea Baker/OAG; Kristen DeWire/OAG; Kaley Laleker/MDE.

The eighth meeting of the Composting Workgroup (CWG) convened on December 5, 2012 at 1:30 p.m. at MDE. Hilary Miller began by requesting comments to the November 1 meeting notes, which were distributed to the CWG in advance of this meeting. No comments were made. She stated that additional comments on the notes should be e-mailed to her within the next day or two.

Next, Brenda Platt provided an update on the status of the USCC model composting rules, which had been a subject of consideration of the Technical Subgroup (TS) in incomplete draft form. She stated that the TS has been an initial audience for the USCC draft model rules, which have evolved based in part on the comments of the TS. A leader of the USCC task force is expected to send a revised full draft of the model rules to Brenda Platt by December 5. If the revised draft arrives in time, the TS will consider it at the December 6 meeting.

Size Thresholds

The group discussed whether the tentatively scheduled December 6 meeting of the TS was necessary. Hilary Miller stated that she believed the TS had gone as far as it could in its discussions without additional information relating to the USCC model rules. So, if the new draft model rules did not arrive, she did not see a purpose to another TS meeting. However, Brenda Platt believed that the TS should meet regardless. She, Mike Eisner,

and Craig Coker had been communicating through e-mail about the proposed exemption thresholds based on size. She believed this topic should be discussed further at the TS meeting. Mike Eisner commented that other States are scattered in how they measure and set size thresholds. Some are set based on the amount of incoming materials, while others are based on the quantity produced or the quantity on site at a time. Variations also exist in whether volume or weight is used to measure the threshold. The TS had not decided how or where to draw lines for size and there is a lack of good science in this area. He suggested that the TS decide the metric now and the exact numbers be filled in later.

Hilary Miller asked composter-members of the CWG which method of measurement would be easiest for them. Jessica Weiss responded with volume in gallons; Mike Toole responded with volume in cubic yards, and Marilyn Rybak responded with weight in tons. Brenda Platt mentioned that for exemption thresholds, it is better to think about smaller facilities that may not have scales. The group discussed briefly whether there would be other instances in which a size threshold would come into play. Hilary Miller asked whether the refuse disposal permit would place limits on size. Ed Dexter stated that for Natural Wood Waste (NWW) permits, there is no limit on incoming material quantities, but the spacing and pile size requirements nonetheless limit the amount of material that can be taken. For other refuse disposal permits, the capacity is based on the specifics of the site and its design, on a case-by-case basis.

Melissa Pennington noted that the TS spent almost the entire previous meeting discussing exemptions; even if the group does not have time to come to an agreement, she felt that the report should state the importance of exemptions and the factors that should go into setting them. Brenda Platt disagreed with leaving the exemption issue open-ended and instead advocated picking a numeric threshold. She noted that the existing MDE-WMA guidance for food composting sets an exemption threshold of 400 square feet. Hilary Miller commented that even if there is only a range in the recommendations, additional comments can be made in a future rulemaking process.

It was again clarified that in these discussions on exemptions, the exemption would not apply to the WMA stormwater permits, though MDE does envision a unified application process for both WMA and LMA composting-related permits.

Ultimately, the group decided that the threshold issues would be taken up at a final TS meeting on December 6 at 1 p.m.

Education and Outreach Subgroup Status

The Education and Outreach Subgroup (EOS) had its last meeting on November 5. The EOS recommendations have been captured fairly well at this point. Brenda Platt stated that the Capital Region Organics Task Force had a presentation by University of Maryland about its composting initiative. The University had developed posters and other materials for education and outreach that could be adapted for use Statewide. Brenda Platt will send the presentation to Hilary Miller.

Draft Report

Next, the CWG went on to discuss a draft report that had been circulated prior to the meeting. Hilary Miller stated that the CWG should especially think about flagging issues to be emphasized in the executive summary and issues that will need to be addressed in potential legislation.

With respect to the draft executive summary, members generally commented that it lacked some of the important points made throughout the process. It was noted that some people may read only the executive summary and should still come away with the main issues the CWG wishes to convey.

- Mike Toole suggested using data on diversion rates from the University of Maryland Presentation to extrapolate Statewide diversion rates if food composting occurs on a greater scale.
- Chaz Miller suggested including an abbreviated summary of the status of food composting, addressing the Howard County pilot and the current lack of capacity for handling food scraps.
- There was discussion about whether to include a statement on the importance of food donation in the executive summary. Some members felt this was off-topic and inappropriate for this report, while others felt it important to acknowledge that food donation is a preferred method for managing food scraps relative to composting.
- Mike Toole stated that the executive summary needs to function as a stand-alone document for people who do not read the full report. As written, it does not do this.
- Hilary Miller stated that she would add a description of the current state of composting to the executive summary, including some of the issues faced with composting in the past.
- Pam Kasemeyer echoed the previous comments, stating that the executive summary needs to include a description of the current status of the regulatory structure and how it is lacking.
- Melissa Pennington suggested highlighting the benefits of composting in the executive summary. Simone Myrie agreed and specifically requested that economic benefits of composting be included. Brenda Platt stated that she would send along information she has on the economic benefits. Melissa Pennington will send information on Ohio's composting industry before and after regulatory revisions. Brenda Platt also raised the connection between composting and healthy soil and greenhouse gas emissions reductions. Jessica Weiss noted the benefits to farming. Phil Davidson noted that composting provides a product to meet nutrient management requirements and stated that he would send Hilary Miller something to this effect in writing.
- Mike Toole suggested eliminating the subtitles in the executive summary because it is unclear where the executive summary begins and ends.
- Richard Keller stated that there should be stronger language suggesting that local agencies be involved in procurement of compost. Pam Kasemeyer felt that if

local governments are mentioned specifically here, legislators could react with local mandates, which is not really the intent of the CWG. Jeff Dannis disagreed, stating that the biggest driver of compost use will be in sediment and erosion control projects.

- Brenda Platt suggested that throughout the report, compost use should be under its own heading, because it does not belong with education and outreach. Mike Toole noted that promotion of the composting market is promotion of composting in the State and that the education and outreach section should be renamed "promotion of composting."
- Mike Eisner suggested including some background regarding on-farm composting in Maryland. Hilary Miller noted, however, that we lack information on what is currently being composted on farms. Gary Felton noted that we have some information about on-farm composting of mortalities, but this is not a large part of composting as a whole. He stated that he would put together a paragraph of background to go in the report.

In the section summarizing current laws and regulations relating to composting, Mike Toole disagreed with mentioning the WMA food composting guidance, since the report acknowledges that the guidance itself does not present legal requirements. Kristen DeWire noted that the guidance does show how the agency is currently implementing the permit requirements, which are legal requirements.

In the interest of time and since most people had not yet read the draft report, the CWG decided to skip to the recommendations in each section. The CWG went through the recommendations and identified those that should be highlighted as especially important and placed in the executive summary. These included items that will require legislative action. The CWG also made some minor edits to the recommendations, which Hilary Miller will incorporate for the revised version. New recommendations will also be inserted suggesting:

- That MDE should be given authority to write new composting regulations under the recycling statute; and
- That the existing "yard waste" ban be left in place. This was in response to some potential pressure to relax the ban so that the woodier yard waste that is difficult to compost but has good energy potential could be used for waste-to-energy.

Legislative issues

Some additional legislative issues were raised throughout the discussions. First, Alan Pultyniewicz stated that if compostable materials are removed from the statutory definition of solid waste, this may mean that they are not counted toward the counties' recycling rates under the Maryland Recycling Act (MRA). Yard trim is not currently counted in MRA recycling rates, but food is. Since current food recycling rates are estimated to be quite low, this change would not initially produce a negative impact for county recycling rates and may inflate them somewhat. However, over time, when food composting increases, counties would not be able to receive credit for this in their MRA

recycling rates. Ed Dexter noted that the definition must be carefully revised so as to allow the materials to continue to count under the MRA.

The group discussed definitions more generally. Some of the definitions suggested for revision within the recommendations may be in the statute and require legislative changes. These will be identified in the executive summary. Some members questioned whether any new terms should be defined in the statute, or whether the statute should simply give MDE the authority to write composting regulations and any needed terms (such as the feedstock types) could be defined in the regulations. Brenda Platt asked whether terms could be defined in guidance even in advance of any regulatory change. Kristen DeWire clarified that terms do not need to be defined in the statute unless they are used in the statute and need not be defined in regulations unless they are used in the regulations. Guidance can be used to interpret current regulations; where a term is used in the regulations and is subject to some ambiguity, guidance could be used to define that term. However, guidance cannot create new definitions for terms that do not exist under the current regulations. For example, placing definitions of the proposed feedstock types in guidance under the current regulations would not be effective, because the current regulatory scheme does not address or make any distinction between feedstock types.

Simone Myrie stressed that the final report should prioritize the legislative steps identified for the upcoming session. Recommendations with a fiscal impact would be unlikely to come to fruition unless they identify a source of funding.

In summary, the main recommendations that are known to require legislative action are:

- Amend the recycling statute (Environment Article, Title 9, Subtitle 17) to provide authority for MDE to create new composting regulations and a new composting-specific recycling permit.
- Amend the definition of solid waste in the solid waste statute (Environment Article, §9-101(j)) to allow for compostable materials covered under the new composting regime to be excluded from solid waste.
- Make any necessary statutory revisions that will allow for the above changes to occur without removing the ability of counties to claim composting as part of their MRA recycling rates.
- Possibly allocate general funds for MDE to conduct specific education and outreach activities over a certain time period.

Conclusion

The CWG decided not to meet again as a full group. Instead, the CWG will:

- Read and submit written comments to the draft report by e-mail by **December 12, 2012 at noon.**
- Rank by importance the recommendations that were identified for inclusion in the executive summary. These rankings will be aggregated and will determine the order of the recommendations.

It was requested that comments to the report be distributed to the full group (using "reply all"), so that members could see other members' comments. Because of time constraints, Hilary Miller stated that she would not be able to send out revised versions of the document each time comments are submitted.

The meeting adjourned at 4:00 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
TECHNICAL SUBGROUP

MEETING SUMMARY - FINAL
SEPTEMBER 25, 2012 1:00 – 4:30 P.M.

Members in Attendance: Jeff Dannis/Howard County Bureau of Environmental Services; Carol Holko/MDA; Warren Bontoyan/MDA; Phil Davidson/MDA; Brenda Platt/Institute for Local Self-Reliance; Mike Guiranna/EPA Region 3; Melissa Pennington/EPA Region 3; Mike Toole/Recycled Green; Don Birnesser/KCI Technologies; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Jeremy Criss/Montgomery County Department of Economic Development; Gary Felton/University of Maryland Extension Service; Craig Coker/Coker Composting and Consulting; David Mrgich/MDE; Hilary Miller/MDE; Steven Worrell/MDE; Mike Eisner/MDE; Paul Hlavinka/MDE; Ed Dexter/MDE; Kaley Laleker/MDE.

Members Not in Attendance: Vinnie Bevivino/Chesapeake Compost Works.

The first meeting of the composting technical subgroup (TS) met at MDE to discuss standards and conditions for compost facilities and potential recommendations for regulatory and/or statutory changes.

Definitions

The first topic on the agenda was the legal definitions relating to composting. The TS discussed which definitions potentially needed to be revised and which terms should be newly defined in regulations or the statute.

Melissa Pennington asked about the process for revision of current definitions. Hilary Miller stated that if the definition is currently in the statute, MDE could advocate for a revision during the upcoming 2013 legislative session, which would potentially allow for the change to be made in 2013. If the definition appears instead in the regulations, the process could be somewhat longer because there are requirements for public participation.

The following points were raised as potential issues to be addressed with definitions:

- **Inconsistency of existing regulatory and statutory definitions.** It was noted that the definitions of "composting" in the statute (Environment Article, § 9-1701(c)) and the MDE regulations (COMAR 26.04.07.02B(4)) differ. These also differ somewhat from the definition of composting in the MDA regulations (COMAR 15.18.04.01B(7)). These should be harmonized.
- **Definition of natural wood waste.** The definition of natural wood waste (NWW) that appears in the statute (Environment Article, § 9-1701(i)) does not explicitly include leaves or grass. The regulatory definition (COMAR 26.04.09.02B(4)) does.

Neither definition addresses addition of food, manure, or other organics to a NWW facility. The definition of NWW should be clarified.

- **Recycling facilities v. solid waste facilities.** Operations that collect, process, and recover organics should be defined as recycling facilities rather than solid waste facilities. This is the approach advocated in the Massachusetts DEP's organics action plan, for example. Ed Dexter clarified the current legal classification of recycling and solid waste facilities as follows. Under the solid waste statute, composting and recycling facilities are considered solid waste facilities (processing facilities). The recycling statute is somewhat newer and includes provisions that could possibly be interpreted to separate recycling facilities from solid waste facilities into two distinct types. Consequently, in the past MDE has not required recycling facilities to obtain solid waste permits. However, a more precise interpretation of the statute was undertaken and resulted in the conclusion that some recycling facilities may also be solid waste facilities in need of a refuse disposal permit. Composting facilities are already addressed explicitly in the processing facility regulations and MDE has permitted a MSW composting facility with a refuse disposal permit in the past. In addition, the county solid waste planning provisions of the statute define solid waste acceptance facility, which is broad and includes compost facilities. So, compost facilities are required to be in county solid waste management plans. Jeremy Criss stated that the statute needed to be fixed as a starting point.
- **Solid waste v. recyclable materials.** It was noted that under the current law, something that is recyclable can also be solid waste. Compostable materials are solid wastes under Environment Article, § 9-101(j). The recycling statute refers to natural wood *waste recycling* facilities, implying that some things are wastes even when they are being recycled. Federal definitions of solid waste within the federal hazardous waste rules indicate that even if a material will be recycled, it is solid waste until it becomes no longer a solid waste.
- **Impervious surface**. An impervious surface is not required for NWW facilities. A member stated that surface requirements need to be defined differently by the scale and type of the operation. Mike Eisner stated that currently, a discharge permit can be either general or individual. He urged the members to look at the recently revised guidance on water permitting for food waste composting facilities. Those requirements are currently "one size fits all." Food composting facilities would need an impervious surface ($\leq 10^{-7}$ cm/sec). Mike Eisner stated that the current guidance may be too restrictive and needs to be more flexible. He stated that construction requirements need to be based on risk factors.
- **Feedstock categories.** Ed Dexter suggested that feedstock categories should be defined to identify those that require a higher level of regulation because of their environmental risk. Some feedstocks may be of sufficient risk that facilities composting them will require a refuse disposal permit, while others may be in a low risk category that is entirely exempt from solid waste regulation, needing only a general discharge permit. Brenda Platt stated that the USCC model regulations (forthcoming) will likely define three feedstock categories. The first category will

be the lowest risk and include things like yard waste. The second category will be the medium-risk feedstocks, such as source-separated organics including food waste. The third will be biosolids and other riskier feedstocks. There has been some dispute about where manure fits in these categories.

- **Compost classes**. Paul Hlavinka asked about the classifications of compost. Since these depend on the metals content of the finished product, the class of the compost could bear on the appropriate level of water protections required of the facility producing it. However, Jeff Dannis noted that high levels of metals are usually only associated with sludges; here we are talking mostly about yard waste with or without food mixed in.
- **Statutory definitions of compost and composting.** Ed Dexter suggested that the current definitions in Environment Article, §9-1701(b) and (c) are okay as they are. Jeff Dannis disagreed, stating that the definition of composting in §9-1701(c) should specify that the process is aerobic. The definition of compost in §9-1701(b) refers to MDA regulations, which describe compost as a stabilized product that came from an aerobic process. The TS generally agreed that MDE and MDA should work together to come up with a consistent definition of compost and composting and present it to the group.
- **Persistent herbicides.** There was some discussion about how to deal with products such as Imprelis that are used on grass, then arrive at compost facilities in grass clippings and do not break down. Brenda Platt noted that composters cannot control or easily detect what is used on the incoming material and questioned how this could be addressed in composting regulations. Jeff Dannis suggested that it could be prohibited to use or bring certain products to the compost facility, and composters could be required to test for these products before selling the compost. Gary Felton suggested that composters have an incentive to avoid these quality problems from a business perspective and it may not be necessary to put this in regulations. Carol Holko stated that MDA could consider adding a testing requirement for persistent herbicides to the existing testing requirements. Ed Dexter noted that the processing regulations seem to allow for MDE to impose a testing or monitoring requirement for finished compost (COMAR 26.04.07.23E(1)).
- **Definition of finished compost, product.** Jeff Dannis suggested a clearer definition of when the compost becomes a product and stops being a solid waste. For MDA's purposes, the compost is a product when it is registered. In order to be registered it must be stabilized. The solid waste statute merely provides that compost, as defined in §9-1701, is not solid waste. § 9-1701, in turn, defines compost by referring to MDA's definition.
- **Pathogen control.** Paul Hlavinka raised the issue of BMPs for pathogen control. It was agreed that these need to be addressed, but maybe not as a definition. MDA does not require testing for pathogens as part of its requirements for finished products, but it does require documentation of time and temperatures during the composting process. Brenda Platt suggested using performance standards, such as a requirement to control pathogens or submit a plan to control pathogens. Ed Dexter noted that for NWW facilities, the general permit is very prescriptive. If a facility

decides not to abide by those requirements, it may propose something different through the individual permit process.

- **Compost uses.** Carol Holko stated that FDA regulations are forthcoming implementing the Food Safety Modernization Act. The regulations may place restrictions on the use of compost on food crops. It was also noted that ill ruminants should not be composted for safety reasons. University of Maryland has a fact sheet on how to properly compost animal mortalities. However, even proper composting cannot deactivate prions. Melissa Pennington stated that these issues could be addressed by limiting the definition of feedstocks (e.g. excluding animals with certain illnesses as a feedstock).
- **Leachate.** Brenda Platt raised the issue of terminology to be used for water that runs off from feedstocks and compost piles. She stated that the USCC model regulations will avoid using the term leachate because that term is associated with landfill leachate. Minnesota, for example, refers to the water as contact water; this is how it differentiates this runoff from stormwater. Paul Hlavinka stated that leachate is defined by the EPA and is not specific to landfills, so it is unlikely that the term will be abandoned for compost facility runoff, though leachate from composting may not be treated identically to leachate from a landfill.
- **Source-separated organics.** A few members agreed that the group should consider a category for source-separated organics similar to Minnesota. Some states have excluded source-separated organics from the definition of solid waste. However, such an approach would require a change to the statute. Hilary Miller noted that this may be a possibility if the CWG decides to recommend it.

Collection

The TS moved on to discuss issues in collection of organic materials.

Plastic bags for yard waste. The first topic was the use of plastic bags for collection of yard waste. Hilary Miller stated that this issue is mostly an aesthetic and product quality issue rather than an environmental or public health issue (except perhaps the issue of plastic blowing off-site as litter). Several members voiced the opinion that plastic bags should not be banned for yard waste at the State level, since this is rightly a local issue. Jeff Dannis suggested that this issue may be outside the province of the CWG, which has the goal of promoting composting in the State. Pam Kasemeyer stated that local control of this issue should not be disturbed because local governments have undergone separate decision-making processes to decide how and where to collect yard waste and have weighed economic issues. Local governments may have made a reasoned decision to allow plastic bags because they believe it will encourage better participation rates and paper bags are more expensive. In addition, any Statewide prohibition on plastic yard waste bags would be politically problematic.

Craig Coker provided an alternative; the State could incentivize the use of paper bags by developing a State contract for paper bags, which the counties could purchase. Jeremy Criss stated that in Montgomery County, residents pile leaves on the street at collection time. However, cities issue their own rules about collection method. Brenda Platt

commented that State action would level the playing field among composters. Plastic bags are a cost issue for compost facilities. Some local governments may find it politically difficult to institute their own bag bans but would welcome State action.

Plastic limits on finished compost. Many members agreed that State action with respect to the percent of plastic in the finished compost is more acceptable than a ban on plastic bags. Currently, MDA has a limit of 2% manmade inerts. Soil amendment guidance from EPA sets a limit of 1%. Washington has proposed regulations that limit foreign matter to 1% by weight, with film plastic limited to 0.1%. MDA may consider moving toward 1%, though that may be too restrictive. Pam Kasemeyer suggested running this issue by recycling coordinators. Hilary Miller stated that she would ask recycling coordinators for their opinions.

Collection frequency. There was general agreement that this issue should be left to local governments.

BMPs v. Regulations

Though this issue was addressed as part of a discussion on collection, it crosses all the discussion categories. At the last meeting of the CWG, there was a suggestion of using BMPs and performance-based standards rather than prescriptive regulations. Hilary Miller noted that under current law, MDE has to regulate these facilities; Water Managament Administration (WMA) has to issue water permits for composting facilities and Land Management Administration (LMA) has to issue solid waste permits in some instances. One argument is that there is a more level playing field and more certainty for industry if requirements are spelled out in regulations.

Mike Eisner described the differences in approach for the general and individual water permits. General permits are easier and quicker to obtain and can be performance-based or based on effluent limits. An individual permit is site-specific, requires public participation, and can take 6-12 months to obtain. The individual permit is used for facilities with higher risk. For food waste composting, the current guidance only includes two categories. If a facility is under 5,000 ft^2 in size, it can receive a general permit. If it is larger, additional conditions kick in, including the requirement for an impervious pad. Yard waste facilities are mostly handled under the general permit. WMA now believes the 5,000 ft^2 threshold may be inappropriate. Data from North Carolina suggests that yard waste runoff has a lower concentration of nutrients than food waste. However, there is not a lot of data available and some studies do not specify the feedstocks. Mike Eisner requested that TS members review the guidance for the next meeting and provide their comments and suggestions. At some size, BMPs likely will not be sufficient.

Mike Toole noted that other permits, such as the NWW recycling facility permit, currently include prescriptive requirements. He stated that MDE should consider whether a performance-based standard could be implemented that would be as protective. Ed Dexter stated that the NWW permit is unique because the statute itself is very prescriptive, which has resulted in the permit being prescriptive. There was some discussion of recommending changes to the NWW statute. Pam Kasemeyer stated that there is concern that if there are additional requirements imposed on NWW facilities, the

activity may become cost prohibitive. The feeling among some of those in that industry is that if the practice is currently working, it should not be changed in any way that would risk it becoming an unviable business. Brenda Platt commented that the TS should at least review the NWW regulations to see if revision is needed. Hilary Miller stated that she would send out the NWW regulations for the TS to look at before the next meeting. She suggested that NWW could potentially be combined with other materials to form the lowest tier of feedstocks. There was some discussion on the prevalence of leaf and grass composting outside the requirements of the NWW permit; Ed Dexter clarified that right now, LMA does not usually regulate leaf and grass composting alone because it is not NWW.

Several members made the point that in determining where BMPs or more stringent and prescriptive requirements are warranted, the primary considerations must be size and type of materials. Ed Dexter described a previous compost facility that began to have problems with odors, vectors, and discharges when it began to take in too much material and its process suffered. The piles were too large and went anaerobic. Paul Hlavinka stated that pathogens are still present in leachate, regardless of the feedstock. MDE can either limit pathogens or impose BMPs. North Carolina put limitations on the amount of e. coli, which has resulted in many violations. The TS largely agreed that a combination of BMPs and regulations will be needed, depending on the size and type of operation.

Increased Diversion of Organics. Hilary Miller stated that the previous Solid Waste Study Group had identified increased diversion of organics as a priority but did not recommend that it be mandatory. She noted that diversion requirements are typically based on population in Maryland and that perhaps there could be some type of organics diversion requirement that applies first to the larger counties. Brenda Platt provided an alternative – counties could be required to address organics diversion (particularly food scraps) in their solid waste management plans, without any numerical requirement for diversion. Mike Toole stated that it is important to address the market for the end product first or concurrently with increasing diversion. This will avoid a glut of collected materials. He suggested that counties be required to address use of finished compost. The EPA has a comprehensive procurement guideline for compost and the State Highway Association should follow suit. Local governments usually follow behind the SHA. David Mrgich also noted that there are public misconceptions about food compost that need to be addressed. Mike Toole stated that generally the market for compost is good; supply of incoming yard waste is tight.

Tiers of Regulation

Next the TS discussed the classes of feedstocks and potential tiers for regulation in more detail. There was general agreement that backyard composting for individual households should not be regulated.

Community gardens are more complicated. The threshold for regulation may be when material is accepted from off site. Or, the overall size of the facility could be the determinant in whether it is regulated. Brenda Platt commented that whether off-site material is accepted should not be the trigger for additional requirements. Hilary Miller noted that this is the case for NWW, however. Carol Holko questioned where the 5,000

ft^2 threshold for water permitting came from and stated that requirements should be science-based wherever possible given available research. Jeff Dannis stated that if that is not possible, requirements should at least be consistent with other regulatory requirements (e.g. thresholds for erosion control plans) to reduce confusion.

With respect to size thresholds, the limit could be expressed as either an area (footprint) or a volume of materials. Gary Felton stated that it would scientifically most appropriate to use a combination of size and material type to set regulatory tiers.

Jeff Dannis created a matrix with feedstock types along one axis and sizes along the other. The TS decided to take this framework and fill it in with suggested size thresholds and levels of regulation for each combination. The TS can discuss the results at the next meeting. Several people noted that this exercise can draw from the tiers used in other states, adapted for Maryland's waste stream. Brenda Platt noted that in Oregon, even the smaller facilities must meet performance standards and alert the State that they exist. Mike Toole stated that feedstock categories may need to address different types of food waste separately and that there should be a definition for "source-separated" materials.

The TS meeting adjourned at 4:30 p.m.. The next TS meeting will be held at MDE at 1:00 p.m. on Monday, October 1, 2012. The next meeting of the CWG will be on Wednesday, October 3, 2012 at 1:30 p.m. at MDE.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
TECHNICAL SUBGROUP

MEETING SUMMARY - FINAL
OCTOBER 1, 2012 1:00 – 5:00 P.M.

Members in attendance: Jeff Dannis/Howard County Bureau of Environmental Services; Carol Holko/MDA; Phil Davidson/MDA; Brenda Platt/Institute for Local Self-Reliance; Mike Guiranna/EPA Region 3; Melissa Pennington/EPA Region 3; Mike Toole/Recycled Green; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Jeremy Criss/Montgomery County Department of Economic Development; Gary Felton/University of Maryland Extension Service; Craig Coker/Coker Composting and Consulting; Ted Streett/MES; Hilary Miller/MDE; Steven Worrell/MDE; Mike Eisner/MDE; Paul Hlavinka/MDE; Ed Dexter/MDE; Kaley Laleker/MDE.

Members Not in Attendance: Vinnie Bevivino/Chesapeake Compost Works.

The second meeting of the Technical Subgroup (TS) of the Composting Workgroup (CWG) convened at 1 p.m. on October 1, 2012 at MDE. Prior to the meeting, several documents for consideration were distributed to TS members:

- Draft permitting tier matrix
- Current MDE guidance document for food composting
- USCC draft model regulations – definitions and Tier 1 regulations
- A summary of relevant definitions in Maryland and other states
- Information on the federal Food Safety Modernization Act and forthcoming regulations

Draft meeting notes from the first meeting of the TS were also distributed just prior to the meeting. The TS focused on the definition of solid waste, how to structure any new regulatory requirements, and feedstock tiers.

Should Source-Separated Organics be Excluded from the Definition of Solid Waste?

Melissa Pennington put together a summary of compost-related definitions in Maryland and other jurisdictions. She noted that of the states that have regulations specific to composting, many exclude source-separated organics from the definition of solid waste. In Maryland, the definition of solid waste appears in the solid waste statute at Environment Article § 9-101(j) and currently includes compostable materials within solid waste. She stated that if the CWG wanted to follow these other states' approach, it could add an exemption for source-separated organics in § 9-101(j)(3), which would be a relatively simple revision.

The TS then discussed in depth two options. First, the statute could be amended so that source-separated organics are not solid waste. Under this option, facilities processing

source-separated organics (SSOs) would no longer fall under the refuse disposal permit scheme. Entirely new and separate regulations would be created (probably under the Recycling statute, which may also need revision) to deal with SSOs facilities. Second, the statutory definition of solid waste could be left as it is – inclusive of compostable materials but exclusive of finished compost. Because this option would leave SSO compost facilities within the refuse disposal permit scheme, new exemptions from the requirement for a refuse disposal permit could be created by regulation for less risky facilities.

Ed Dexter stated that at the higher end of risk, facilities should still be treated as solid waste facilities. Pam Kasemeyer suggested excluding SSOs from solid waste, but including the phrase, "unless otherwise specified by the Department," allowing MDE to identify instances in which SSO facilities are to be treated as solid waste facilities. She also expressed doubt that the legislature considered in depth whether SSOs should be included in solid waste. Consequently it may be open to the statutory revision. Melissa Pennington stated that the desired result could be accomplished through either approach, but that the TS should decide on an approach now because it will impact the work that needs to be done in developing recommendations. She also noted that one of the impediments to composting in Maryland is that the current regulatory scheme includes requirements from multiple areas of the law and the requirements are confusing and scattered. "Stand-alone" regulations for composting, separate from the solid waste statute and regulations, could provide a simpler roadmap for compost facilities. Ed Dexter stated that very rich feedstocks at large facilities will need engineering review and more significant controls. The advantage of leaving SSOs as solid waste would be the ability to take advantage of the existing regulatory system for these riskier facilities. If SSOs are removed from solid waste, no SSO facilities could be permitted using the refuse disposal permit. Michael Toole stated that there are two tasks at hand – one is to update the regulations and the other is to follow the HB 817 mandate to identify obstacles to composting. Including SSO as solid waste is an obstacle and excluding it would acknowledge that composting is not a solid waste enterprise. Melissa Pennington commented that in some states, the regulations state that no size facility dealing with a certain high risk feedstock would be exempt. Carol Holko commented that it would be simpler and more preferable to make the desired changes through regulations and leave the statute alone.

Hilary Miller noted that the Office of the Attorney General has stated that MDE has the authority now to develop additional regulations for compost facilities. Regulations could be placed under the recycling statute, with a separate section for source-separated organics, similar to natural wood waste. Brenda Platt stated that compost facilities are not like landfills, and should not be regulated in the same way. Ed Dexter commented that for very large compost facilities, they begin to look similar to solid waste facilities and have some of the same risks. Jeff Dannis made the distinction that everything in a compost facility goes back out in the form of a product, unlike at a landfill. However, this is the case for other processing facilities included within the solid waste statute. Melissa Pennington stated that while the focus here has been on the concerns with the largest facilities, small facilities will form most of the infrastructure for organics

diversion. Craig Coker asked whether concerns about the riskier facilities could be addressed without including compostable materials in solid waste. Ed Dexter commented that while it could, it would save work to use the existing regulatory scheme designed for this level of risk rather than developing a new one specific to compost facilities.

Jermey Criss proposed using the regulatory approach discussed above as a pilot to see if it works. However, others noted that there is probably no legal basis for adopting regulations as a pilot. The CWG could recommend review of regulations after a 5 year period, however.

At the end of this discussion, it was tentatively decided that the TS would recommend leaving the statutory definition of solid waste inclusive of compostable materials. Exemptions from the refuse disposal permit requirement and additional requirements specific to composting would then be fleshed out in regulations.

Other Issues Relating to the Definition of Solid Waste

Inconsistencies in the definition of solid waste were then discussed. The definition in the solid waste statute, found at Environment Article §9-101(j), differs from the definition in the regulations adopted under the authority of that statute. The regulatory definition is found in the solid waste regulations at COMAR 26.04.07.02. It refers to the definition in the hazardous waste regulations at COMAR 26.13.02.02, which were adopted under a different statute. Because this definition conflicts with the definition in the solid waste statute, the reference has been considered inapplicable and was likely a mistake. The regulatory definition in COMAR 26.04.07.02 should be changed to conform to the solid waste statute.

However, the idea was raised that some aspects of the hazardous waste definition of solid waste could be borrowed and incorporated into the solid waste definition. Melissa Pennington stated that if the definition of solid waste is to be changed, the group should look at states that have succinct, clear definitions without cross-references. Pam Kasemeyer agreed, stating that the goal is for a person to be able to understand which regulations they need to follow.

Structure of New Compost-Specific Regulations

The TS discussed how to format new regulatory provisions on compost facilities.

Ed Dexter raised the example of other regulations that established a new scheme containing some new provisions and some old provisions. To make this approach more coherent, a single "parent" regulation was created. That regulation described various scenarios and referred the reader to the appropriate place depending on what the person is trying to do. Some of these references sent the reader to existing regulations; others sent the reader to new regulations specific to that subject.

This approach could be used for compost-specific regulations. One parent regulation would serve as a starting point for anyone starting a composting operation. Provisions within that regulation would refer the reader to specific agriculture regulations, water regulations, or the refuse disposal permit (processing facility) regulations, where applicable. New provisions would be created to deal with facilities exempted from the refuse disposal permit requirement. Jeff Dannis noted that the permit tier matrix could be inserted into this "parent" regulation for clarity.

The TS responded to this suggestion. Michael Toole pointed to the Massachusetts Organics Action Plan and stated that the CWG should be focusing on how to eliminate barriers to removing organics from the waste stream. Carol Holko suggested that the TS decide what result it would like to achieve, and then allow MDE to decide exactly how to fit it into the regulatory structure. Brenda Platt stated that she was still uncomfortable with addressing any compost facilities through the refuse disposal permit and recommended looking to the Oregon approach. Ed Dexter clarified that under his suggestion, most compost facilities would not fall within the refuse disposal permit requirement; this would be reserved for only the highest tier.

It was agreed that the changes discussed would impact only solid waste requirements, not water permitting. However, the new composting regulation may include references to water requirements.

As a result of the foregoing discussions, the TS will tentatively recommend creating a new regulation under the recycling statute specific to composting. This may require a change to the recycling statute.

Water Permitting

The requirements for water permitting of compost facilities were discussed. If a compost facility qualifies as a covered industry and there is an opportunity for rain to contact materials, some type of discharge permit will be required. This is based on the potential for discharge. The type of permit required may be a stormwater general permit (GP), which is quicker and easier for parties to obtain, or an individual permit.

Michael Toole asked when compost is no longer a solid waste and no longer subject to water requirements. It was clarified that whether a contacted material is solid waste is immaterial for the purposes of determining whether a discharge permit is required. Rain need not contact a "solid waste" to be capable of polluting water – it could contact other materials during the manufacturing process.

Michael Toole asked whether a compost facility with an entirely separate area for storage of finished compost would be required to have stormwater protections and be covered within the permit, or just the area containing unfinished materials. For example, expense would be reduced if an operator could lay a pad only under the unfinished materials. Mike Eisner responded that BMPs would probably be needed for both areas and both areas would be covered under the stormwater permit, but that more controls would be

required for unfinished compost areas. Whether BMPs for finished compost areas would require a pad is up for consideration. Paul Hlavinka stated that controls could be accomplished by requiring BMPs or by giving limits on effluent that may be achieved however the operator wishes. Gary Felton stated that usually BMPs are cheaper. Paul Hlavinka noted that they may also be more effective since they are in place at all times. Testing may only take place quarterly. The EPA stormwater GP requires operators to test against certain benchmarks; these are not limits but are intended to tell the operator whether the BMPs are working. After a certain period of consistently testing within benchmarks, the operator may receive more lenience. The BMPs would probably be presented in a guidance document similar to the existing one.

Craig Coker asked whether a fabric-covered facility like the Gore system would fall within the "no-exposure" exemption. Paul Hlavinka stated that it probably would not. Storage and receiving may be conducted outside and there may not be a bottom to the cover. Gary Felton stated that the Gore system is close to being completely enclosed. Jeff Dannis disagreed, stating that some small amounts of materials are not swept under the cover or tracked outside the cover. Gary Felton noted that tracking occurs with any manufacturing facility that is enclosed.

Jeremy Criss asked whether composting where the product is used on site would be subject to the permit. It was clarified that unless compost is being produced for sale or bartering, the activity is not industrial and is not required to be covered under the permit. Similarly, if food waste is brought in from off site but the resulting compost is used on site, no stormwater permit would be required. Mike Eisner stated that he was unsure of whether production of compost for free distribution would be industrial or not.

Gary Felton stated that on-farm composting where the compost is sold off-site becomes prohibitively expensive if farmers are required to construct an impervious pad. Mike Eisner stated that the current guidance is only a starting point, and that he would like suggestions about pad design. He stated that at some scale, a 10-7 pad would probably be needed. Several people disagreed with this. Carol Holko requested some research to substantiate the requirement for a 10-7 pad and to show this is appropriate for on-farm composting. The document, "Best Management Practices for Incorporating Food Residuals into Existing Yard Waste Composting Operations" (written by USCC, funded by EPA Region 3) was mentioned as a resource to consult.

Feedstock Tiers

The TS then discussed the feedstock categories in the USCC model regulations document. Craig Coker, who is on the task force that developed the model, stated that the task force is made up of state regulators, compost facility operators, and others with experience in composting. The document is the result of months of back and forth discussions on the feedstock categories, so he suggests that the TS seriously consider adopting the categories.

The three USCC feedstock types were read and compared with the feedstock categories in the draft permit tier matrix. The USCC categories number from Type 1 (low risk) to Type 3 (high risk). The following specific issues were discussed:

- **Garden residuals** are in Type 1 of the USCC categories. Craig Coker stated that he believes this is intended to mean residential garden residuals.
- **Physical contaminants**. Type 2 feedstocks are those that pose a higher risk of physical contaminants than Type 1. This was explained to primarily refer to the prevalence of items like plastic, rubber bands, metal twist ties, and glass that show up in food waste.
- **Human pathogens**. Type 2 feedstocks are those that pose a higher risk of human pathogens than Type 1. This mostly refers to human pathogens in post-consumer food waste.
- **Chicken processing waste**. Under the USCC categories, this would be either Type 2 or 3. If the material is approved by the Department, it could fall under Type 2. Otherwise, it would fall under Type 3.
- **Manure**. The USCC task force is still trying to decide whether to put animal manure in Type 2 or 3, though Craig Coker believes it will ultimately go in Type 2. The TS discussed where to place manure. On one hand, biosolids are within Type 3, and maybe manure should be treated the same. However, animal diets are more controlled than human diets. Oregon puts manure and bedding in its own category because it is primarily handled in an agricultural setting. Gary Felton stated that as long as the manure has moisture content less than 60%, it should go in Type 2. Jeremy Criss raised concern with separating manure from NWW, since he wanted to ensure that it is easy for operators to mix the two. Ed Dexter noted that mixing the two feedstocks would bump the facility into a higher tier, though the operator would be free to do so. Craig Coker stated that he believes manure should generally go in Type 2. Brenda Platt suggested that Type 2 contain manure and bedding approved by the Department. Other manure and bedding would go in Type 3. It was also noted that on-farm exemptions could be used to deal with manure.
- **Vegetative Wastes**. In the USCC document, vegetative food wastes are in Type 2. Some members suggested moving vegetative food wastes to Type 1 with the other vegetative wastes (agricultural crop residues, garden residuals, etc.). Michael Toole noted that residential collection and composting of food scraps is a major aspiration for Maryland, so vegetative food waste should not be placed in a higher tier. Hilary Miller noted that Type 2 wastes tend to be more commercial, while Type 1 are more residential; perhaps vegetative food wastes should stay in Type 2 if they come from grocery stores or other businesses. Jeff Dannis suggested splitting Type 1 in to a 1a, which would include only NWW and would eliminate the need to change the NWW permit, and a 1b, which would include yard waste and vegetative waste. The TS ultimately decided to leave vegetative food waste in Type 2. Differences between it and other types of food waste could be addressed in the design and operational standards. Since all food waste is in

Type 2, the TS decided to revise the language to state "food scraps, including vegetative food wastes, meat, source-separated mixed food waste, and department-approved industrially produced vegetative food waste."

- **Limit on proportion of food waste in Type 2**. Paul Hlavinka suggested limiting Type 2 feedstocks to 20% food waste. Gary Felton and Craig Coker both opposed this, stating that the percentage of food waste should instead be limited by the C:N, moisture content, and free air space, which are management concerns.
- **Sewage Sludge** is within Type 3 in the USCC document. Because there is already a separate process for permitting sewage sludge facilities, the TS decided to place sewage sludge in a category of its own – Type 4, which would also include septage.
- **MSW** is in Type 3 in the USCC document. Because Maryland already has the refuse disposal permit system for solid waste facilities, and the TS generally agreed to retain this process for MSW composting, MSW will be removed from Type 3. MSW composting will not be addressed in the new regulations. The regulations will refer to the existing solid waste regulations instead.
- **Dead animals and diapers.** These materials, not addressed in the USCC document, will be added to Type 3.

Exemptions

The exemptions in the USCC model regulations were briefly discussed, though they will need to be discussed further in future meetings. It was determined that the exemptions exempt facilities from the design and operational requirements and the permit requirement. However, this applies only to solid waste requirements; water permitting may be required for exempt facilities. Craig Coker raised the possibility of a permit-by-rule for some medium-risk facilities. Others stated that this should be considered in later meetings.

It was decided that the TS would meet again after the October 3 meeting of the CWG. Scheduling was discussed and Hilary Miller stated that should would find acceptable dates and notify the TS. She also stated that she would write up tentative recommendations based on the discussions of the TS and present these to the CWG at the October 3 meeting.

The next meeting of the CWG will be October 3, 2012 at 1:30 p.m. at MDE. At that meeting, the CWG will discuss:

- TS recommendations so far
- The Massachusetts DEP Organics Action Plan
- The USCC/EPA Region 3's "BMP's for Incorporating Food Residuals into Existing Yard Waste Composting Operations."

The meeting was adjourned at 5:00 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
TECHNICAL SUBCOMMITTEE

MEETING SUMMARY - FINAL
OCTOBER 12, 2012 1:00 – 5:00 P.M.

Members in attendance: Craig Coker/Coker Composting, Brenda Platt/Institute for Local Self-Reliance, Jeff Dannis/ Howard County Bureau of Environmental Services; Carol Holko/MDA; Phil Davidson/MDA; Ted Streett/MES; Mike Toole/Recycled Green; Mike Eisner/MDE; Hilary Miller/MDE; Ed Dexter/MDE; Paul Hlavinka/MDE; Melissa Pennington/EPA Region 3; Dave Mrgich/MDE; Steven Worrell/MDE; Kaley Laleker/MDE

The third meeting of the Technical Subcommittee (TS) of the Composting Workgroup (CWG) convened at 1 p.m. on October 12, 2012 at MDE. Hilary Miller asked the TS for any edits to the meeting summaries for the September 25 and October 1 meetings by October 19th.

The TS then discussed various topics related to the revised draft TS recommendations (distributed previously).

Persistent Herbicides

Jeff Dannis suggested that the TS follow up on its discussion about persistent herbicides from the first meeting. Craig Coker noted that in Vermont, persistent herbicides in manure have posed problems for manure-based composts. Herbicides are used on grain, which is used for feed. Some types of herbicides then remain present in manure and persist even after a normal composting process. One Vermont municipality has recently had to recall compost because it killed the plants on which it was used. It is therefore important to remember that this issue does not only impact green waste. Brenda Platt confirmed this, stating that concentrations of 10 ppb of persistent herbicides were detected in both horse feed and horse manures. In response, the U.S. Composting Council (USCC) is forming a workgroup to develop a protocol relating to persistent herbicides. This will be incorporated as a requirement to obtain USCC registration. Ohio State University has also studied the impacts of herbicide-laden compost on plants. It may be necessary to consider a bioassay test for finished compost to flag problems with persistent herbicides. To complicate matters, different labs have found different results.

Mike Eisner stated that the issue of persistent herbicides in manure is a reason to place manure into a separate risk category for regulation. Mike Toole disagreed, stating that any vegetative matter exposed to systemic herbicides like the ones at issue here could potentially cause these problems for finished compost. This problem is not unique to manure and does not justify treating manure separately. However, Mike Eisner noted that manure may also have an elevated risk of pathogens, justifying separate treatment.

Ed Dexter stated that the current processing facility regulations address the content of the finished compost, requiring sufficient quality and prohibiting injurious particles. These requirements would apply only to those facilities obtaining refuse disposal permits, however. Current authority of both MDE and MDA would allow for increased controls on persistent herbicides in the end product.

Some members felt that this issue is not properly before the TS, which should be focusing on regulation of composting facilities (rather than products) by MDE. Carol Holko commented that this is an end user issue, and not a regulatory issue to be addressed by MDE. Moreover, MDA could already require testing for persistent herbicides under its current authority or could do spot checks of products. Brenda Platt stated that California and Washington have passed laws restricting the use of certain herbicides by residences and suggested that the TS recommend such an approach. Ted Streett also felt this issue was unrelated to the TS's mission. Hilary Miller noted that the broader goal of the CWG is both to encourage composting and to avoid discouraging it, which includes eliminating problems that may discourage demand for compost. Several members also characterized the issue as an herbicide labeling and use issue, rather than one related to the composting activity itself. Carol Holko noted that there are EPA registration and use requirements for herbicides. Ted Streett stated that EPA withdrew approval for the herbicides in question to be labeled for use on grass. Brenda Platt noted that the USCC has recognized that there is both a legislative and policy path to addressing this issue as well as an outreach path to involve the horse community. Craig Coker stated that the USCC will publish a fact sheet about the issue, develop testing procedures, and work with Dow Chemical.

As a result of this discussion it was decided that a new TS recommendation (#21) would be added to recommend that MDE and MDA consider the issue of persistent herbicides and address them through statute, regulations, or policy.

Water-Related Definitions

The majority of the discussion surrounding the proposed terms for definition centered on various types of water that flows around, through, and on top of composting piles. The recommendations suggested definitions of "leachate" and "stormwater" runoff. Mike Eisner suggested an additional category of water – "contact water" - to refer to rainwater that falls on and then runs off of the compost pile. Unlike leachate, contact water would not include water that has percolated through the piles. Stormwater would include rainwater that falls on areas other than piles. Mike Eisner justified the additional category on the basis that contact water could potentially have different characteristics than both leachate and stormwater. MDE may have more flexibility to treat these waters differently if contact water was defined separately.

There was extensive discussion about whether, in practice, contact water could (or would) remain separate from leachate or truly have different characteristics than leachate. Ed Dexter stated that in his experience, runoff from compost sites can contain significant

amounts of nutrients, such that he has seen algal mats developing on pools of compost facility runoff. Materials are invariably tracked onto the composting pad where they can be picked up by "contact water," and leachate that goes through the bottom of the pile would likely mix with any contact water anyway. In this mixed state, the contact water and leachate will need to be collected and treated the same, rendering it pointless to define them differently. Hilary Miller stated that it may complicate the regulations to refer to three different types of water generated from a compost facility. Ed Dexter stated that it may be possible in some systems to separate leachate from contact water, but ordinarily a facility would not be designed to do so because of the expense. Mike Toole noted that in a typical windrow or aerated static pile system, there is no practical way to separate the water running off and through the piles. He also stated that this distinction is immaterial because in filling out a stormwater pollution prevention plan (SWPPP), the operator must identify potential sources of pollution and steps to mitigate them. Paul Hlavinka agreed. Mike Eisner stated that once something is called leachate, it will need to be collected and may need to meet effluent limits; BMPs and a SWPPP would not be enough. Currently, stormwater may be permitted through a general discharge permit, but leachate may not. Paul Hlavinka noted that the term leachate is used in reference to wood waste; leachate from wood waste is allowed to be permitted through the stormwater general permit. A new general permit for stormwater discharges is currently up for public comment. Paul Hlavinka suggested a brief presentation on that general permit to the TS at a later date.

The members also discussed the fact that leachate will need to be treated differently in different circumstances. Ed Dexter stated that leachate from yard waste composting may be treated like stormwater, but leachate from food composting may need to be collected and treated more like landfill leachate. Hilary Miller noted that even in a covered pile system, water running off piles could be leachate if the cover is damaged. Jeff Dannis raised the situation of stockpiled finished compost. He asked whether water contacting that material would be leachate, considering that the very same material could be spread uncovered on the ground for use. Ed Dexter stated that when compost is spread, it would be subject to a nutrient management plan (NMP) if the use is agricultural. This is true regardless of the materials from which it is made, as long as it has a nutrient content. He also noted that even though a pile of compost is a finished product, this does not mean it would not contain soluble nutrients. Ed Dexter and Paul Hlavinka stated that large stockpiles of finished compost may even have more available nutrients ready to run off.

Ed Dexter further stated that how the leachate must be controlled and handled should depend on the tiered system proposed by the TS. Compost made from meat or seafood may contain more nutrients in the finished product and consequently may need to be stored on a pad. Jeff Dannis was concerned that this approach would discourage facilities from accepting food scraps. Craig Coker commented that some composts, such as those made from manure, have higher nitrogen contents than those made from yard trim. Some of that nitrogen will run off from finished compost. Normally this runoff can be directed to a vegetative filter strip or other low-cost management system. The content and amount of the runoff depends on the size of the facility and the level of precipitation. Ed Dexter commented that he has seen high concentrations of nitrogen in groundwater and runoff

from compost facilities; this is a worst case scenario. If a small amount of food was taken, for example, this may not be as much of a problem. However, the risks to water must be addressed because if the CWG process creates a system that still causes environmental problems, it has not benefitted the composting industry.

Next, the TS discussed surface requirements for compost facilities. Craig Coker stated that he believes some type of improved surface may be needed for areas on the Eastern Shore, though the surface could be made of compacted soil. Mike Eisner advocated different pad construction requirements for different types of facilities. Brenda Platt referred to the Minnesota draft regulations, which provide that surface water drainage must be diverted from the operating areas, and that there must be a drainage control system with ditches and other features.

Craig Coker stated that MDE should encourage reuse of contact water in the composting process. Paul Hlavinka agreed, stating that this could potentially be a required BMP. He noted, however, that water coming from stages prior to pathogen reduction should only be reused in comparable stages to avoid cross-contamination. Ed Dexter commented that seasonally, there will be times in which there is too much water generated to recycle in the process. During these periods, the facilities will either need large amounts of storage for water or another means of dealing with the liquid. Ponds used to retain water should be subject to design requirements. Hilary Miller stated that these water-related details need to be discussed internally and captured in writing for proposal to the CWG.

Feedstock Categories

The TS then discussed any needed adjustments to the feedstock categories developed at previous meetings. There was some discussion about rewording Type I feedstocks, with the following issues raised:

- Whether yard residuals and grass clippings should be limited to residential sources in Type 1: It was noted that this may have been aimed at excluding yard trim generated from community gardens from the lowest feedstock level. However, some members commented that it is ambiguous whether yard trim and grass clippings generated by professional landscapers would be included. Often landscapers mix together materials from residential and commercial sites.
- Whether to use the existing definition of "yard waste" that already appears in the statute at Environment Article, §9-1701: This option would allow for consistency in the terms used. Members generally felt that the content of the definition was adequate, but did not like that the word "waste" is used. Some members noted that since most people will not read the statute or regulations, it is more important that the word "waste" be avoided in outreach documents and guidance.

The discussion continued to Type II feedstocks and centered on the following issues:

- General wording issues. These included whether items that appear in Type I should be restated in Type II, or whether this would be implied. Some members felt that Type II should only state the items of higher risk than Type I, and the permit tiers could specify that Type I and II materials would be accepted in a

certain tier. It was also noted that residential collection of organics would likely include mixed items from both Types I and II. It was also commented that there was some redundancy in the Type II items listed.

- Whether Type II manures were intended to reach only those with less than 60% moisture: Michael Toole objected to this. Craig Coker stated that moisture is fairly easy to measure through a squeeze drip test. Mike Eisner believed that all manure should be in Type III because of pathogen concerns and also as a means of simplifying the categories. Carol Holko stated that manure needs to be managed in some way, and making it more difficult to compost manure could actually be more harmful environmentally because of the lack of other means of managing manure. Brenda Platt stated that Type II was intended to include department-approved manures, with moisture being only one factor.
- Whether poultry and seafood waste should be moved to Type III: Paul Hlavinka believed that it should, because industrial meat waste is more problematic than vegetative industrial waste. However, Craig Coker stated that if pathogens are the issue, the same pathogen reduction requirements could be imposed on Types II and III.
- Whether diapers should be moved to Type IV: Some members wondered whether compost made of diapers could even be sold. Craig Coker was in favor of leaving diapers in Type III, because Type IV contains sewage sludge, which is more problematic. Sewage sludge derives partly from industrial sources. Ultimately, it was agreed that diapers should be moved to Type IV.

At that point, the TS agreed to hold off on any final revisions to the feedstock categories until design and operational requirements for various tiers are developed. The TS acknowledged that after that point, it may be necessary to tweak the feedstock categories.

Other Recommendations

The TS considered remaining comments to the draft recommendations. The TS discussed the recommendation that stated "State and county agencies should take affirmative steps to explore/address and encourage composting and the use of finished compost." This recommendation had been revised from its original wording because some CWG members representing the counties had objected to any requirement that they address composting in the solid waste management plans. Some county officials felt that such a requirement would take a large amount of time to fulfill with little substantive benefit. Dave Mrgich noted that counties must already address composting of yard waste and municipal solid waste, but not food. The existing requirement to address composting has been satisfied with only a few sentences. Craig Coker suggested that MDE provide the counties with a list of ways counties could promote and encourage composting. Ed Dexter noted that under current law, all solid waste acceptance facilities (including compost facilities) are required to be described in the solid waste management plan. Brenda Platt stated that it is important to address food scraps because counties largely are not considering composting of food scraps. Meanwhile, some counties are planning for additional landfill or incinerator capacity. Dave Mrgich noted that there are other items

required to be addressed in the solid waste management plans that must only be considered – not necessarily done. An example is MSW composting.

For the recommendation regarding the requirement for a discharge permit, Paul Hlavinka had a minor revision. He stated that even if a facility obtains a "no exposure" designation, it is still covered under the general permit. He also commented that the recommendation should stress that the goal for composting operations should be coverage under the general permit, which is less burdensome than the individual permit.

There was also brief discussion about the possibility of a combined permit encompassing all permits needed from MDE for a compost facility. Ed Dexter stated that this may actually be more complicated to achieve. Paul Hlavinka suggested using the existing general permit for stormwater discharges plus a guidance document. Ed Dexter noted that the natural wood waste general permit has not worked well in that it has resulted in a high prevalence of noncompliance among facilities first beginning operations.

Breakout Tasks

In order to maximize the accomplishments of the TS in the limited available time, the TS decided to take on certain tasks in smaller groups and report back to the whole TS at the next meeting.

Brenda Platt and Craig Coker volunteered to develop tiered design requirements with the goal of having at least a strawman document ready for the TS by October 22.

MDE and MDA agreed to work on harmonizing and finalizing definitions related to composting.

Brenda Platt stated that she would send around the Vermont universal recycling law for the TS to consider.

The next meeting of the TS is Monday, October 22, 2012 at 1 p.m. at MDE. The next meeting of the full CWG is Thursday, November 1, 2012 at 1:30 p.m. at MDE.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
TECHNICAL SUBGROUP

MEETING SUMMARY - FINAL
NOVEMBER 19, 2012 1:00 – 5:00 P.M.

Members in Attendance: Mike Toole/Recycled Green; Paul Hlavinka/MDE; Steve Worrell/MDE; Mike Eisner/MDE; Phil Davidson/MDA; Mike Giuranna/EPA Region 3; Melissa Pennington/EPA Region 3; Brenda Platt/Institute for Local Self-Reliance; Gary Felton/
University of Maryland; Ed Dexter/MDE; Ted Streett/MES; Jeremy Criss/Montgomery County Department of Economic Development; Hilary Miller/MDE; Kaley Laleker/MDE; Jeff Dannis/
Howard County; Craig Coker/Coker Composting; Don Birnesser/KCI Technologies.

The fifth meeting of the Technical Subgroup (TS) of the Composting Workgroup (CWG) was held on November 19, 2012 at MDE.

U.S. Composting Council Model Rules Update

Hilary Miller began by asking Craig Coker and Brenda Platt for any updates to the U.S. Composting Council (USCC) model composting regulations, which the TS had been considering in draft form over the past few meetings. Craig Coker stated that a compiled version of the entire model rules had been distributed to the USCC task force, which made edits to the definitions section. A revised version had been distributed to the task force on November 16th and the task force will meet next week. Brenda Platt noted that she submitted some comments to the USCC draft based on the CWG and TS discussions. The third permitting tier, which the TS has not considered yet, still has not been released for distribution to the TS. She stated that she would seek permission to circulate the full draft.

Exemption Thresholds

The TS had previously discussed the concept of exemptions from the composting permits or from design and operational requirements that would be specified in new regulations. Brenda Platt circulated her suggestions for exemption thresholds, based on size and feedstock type. The feedstock types were defined in earlier meetings. The suggestions were:

- For Type 1 feedstocks: exempt if under 5,000 cubic yards
- For Type 2 feedstocks: exempt if under 1,000 cubic yards
- For Type 3 feedstocks: exempt if under 500 cubic yards
- For Type 4 feedstocks: no exemption would apply

Exempt facilities would be required to operate so as to protect the environment and public health. Brenda Platt explained that volume was used here rather than weight because smaller facilities tend not to have scales. The exemption amounts are expressed as volume of raw feedstocks accepted per year. However, some states also base exemptions on the quantity of material on site at any given time.

Paul Hlavinka asked for the basis of these proposed thresholds and whether they have any scientific foundation. Brenda Platt clarified that these were based on what other states have done. Specifically, the proposed thresholds are modeled on Oregon's requirements. She had previously distributed an article from Biocycle in which she provided the exemption thresholds for food scraps in 11 states. That survey shows that the thresholds proposed here are consistent with what other states have done. In fact, they are somewhat conservative because several of the states listed are now increasing their exemption thresholds. Craig Coker noted that there is no available scientific study that correlates a particular de minimis quantity of feedstocks with a lack of environmental risk. So, the thresholds had to be based on what other states have selected, which in itself is somewhat arbitrary. However, he noted that in his experience and opinion, materials in the quantities proposed here would be unlikely to cause environmental problems.

What is the Exemption From?

The TS discussed what should follow from being considered "exempt." Brenda Platt noted that the proposed exemption thresholds were based on the USCC model, which would establish exemptions from the rules; that is, from the design and operational requirements contained in the rules. However, Craig Coker stated that exemption from the design and operational requirements and exemption from a permit requirement does not necessarily require exemption from any registration requirement.

Hilary Miller commented that there has already been some discussion among the CWG on whether all facilities should have some basic registration requirement, regardless of whether they are small and possibly exempt from a composting permit. She stated that varying opinions on this exist among CWG members. She believes that registration would be helpful and would allow for small composters to certify that they will follow certain basic standards. Brenda Platt provided the example of Ohio, where facilities over 300 square feet must register with the State and specify the quantity of materials that they will accept. Jeff Dannis remarked that 300 square feet is very small and would include virtually everyone aside from small backyard compost piles. Ed Dexter stated that registration would create a level playing field and the quantity specification included in a registration requirement would help verify that exempt facilities actually are within the exemption threshold.

In addition to discussing whether a registration requirement should apply regardless of exemption, the TS also discussed whether and which permit requirements would be exempted. Mike Eisner made it clear that any exemption considered in the context of size thresholds could apply only to a Land Management Administration (LMA) recycling or solid waste permit, not to water permits. The federal Clean Water Act does not allow

for size exemptions; facilities within the composting industry will generally need at least a general permit for stormwater discharge associated with industrial activity. Ed Dexter suggested that, since the reach of the stormwater discharge permit requirement is so broad, it may serve the purpose of a registration requirement. Since almost all facilities would be required to have stormwater discharge permits, MDE would be alerted to their presence even if they are exempt from solid waste or recycling permits.

Brenda Platt raised the issue of the current exemptions that are listed in the Water Management Administration (WMA) guidance. Currently, the guidance states that food composting facilities under 5,000 square feet are eligible for the general stormwater permit. Food composting facilities smaller than 400 square feet are totally exempt. However, Mike Eisner stated that this guidance will need to be revisited; the sizes selected were arbitrary.

Craig Coker asked what type of permitting program would be instituted for any new compost-specific permits (e.g. regular permits, permits-by-rule, registrations). Hilary Miller stated that this has not been decided yet.

On-farm Composting Exemptions

One of the recommendations previously developed by the TS proposed a permitting exemption for on-farm composting. To help clarify the boundaries of this exemption, Jeremy Criss set forth several scenarios for discussion.

Scenario 1: A certified organic vegetable farmer controls 15 acres, 7 of which are in cultivation. The farmer seeks to use agricultural materials generated on site in a composting process that will create compost to be used solely for vegetable cultivation on site.

- Paul Hlavinka stated that WMA would not require this facility to apply for a stormwater permit, since compost is not sold or distributed in this scenario (and this facility is not involved in the industrial activity of composting that would subject it to the stormwater permit requirement).
- Ed Dexter stated that he did not see a problem with letting these facilities go unregulated by LMA, as long as there is a way of dealing with them if they become a problem.
- There was general agreement that whether the farm is certified organic or not is immaterial for MDE's purposes.
- MDA would not regulate the compost produced in this scenario because it is not sold or distributed.
- The TS agreed that this scenario should be included within the on-farm exemption; no permits or registration should be required.

Scenario 2: The scenario is the same as above, except that the farmer begins to bring in off-site feedstocks. Again, the compost is used entirely on site and is not sold or distributed.

- Several members (Gary Felton, Hilary Miller, Ed Dexter) felt that in this scenario it may make a difference what feedstocks were being brought from off-site and in what quantities.
- Brenda Platt noted that the USCC would exempt any materials generated and composted on a farm. However, materials that are taken in from off the farm would be subject to the quantity thresholds to determine the exemption.
- Ed Dexter noted that the nutrient management requirements place some limitations on on-farm composting where the compost is used on site, even if feedstocks are taken in from off site. This is because the size of the farm will limit the quantity of compost that can be produced and used on site. However, it was noted that a nutrient management plan does not address storage of the feedstocks and compost.
- Mike Toole commented that in Oregon, a screening process applies to all facilities initially. The results of this risk-based screening determine whether the facility may operate under a simple registration or whether it must obtain the full permit.
- Gary Felton stated that if the facility is taking in Type 2 feedstocks, he would like for it to notify MDE of the quantities and type of materials (to determine the C:N ratio and moisture content). Mike Toole noted that this could be part of a registration and screening process.
- Another example of this issue is Walmart's program of sending fruits and vegetables from its stores to farms for animal feed or composting. The farms would receive about 10-15 tons (15-20 cubic yards) per week of materials. Weis is doing the same thing in Pennsylvania. There was some discussion as to whether any exemption should be limited to non-meat food waste when taken from off site.

The TS ultimately agreed on a scheme for the on-farm exemption that would depend on the source and ultimate use of the material, as follows:

<u>If the feedstocks are generated on site and the compost is used on site:</u>
Exempt, no MDE permits or registration required.

<u>If the feedstocks are generated off site and the compost is used on site:</u>
Facility must submit a registration. A risk based evaluation of the registration will be done to determine whether a permit is needed. There is no specific quantity or feedstock threshold.

<u>If the compost will be sold or distributed off site</u>:
The farm must apply for a WMA stormwater permit; will be subject to the tiered system for a LMA permit; and the compost will be regulated by MDA.

The registration would require submission of information on feedstocks and quantities, but would be a simple, one-page form. Jeremy Criss suggested that MDE continue the current practice of notifying MDA first whenever an environmental problem is discovered at a farm.

Survey of Counties

As Hilary Miller promised in previous CWG and TS meetings, she surveyed counties about two key issues.

- The first issue was whether collection of yard waste in plastic bags should be banned at the State level, or whether this should be left up to counties. Sixteen counties responded, with 8 supporting a State-wide ban and 8 opposing. Howard County had not responded, but Jeff Dannis of Howard County stated that it would oppose.
- The second issue was how counties define, classify, and limit the siting of compost facilities in their planning and zoning laws. Participation was poor, but the counties that responded did not have definitions of composting. In most places, a compost facility would be included in an agricultural use and as such, would be allowed in rural zones. Specifics varied substantially by county. Jeff Dannis stated that Howard County has a definition in its zoning regulations but it relates only to yard waste composting.

Exemption Thresholds, Cont'd

The TS returned to the quantity-based exemption thresholds for non-farm composting. It was reiterated that these exemptions would be exemptions from the LMA permit and from design and operational requirements (though there may be some baseline requirements applicable that prohibit nuisance or environmental harm). The exemptions would not exempt facilities from the obligation to obtain coverage under a stormwater permit or to register the product with MDA.

The TS first discussed the proposed 5,000 cubic yard/year exemption for Type 1 feedstocks, which includes yard trimmings. This would yield an estimated 2,400 cubic yards or 240 dump trucks of finished compost per year. Hilary Miller stated that 5,000 cubic yards seemed like too much material to exempt. Jeff Dannis noted that currently, yard waste facilities (not natural wood waste) are not required to obtain LMA permits. Ed Dexter stated that he has not seen many problems with Type 1 feedstocks and that the main risk is fire. The TS took note that several existing yard trim composting facilities in Maryland would be above 5,000 cubic yards per year. Brenda Platt commented that other states that have used similar thresholds have not had problems with Type 1 materials and in fact are beginning to raise the thresholds further.

Gary Felton stated that if facilities taking up to 5,000 cubic yards of material would be exempt, MDE should still be aware of them and they should have some level of oversight. Paul Hlavinka stated that if these facilities are selling compost they would be covered under the stormwater permit, so MDE would be aware of them.

Jeremy Criss commented that the local soil conservation districts (SCD) should assist in developing site designs for water protection, including composting pads. SCDs assist with developing soil and water conservation plans. Gary Felton suggested that this be mandatory. If the site is not a farm, the SCD's jurisdiction over the site varies by county.

Mike Toole stated that for facilities disturbing over 5,000 cubic feet a grading permit is required and a soil and erosion control plan is a prerequisite of the grading permit. The TS decided that facilities under 5,000 square feet should work with the SCD to develop a soil and water conservation plan, but that this should be a BMP rather than a requirement for these small facilities.

The TS briefly discussed the proposed threshold of 1,000 cubic yards per year for Type 2 materials. Jeff Dannis estimated that this would equal about 3 windrows at 60 feet long, yielding about 400 cubic yards of compost per year. There was some confusion about whether the exemption amounts indicate the total amount of feedstocks (i.e. the 1,000 cubic yard limit would apply to Type 2 + Type 1 feedstocks). Brenda Platt stated that she would look at what the exemptions from other states included.

Some members felt that it would be better to create an exemption for food waste up to a certain percent of all feedstocks, rather than exempting all Type 2 materials up to a certain volume. Hilary Miller stated that she was not comfortable exempting food composting unless food comprised only a limited percentage of all materials. She suggested 10-20% food waste as the limit. Mike Toole stated that 15% is suggested in the on-farm composting handbook as a means of limiting vectors and odors rather than water pollution. Gary Felton stated that the percent does not matter as long as the moisture content and C:N ratio are acceptable. Hilary Miller also stated that food waste is more of a problem during storage and not necessarily after it is mixed. Brenda Platt suggested that the limit could be done on a per-day basis to avoid exempting facilities that would have large piles of incoming, unmixed food scraps. Another option would be to have a maximum percentage that is also subject to a cap on volume. Mike Eisner stated that at some point, the scale of the facility will create risk regardless of the percentage of food as a portion of all feedstocks. The TS did not come to a conclusion on this issue.

Miscellaneous Issues

The TS discussed two additional issues. The first was the time and temperature requirements imposed by MDA as a condition of product registration. The current MDA regulations at COMAR 15.18.04.05 require compost made of MSW or manure to "pass" a process to further reduce pathogens (PFRP, referring to the federal standards for treatment of sewage sludge, which for composting require the materials to reach 131 degrees F for 15 days using windrows or 131 degrees F for 3 days for ASP or in-vessel composting). There was some debate over whether this could be satisfied by testing the end product for pathogens, or whether it was satisfied by documenting the time and temperatures achieved during the process. Phil Davidson stated that during inspections, MDA will expect operators to be able to point to records documenting PFRP. Mike Toole argued that the process is immaterial as long as the end product contains permissible levels of pathogens. The TS considered whether MDA should change the regulations to require PFRP for all compost, rather than compost made only of MSW or manure. Steve Worrell noted that the current regulation excludes other possible sources

of pathogens, such as source-separated post-consumer food waste. The USCC model rule would not require PFRP for Type 1 feedstocks, but would require it for Type 2.

The other issue related to how MDA can regulate sales of soil blends containing compost where the seller purports to sell "soil" rather than compost. MDA lacks the authority to regulate soil, so the agency has not been able to intervene where unregistered blends are sold as soils. MDA is considering this issue and how best to respond.

The TS tentatively scheduled another meeting for **December 6**, 2012 at 1 p.m. The next meeting of the CWG is scheduled for **December 5** at 1:30 p.m. Hilary Miller stated that she would also hold a room for **December 11** at 9 a.m. in case the TS needs an additional meeting.

The TS will also consider and comment on the draft recommendations by e-mail. Hilary Miller stated that she would e-mail the revised recommendations to the TS and requested that edits be submitted by **December 3**.

Brenda Platt stated that she will seek permission to circulate the full draft of the USCC model rules.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
EDUCATION AND OUTREACH SUBGROUP

MEETING SUMMARY - FINAL
OCTOBER 19, 2012 1:00 – 5:00 P.M.

Members in attendance: Jessica Weiss/GrowingSOUL; Denice Curry/Prince George's County; Richard Keller/MES; Chaz Miller/ National Solid Wastes Management Association; Brenda Platt/Institute for Local Self-Reliance; Gemma Evans/Howard County Department of Public Works; Ed Dexter/MDE; Dave Mrgich/MDE; Hilary Miller/MDE; Kaley Laleker/MDE.

The first meeting of the Education and Outreach Subgroup (EOS) of the Composting Workgroup (CWG) convened at 1:00 p.m. October 19, 2012 at MDE.

Hilary Miller opened with a list of tentative recommendations relating to education and outreach. These came from previous discussions of the CWG and technical subgroup and were previously distributed to the EOS by e-mail. Members of the EOS made the following comments and additions to the tentative recommendations:

Use of the term "organics." Jessica Weiss stated that in her experience educating children and their parents about composting, the term organics introduces confusion. People tend to associate the term with organic food (grown without pesticides, etc). Instead, she suggested using different language to convey that anything grown from the ground should be returned to the ground.

"Branding" of composting. Jessica Weiss also suggested identifying an easily recognizable symbol or icon to market the concept of composting, similar to the triangular arrow used to indicate recycling. Icons have a big impact and could be used on bins for collection of recyclables. Brenda Platt stated that the U.S. Composting Council (USCC) developed a compostable logo, but it is mostly used to identify compostable plastics that meet established criteria. She also stated that MDE should participate in USCC's annual composting awareness week. The event is accompanied by posters, messaging, and outreach documents that could be used in Maryland.

Update the MDE composting website and guidance. Brenda Platt commented that MDE should update its website to provide information relevant to members of the composting industry and county recycling officials. She suggested modeling the website on the Ohio Food Waste Recovery Website. Resources should promote composting on a variety of scales, including on-site composting. In developing guidance and new internet resources, MDE should focus on the positive impacts of composting. Other states lead with the benefits of composting on outreach documents and websites. In contrast, the tone of the food composting regulatory guidance currently on the MDE site is negative.

Gemma Evans agreed with this suggestion. Richard Keller suggested that composting be added to the Recycling in Maryland website (mdrecycles.org).

Food management hierarchy. Brenda Platt stated that Vermont has set forth its State policy on food management in legislation, endorsing a food management hierarchy similar to the EPA hierarchy. She suggested that Maryland develop a similar policy. Ed Dexter commented that in the report to the legislature, it will be necessary to explain why food composting is of particular importance. Richard Keller agreed, stating that 40% of food produced in the U.S. is wasted. A member also commented that food donation should be recognized as an important strategy to deal with food residuals.

Increase training opportunities. Brenda Platt also suggested continuing to pursue a creation of a master composter training course in Maryland.

Stress compost use in outreach. Gemma Evans commented that outreach should more prominently feature possible uses for finished compost. She observed that the general public may now know how or where to use compost and could benefit from this information. Chaz Miller also suggested that outreach efforts focus on end markets. Jessica Weiss stated that there should be a PSA or slogan encouraging use of compost on farmland throughout Maryland as a way to address poor soil and create a sustainable food system. However, Hilary Miller noted that not all compost is suitable for use on a farm, and information provided should stress uses appropriate to the particular compost.

Increase specificity of recommendations. Richard Keller stated that overall, the recommendations coming from the EOS should be made much more specific. For example, draft recommendation 4 provided that "education and outreach efforts should encourage removing more organics from the waste stream." While the CWG would certainly agree with that statement, specific strategies for achieving that goal must be provided. In addition, the recommendations about procurement by State and local agencies should be more specific. Specific strategies should be developed to present to DGS and county purchasing agents.

Composting as an "environmentally-friendly" versus solid waste activity. Chaz Miller briefly commented that draft recommendation 1, seeking to consider composting as an environmentally friendly activity as opposed to a solid waste activity, may imply that permitting of solid waste facilities is not environmentally friendly. He also stated that it is less important what composting and compostable materials are called. Promoting end markets and providing "how-to" documents for composting are more important issues for the EOS to address.

State and local cooperation. Gemma Evans commented that counties should be able to establish their own education and outreach plans underneath the broader plan. Target audiences will vary by location; some locations may be more focused on reaching potential on-farm composters, for example. Any State efforts to promote composting should not preempt local efforts. Hilary Miller stated that State and local governments should work together to promote composting and provided the example of electronics

recycling. The State provided materials to counties conveying a consistent message. Counties then supplemented these materials with their own county-specific information. Chaz Miller agreed, stating that how-to documents should be provided and the benefits of composting should be promoted, without requiring counties to compost.

Funding for education and outreach. Several members recognized that achieving the education and outreach goals advocated by the EOS would require additional State funding. Additional staff would be needed to improve the website and conduct other outreach efforts. In the past, where MDE has requested additional resources without specifying a source, nothing has resulted. Brenda Platt suggested that in the report to the legislature, the need for resources to undertake education and outreach should be connected to the existing waste diversion goals, greenhouse gas emissions reductions goals, and jobs. She also stressed that the need for funding should not be "buried" at the end of the report but made prominent.

Hilary Miller noted that identifying the revenue source will be the difficult part. Achieving consensus on this issue has been a pitfall in previous workgroups. The CWG could recommend that permit fees be imposed for composting permits and used to fund education and outreach. Ed Dexter noted that there are already fees on discharge permits. Many permitting fees collected by MDE go into funds that may be used in part for outreach. The recycling statute already has a recycling fund, which could be changed in the statute to receive and dispense compost-related funding. MDE is aware of about 20-30 compost facilities in the state, including those with and without permits. Many of these are quite small and compost only on-site materials. Brenda Platt suggested that registrations and small fees might be required of community garden-scale compost sites, while larger fees could be collected from larger facilities. In some states, solid waste fees on disposal are used to fund both recycling and composting. Many states provide grants for composting programs; MDE would like to do something similar if the funds were available. Brenda Platt suggested that Melissa Pennington use the state composting regulators e-mail list to survey the funding sources of other states' composting programs.

MDE has previously provided grants for recycling, but funds were quickly exhausted. Richard Keller raised the possibility of private funding. Dave Mrgich stated that this would be difficult because the Department cannot solicit funds where it also regulates. Tip fees on disposal are controversial and have not gained consensus when raised in the past. Funds from discharge permits go into a Clean Water Fund, which may not be used for recycling or composting. Hilary Miller commented that the recycling fund is low and currently being used for other things.

Massachusetts action plan. The EOS then discussed the Massachusetts Organics Action plan (distributed previously). The Massachusetts Plan includes the creation of resources for large food scrap generators to increase collection infrastructure. One member raised the problem of promoting increased collection when there currently is a lack of capacity for processing food scraps. However, it was noted that the clarification of regulatory requirements, also moving forward under the CWG will help to increase capacity. Richard Keller stated that as part of a long-term program for education, MDE should

work with trade groups representing restaurants, hospitals, and other large generators. This would be preferable because it would provide a consistent message and allow for shared resources. The National Restaurant Association has been involved in promoting composting on a national level.

The Massachusetts Plan also includes a survey to identify large food scrap generators in the State. The survey information would be used to develop food waste density maps that would allow for development of hauling routes. Dave Mrgich stated that to conduct such a survey in Maryland, MDE would need help from the counties. Attempts at similar surveys had failed in the past. Brenda Platt commented that Institute for Local Self-Reliance did an accounting of the large food scrap generators in Virginia under a grant. Richard Keller suggested focusing on public institutions that are large food scrap generators first. The Maryland Stadium Authority, public schools, and other State agencies are examples.

Gemma Evans mentioned providing training for health officials. Other members suggested providing how-to guides targeted to specific types of site or feedstocks. Jessica Weiss pointed to the Massachusetts strategy to investigate the use of State property for development of organics recovery. She stated that compost could be created as a government commodity that could be provided as an in-kind subsidy to urban farms.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP

MEETING SUMMARY - FINAL
DECEMBER 6, 2012 1:00 – 5:00 P.M.

Members in Attendance: Mike Toole/Recycled Green; Craig Coker/Coker Composting and Consulting; Melissa Pennington/EPA Region 3; Ed Gertler/MDE; Simone Myrie/Delegate Mizeur's Office; Ed Dexter/MDE; Jeremy Criss/Montgomery County; Mike Eisner/MDE; Steve Worrell/MDE; Ted Streett/MES; Carol Holko/MDA; Pam Kasemeyer/Maryland Delaware Solid Waste Association; Phil Davidson/MDA; Hilary Miller/MDE; Gary Felton/University of Maryland; Brenda Platt/Institute for Local Self-Reliance; Kaley Laleker/MDE.

The fifth meeting of the Technical Subgroup (TS) of the Composting Workgroup (CWG) met on December 6, 2012 at 1:00 p.m. at MDE.

USCC Model Rules

Craig Coker gave an update on the USCC model rules. The latest draft had been circulated to the TS just prior to this meeting. The draft is still limited to internal use. The draft will be discussed by USCC at its board meeting on December 14. After that, it may be released for distribution. Most of the final edits were minor changes to the definitions, but the other content is mostly the same as the last version.

Mike Toole commented that the new version lists prohibited composting feedstocks including hazardous substances and suggested that Maryland include something similar. The term hazardous substances was also defined, conforming to RCRA (although Melissa Pennington noted that the definition refers to "hazardous waste" and should instead read "hazardous substance"). Ed Dexter stated that Maryland regulations would cite to Maryland's RCRA analog anyway.

Mike Toole also brought up the testing frequency requirements in the model rules. For facilities producing over 17,500 tons of compost per year, compost must be tested once per month. Mike Toole stated that this would be quite expensive; it costs him $300 per analysis plus $150 for shipping the sample. Craig Coker stated that this frequency comes from USCC's seal of testing assurance. If the testing results are acceptable for 2 years, the model rules would allow for a reduction in testing frequency. Hilary Miller asked whether a lesser frequency would be adequate to ensure quality. Craig Coker stated that changes in the feedstock are more important than time intervals in determining when testing should be done. MDA requires quarterly testing for the first year and annual testing thereafter as long as the results are acceptable. Mike Toole noted that MDA requires each feedstock combination to be registered separately; if each type also had to be tested separately once per month, that would be very expensive.

Mike Eisner discussed the provision prohibiting Tier 1 facilities from discharging contact water to surface water. §4(II)(B)(4). This would seem to require all contact water to infiltrate. However, later the rules state that contact water must be directed to a containment, recycling, or treatment system designed to handle a 24-hour, 25-year storm event. He questioned whether for Tier 1 facilities, all contact water should be required to be collected and contained. Craig Coker stated that water generated up to a 24-hour, 25-year storm event would be treated or reused on site. In quantities generated from a 24-hour, 25-year storm event, the water could be discharged. Also, it was intended that the prohibition on discharges to surface water be qualified by "without a NPDES discharge permit." Ed Gertler noted that the threshold for NPDES permits is usually the 10-year storm.

Size-Based Exemptions and Tiers

The TS then continued its discussion of exemption thresholds for small facilities. The exemptions listed in the USCC model rules have not changed in this version, but the rules clarify that the exempt amounts apply independently to each feedstock and are not listed as total amounts of feedstocks. The USCC exemptions are based on weight, but Brenda Platt had also proposed volume-based thresholds at the last TS meeting. Craig Coker noted that weight can be converted to tons based on bulk density, but it is still easier for smaller facilities if the thresholds are volume-based.

Mike Eisner and several other people at MDE had discussed size thresholds and created a draft table. The table establishes subcategories for facilities in each tier. The tiers are based on feedstock types, as discussed at earlier meetings. The subcategories within each tier are based on size (Tier 1 small, Tier 1 large, Tier 2 small, etc.). Size is defined by the volume of material on site at any one time. Feedstocks and active compost piles are counted in this volume, but curing or finished compost is not. The remainder of the table is based on the Wisconsin scheme. Permit requirements are specified for each level of facility. All facility types would require at least coverage under the general stormwater permit. Larger facilities and those with risker feedstocks may require refuse disposal permits and individual discharge permits. Minimum requirements, such as performance standards, locational criteria, minimum design and operational requirements, recordkeeping, and monitoring are specified for each level as well. For the larger facilities with more risky feedstocks, additional design and operational requirements might kick in, as well as requirements for contact water and leachate collection and management. Finally, the table specifies pad construction requirements for each type of facility, ranging from a carbon-rich substrate to an engineered pad with permeability rating of 10^{-7} cm/sec (hereinafter "10^{-7} pad"). Mike Eisner emphasized that this table is offered as a framework or a starting point. Specifics should be fleshed out later.

Pad Requirements

The TS extensively discussed pad design requirements. Mike Toole commented that when compared to the USCC model, the proposed table is more stringent in terms of design requirements. However, Mike Eisner noted that the USCC model does not take

into account the size of facilities in setting design requirements. Mike Toole stated that the point at which MDE begins requiring a 10^{-7} pad is the point at which additional infrastructure development ends because of the potentially huge expense of constructing this type of pad. As the table is written, this requirement is triggered at 5,000 cubic yards of type 2 feedstocks. He felt this was too limiting. Mike Eisner stated that there is some quantity of type 2 feedstocks (includes most food scraps, manure) at which he would prefer strict controls for water protection. Mike Toole also commented that, if Maryland were to remove compostable materials from the definition of solid waste as the CWG had discussed, facilities composting these materials would not fall within the refuse disposal permit requirement. Mike Eisner stated that this should be open for discussion, though at some point the group had acknowledged a refuse disposal permit probably would be required (such as for MSW composting).

The TS discussed whether the 10^{-7} pad requirement makes sense when applied to compost facilities. Ted Streett noted that the 10^{-7} standard is used for landfill liners and believed it to be arbitrary when applied to compost facilities. He further commented that it is too strict to apply to type 2 feedstocks, is too capital intensive to achieve, and should be relaxed. Steve Worrell said that the 10^{-7} comes from research by EPA, which concluded that this level of permeability would result in de minimis leakage from a landfill. It is used to represent an attainable level of impermeability where very little leakage is desired. It recognizes that a surface more impermeable than this would be difficult and expensive to achieve and absolute impermeability would be impossible. Melissa Pennington noted that the standard appears in the hazardous waste portion of RCRA. Craig Coker stated that its purpose as a RCRA standard is to deal with long-lived pollutants. Pollution from compost facilities is from biodegradable materials that pose a relatively low risk of contamination to groundwater.

Craig Coker also acknowledged, however, that there is some risk of ground water contamination where there are sandy soils and in these cases a 10^{-7} pad might be warranted. Still, a 10^{-7} pad should not be applied as a blanket rule throughout Maryland. Hilary Miller stated that the group had previously suggested developing specifications that take into account Maryland's different geologic regions and she noted that this has been done before in MDE's oil control program. Mike Eisner agreed that this varied approach is worth considering, though he stated that the 10^{-7} requirement appears across other states' composting regulations. Brenda Platt commented that other states, such as Minnesota, have admitted that this standard was arbitrarily lifted from the landfill requirements for use in composting rules.

Ed Dexter commented that the 10^{-7} number is not arbitrary in that it has a scientific basis when used as a standard for relative impermeability. Landfills had previously used 10^{-5} and 10^{-6} liners and it was demonstrated that these were not adequate to protect against leakage. Melissa Pennington drew a distinction between compost facilities and landfills, noting that landfills are designed to last for a very long time, while composting materials are moved during the normal process, eventually leaving the site as compost. However, Ed Dexter replied that at a compost facility, even though specific materials move through the process and off site, the piles of feedstocks and composting materials are constantly

replenished, so that in certain spots, there is a constant source of nutrients sitting on the pad.

Jeff Dannis raised some of the practical issues with the 10^{-7} pad requirement. He had investigated the use of asphalt for a compost pad and discovered that ordinary asphalt does not meet 10^{-7}. Asphalt is normally about 7% voids; to achieve 10^{-7}, this would need to be reduced to 2% by filling the spaces with extra tar.

Ed Dexter commented that the permeability rating of the material is only one aspect of the hydraulic performance of the pad. As asphalt ages, it gets brittle and more permeable. But, if the surface is sloped, has a gravel base, and is well-maintained, it would perform better. So, there may be different ways to achieve the same performance. He suggested that the variance process could allow for extra flexibility in achieving an equally protective result or that the regulations could specifically require the Department to consider alternatives as they are proposed. Hilary Miller mentioned that the TS had previously discussed performance standards as opposed to prescriptive requirements. Gary Felton suggested a standard that would set a limit on the amount or concentration of nitrogen that seeps through the composting surface and reaches groundwater. However, Mike Eisner noted that the usual effluent limit is the drinking water standard, which would likely be more cost-prohibitive to achieve than a 10^{-7} pad. Craig Coker pointed out that the USCC model aimed for a flexible approach because it takes into account soil type and distance to the water table and allows for a variety of surface types based on Federal Highway Administration specifications. He also questioned whether a plastic liner under concrete would be necessary to meet the 10^{-7} standard. Ed Dexter answered that it probably would not, as long as the surface is maintained adequately.

The costs for various surfaces were estimated as follows:

- Concrete costs around $3.50 – 4.00 per square foot. A HPDE liner costs about $2 per square foot.
- Mike Toole stated that a concrete pad for a 10 acre site would cost around $1.5 million, which is likely prohibitive for many potential composters.
- Craig Coker stated that a pad for an area of about 54,000 square feet would cost around $125,000 for asphalt and over $200,000 for concrete.

Gary Felton stated that he would calculate material quantities for an average dairy farm or one chicken house to see where these would fit under the proposed table. Brenda Platt stated that the TS had agreed already that only the higher risk feedstocks would require refuse disposal permits and the rest (feedstocks 1 and 2, and possibly 3) would be subject to a new composting permit. This is not reflected on the proposed table. She also asked how the quantity thresholds were decided. Ed Dexter stated that they thought the quantity on site would be easier to measure on the spot than the throughput, which would require looking back at records.

After these discussions, Hilary Miller asked whether the TS wanted to create a recommendation about pad requirements. It could suggest a 10^{-7} standard for larger facilities or a surface that performs similarly. The recommendation might also state

factors to be used in evaluating alternative pads (slope, soil type, etc.). Mike Toole was not in favor of adopting a separate recommendation on the impermeable pad requirement. He believed that these discussions were already covered in recommendations that suggest a risk-based approach. Pam Kasemeyer agreed, stating that the CWG should not elaborate on technical specifications because the members do not all agree on these. The more general statements that already appear in recommendations express the intent of the whole CWG. MDE will use these discussions going forward to make decisions. However, she suggested strengthening the recommendations that already get at these issues, adding a statement that MDE would meet with stakeholders to develop standards with maximum flexibility.

Draft Report Issues and Next Steps

Simon Myrie thanked the TS members for their work and stated that the support of the workgroup members will be important in passing any composting legislation. She asked about the major components of a composting bill that might result from these efforts. In addition to the need to change the solid waste definition and create authority for new composting regulations, the TS discussed the recommendation for a minimum of 1 FTE for compost education and outreach. Hilary Miller stated that she would add to the recommendation a request that the legislature provide sufficient appropriations for certain listed outreach and education activities for a certain number of years. This would jumpstart the composting industry.

It was agreed that the CWG members would continue to be included in future composting discussions and development of regulations. Brenda Platt suggested that there should be at least some in-person meetings after the report is submitted (January or February) to continue these discussions. Ed Dexter suggested meeting roughly once per month. The TS briefly discussed including the health department in these discussions because of pathogen issues involved in composting. Hilary Miller stated that she had already discussed food composting with the health department, but could try to involve it in future discussions.

The TS briefly discussed forthcoming regulations to the federal Food Safety Modernization Act (FSMA), which will limit the application of raw manure to food crops. It is expected that these regulations will increase the importance of compost for use on food crops. Carol Holko stated that she would put together a few sentences on this issue to put in the report.

Craig Coker stated that he gave a copy of the draft final report to Lori Loader of Synagro. She commented that the report failed to adequately address the new MDA nutrient management requirements related to winter restrictions on application. Composters who hope to sell to the agriculture market may need to plan for larger storage areas for finished compost during periods in which application is limited. Several members felt that, because the nutrient management regulations are controversial among farmers generally, it would be best to avoid extensively analyzing them in this report. The regulations are finalized and the TS instead decided that the application of the nutrient

management requirements to compost should be mentioned in the context of composting education and outreach.

In summary, the following items mentioned at this TS meeting will be incorporated into the final report:

- The existing recommendations will be strengthened based on this meeting's discussions on pads, without addressing any details on pad design requirements. The recommendations should stress the importance of flexibility, risk-based standards, and accounting for factors such as geologic variations.
- The report will also mention that stakeholders will continue to be engaged in future discussions leading to the creation of new composting regulations.
- MES and MDA have submitted additional comments about on-farm composting, which will be incorporated.
- The table provided by Mike Eisner will not be included in the report, but will be used as a starting point for further discussions after the report is submitted.
- Recommendations will clarify that USDA standards and other requirements for AFOs apply to on-farm composting and storage of manure.
- Priority legislative actions will be made more prominent in the report.
- The report will mention the need to create awareness that compost is a nutrient source like other sources subject to nutrient management requirements. However, the report will avoid extensive discussion of the nutrient management regulations, which could distract from more crucial points.
- The report will include a recommendation that requests a sufficient appropriation to undertake specific education and outreach activities in the short term.
- Carol Holko will submit a few sentences on the upcoming FSMA regulations and their potential impact on composting.
- MDA does not require statutory changes for any of its definitions. However, if "farm" will be defined, MDE and MDA must ensure that it is not defined so broadly as to include all composters (thus capturing almost every facility within the on-farm exemptions).

The TS will not meet again in person prior to the final report deadline. **Comments and edits to the draft report are due on December 12, 2012 at noon.**

The meeting adjourned at 4:00 p.m.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
COMPOSTING WORKGROUP
EDUCATION AND OUTREACH SUBGROUP

MEETING SUMMARY - FINAL
NOVEMBER 5, 2012 1:00 – 5:00 P.M.

Members in attendance: Jessica Weiss/GrowingSOUL; Denice Curry/Prince George's County; Richard Keller/MES; Chaz Miller/ National Solid Wastes Management Association; Brenda Platt/Institute for Local Self-Reliance; Mike Giuranna/EPA Region 3; Gemma Evans/Howard County Department of Public Works; Ed Dexter/MDE; Dave Mrgich/MDE; Hilary Miller/MDE; Kaley Laleker/MDE.

The second meeting of the Education and Outreach Subgroup (EOS) of the Composting Workgroup (CWG) met on November 5, 2012 at 1:00 p.m. at MDE.

DGS – Green Purchasing Report

The EOS began by reviewing the Maryland Green Purchasing Annual Report for 2011, written by DGS, which discusses feasibility of a Statewide composting program. The report recommends the following:

- That DGS and DNR develop a composting pilot at the Tawes Building;
- That DGS and MES develop purchasing specifications for compost to allow State and local governments to purchase certified compost;
- That DGS partner with school cafeterias and other generators to reduce food waste that is send to the landfills.

The report also suggests that MDE and MES develop regulations to certify compost manufacturers. The report did not acknowledge that MDA already requires registration for compost that is distributed and requires that compost facilities have a certified operator. Richard Keller stated that he was not involved in the green purchasing report. Hilary Miller stated that MDE was also not involved.

Hilary Miller noted that she was aware of a composting pilot that took place at the Tawes building and heard that it was unsuccessful, but had not heard the details. Andrew Kays, who serves on the full CWG, will find additional information on the pilot and report back. It was also noted that there exists a food waste collection circuit in Baltimore City, though it is privately operated. Also, Mike Giuranna stated that EPA has in the past funded a pilot to pick up food scraps from 8-10 City high schools. Hilary Miller stated that she would seek more information on DGS's activities since the report was issued to see what other progress has been made. She noted that she is aware that DGS is interested in doing food composting.

Organics Diversion Goals

At the last meeting of the CWG, the suggestion was made that a goal for organics diversion be set, similar to the Statewide or State government goals for recycling. The CWG did not agree on whether this should be done. The EOS briefly discussed this issue.

Brenda Platt stated that she supported a goal for increased composting. She also suggested that State agency recycling plans be required to address food composting. Hilary Miller stated that counties object to goals for composting. Brenda Platt suggested that in the alternative, the State should provide counties with things that can make it easier to tackle food composting such as case studies, master composter courses, technical assistance, and other guidance. She also raised the issue of a recent Maryland Recycling Network board decision that was distributed to the CWG. In it, MRN resolved to oppose any requirement that counties address composting in their solid waste management plans. Brenda Platt asked the EOS members who may be part of MRN to elaborate on this. It was noted that the resolution was mainly aimed at addressing concerns voiced by Charlie Reighart at previous CWG meetings. He had opposed requirements to address composting in the plans on the grounds that past requirements for addressing school recycling had necessitated many hours of work and yielded little actual change in practice. Hilary Miller stated that she would reword the recommendation to avoid insinuation of any hard numerical goals and instead insert language about providing counties with technical assistance and guidance.

State Procurement of Compost

Brenda Platt suggested that recommendations about government procurement of compost be separated from recommendations relating to government agencies actually composting, to increase clarity. The recommendations will be revised accordingly.

At the last meeting of the CWG, Mike Toole stated that the State Highway Association (SHA) keeps a list of approved compost that may be used in SHA projects. The EOS found a "Qualified Products List," which was published by the Landscape Operations Division, Office of Materials Technology. The list stated it was revised in May, 2012, but EOS members identified several contacts that were significantly outdated. Compost products, such as socks, blankets, and berms, did not appear to be on the list. Brenda Platt mentioned that these items do appear on similar EPA lists. Richard Keller commented that the list does not make it easy enough to tell what the products are; it would be helpful if SHA could clearly recommend or approve certain types of compost-related products. Local governments often follow State lists of approved products.

Next, the EOS discussed preferences for various types of compost purchased by State government. The exiting recommendation suggested a preference for Maryland compost or for MDA-registered compost. Richard Keller asked what type of preference would be given. He noted that some preferences are very strong, compelling agencies to seek and identify vendors of a particular type. An example is the preference given to minority businesses. Hilary Miller stated that this would probably be a price preference, similar to the 5% preference for recycled paper.

The EOS considered whether the preference should apply to compost that was actually produced in Maryland over compost that was produced out of State. Richard Keller was concerned about the prospect of an in-State preference, adding that other States may reciprocate. Hilary Miller stated that DGS is seeking to create a Statewide contract for compost, according to the green purchasing report. However, Brenda Platt still felt that particular preference should be given to compost produced in State. Several members questioned whether the requirement or preference for purchase of MDA-registered compost would be sufficient. However, it was noted that all compost that is distributed in Maryland must be registered by MDA, so compost produced out of State could also be MDA-registered.

Richard Keller commented that procurement agencies need to be trained on any new preferences for compost. Hilary Miller felt that it would be fairly easy for State agencies to use Statewide contracts for compost without any additional knowledge, as long as the new contract is announced. Richard Keller replied that counties need to be apprised of their ability to use the Statewide compost contract so they know it is an option.

Hilary Miller summed up the discussion, suggesting:

- A Statewide contract for compost should be developed
- In State compost contracts, there should be a price preference of Maryland-produced compost.
- In State compost contracts, there should be a requirement for MDA-registered compost (since registration is merely compliance with existing law).

There was some remaining dispute surrounding the price preference for in-State compost. Chaz Miller opposed it, adding that it was probably unnecessary because the transportation savings from using local compost would be enough to encourage purchase of Maryland compost. Others wondered whether such a preference would be against procurement rules or the Commerce Clause. Hilary Miller stated that she would check with DGS about the State's ability to prefer products produced by in-State companies.

"Branding" of Composting

The EOS discussed the suggestion that a symbol for organics recycling be developed. Jessica Weiss stated that the symbol could draw on the arrow mark used for recycling so that people would think of composting as an aspect of recycling. Richard Keller commented that national branding would be challenging. Jessica Weiss responded that the symbol should start with Maryland, and could be used on bins or as part of materials created for municipal programs. An existing symbol is used to signify compostable products meeting certain standards. Brenda Platt suggested that the State develop posters, logos, and other branding materials for local governments to use in their programs. Hilary Miller agreed, citing a similar effort for electronics recycling that was carried out by EPA Region III and used by the states. Brenda Platt stated that Washington State and Portland, Oregon have many outreach and branding materials available and these should be adapted for use in Maryland. She also suggested promoting

uniform bin colors to the extent possible. Gemma Evans stated that the recommendations should encourage counties to work with each other as well as with the State.

Food Hierarchy of Management

There was discussion at the CWG meeting about whether the food management hierarchy should be included in the recommendations or just mentioned elsewhere in the report. Some people felt that methods other than composting (source reduction, food donation) were outside of the scope of the CWG and that extraneous information would reduce the impact of the report. Others felt that the hierarchy does not propose a particular action and is therefore not a recommendation. However, Brenda Platt noted that it is important to educate legislators that some uses should be endorsed above composting. Hilary Miller stated that the hierarchy, using EPA's language, would be left as a recommendation for now.

Community Gardens

The EOS very briefly discussed composting at community gardens, which has been a recurring issue for the CWG in terms of the appropriate level of permitting. Jessica Weiss described community gardens at schools, in which children bring food scraps from home and the materials are composted on site, producing about 2 cubic yards of compost every 6 months. Most other community gardens are even smaller. Mike Giuranna stated that in Pennsylvania, the State does not regulate these because they are so small. In Oregon, facilities producing over 100 tons/year are regulated, but smaller facilities are not. An alternative would be to require small facilities like community gardens to register and agree to follow basic minimum standards. It was decided that this issue would be discussed further in the next TS meeting.

Brenda Platt stated that the recommendations should promote on-site composting such as at schools, hospitals, and prisons. Eastern Correctional Institute has started an anaerobic digestion project to deal with agricultural waste. It will be operational in 2013.

Funding

The EOS touched briefly on funding for education, outreach, and other aspects of the composting program. Many other states have landfill fees that can fund recycling and solid waste programs. These and other solid waste fees were considered in the Solid Waste study group and no agreement was reached. At the last meeting of the CWG, Justen Garrity (a composter) stated that he was opposed to any additional fees on compost facilities.

The EOS agreed that the recommendations are close to being finished and did not feel that another meeting of the EOS was necessary. Hilary Miller stated that she would finalize the recommendations based on these discussions and send them out by e-mail for any additional comment.

The meeting was adjourned at 4:08 p.m.

Appendix F

Model Compost Rule Template
US Composting Council

5400 Grosvenor Lane
Bethesda, MD 20814

Version 1.1
April 4, 2013

US Composting Council®

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US Composting Council Model Compost Rule Template

US Composting Council Model Compost Rule Template

SUMMARY

In 2011, the USCC initiated a public-private partnership to develop a model compost rule template (MCRT). The template includes a three-tiered permit structure, with design and operating requirements based on materials composted and technology employed. The foundation of the tiers is the feedstock categories, which are based on the materials' potential risks to human health and the environment. The template also includes siting and testing requirements based on quantity and types of feedstocks processed. The MCRT is anticipated to be a "living document" that will be periodically reviewed and updated as knowledge and experience in compost manufacturing and regulating continue to mature.

PROJECT DESCRIPTION

The US Composting Council, in conjunction with the Georgia Environmental Protection Division, *BioCycle* and a volunteer Task Force comprised of state composting regulators, composting facility operators and several consultants, has developed a Model Compost Rule Template to assist state regulatory agencies in development and/or revision of their composting regulations. Model composting rules, based on science as well as experience, are needed as a foundation for operators and regulators to help in the permitting process and aid in regulatory oversight. To ensure consumer confidence in compost quality and build composting infrastructure, composting facilities must be designed, operated and regulated to ensure quality products are produced and high standards are maintained that are protective of public health and the environment.

BACKGROUND/HISTORY

- In 2010, the Georgia Department of Natural Resources' Environmental Protection Division (GAEPD) approached the US Composting Council (USCC) about collaborating on a partnership to develop a model compost rule template.
- In 2011, the USCC and GAEPD launched an initiative to interview state regulatory personnel and compost operators from around the country about design and operational practices at composting facilities. The intent was to accomplish two important goals:
    1. Ensuring Georgia's proposed composting rule changes are science-based, while offering verification that similar rules adopted in other states have been effective, both in theory and in practice.
    2. Providing USCC the foundation and background data needed to develop a template of model rules, incorporating the recommendations, experience and ideas of composting professionals around the country
- Engaged the Fanning Institute at the University of Georgia to conduct a series of confidential interviews and an online survey with composting regulators and private composting facility operators in various states.

- The Georgia "strawman" rule (developed as part of a stakeholder process in 2009) was used as the basis for interview questions. Fanning conducted confidential interviews with 15 private operators around the U.S., 4 state regulators from throughout the country, and facilitated an online survey of state regulators from every state with a composting program. Private operators interviewed represent small, medium and large-scale facilities using a variety of composting methods and systems to process a variety of organic waste streams.

- Surveys and interviews were conducted from the fall of 2010 through spring of 2011. Specific responses were kept confidential and aggregated with responses from interviews with state counterparts from various states. Aggregated responses and recommendations for changes to the Georgia strawman composting rule were provided by the Fanning Institute to GAEPD and the USCC in August 2011.
- The USCC used the findings of the interviews and surveys, along with the most current draft of Georgia's revised composting rule (still undergoing administrative review in Georgia in November 2012), to provide the foundation and background data for development of a Model Compost Rule Template.
- The USCC contracted with Nora Goldstein, Editor of *BioCycle*, to serve as facilitator and editor of its Model Compost Rule Template project. The arrangement began in December 2011.

DEVELOPMENT OF THE MODEL COMPOST RULE TEMPLATE

- The USCC created a core project team to manage and oversee development of the Model Compost Rule Template (MCRT). Members of the core project team originally included Frank Franciosi, USCC President, Wayne King, USCC Past President, Stephanie Busch, Environmental Project Administrator with the GAEPD, Cary Oshins, USCC Director of Education and Training, Michael Virga, USCC Executive Director and Nora Goldstein, *BioCycle*. About halfway through this project, Brenda Platt, chair of the USCC Legislative and Regulatory Affairs Committee, joined the core project team.
- The USCC convened a Task Force to advise and provide input into development of the MCRT. The Task Force was comprised of state composting regulators, composting facility operators, composting consultants and technical experts. The kick-off Task Force conference call was held in late February 2012. Task Force calls were held monthly through July 2012. The Task Force was asked to do a final review of the MCRT in October. Final comments are reflected in the MCRT.
- As noted, the latest drafts of the State of Georgia's revised compost rules were utilized as the initial template. The revised Georgia rule utilized the tiered approach, with requirements increasing with each subsequent tier. The USCC MCRT project team, along with the Task Force, decided early on to utilize the tiered approach. This approach was also supported in the majority of comments gathered through the Fanning Institute interviews.
- A variety of state composting rules helped to guide development of the final MCRT. For example, the initial list of definitions (Section 1 of the MCRT) was compiled from states such as Oregon, Ohio, Georgia, California, Washington, Kansas and several others. This list

was ultimately edited and whittled down by the Task Force and core project team. This approach was utilized for all sections of the final MCRT.

KEY ELEMENTS OF THE USCC MODEL COMPOST RULE TEMPLATE

The MCRT project team, with significant input from the Task Force, used the following key elements to guide development of the MCRT:

- The Model Rule would not be prescriptive, i.e., it covers all the key aspects of designing and operating a composting facility that will protect human health and the environment, but does not specify how the composting facility will achieve that level of protection. For example, the MCRT requires control of nuisance odors, but doesn't prescribe how that will be done or to what level odors must be mitigated.

  The exception to this preference for performance versus prescriptive-based rules comes in groundwater protection sections of Tiers 2 (4.II.B.2) and 3 (5.II.B.2). Here we have opted to provide 2 alternatives in each, Alternative A being performance based and Alternative B more prescriptive. States adapting these rules will have to decide which alternative to choose.

- The word "waste" is not used in the MCRT; instead, the USCC decided to use the term residuals, to indicate that the raw materials going into the manufacture of compost are resources that can be converted into products via the process of composting.

- The MCRT project team and Task Force decided that all tiers are required to meet the time and temperature requirements in the Process to Further Reduce Pathogens (PFRP). It recommended that the USCC provide an FAQ on the PFRP process.

- During the drafting of Tier 2, the Task Force had detailed discussion on use of the term "leachate" as it related to the composting process. The term leachate in the context of solid waste management originated in regulatory language for landfills, and was carried over into state solid waste composting rules — even though the make-up of landfill leachate is significantly different than what is generated at a composting facility. The State of Minnesota was in the final stages of its compost rule revisions, and the MCRT Task Force learned that Minnesota had decided to use the term "contact water" instead of "leachate." The MCRT distinguished between contact water — water that has come in contact with raw feedstocks in the tipping and mixing area(s) and active composting piles — and storm water, which is water that has not come into contact with raw feedstocks or active composting piles.

One issue that the project team and Task Force did not fully address was that of animal mortalities. No consensus was reached as far as which feedstock category animal mortalities should be in. States have varying approaches to regulating composting of animal mortalities. Composting of animal mortalities on farms is included as an exemption in Section 3.

Finally, the rule does not address static piles or windrows that are not actively managed or aerated. This method of composting may be addressed in a future version

Please submit comments and questions regarding the Model Compost Rule Template by using the response form at: http://compostingcouncil.org/advocacy-resource-materials/

Section 1. Definitions

Agricultural Composting: Composting conducted by an agricultural operation on lands used for farming.

Agricultural Residuals: Materials generated by the customary and generally accepted activities, practices, and procedures that farmers engage in during the production and preparation for market of poultry, livestock and associated farm products; from the production and harvesting of agricultural crops which include agronomic, horticultural, and silvicultural crops; and materials resulting from aquacultural production. Includes manures not managed as part of a Confined Animal Feeding Operation (CAFO) permit.

Aerated static pile composting: Process in which decomposing organic material is placed in piles over an air supply system that can be used to supply oxygen and control temperature for the purpose of producing compost. Piles must be insulated to assure that all parts of the decomposing material reach and maintain temperatures at or above 55°C for a minimum of 3 days.

Biosolids: Solids derived from primary, secondary or advanced treatment of sanitary wastewater that have been treated through one or more controlled processes that significantly reduce pathogens and reduce volatile solids or chemically stabilize solids to the extent that they do not attract vectors.

Capacity: Amount of material, in tons or cubic yards, a facility can hold at any one time. Includes feedstocks, actively composting and curing material, and final product storage.

Certificate of Completion: Document issued by a certifying organization stating that the compost facility operations manager has met the requirements for the specified operations manager program.

Certifying Organization: Public or private entity approved by the [insert regulatory agency] to provide compost operations training.

Compost: A stabilized (see "stability") organic product produced by a controlled aerobic decomposition process that can be used as a soil additive, fertilizer, growth media or other beneficial use.

Composting: The accelerated biological decomposition of organic matter under managed aerobic conditions resulting in compost.

Composting Facility: Buildings, grounds (see "composting pad") and equipment dedicated to the manufacture of compost. Also includes stormwater control devices.

Composting Pad: Ground on which composting activities take place. May be subdivided by function, such as "mixing pad", "composting pad", "curing pad" or "storage pad". An "all weather composting pad" is one of sufficient construction, firmness and grading so that composting equipment can manage the process during normal inclement weather, including expected rain, snow and freezing temperatures.

Compostable Products: Containers, films or foodservice ware such as bowls, plates, cups, cutlery, composed of materials such as vegetable matter, paper, cardboard, and plastics that meet ASTM D6400, D6868. These products should be labeled in accordance with the USCC Labeling Guidelines.

Contact Water: Water that has come in contact with raw feedstocks or active composting piles. It does not include water from curing piles, finished compost or product storage piles. See also "stormwater" and "runoff".

Crop Residues: Materials generated by the production, harvesting and processing of agricultural or horticultural plants. These residues include but are not limited to stalks, stems, leaves, seed pods, husks, bagasse, and roots.

Curing: A continuation of the composting process after the high heat stage during which stability and maturity continues to increase. For the purposes of these regulations, compost enters the curing stage after completing the process to further reduce pathogens and the requirements for vector attraction reduction.

Feedstock: Organic material used in the production of compost.

Food Processing Residuals: Organic materials generated as a by-product of the industrial food processing sector that are non-toxic, non-hazardous, and contain no sanitary wastewater. The term does not include fats, oil, grease and Dissolved Air Flotation (DAF) skimmings.

Food Residuals: Pre- and post-consumer food discards from households and the commercial/institutional sector including but not limited to vegetables, fruits, grains, dairy products, meats, and compostable foodservice ware/packaging that may be commingled.

Hazardous Waste: Any substance identified by regulation as hazardous waste under the "Resource Conservation and Recovery Act of 1976," 90 Stat. 2806, 42 U.S.C.A. 6921, as amended.

Industrial by-product: Organic materials generated by manufacturing or industrial processes that are non-toxic, non-hazardous, contain no domestic wastewater, and pass the paint filter test. Non-organic industrial by-products such as clay and gypsum shall be considered upon request.

In-vessel composting: Process in which decomposing organic material is enclosed in a drum, silo, bin, tunnel, or other container for the purpose of producing compost; and in which temperature, moisture and air-borne emissions are controlled, vectors are excluded and nuisance and odor generation minimized.

Maturity: Measure of the degree of completion of the composting process.

Mixed solid waste: Mixture of organic and inorganic discards and may contain household and other municipal solid wastes that are excluded from regulation as hazardous wastes.

Mulch: Any organic or inorganic material used on the soil surface to reduce weeds, conserve soil moisture, improve water infiltration, or for aesthetic purposes.

Operations manager: Person responsible for the day-to-day operation of a composting facility.

Run-off: Precipitation that has fallen onto the composting facility and flows off of the facility in either laminar or concentrated flow.

Run-on: Precipitation that has fallen upslope of a composting facility and flows on to the facility.

Sludge: Any untreated solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

Source separated organics: Organic material that has been separated from non-compostable material at the point of generation, including but not limited to yard trimmings, food residuals, vegetative materials, woody materials, and compostable products.

Stability: Inverse measure of the potential for a material to rapidly decompose. Measured by indicators of microbial activity, such as carbon dioxide production, oxygen uptake, or self-heating.

Stormwater: Precipitation that has not come into contact with raw feedstocks or active composting piles.

Throughput: Amount of material, in tons or cubic yards, a facility can process in a given amount of time.

Yard Trimmings: Leaves, grass clippings, brush, garden materials, tree trunks, tree stumps, holiday trees, and prunings from trees or shrubs. Can also include vegetative materials resulting from the use of commercial products, including but not limited to discarded flowers, potted flowers, or grave blankets that do not include plastic, metal, polystyrene foam, or other non-biodegradable material.

Vector: Any insect, rodent or other animal capable of transmitting, directly or indirectly, infectious diseases to humans or from one person or animal to another.

Vegetative Materials: Materials derived from plants including but not limited to fruit and vegetable peelings or parts, grains, coffee grounds, crop residues, non-recyclable paper, waxed cardboard and uncoated paper products. Vegetative material does not include oil, grease, or dairy products.

Vermicomposting: The controlled and managed process by which live worms convert organic materials into dark, fertile, granular excrement or castings.

Vermiculture: Raising of earthworms for the purpose of vermicomposting.

Windrow Composting: Process in which decomposing organic materials are placed in long piles for the purpose of producing compost. The piles are periodically turned or agitated to assure all parts of the decomposing material reach the desired stability.

Woody material: Residuals and by-products of cutting trees, including but not limited to tree stumps, sawdust, pallets, and dimensional lumber that has not been treated chemically or with adhesives and coatings such as paint, glue, or any other visible contaminant.

Section 2. Feedstock Categories

Type 1 feedstocks include yard trimmings, woody materials, crop residues, and other materials determined to pose a low level of risk to human health and the environment, including from physical contaminants and human pathogens.

Type 2 feedstocks include agricultural residuals, source-separated organics; and [agency] approved food processing residuals and industrial by-products. Type 2 feedstocks are materials that the department determines pose a low level of risk to the environment but have a higher level of risk from physical contaminants and human pathogens compared to Type 1 feedstocks.

Type 3 feedstocks include mixed solid waste (MSW), sludge, biosolids, diapers, and industrial by-products and food processing residuals not covered in Type 2. They include these and other materials the department determines pose a higher level of risk to human health and the environment from physical and chemical contaminants and from human pathogens compared to Type 1 and 2 feedstocks.

Prohibited feedstocks include: asbestos-containing wastes; biomedical wastes; toxic or radiological wastes; hazardous wastes; and any other prohibited wastes defined in [state] rule____

Section 3. Exemptions

I. The following types of composting facilities are exempt from these rules. Each exemption is independent of the others, nor does it apply to other regulatory requirements.
   A. Any composting facility with a throughput of less than 100 tons of Type 1 feedstock during any calendar year.
   B. Any composting facility with a throughput of less than 20 tons of Type 2 feedstock during any calendar year.
   C. Any composting facility with a throughput of less than 40 tons of Type 2 feedstock in any calendar year using an in-vessel composting method.
   D. Backyard composting
   E. Animal and crop production operations that compost yard trimmings, agricultural residuals, woody materials, and/or food scraps provided that the following conditions are met:
      1. The owner of the composting facility is the same as the owner of the animal or crop production operation where the yard trimmings, agricultural residuals, food scraps, and woody materials are generated.
      2. The composting facility is located on property owned or leased by the animal or crop production operation.
      3. The composting facility is operated in such a manner that noise, dust, and odors do not constitute a nuisance or health hazard and does not cause or contribute to surface or ground water pollution.
      4. All compost produced is utilized exclusively at the animal or crop production operation.
   F. Composting of mortalities, provided such composting is in accordance with the requirements of the [state] Dead Animal Disposal requirements, or conducted under auspices of state Department of Transportation, state Department of Agriculture, or other agency programs.
   G. Composting of animal manures or sewage sludges where such activities are permitted under CAFO or National Pollutant Discharge Elimination System permits.

Section 4. Tier One

I. Referenced Feedstock Category: Type 1 feedstocks include source-separated yard trimmings, woody material, agricultural crop residues, and other materials determined to pose a low level of risk to human health and the environment, including from physical contaminants and human pathogens.

II. Design and Operating Standards

A. Tier One composting facilities may process Type 1 feedstocks only.

B. Tier One facilities shall meet the following design standards in order to operate in a manner that is protective of human health and the environment:

1. The feedstock receiving, processing and storage areas must be clearly defined and the maximum throughput and capacity specified.

2. No material may be stored in excess of the designated capacity.

3. The composting area should have run on and run off control and slope of 1 to 6 percent as determined by site conditions.

4. Site shall not cause a discharge of contact water to surface water.

5. Facilities operating on a seasonal basis only (e.g., fall leaves and spring yard clean-outs) must comply with B.1., B.2., B.3., B.4. All other Tier One composting facilities shall include an all-weather composting pad

C. Tier One facilities shall meet the following operational standards:

1. Facility operations managers must be able to document training in the basics of compost facility operations within the first year of supervising the facility. Training must consist of classroom and hands-on course work and conclude with a certificate of completion that must be kept on site at all times. Appropriate compost operations training must be approved by the [insert appropriate agency].

2. Facilities must develop and follow a Composting Facility Operations Plan (CFOP) — reviewed and approved as part of the Tier 1 permit application — that describes operational procedures (methods and practices) to comply with the intent of regulations to protect public health and the environment and not create nuisances. This includes measures to control nuisance odors, vectors, fires, contact water and stormwater. The CFOP must be internally reviewed annually and updated when there is a change to procedures (including equipment) and/or feedstocks being processed, and reflect how the facility will continue to comply with the intent of the rules. The CFOP must be available to the permitting authority upon request.

3. Facilities shall be maintained in a clean and sanitary condition, i.e., free of unsecured trash at end of each operating day.

4. Operators of composting facilities shall comply with all local rules, regulations, and ordinances pertaining to their facilities.

5. Feedstocks must be managed in a timeframe that minimizes odors, contact water, fire and scavenging by vectors.

6. Contact water generated shall be directed to a containment, recycling, and/or treatment system sized to handle at a minimum a 24-hr 25-yr storm event.
7. Stormwater shall be managed through Best Management Practices approved by the NPDES Program.
8. Storage of finished compost on site is limited to 12 months of production, unless approved by the (insert agency name) on a case-specific basis.
9. Non-compostable waste shall be removed or stored in a waste container and/or containment area, and disposed or recycled at a permitted solid waste facility in a timeframe approved in the CFOP [or as required by local regulating authority and/or as soon as the container is full].
10. Compost processing time and temperatures shall be sufficient to kill weed seeds, reduce pathogens and vector attraction, and produce compost that meets the stability necessary for the intended use (see Section 8. Compost Testing). Pathogen and vector attraction reduction compliance achieved as follows:
    a. Windrow composting: the compost material must be maintained at a minimum average temperature of 55°C or higher for 15 days or longer. During the period when the compost is maintained at 55°C or higher, there shall be a minimum of five turnings of the windrow with a minimum of 3 days between turnings. The 15 or more days at or above 55°C do not have to be continuous;
    b. Aerated static pile or in-vessel composting process: Material maintained at a minimum average temperature of 55°C or higher for three continuous days, followed by at least 14 days with a minimum of 45°C
11. The composting area shall be maintained and repaired, as needed.
12. Records shall be maintained that identify the weight or volume of incoming feedstocks and outgoing finished compost. Records documenting compliance of the composting facility with the Rules shall be kept for a minimum of three years from the date of the record, and be in a form suitable for submission or inspection by the (insert agency name).
13. Notice of final closure must be provided to the Director within 270 days (or as specified by state requirements) of receiving the final load of material. Any site not operated on a seasonal basis only and not receiving material for 270 days shall be deemed abandoned and in violation of these Rules unless properly closed. Notice of closure must include the date of final material receipt and a site closure plan for managing all feedstock and active, curing, and finished compost and compost-blended products remaining on site. In addition, the plan must address how contact water stored in containment structures or ponds will be treated and/or removed. All material shall be removed from the facility within 270 days unless it is being utilized as part of site closure as described in the site closure plan.
14. The facility shall have a sign at the entrance of the facility that lists the following: name of facility; operating permit number; hours of operation; and emergency contact information.

Section 5. Tier Two

I. Referenced Feedstock Category:

Type 2 feedstocks include all type 1 feedstocks plus: agricultural residuals, source-separated organics; and [agency] approved food processing residuals and industrial by-products. Type 2 feedstocks are materials that the department determines pose a low level of risk to the environment but have a higher level of risk from physical contaminants and human pathogens compared to Type 1 feedstocks.

II. Design and Operating Standards

A. Tier Two composting facilities shall process Types 1 and/or 2 feedstocks only.

B. Tier Two facilities shall meet the following design standards in order to operate in a manner that is protective of human health and the environment:

1. Owner or operator must submit an engineering design report for approval with facility application.
2. Tipping, mixing, active composting, curing, screening and finished compost storage areas must be on an all weather pad.

ALTERNATIVE A:

The all weather pad shall be designed, constructed, and maintained to:

a) prevent ponding and impede vertical movement of potential contaminants from contact water;
b) reliably transmit any free liquid present during the storage, treatment, and processing of materials laterally to a containment structure to prevent liquids from entering surface water or groundwater; and
c) prevent conditions that could contribute to, or cause contamination.

ALTERNATIVE B:

The all weather pad must meet the following criteria:

a) Five feet or more from the top of the zone of continuous groundwater saturation
b) Soils within the 5 feet are composed of any combination of the following soils: sandy clay loam, loam, silt loam, silt, sandy clay, clay loam, silty clay loam, clay, and silty clay
c) If either less than 5-feet from the top of the zone of continuous groundwater saturation or soils other than in 2.b above, an improved low permeability surface is required for tipping, mixing and active composting areas. All weather pad is allowed for curing and finished product storage.

The improved low permeability surface can be constructed of:

i. Low permeability soils that meet Federal Highway Administration specifications for subgrade stabilization (Sec. 213), which are available at http://flh.fhwa.dot.gov/resources/pse/specs/fp-03/fp-03usc.pdf.

ii. Other: Concrete, asphalt, FHWA specifications for stabilized aggregate or treated aggregate courses (Sec. 302) or other approved methods.

d) All weather pad shall be of sufficient slope (1 to 6 percent as determined by site conditions) to direct contact water to the appropriate collection, storage and treatment system.

3. Stormwater management plan must be submitted with permit application. Stormwater control features shall be designed, constructed and maintained to prevent run-on onto the facility during peak discharge from a 25-year, 24-hour storm event and to control and collect the runoff stormwater volume resulting from a 25-year, 24-hour storm event.
4. Contact water must be segregated and directed to a containment, recycling, and/or treatment system.
5. The maximum composting process windrow or pile size and minimum composting process windrow or pile spacing shall match the capability and requirements of the equipment used at the facility. As pile height increases, windrows or piles should be monitored to minimize compaction, a potential cause of odor.
6. The composting facility shall have all-weather access roads. The facility shall be designed such that access to the composting facility shall be limited to authorized entrances, which shall be secured from public access when the facility is not in operation.
7. A plan and procedure for monitoring the temperature and moisture during composting shall be provided, and should demonstrate that PFRP (Process to Further Reduce Pathogens, USEPA 40 CFR Part 503) is met. The temperature and moisture ranges for the composting cycle shall be specified. The plan shall include contingencies for not meeting the specified ranges for the composting process.

C. Tier Two facilities shall meet the following operational standards:

1. Facility operations managers must be able to document training in the basics of compost facility operations within the first year of supervising the facility. Training must consist of classroom and hands-on course work and conclude with a certificate of completion that must be kept on site at all times. Appropriate compost operations training must be approved by the [insert appropriate agency].
2. Facilities must follow a Composting Facility Operations Plan (CFOP) — reviewed and approved as part of the Tier 2 permit application — that describes operational procedures (methods and practices) to comply with the intent of regulations to protect human health and the environment and not create nuisances. This includes measures to control nuisance odors, vectors, fires, contact water and stormwater, as well as provisions for prompt equipment repair or replacement when needed. The CFOP must be internally reviewed annually to ensure it continues to reflect current procedures, equipment and feedstock(s). The CFOP must be updated when there is a change to procedures (including equipment) or the types of feedstocks processed, and reflect

how the facility will continue to comply with the intent of the rules. The CFOP must be available to the permitting authority upon request.

3. Facilities shall be maintained in a clean and sanitary condition, i.e., free of uncontained wastes at the end of each operating day
4. Operators of composting facilities shall comply with all local rules, regulations, and ordinances pertaining to their facilities.
5. The facility must process Type 2 feedstocks in a timeframe that minimizes odors, release of feedstock liquids, fire and scavenging by vectors.
6. Feedstocks with free liquid shall be mixed with drier feedstocks, bulking material or compost so that the liquid is promptly absorbed and not allowed to flow as free liquid from the compost piles or windrows. Free liquid that is not absorbed shall be managed as contact water and directed to a containment or treatment system.
7. By the end of each operating day, all incoming Type 2 feedstocks must be processed into the active composting pile, transferred to leak-proof containment or mixed with bulking material and covered in a manner that minimizes nuisance odors and scavenging by vectors.
8. Contact water shall be directed to a containment, recycling, and/or treatment system.
9. Storage of finished compost on site is limited to 12 months of production, unless approved by the (insert agency name) on a case-specific basis.
10. Non-compostable waste shall be removed, stored in a waste container or containment area, and disposed of or recycled at a permitted solid waste facility in a timeframe approved in the CFOP (or as required by local regulating authority and/or as soon as the container is full).
11. Compost processing time and temperatures shall meet PFRP and vector attraction reduction requirements, and produce compost that meets the stability necessary for the intended use (see Section 8.Testing). Pathogen and vector attraction reduction compliance is achieved as follows:
    a. Windrow composting: the compost material must be maintained at a minimum average temperature of 55°C or higher for 15 days or longer. During the period when the compost is maintained at 55°C or higher, there shall be a minimum of five turnings of the windrow with a minimum of 3 days between turnings. The 15 or more days at or above 55°C do not have to be continuous;
    b. Aerated static pile or in-vessel composting process: Material maintained at a minimum average temperature of 55°C or higher for three continuous days, followed by at least 14 days with a minimum of 45°C.
12. The composting area shall be maintained and repaired, as needed. Records shall be maintained that identify the weight or volume of incoming feedstocks and outgoing finished compost, as well as a summary of regulated analytical tests and process results on product and site monitoring results (if/as required). Records documenting compliance of the composting facility with the rules shall be kept for a minimum of

three years from the date of the record, and be in a form suitable for submission or inspection by the (insert agency name).

13. Notice of final closure must be provided to the Director within 270 days (or as specified by state requirements) of receiving the final load of material. Any site not operated on a seasonal basis only and not receiving material for 270 days shall be deemed abandoned and in violation of these rules unless properly closed. Notice of closure must include the date of final material receipt and a site closure plan for managing all feedstock and active, curing, and finished compost and compost-blended products remaining on the site. In addition, the plan must address how contact water stored in containment structures or ponds will be treated and/or removed. All material shall be removed from the facility within 270 days unless it is being utilized as part of site closure as described in the site closure plan.

The facility shall have a sign at the entrance of the facility that lists the following: name of facility; operating permit number; hours of operation; and emergency contact information.

Section 6. Tier Three

I. Referenced Feedstock Category

Type 3 feedstocks include mixed solid waste (MSW), diapers, sewage sludge, biosolids, and industrial by-products and food processing residuals not covered in Type 2. They include these and other materials the department determines pose a higher level of risk to human health and the environment from physical and chemical contaminants and from human pathogens compared to Types 1 and 2 feedstocks.

II. Design and Operating Standards

A. Tier Three composting facilities may process Types 1, 2 and/or 3 feedstocks.

B. Tier Three composting facilities shall comply with design and operating standards for Tier 2 composting facilities and the additional design and operating standards listed below:

1. Facilities that compost biosolids or sewage sludge shall comply with all applicable federal regulations regarding sludge management at 40 CFR 501; 40 CFR 503; and 40 CFR 503, Subpart B.

ALTERNATIVE A:

2. The receiving, mixing and active composting areas shall be constructed of an impermeable material such as concrete, asphalt, or similar approved impervious material to prevent the infiltration of contact water into the groundwater.

ALTERNATIVE B:

2. The working surfaces for all receiving, mixing, active composting and storage areas must be designed, constructed, and maintained to prevent conditions of contamination, pollution, and nuisance. All working surfaces must meet the following specifications:

a) All working surfaces must have a hydraulic conductivity of $1x10^{-5}$ cm/s or less, and meet one the following construction and material specifications:
   i. Asphalt concrete or Portland cement concrete designed to minimize the potential for cracking and to allow equipment to operate without damage;
   ii. Compacted clay, with a minimum thickness of one foot and protected from desiccation and installed in a manner such that the integrity will not be impaired by the operation of heavy equipment used at the composting and storage area; or
   iii. An equivalent engineered alternative.

Section 7. Criteria for Siting a Composting Facility

I. Tiers 1, 2 and 3 composting facilities shall comply with the following Siting Criteria:

A. The proposed facility will comply with all local zoning and land use ordinances.

B. The following buffers shall be maintained between the composting operation and the following features. [buffer distances to be determined by state regulatory agency]

1. the property line. .....[X ft]
2. adjacent residences.....[X ft]
3. drinking water supply wells .....[X ft]
4. streams, lakes or other bodies of water.....[X ft]
5. wetlands, unless otherwise permitted by the United States Army Corps of Engineers.....[X ft]

C. Location of a facility within a 100-year floodplain is discouraged. However if it is sited within a 100-year flood plain, the facility shall not restrict the flow of the 100-year flood, reduce the storage capacity of the floodplain, or result in a washout of material on the facility's property.

Section 8. Compost Testing

I. Tiers 2 and 3 facilities shall meet the following test standards and requirements:

1. Samples and measurements taken for the purpose of product testing shall be representative of the composting activity and shall be conducted in a manner consistent with Test Methods for Evaluation of Compost and Composting (TMECC) or other applicable standards pre-approved by the relevant agency.
2. The minimum number of samples that shall be collected and analyzed is shown below. Samples to be analyzed shall be composted prior to the analysis.

Compost Quantity[1]	Frequency
1 – 2500 tons	1 per quarter (or less)
2501 – 6200 tons	1 per quarter
6201 – 17500 tons	1 per 2 months
17501 tons and above	1 per month

[1]Either the amount of finished compost applied to the land or prepared for sale or giveaway for application to the land (on as "as is" (wet weight) basis)

If test results show the finished product is stable and in compliance with both metals and pathogens standards for a two year period the facility may request a reduction in the frequency of testing. Compost produced from non-biosolids feedstock may test for pathogens and trace metals at half the frequency, but overall testing for all other characteristics must be as defined in the table above.

3. All compost shall be tested for stability using one of the methods listed in TMECC 5.08, Respirometry.
    a. The stability results must be reported
4. All compost shall be tested for the presence of pathogens using the methods in TMECC 7.00, Pathogens.
    a. Either the density of fecal coliform in the finished compost shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or the density of *Salmonella* sp. bacteria in the finished compost shall be less than three MPN per four grams of total solids (dry weight basis) before the compost may be sold, given away or applied to the land.
5. All composts shall be analyzed for metals listed in 40 CFR, Section 503.13(b)(3), as amended using methods described in TMECC 4.00 Chemical Properties.

The concentration of metals in compost to be sold, given away or applied to the land shall not exceed the pollutant concentration (milligrams per kilogram) limits for Exceptional Quality compost as defined in the following table contained in 40 CFR, Section 503.13, Table 3

Arsenic	41	Mercury	17
Cadmium	39	Nickel	420
Copper	1500	Selenium	100
Lead	300	Zinc	2800

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Statutes, Regulations, and Guidance Concerning the Regulation of Composting in Maryland

Composting of organic material can be a useful way to recycle materials that would otherwise end up in a landfill. "Backyard" composting of yard waste, garden residuals and food scraps is generally not regulated (although some counties may have local zoning or health department requirements – check with your local officials).

However, larger-scale commercial, governmental, or cooperative composting activities can potentially have negative environmental impacts such as water pollution, the risk of fire, and the development of significant health nuisances such as odor and the attraction of disease vectors such as rats and flies. Therefore, these activities may be regulated by one or more State agencies, depending on what type of materials are being composted, where and how they are being composted, and what is being done with the finished compost. The various requirements generally include a permit or other approval, and often involve both the submission of an application and supporting documents, as well as specific requirements for the preparation, design, and operation of the composting facility itself. The following is a description of the State's regulatory system, and the types of approvals that may be required.

1. **Maryland Department of Agriculture (MDA) Regulations Governing Compost Quality.** If the compost is sold or distributed in Maryland (including given away for free or used in public places by other than governmental entities – see the regulation at COMAR 15.18.04.02A(3) for a list of exemptions), then the Maryland Department of Agriculture's (MDA) compost regulations at COMAR 15.18.04 are applicable (available in the list of other Office of the State Chemist regulations at www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=15.18. These regulations require registering of the product with MDA, and regulate the quality of the compost being produced. MDA also has regulations governing fertilizers and soil amendments which may be applicable. Please see MDA's Office of the State Chemist's webpage at http://www.mda.state.md.us/sc/plants-pests/state_chemist2.php regarding application forms and links to the MDA regulations. This applies to most types of compost, including manure, food waste, and yard waste compost. The Office of the State Chemist can also be reached by telephone at 410-841-2721, or by facsimile at 410-841-2740.

2. **Maryland Department of the Environment (MDE) Regulations Governing Composting Facilities.** The location where the composting takes place may or may not need a permit from MDE's Land Management Administration depending on what is being composted and what is done with the resulting compost:

   A. **Solid Waste**: Composting of solid waste such as household refuse, industrial residuals, and other materials is likely to require a Refuse Disposal Permit for a processing facility. See COMAR 26.04.07.23 at www.dsd.state.md.us/comar/comarhtml/26/26.04.07.23.htm. These regulations generally require that the activities take place in a building, and on an

impermeable floor. The solid waste regulations also include some requirements governing compost quality that are applicable whether or not MDA's compost regulations are applicable. For more information, contact the Solid Waste Program, Solid Waste Operations Division at (410) 537-3318. Note that there are some exceptions - see paragraph D below.

B. Natural Wood Waste (NWW): Maryland law has established a specific and detailed regulatory program for natural wood waste composting (see §§9-1701, 9-1708, and 9-1721 through 1724 of the Environment Article, Annotated Code of Maryland for the statutes pertaining to natural wood waste and other waste composting. Composting of ground up logs, limbs, branches, stumps, and other natural wood waste requires a natural wood waste recycling permit under COMAR 26.04.09. (Disposal by landfilling of these same materials requires a Refuse Disposal Permit for a landclearing debris landfill – see COMAR 26.04.07.04). This can be done outside, and does not require an impermeable surface, but the activity is limited to natural wood only, and there are specific requirements for permitting, operation, monitoring, and reporting - see the regulations at www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=26.04.09.*. Both a general permit and individual site permits (which allow greater flexibility for site-specific activities than the general permit) are available. A permit is required before operations can commence; however, if the material being composted only derives from one site (e.g., a construction site), and is going to be used on that site (e.g., for interim stabilization of disturbed areas), then a permit may not be required. Also, governmental entities are exempt from the NWW permit requirement. For more information, contact the Solid Waste Program, Solid Waste Operations Division at (410) 537-3318.

C. Sewage Sludge: Composting of sewage sludge, and anything containing sewage sludge, requires a Sewage Sludge Utilization Permit under the sewage sludge regulations. A permit is required before construction or operation can commence. See statutes in Subtitle 9-2, Part III of the Environment Article, Annotated Code of Maryland, and regulations under COMAR 26.04.06 at www.dsd.state.md.us/comar/SubtitleSearch.aspx?search=26.04.06.*. For information concerning sewage sludge utilization permits, contact the Waste Diversion and Utilization Program, Nutrient Resources Division at (410) 537-3375.

D. Recycling or Solid Waste? Whether a Refuse Disposal Permit is required or not is in part dependent on what is done with the compost. The definition of solid waste under Maryland law include materials that may be composted, but excludes finished compost (see §§9-101(j) of the Environment Article, Annotated Code of Maryland). Therefore, if the compost can all be successfully distributed, and there is not any significant amount of solid waste residuals that have to be disposed of, then the composting activity is regarded as a recycling operation and not a refuse disposal facility. Composting of food waste that does not contain uncompostable packaging materials or other wastes is an example of a composting activity that may fit this category. However, if the raw materials contain an unacceptable amount of uncompostable elements, e.g. plastic or metal, or the attempts to compost are being done in a way that results in off-spec product that isn't marketable (e.g., it doesn't meet MDA's or MDE's compost quality standards such as pathogen reduction or objectionable material content; or it doesn't break down well; or isn't

acceptable to buyers because of odor, texture, or other objectionable characteristics, rendering it unmarketable) then a Refuse Disposal Permit is required. Maryland law requires that a Refuse Disposal Permit be obtained in advance of construction or operation of the facility (see §9-204 of the Environment Article, Annotated Code of Maryland). So, it is recommended that prospective compost operators research this area thoroughly, and do market research as well, to insure that a market exists for the material, and whether a Refuse Disposal Permit will be required.

Materials that likely do not need a Refuse Disposal Permit if they are composted properly include manure, yard waste (grass, leaves and yard clippings etc. – see the complete definition at §9-1701(q) of the Environment Article, Annotated Code of Maryland), and food waste if it is uncontaminated by non-compostable materials such as packaging, pallets, plastic plates, drink containers, and silverware. These materials can routinely be composted to produce products that are completely marketable. However, if the material contains non-compostable materials or the composting process is not done properly, then some of the material may have to be disposed of as solid waste, and the facility may be required to obtain a Refuse Disposal Permit for a processing facility. Please contact MDE's Solid Waste Program for more information prior to engaging in activities that may require a Refuse Disposal Permit.

E. Stormwater and Wastewater Discharge Permits. MDE has specific permit requirements for food composting operations because such operations use materials that contain soluble constituents that, when released to ground or surface waters, have a high potential to pollute waters of the State. A Discharge Permit may be required for this activity - see the attached document "MDE/ WMA Permitting Requirements for Food Composting Operations."

For other forms of composting that do not include food waste, such as natural wood waste and or leafy materials, if a composter will sell or barter the composted product, then this is considered a compost manufacturing operation. A discharge permit is required for such "manufacturing" types of operation. Typically the Department authorizes this discharge under the general permit for discharges of storm water from industrial activities (SW); however, certain instances require an individual discharge permit. The key provision of the general permit is the development and implementation of a pollution prevention plan (SWPPP) for storm water runoff that may come in contact with compostable materials. Below is a link with some basic information on this permit. www.mde.state.md.us/assets/document/permit/2008PermitGuide/WMA/3.03.pdf.

If the compost operation is large enough to require a 'Wind-Row' type of composting operation or if the wastewater from the operation is disposed of by spray irrigation or other land application systems, then a groundwater discharge permit may be required. This type of permit may include such measures as the installation of monitoring wells for the purpose of monitoring groundwater quality. A plan to manage storm water runoff is also required to manage nutrients and other contaminants and prevent ground or surface water pollution. In addition, the operator may be required to have an operating plan to control offsite migration of odors.

If a composter brings in source materials such as natural wood waste or leaf materials from offsite, and uses the composted product solely in their own onsite farming or gardening activities, then regulations do not require a discharge permit. This is considered equivalent to other farming tasks, such as plowing, fertilizing, or weeding. Similarly, a discharge permit is not required for composting operations in which composting materials are created and used on the same property, unless such composting operations are conducted in a manner that could contaminate ground or surface waters.

Regardless of whether a discharge permit is required, for protection of waters of the State it is recommended that a composting operation be containerized or operated in a manner to prevent ground or surface water contamination. Conducting composting operations on an impervious ground surface, and with a cover from the rain, will minimize the potential that runoff will contaminate ground or surface waters.

F. Other MDE Permits. Other MDE permits may also be required. In particular, the Air and Radiation Management Administration (ARMA) may require permits for waste shredders and possibly other activities such as bioreactors.

For more information concerning other MDE permits and their requirements, see the WMA fact sheet that follows entitled

"Requirements at Food Composting Operations to Protect Waters of the State"

and MDE's Permitting Guide and other information on MDE's website, at www.mde.state.md.us/programs/Permits/Pages/permits/index.aspx.

Attachment Follows:
"**Requirements at Food Composting Operations to Protect Waters of the State**"

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Requirements at Food Composting Operations to Protect Waters of the State

The purpose of this document is to define the expectations, site design parameters, and regulatory requirements of food composting operations in order to prevent or minimize exposure of compostable materials to storm water and to prevent untreated discharges of leachate. Food composting operations include food waste source materials, its byproducts, storage and staging areas, active compost areas, and finished product storage areas. Leachate, for the purposes of this document, is defined as any liquid that is a component of the composting material or that comes into contact with such material.

Food composting facilities are subject to State and federal water pollution control laws. Facilities manufacturing compost from outside materials for sale or trade are engaged in industrial activity and must have a National Pollutant Discharge Elimination System ("NPDES") permit for storm water discharges if any potential pollutants are exposed to storm water. Storm water discharges may be permitted under the General Permit for Storm Water Discharges Associated with Industrial Activity, or the Department may, at its discretion, require an individual discharge permit for the facility. A facility that has no exposure of potential pollutants to storm water (for example, all composting operations are conducted in a building) may file a No Exposure Certification with the Department. In addition, a state discharge permit is required for discharges of pollutants or wastewater from composting operations to surface or groundwater. MDE's experience has shown that large scale composting operations, especially food composting operations, generate leachate with the potential to contaminate ground and surface waters.

The following guidance requires food composters to control for leachate and minimize or prevent exposure of materials associated with food waste to storm water. This will typically be accomplished via covered stockpiles and windrows, impervious surfaces for compostable materials, the development of a site specific storm water pollution prevention plan, and leachate collection and treatment or hauling. If the facility chooses to treat and discharge its leachate, a site specific discharge permit is required, with limits protective of the specific receiving stream and offsets for discharges of nutrients to prevent any net increase in nutrient loadings to the watershed. Land application of treated leachate and discharge via an on-site disposal system are other alternatives that may be authorized under a site specific State groundwater discharge permit.

I. Minimum Requirements for Design and Operation of Food Composting Facilities

Design requirements for food composting operations include setbacks, impervious surfaces for all compostable materials associated with food waste, collection of all resulting leachate and contaminated storm water, and development of a site specific storm water pollution prevention plan which considers implementation of covered stock piles and windrows as part of the facility's best management practices.

The minimum design requirements for a food composting facility to protect surface and ground waters of the State are as follows:

1. The facility shall maintain a setback of at least 100' from waters of the State, including field ditches, other conduits, intermittent streams, and drinking water wells; or an approved alternative may be substituted for the 100' setback. An example of an approved alternative is a 35-foot vegetative buffer strip established consistent with NRCS Practice Standards 390, 391 and 393, or systems as approved by MDE in coordination with the Maryland Department of Agriculture and the University of Maryland Extension Service. In addition, the facility shall not be located:
   a. Within 25 feet of public roads;
   b. Within 50 feet of a property line, unless the owner of the adjacent property has provided a written waiver consenting to the facility being closer than 50 feet; or
   c. Within 200 feet measured from an occupied off-site dwelling, unless the owner of the dwelling has provided a written waiver consenting to the facility being closer than 200 feet.

2. Any access roads to the facility shall be compacted and maintained in order to control dust and to prevent or minimize the tracking of mud onsite or offsite. Leachate shall not be applied to the roads for dust control.

3. Prior to beginning construction of the facility, the operator must obtain all the necessary storm water management permits. Storm water runoff shall be managed in accordance with federal, State, and local regulations, including State discharge permits for storm water associated with industrial activity, and for construction activity if construction affecting one acre or more will occur. The facility shall develop and implement a storm water pollution prevention plan addressing best management practices (BMPs) for all storm water exposures, including but not limited to BMPs to divert storm water away from composting operations and to minimize or prevent exposure of compost materials to storm water.

4. All food waste processing, including staging areas, windrows, and any areas where food waste is co-mingled with other compost (including but not limited to yard waste) shall be placed on a surface (pad) with a permeability rating of no more than 1×10^{-7} centimeters per second. This could be achieved with plastic lining under an earthen or asphalt pad, or concrete. The Department is not aware of other alternatives that would reliably produce the 1×10^{-7} centimeters per second permeability rating, but would consider other alternatives if it can be demonstrated that they would meet the permeability rating. The pad shall be constructed a minimum of two (2) feet above the seasonal high groundwater table. The pad shall be capable of maintaining structural integrity under normal operating conditions, collection of all liquids and solids generated by the composting or staging process, and capable of supporting vehicular traffic on the pad (if vehicles are driven onto the pad).

5. All leachate and all runoff from food compost materials exposed to storm water shall be collected and stored in a tank, container or lined impoundment prior to reuse on-site (with

no discharge), discharge to a sanitary sewer system, hauling off-site for treatment and/or disposal, or treatment by an on-site wastewater treatment facility prior to discharge under a site-specific state discharge permit (see Section II of this guidance for permit requirements). All necessary permits for the management of storm water, leachate and wastewater must be obtained prior to beginning composting operations.

6. Applicants must contact MDE's Land Management Administration for approval of any food composting operation prior to operation. Materials which are not to be used in the food composting operation, or any materials generated which are determined to be "waste" shall be managed appropriately. A Refuse Disposal Permit may be required. Maryland law specifies that if a Refuse Disposal Permit is required, the permit must be obtained prior to construction or operation of the facility. Please contact the Solid Waste Program at (410) 537-3318 for more information about the refuse disposal permit application process.

7. All materials at the facility shall be stored and processed in a manner that prevents harborage or breeding of vectors or creation of odor, litter and other nuisances that may be harmful to public health or the environment.

8. All incoming materials associated with food waste must be incorporated into the composting processes within 72 hours.

9. Pre-consumer and post-consumer food residuals, food processing waste and manure are the only waste streams that may be accepted at the facility in liquid form. The liquid food waste and manure may be added during composting to achieve the appropriate moisture content and should not be used to the extent that these liquids will discharge from the bottom of the compost pile. Properly constructed tankage must be available to store all liquid compost inputs.

10. The operator of the facility must develop and maintain a standard operating procedure for the routine management of composting operations and alternative management of materials during periods when the facility is not in operation.

11. The composting operation must also meet all requirements of COMAR 15.18.04 (as stated above in the section 'Maryland Department of Agriculture (MDA) Regulations Governing Compost Quality', including but not limited to the requirement that composting operations be supervised by a Certified Compost Operator.

II. Discharge Permit Requirements for Onsite Treatment and Discharge of Food Composting Operation Wastewater.

Food composting operations with storm water discharges directed to surface waters (either directly or via a storm sewer systems) are subject to NPDES permitting requirements for exposure to storm water, which may be fulfilled either through registration under a storm water general discharge permit, or at the Department's discretion, issuance of an individual discharge permit.

If the facility chooses to treat and discharge its leachate to surface or ground waters of the State, submission of an application for a site specific discharge permit is required. Permit application forms are available online at www.mde.state.md.us.

Subject to the Department's notice of final determination on any permit application, the required discharge permit will establish as a minimum the following terms and conditions, in addition to the requirements listed in Part I of this guidance, depending on whether the applicant is proposing a discharge to groundwater or surface water:

1. For food composting operations proposing to discharge wastewater to surface water, numeric limits will be applicable for the following characteristics: Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), nutrients (Nitrogen and Phosphorus), Ammonia (as N), pH and bacteria. A narrative limit will apply for oil and grease and color. Meeting the numeric and narrative limits is most commonly achieved by installation and operation of a package treatment plant.

2. For food composting operations proposing to discharge wastewater to groundwater via a land treatment system, numeric limits will be applicable for the following characteristics: BOD, Total Suspended Solids (TSS), Total Nitrogen (TKN plus nitrite-nitrate), Total Dissolved Solids (TDS), Chlorides, and bacteria. Limits will be imposed based on site specific conditions such as soil conditions, scale of operation, results of monitoring well samples, and the overall wastewater quality. Meeting numeric limits may be appropriately achieved by an advanced on site disposal system, constructed wetlands, or a spray irrigation system.

3. If the facility intends to land apply storm water and leachate, the permit application must include plans for a containment structure sufficient to hold sixty (60) days of storm water and leachate. A Nutrient Management Plan (NMP) and proposed best management practices shall also be part of the permit application. Operations and Maintenance (O&M) requirements, and Monitoring Well (MW) requirements may also be required in the permit depending on discharge volume and other site specific conditions.

4. For all proposed discharges, regardless of whether to surface or to ground waters, offsets for nutrients to prevent any net increase in nutrient loadings to the watershed will be required. Further information regarding nutrient caps and offsets is available online at www.mde.state.md.us by searching for "Policy for Nutrient Cap Management and Trading."

5. The permit's storm water pollution prevention plan requirements may include more specific best management practices depending on site conditions and operations.

6. The required impermeable pad shall be inspected for uniformity, damage and imperfections during construction, installation and operation. This inspection shall be accomplished by a professional engineer or surveyor.

7. Permit applications for food composting operations shall also include the following information as a minimum:

a. proposed procedures for inspecting incoming materials and segregating or rejecting non-compostable materials;
b. proposed procedures for maintaining aerobic composting conditions;
c. proposed procedures for monitoring temperature and oxygen in the piles and ensuring that the compost product meets MDA composting standards; and
d. proposed wastewater treatment system.

8. Once a permit application is received, the Department's procedure is to visit the facility and then evaluate the specific requirements (those described above) that are applicable. A permit will be drafted, and made available for the general public for their review and comment. A public hearing, if requested, will be conducted. If no adverse comments are received, the permit will be issued. If adverse comments are received, the Department issues its final determination (with response and potential modification to the draft permit).

9. MDE's published turnaround time for surface water discharges from permit application to publication of a proposed permit is 12 months, and for groundwater discharges, 18 months.

10. Each permit approval lasts a maximum of five (5) years, and each renewal application must be submitted 180 days prior to the expiration date.

11. For surface water applications, application fees range from $50 - 20,000 depending on the volume of discharge and how the water is used; annual permit fees range from $100 - 5,000 depending on the volume of discharge.

III. Exceptions

Exceptions to the applicability of requirements listed in this guidance include:

1. The composting operation occurs within an aggregate area not greater than five thousand square feet; the operator has developed best management practices to minimize the potential for any groundwater and surface water pollution; and the operator has obtained coverage under the Department's storm water general permit for industrial discharges, with the approved registration including both the ground and surface water best management practices.

2. Composting facilities that compost food waste generated from animal or crop production operations, provided that the owner of the composting facility is the same as the owner of the animal or crop production operation where the food waste is generated; the composting facility is located on property owned by the animal or crop production operation; the composting facility is operated in such a manner that noise, dust, and odors do not constitute a nuisance or health hazard and does not cause or contribute to surface or ground water pollution; and all compost produced is utilized exclusively at the animal or crop production operation. If the site is an animal feeding operation that falls under Maryland's Animal Feeding Operations (CAFO/MAFO) regulations, then the requirements of those regulations and any applicable permit issued under the

CAFO/MAFO regulations will apply to the composting activity as well. See MDE's website at www.mde.state.md.us/programs/Land/SolidWaste/CAFOMAFO/Pages/Programs/LandPrograms/Solid_Waste/cafo/index.aspx for more information about CAFO/MAFOs.

3. Any person composting food waste within an aggregate area not greater than four hundred square feet on any premises in a manner that noise, dust, and odors do not constitute a nuisance or health hazard and does not cause or contribute to surface or ground water pollution; however, if the primary activity of the operator is Standard Industrial Code 2875 (composting and mixing fertilizers), the operator is still required to register under the Department's storm water general permit for industrial activity.

IV. Contact Information

For stormwater and other discharges to surface waters, contact the Industrial and General Permits Division at 410-537-3323. For stormwater discharges from construction sites, contact the WMA Compliance Program at 410-537-3510. For discharges to ground waters, contact the Groundwater Permits Division at 410-537-3778. Also, see MDE's website for more information concerning discharge permits: www.mde.state.md.us/PROGRAMS/PERMITS/WATERMANAGEMENTPERMITS/Pages/Permits/WaterManagementPermits/index.aspx.

For activities that may require a Refuse Disposal Permit, please contact the Solid Waste Program at (410) 537-3318. For general information concerning other types of composting, see www.mde.state.md.us/programs/Land/SolidWaste/Pages/Programs/LandPrograms/Solid_Waste/index.aspx and other information at www.mde.maryland.gov/programs/land/recyclingandoperationsprogram/educationandoutreach/pages/programs/landprograms/recycling/education/compostinfo.aspx.

Appendix H

Email from Peter Houstle to Hilary Miller on October 23, 2012.

Dear Hilary:

I am writing regarding an issue that has come up with the MDE Composting Workgroup.

As you may know, the Maryland Recycling Network (MRN) represents recycling professionals throughout the state, including businesses large and small, non-profit groups, individuals, municipalities, and nineteen of twenty-four Maryland counties. After a half hour discussion at our most recent MRN Board meeting, October 16, 2012, the following motion was approved without dissent:

"The Maryland Recycling Network (MRN) Board of Directors supports the efforts of the Maryland Department of the Environment (MDE) Composting Work Group to promote the cause of food scrap composting in Maryland. The MRN Board believes this can and should be achieved without requiring jurisdictions to amend their ten-year solid waste management plans."

Please forward the entirety of this e-mail to the full MDE Composting Work Group for its consideration.

Thank you,

Tanya M. Adams
MRN President

c/o Peter Houstle
Mariner Management
301-725-2508
www.marinermanagement.com

Appendix I

Summary of Results for ILSR Survey of Composting Facilities

In August 2012, the Institute for Local Self-Reliance (ILSR) surveyed composting and natural wood material recycling facilities in the state of Maryland. Of the 18 surveys returned, 13 identified challenges that hinder the cost effectiveness of the facility. Of these 13, 7 identified "regulations/permitting" and 5 noted "lack of market demand for compost or other products" as the dominant challenges. Two other challenges – "contamination of feedstock/incoming material" and "competition of other facilities" – were identified by 3 respondents. Thirteen facilities responded affirmatively that they would like to expand their operations. Of these, 6 identified "regulatory or permitting issues" and 5 mentioned "financing" as major obstacles to expansion. Two other common responses were "access to land" (31%) and "lack of market demand for compost or other products" (31%).[i]

A question regarding the kind of public or private assistance that would help facilities overcome the identified obstacles yielded more anecdotal, qualitative responses. Ten facilities offered responses. Of these, 6 (60%) responses related to assistance with and/or improvements to regulations and permitting. These ranged from wanting advocacy for coordinating/organizing the different permitting levels (state, county, local) to requesting support in promoting specific regulations, such as bans on plastic bags. Five (50%) mentioned needing grants or funding to overcome their perceived challenges, 2 of those specifically mentioned utilizing funds for marketing purposes. One respondent highlighted the importance of "Positive letters and feedback [that] show how we benefit the area and even the state."[ii]

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[i] Personal communication, Brenda Platt, Director, Composting Makes ene, Institute for Local Self-Reliance, Washington, DC, December 11, 2012.
[ii] Ibid.

Appendix J

Known Composting Facilities in Maryland Registered with Maryland Department of Agriculture

The following is a list of compost operators with facilities located in Maryland that have registered compost with Maryland Department of Agriculture (MDA), as either a soil conditioner or a fertilizer. This list is current as of December 21, 2012. Note that only those that sell or distribute their compost in Maryland are required to register the product with MDA.

Anne Arundel County Waste Management
Annapolis, MD

City of College Park
College Park, MD

Frederick County Department of Solid Waste
Frederick, MD

Garrity Renewables, LLC
Aberdeen, MD

Harford County Government
Street, MD

Maryland Environmental Services
Millersville, MD
(Operates compost facilities on behalf of Montgomery County and Prince George's County in Dickerson, MD and Upper Marlboro, MD, respectively)

Topsoil Etc., Inc.
Baltimore, MD

Recycled Green Industries LLC
Woodbine, MD

Veolia Water North America/Baltimore City Compost
Baltimore, MD

LWP Organic Compost, Inc.
Salisbury, MD

Appendix K

County Survey Responses Regarding Use of Plastic Bags for Yard Trim Collection

The counties were asked the following three questions:

1. Would the county rather the State or the local jurisdictions decide whether plastic bags should be permitted for containing yard trim set aside for composting?

2. Does the county support a ban on the use of plastic bags for set-out of yard trim?

3. Do you have any other comments on the use of plastic bags and their impact on compost facilities?

Prefer Local vs. State Decision	**Ban Plastic: Yes or No**	**Other Comments**
Local	No	Plastic can be effectively removed from final product with sound techniques; County has had success marketing its compost and meets highest quality standard set by MDA
Local	Not specified	County currently allows residents to set out yard materials in plastic bags; County may or may not change that policy; should be left up to local governments
State	Yes	City lets residents set out yard materials in plastic bags; do not anticipate changes to this; no objection if State were to pass a law banning the use of plastic bags for the collection of organics
State	Yes - No organics should be collected in plastic bags	Workers complain of odor when plastic bags used for organics
State	Yes	Plastic in finished products and airborne plastic are problems
State and Local	Yes	Banned in county but still get them sometimes

Not specified	Yes	County stipulates paper bags or loose acceptance of yard waste; private composting operations may have a problem with stipulating certain types of bags
State and Local	Yes	County banned plastic bags for curbside yard waste; helps to have State backing
No formal position	Yes, effectively	County does not accept yard waste in plastic bags at County controlled processing facilities; good compliance by haulers that tip at County facilities
Not specified	Not specified	Only collected at County landfill and require materials be emptied from any kind of bag or box; request residents to reuse the containers
Local	Not specified	Many factors to be considered; best left to what is best interest of County; State involvement would not be of benefit to the County
Local	Not specified	Prefer local governments regulate this process instead of a State mandate
Local	No	Should be discretion at the local level; County doesn't allow plastic bags in County provided curbside collection of yard trim but privately held facilities may have a process to accept plastic bags; technology is evolving; locals should be able to respond to particular circumstances
Not specified	No	State law banning collection of organics in plastic bags not a good idea because organics collection programs are still evolving and there should be some flexibility
Local	Yes beginning 2014	County won't allow plastic bags at its composting facility
Local	Not specified	Recommend not using plastic but don't regulate usage; address bag management process in facility operations plan

Local	Not specified	Let local governments handle in house; bags can be a big problem
Not specified	Not specified	Only take plastic bags at convenience centers and landfill; require residents to empty bags

County Survey Responses Regarding Zoning for Composting Facilities

County planning and zoning officials were asked about the classifications and processes applicable to siting and zoning of composting facilities. The following table shows the responses received.

COUNTY	1. For the purposes of land use, planning, or zoning, does your county have a legal definition of "composting" or "compost facility"?	2. If yes, please list the citation, link, or text of the definition	3. In areas where the county is zoned, what are the zoning classifications in which a compost facility could permissibly be located without a special exception or a conditional use permit?	4. Please describe the process for obtaining a special exception or conditional use permit in your county.	5. Do county zoning rules place any restriction on composting operations, such as the size of the operation, proximity to housing, airports, etc.?	6. Are you aware of any additional permits or approvals required by the county to site or operate a compost facility (e.g. solid waste permits, heath department approvals, etc)?
Calvert	No, the Calvert County Zoning Ordinance does not define "composting" or "compost facility".	N/A	Composting facilities are not listed on the Use Charts of the Calvert County Zoning Ordinance.	Special Exceptions are reviewed and granted/denied through the Calvert County Board of Appeals.	Forest Product Processing: Structures setback 200' from property line. 100' vegetative buffer must be provided along property boundary. Hours of operation limited to daylight hours on weekdays only. Commercial Recycling Facility Must be operated under requirements of County Solid Waste Ordinance. No incinerator is permitted. No outdoor	Solid Waste permits & approvals handled by the Calvert Co. Division of Solid Waste:410-326-2010 Calvert County Environmental Health Department:410-535-3922

					processing permitted	
Charles	Charles County does not have a specific definition for “composting” or “composting facility”.	N/A	Even though “composting” is not defined, the County would consider the use permitted within the rural zones on farms where the landowner is composting materials produced on site. When material is brought in from off-site, the operation would be considered a solid waste facility and would not be permitted.	The Board of Appeals hears special exception requests. There is a fee of approximately $1000 and the case is heard 2-3 months from the time of request.	Currently, there is nothing specific to “composting” in the Zoning Ordinance. If the County were to define and more specifically regulate “composting”, these types of issues would be addressed.	None at this time.
Dorchester	No	N/a	The only express mention of composting is in conjunction with poultry house operations ,i.e., composting of poultry manure. It is permitted in the AC, AC-RCA, and RC districts.	A special exception requires the approval of the Board of Zoning Appeals. The applicant has to complete the application form and respond to the special exception criteria, as well as submitting a sketch map showing the location of the proposed use. The Board meets on a monthly basis, and usually decides the night of the meeting	We require a 200 ft setback to the property line and any road, and a 600 ft. setback to any zoning boundary where the use is not permitted.	
Garrett	Garrett County does not regulate composting under	N/A	All areas of the county.	N/A	No	

	any land use ordinance.					
Harford	There is no specific definition of compost facility. But there are 2 to 3 different "uses" in which this type of facility would be regulated. Agriculture Processed Product is defined in part to include a "product that is treated in order to increase it's market value…" Otherwise for commercial operations it would be defined as a Solid Waste Transfer Station or a Mulch processing, storage and sales.	http://www.harfordcountymd.gov/PlanningZoning/Download/1303-406.pdf	If it is a Solid Waste Transfer Station it must first be identified in the Solid Waste Management Plan (which is adopted by the County Council). Then they are permitted in the AG, B3 and CI zoning districts. Mulch Processing is a Special Exception in the AG, permitted in the CI and GI districts Agriculture Process Product is permitted in the AG provided that the product was grown/raised on the premises. Otherwise permitted in the CI LI and GI zoning districts.	Special Exception process requires approval from the Board of Appeals which is a quasi-judicial public review process overseen by a Hearing Examiner. Staff reports are written based on the applicants meeting the standards identified for the use in that particular zoning district.	Yes, depending upon the type of operation as described above.	Not aware of additional permits but each of those agencies would review as part of the
Somerset	"Composting" is not defined in the County's zoning ordinance, although it is referenced as an allowable use in certain zoning districts.	N/A	"Composters" in conjunction with "Commercial raising of poultry" on a minimum lot size of 10 acres and with setback restrictions are permitted in the following zoning districts: Agricultural-Residential; Conservation; Mixed Use Village; General Commercial; Light Industrial; General Industrial; and Airport. They are also allowed in	Special Exceptions are obtained from the County's Board of Zoning Appeals at an advertised Public Hearing with the property posted. Advertisements appear in the County's 2 local newspapers in consecutive weeks before the BZA meeting. The	No restrictions on size. As noted above, composting in conjunction with Poultry requires a minimum 10 acre lot size; more stringent setbacks from property lines; and a minimum of 200' setback from any dwelling or structure on	Offhand I'm not aware, but there hasn't been an application for one in the 3 years I've been here. If we receive an application I would check with the Health Department and other departments as part of our

			other Districts but only by Special Exception. "Composting at a Commercial or Industrial Scale" are not Permitted Uses but require Special Exceptions in certain districts.	Zoning Ordinance contains criteria that must be met in order for a Special Exception to be approved. Persons dissatisfied with the BZA's decision can appeal to the Circuit Court. Conditional Uses are not provided for in the County's Zoning Ordinance.	another parcel.	Technical Advisory Committee review of these types of applications.
Washington	Washington County, MD does not have a use designation for or address "composting" or "compost facility"	N/A	N/A	Our filing instructions can be found at http://www.washco-md.net/permits/bds_zoning.shtm	N/A	N/A
Worchester	The Worcester County Zoning Code does not have a specific definition of composting or a composting facility. Composting can be considered a part of an agricultural operation, as spelled out in Zoning Code Section 1-347 Right to Farm Law, for activities associated with the operation of the farm.	Zoning Code Section 1-347 Right to Farm Law.	There are no zoning districts which specifically allow a composting facility as described in HB 817, by right or special exception. There is a provision in all zoning districts for a special exception use or structure that is not specifically mentioned, but is of the same general character of a use in that particular zoning district.	The Board of Zoning Appeals is a seven member board who reviews all special exception requests at a public hearing once a month. An application, review fee, and 10 copies of a site plan are required to be submitted. The applicants must justify the use under the special exception criteria contained in §ZS 1-116. Of course, the use must be listed	Potential restrictions would involve setbacks, landscape requirements, and other such restrictions would regulate the placement of the particular use on a given property.	Additional approvals and permits may include stormwater management and sediment erosion control. Depending on the location of the specific facility, the property may be subject to the Critical Area or Forest Conservation Laws.

				as a permitted or special exception use in order to apply for the hearing. If the Board approves the use, the project will be subject to the standard permitting process, and potentially site plan review as a commercial operation.		