



Minding your Manures

It's that time of year again - the days are longer, the air is warmer, and the work doesn't seem to have an end in sight! It's going to be planting time again in Southeast Pennsylvania, and with the winter we've had and the number of full manure storages out there, it's about time! It's once again manure spreading time, a time where we recycle the bi-products of animal production into useable and available nutrition for this upcoming year's yield of crops.

If you are an operator who land applies manure, this is a busy time for you. And because this is a busy time for you and all others who need to spread their winter collection of manure, this is also a time when there is an elevated risk to surface and ground waters of nutrient pollution from land applied manure.

First and foremost, if you have an up-to-date Act 38 Nutrient Management Plan or a Manure Management Plan, please follow it! If you do not have a plan and you land apply manure, you are required by law to have and maintain one of the two types of plans. In the meantime, there are some common sense rules that need to be followed to minimize the risk of nutrient pollution when spreading manure:

Do not over apply! Apply only what you need to satisfy nutrient needs of crops. Manure is fertilizer and fertilizer is money. Do not apply manure to the point where it "runs off." The non-winter season cap on any single liquid application is 9,000 gallons per acre. The most efficient budgeting of manure for crops is achieved through proper planning and noted in either a Manure Management Plan or and Act 38 Nutrient Management Plan.

Be aware of and mind your setbacks! Manure application setbacks are not only a legal responsibility, but a ethical one as well. Because of the mobility of nutrients, spreading is not permitted within 100 feet of surface waters (streams, lakes, rivers, ponds), sinkholes, and wells. Be aware of the location of nearby surface waters, areas of karst geology, well locations (even on neighboring properties to minimize the potential transportation of nutrients to surface waters), and ground and drinking water supplies.

One of the simplest tools to assist in the responsible application of nutrients during this busy time of year is the development, implementation, and maintenance of either an Act 38 Nutrient Management Plan or a Manure Management Plan. Both plans are guidance documents that assist in the responsible collection, storage, and application of nutrients while also satisfying the requirements of the law.

Please contact the Chester County Conservation District to find out which plan is right for your operation. If a Manure Management plan is what suits, the Chester County Conservation District staff would be glad to make a visit and assist in the development of a plan for your operation. If animal density proves an Act 38 Nutrient Management Plan is in order, the District has the resources and contacts available to achieve responsible, efficient, and economic results in addition to compliance with state regulations.

How to become a Chester County Conservation District Cooperator

What is a cooperator?

The relationship between the Conservation District and people of the county it serves has been growing since the late 1940's. The unique relationship that the Conservation District has with the farmers and land owners we serve has remained very steady and unchanging, while the tools, programs, and approach is constantly evolving. We send out newsletters, and hold outreach meetings and educational sessions in hopes of gaining farmer and land owner interest in conservation and interest in becoming a cooperator. Becoming a cooperator is an investment in a partnership with an agency that has multiple resources geared toward conservation.

How do I become a cooperator?

Only one form is the key to becoming a Conservation District cooperator: the **Request for Assistance** form. This form is a simple request, from you, the producer, to us, the Conservation District, explaining who you are, what kind of operation you have, and what help you request. If you are not currently a cooperator and would like to become one, just call us at 610-925-4920 and we will send you a form or go to www.chesco.org/conservation and click on Applications / Forms to print one for yourself.

What can the Chester County Conservation District do for me?

After completing and submitting a Request for Assistance form, we can meet to discuss your thoughts and concerns and walk the farm. The Conservation District offers technical assistance and we look at specific on-farm issues and discuss short- and long-term ways to address your concerns. We also lay out contours, provide publication information, generate maps, look up historical property information, and discuss the regulations that apply in specific situations and the steps that can be taken to move forward toward compliance.

Why do I need a conservation plan?

A conservation plan is a record of producer decisions. After we discuss your options and you decide to keep moving forward (whether it is pursuing financial assistance, needing survey and engineering assistance, or design work), we must first generate an up-to-date conservation plan. **First of all**, this gives us a plan on paper to which the producer is agreeable, and it also gives us access to further tools for working with the Natural Resources Conservation Service for their expertise. **Secondly**, it serves plowing and tilling operations, and/or operations with animal heavy use areas over 5000 square feet, with a plan that brings them into compliance with Chapter 102 regulations. **Finally**, this plan fulfills local, state, and federal requirements, as well as agricultural requirements for potential future expansion permits, selling land easements, or REAP or financial assistance applications.

What are the benefits of conservation?

The benefits of conservation look different to different people. A dairy farmer may need a barnyard and manure storage to address nutrient runoff concerns. A crop farmer may need a terrace or waterway to stop erosion and top soil and nutrient loss in the fields. A land owner may need a stream bank stabilized to keep the stream from inching closer to a dwelling. Either way, contact the us to help you become a cooperator and work toward your conservation goals.

The Chester County Conservation District is a non-regulatory agency that seeks voluntary compliance from co-operators. This means it is up to the producer to decide to work with us and ask us for assistance. We do sometimes investigate and address complaints, because we have the resources to educate and work toward voluntary compliance in addressing issues. Otherwise, we do not inspect properties, we do not administer fines, and we do not require producers to work with us.

Current Research in the Mushroom Industry

In September 2014 a final report titled, "Evaluating Passive Composting of Spent Mushroom Substrate According to Best Practices Guidelines" was published by Louis A. Kaplan, Ph.D., from Stroud Water Research Center. The purpose of the study was to evaluate whether the Best Management Practices (BMPs) for passively composting Mushroom Compost (MC) as recommended in the "**Best Practices for Environmental Protection in the Mushroom Farm Community**" manual protect water quality.

The study began in October 2013 and was completed at the end of July 2014. The project consisted of the installation of six ground water monitoring wells in a local crop field. Four wells were installed in three separate treatment plots after the passively composted MC had been removed and one well was installed in each of the two control areas that received no MC. Grab samples as well as data obtained from the sensors installed in the monitoring wells were used to assess the concentrations of salt, nitrates, dissolved organic carbon, and other constituents which have the potential to degrade water quality. The soils in the treatment and control plots were also evaluated for conductivity, temperature, and moisture content.

Dr. Kaplan concluded in the report that, "While the results to date should still be considered preliminary, the initial conclusion from the data collected is that SMS composting on this site has clear, but minor impacts on groundwater quality eight months after SMS was removed. Evidence of more serious water quality degradation to date has been transient and localized."

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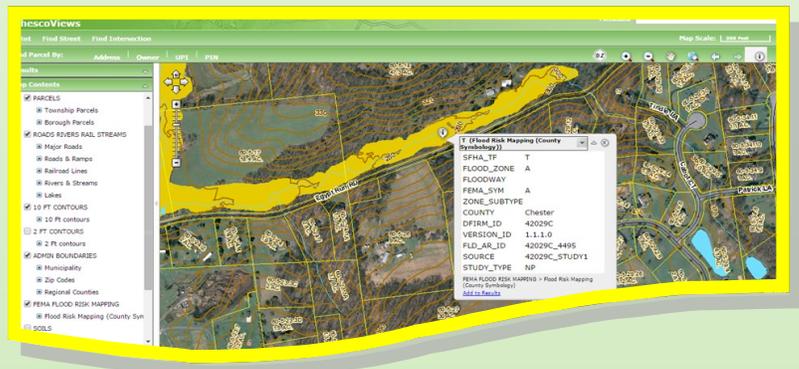
Mapping

Tools

Available for Public Use

When you are a cooperator of the Conservation District we often use maps to assist you in developing solutions to possible on-farm issues. Aerial photographs, topographic contours, and soil types can tell us a lot about your farm even before we make an onsite visit. However, these tools are also available to the public. You can use websites like ChescoViews, Web Soil Survey, and PAOneStop to look at the contours or slopes on your farm, the drainage capability of your soils, the likelihood of flood areas, and other aspects of the land. The following are examples of practical program uses.

ChescoViews—use this program to view 2ft and 10ft contours, streams, flood zones, and soil types.
<http://mapservices.chesco.org/chescoviews/>



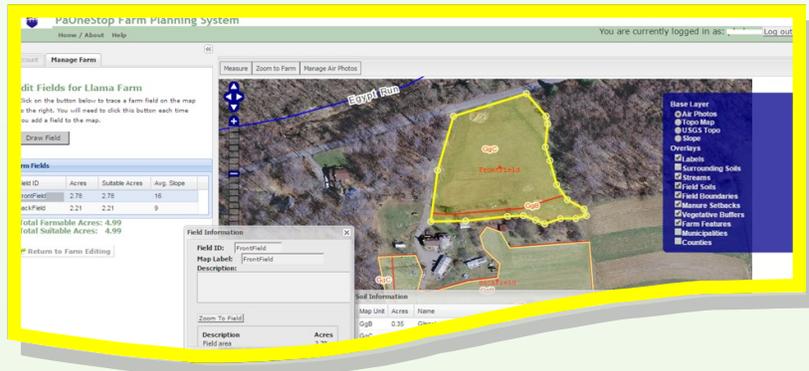
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3aB	Balle silt loam, 3 to 8 percent slopes	1.9	4.5%
Co	Codorus silt loam	4.3	9.9%
3aD	Galla silt loam, 15 to 25 percent slopes	1.7	4.0%
3bB	Glenslg silt loam, 3 to 8 percent slopes	9.0	20.8%
3cC	Glenslg silt loam, 8 to 15 percent slopes	21.1	48.9%
4aB	Manor loam, 3 to 8 percent slopes	0.4	1.0%
4aC	Manor loam, 8 to 15 percent slopes	2.7	6.3%
	Manor loam, 15 to 25 percent slopes	0.4	1.0%

Web Soil Survey—use this program to look at your soils in detail (e.g. drainage class, slope, productivity).
<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

Continued on the top of next page...

PAOneStop—use this program to outline fields on the map to estimate acreage, setbacks, and more.

<https://www.paonestop.org/>



A Most Important Question

“What is the easiest way to ensure compliance with environmental regulation?” People ask variations of this question all of the time on farm visits. There are two main things that regulators look for as they drive into a farm: Is it green and where is the stream?

The first and simplest thing to do on your farm is to keep it green. Green grass is the answer to many environmental problems. If your farm has brown areas around the buildings and in the pastures, regulators are going to look closely at all of those areas. Deciding how to get animals to pastures and barnyard areas without creating massive mud and manure areas is of great importance.

Usually some fencing to confine animals to an animal trail or adding a stoned animal trail will remedy this problem. Also, animal concentration areas in pastures should have a swale above them so that rain water will run around the area and not through the area. We all usually think of a bull dozer when we think of making a diversion or swale, but a mold board plow could be used to cheaply create a swale capable of preventing rainwater from running through these areas.

Of course the main thing that we all hear about is clean streams. There are two things regarding streams that you can do cheaply to remedy this issue. The first is to fence animals out of streams. Regulators want to see fences set back at least 35 feet from stream banks, but just getting a fence up 15 feet back from the bank makes a huge difference to the quality of the water in the stream. This will prevent mud from entering the stream by keeping animals from trampling the banks and allow grasses to get established to hold the soil in place.

The second thing dealing with streams is to establish stabilized stream crossings or water access points where animals are able to cross the stream or drink water without trampling banks. This practice does require a permit from the Department of Environmental Protection (DEP). The permit currently costs \$50.00 - a minimal cost to ensure that the stream on your farm stays clean.

The agricultural staff of the Conservation District can help by discussing these issues with

you, by providing no cost engineering assistance, and assist you in finding financial assistance to do any of these things. Call us at 610-925-4920.

John Hoover



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Chester County Farmland Preservation

Chester County's Farmland Preservation Program is well-known and respected at the County, State, and National level. Pennsylvania leads the nation in the number of farms and acres permanently preserved for agriculture and Chester County has preserved over 34,000 acres and more than 400 farms. Aside from wanting to protect open space for future generations, farmland owners are motivated to participate in the program for a number of different reasons. Selling the development rights but keeping the farm can provide critical funds to purchase new equipment, expand their operation, transition to new or different products, and invest in more farmland. It can also provide flexibility for estate planning and make it easier to allocate assets to future generations. While the number of farms and prices paid changes from year to year, last year the Open Space Preservation Department preserved 38 farms and over 2,600 acres with an average payment of \$5,272 per acre.

Many landowners are currently enrolled in an Agricultural Security Area (ASA), and/or Act 515 or 319 (Clean and Green). While these programs provide many benefits to the farmland, they do not provide permanent protection. It is a common misconception that once enrolled in either the ASA or 319/515 then your property is preserved. The Chester County ALPB partners with landowners, nonprofit organizations, municipalities, the Commonwealth of Pennsylvania, and the U.S. Agricultural Conservation Easement Program to permanently preserve farmland in Chester County.

The County's Department of Open Space Preservation (DOSP) is now accepting appli-

cations to sell agricultural conservation easements with an August 3, 2015 deadline. Additional information and applications are available online at www.chesco.org/openspace and clicking on "Farmland Preservation." To receive a blank application in the mail or to receive personal assistance, contact Geoff Shellington, DOSP's Agricultural Programs Coordinator, at (610) 344-6504 or gshellington@chesco.org.



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Christian Hauser



Christian is excited to join the Chester County Conservation District (CCCD) as the Conservation Program Representative. Christian is a graduate of Cornell University (B.S. 2007) and the College of William and Mary (M.S. 2011). Both Christian's undergraduate and graduate degrees focused on restoration ecology and watershed management. In addition to his education, Christian has five years of professional experience managing restoration and watershed improvement projects, including stream restoration, wetland mitigation, and implementation of a variety of best management practices (BMPs) such as riparian buffers, stream crossings, and channel stabilization features.

Christian grew up on a sustainable fruit and produce farm in Lincoln University, Pennsylvania, and currently resides with his wife and son in Oxford, Pennsylvania. Christian's role with the CCCD will be to pursue conservation initiatives in non-traditional areas, or using non-traditional funding sources.

Molly joined the Chester County Conservation District as the District Engineer in May of 2015. She received an undergraduate degree in Biological Systems Engineering (formerly Agricultural Engineering) with a concentration in Land and Water Resources from Virginia Tech, and has completed some graduate coursework in Water Resources Engineering at Villanova University. For nearly six years Molly has worked for a small consulting firm where she specialized in innovative stormwater management design for redevelopment projects in southeast Pennsylvania and environmental/watershed planning for campuses and municipalities in the mid-Atlantic. Her coursework, design experience, and commitment to protecting our natural resources prepare her well for her work at CCCD, where she provides technical guidance and engineering support for review of E&S control plans and post-construction stormwater management plans for the NPDES program, with the potential to expand her role to include engineering oversight of some farm practices. Molly is a licensed Civil Engineer in Pennsylvania and Delaware.

Molly Julian





CHESTER COUNTY
CONSERVATION DISTRICT

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Planning Ahead

A common challenge that Conservation District staff faces when working with a producer on a project is timing. There are a number of factors that come into play. Is the producer ready (both financially and agronomically) to implement the practice? How long will it take to complete a survey and design? How long will it take to get any required permits? When are the submission dates for any funding opportunities and when will the funding actually be available? These challenges become even greater when a producer would like to implement a practice in the very near future.

The Conservation District staff can control a few of these factors, such as the time it takes to complete any needed surveys and designs. However, other factors, such as the timing of funding sources and time required for permit approval are a different issue. Because of this, it is best to plan ahead - even for projects that you're not certain you want to do. Perhaps you are thinking about installing a new manure storage or terracing a field sometime in the next few years. If that's the case, give us a call and we can begin the survey and design.

Planning ahead also has a few other advantages. It gives us time to assess if a permit is required, and if so, to go through that process. Another big advantage is that the project will be "on the shelf" ready and waiting if a new funding source becomes available.

So if you are thinking of a project, even if you are not completely sure if or when you want to do it, give us a call. That way, when the timing is right for you to implement the project, we will all be ready.