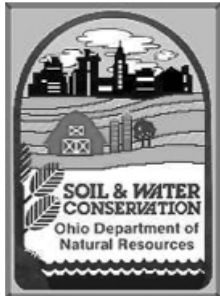


Guidelines for
Livestock Operations



Introduction & Objectives



This booklet was originally developed in 1995 by the Ohio Agricultural Service Team to assist livestock farmers in planning for the future. This booklet was revised in 2003 to reflect the following changes:

- The passage of Senate Bill (SB) 141 in December 2000 and the subsequent transfer of most of the regulatory and permitting authority for large livestock farms from the Ohio Environmental Protection Agency (Ohio EPA) to the Ohio Department of Agriculture (ODA) in August 2002.
- The United States Environmental Protection Agency's (US EPA) new rules for concentrated Animal Feeding Operations (CAFOs) that became effective in April 2003.
- The passage of House Bill (HB) 152 in August 2003.

Clean water is important to every citizen of Ohio. Since ground water and the water in nearby streams can be affected by nutrients we apply to the soil, livestock production practices play an important role in keeping our water clean. It is up to all of us to do our part.

This booklet was developed by the Ohio Department of Natural Resources (ODNR) Division of Soil & Water Conservation (DSWC), ODA Livestock Environmental Permitting Program, Ohio EPA Division of Surface Water, the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS), Ohio State University (OSU) Extension and the Ohio Livestock Coalition (OLC) to help farmers, citizens, local officials, the media and interested parties and stakeholders better understand the types of regulations, rules, permits and plans that may be required of certain farming operations.

For information beyond what is covered in this booklet, please refer to the contacts section on page 18.

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In December 1995, the agricultural service team, composed of representatives from several state and federal agencies, as well as representatives from Ohio's livestock commodity organizations, was created by the state of Ohio to advise livestock producers and other entities on livestock facility expansion or other issues. While the agricultural service team officially no longer exists, the spirit of its mission continues with the ODA Livestock Environmental Permitting Program's Concentrated Animal Feeding Facility (CAFF) Advisory Committee, which consists of similar membership organized to provide the director of agriculture with guidance, advise, counsel, and recommendations regarding large-scale livestock production issues. This booklet was also revised in a similar manner.

This publication is made possible by the Livestock Environmental Assurance Program (LEAP), which is administered by the OLC and partially funded through a grant from the ODNR-DSWC and was peer reviewed by the following:

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Protecting Water Resources

Ohio's farmers have made great strides in protecting our water resources through improved agricultural practices. Ohio has been very successful in addressing non-point source pollution through a voluntary approach. Voluntary programs provide farmers with the opportunity to select best management practices, commonly referred to as BMPs, and incorporate best available technologies that are both environmentally sound and cost-effective for their farm.

Ohio has several successful voluntary programs in which ODNR-DSWC, USDA-NRCS, local SWCDs and Ohio EPA have formed partnerships with the agricultural community to help address environmental concerns associated with agriculture. Additionally, technical assistance and cost-share programs that provide financial and economic incentives for farmers to utilize to develop and implement management practices, build or improve structures and purchase equipment that protect the environment and conserve natural resources are available from the ODNR-DSWC, USDA-NRCS, local SWCDs and Ohio EPA.

Non-Point Source Threats

Many bodies of water in Ohio are impacted by non-point sources, which include construction sites, city streets, mines, rural septic systems and agriculture. Non-point source pollution does not come out of a pipe, so it can be more difficult to control than point source pollution.

Until recently, many non-point source problems were masked by historically severe point source impairments, such as wastewater treatment plant discharges. As point source problems were abated, the underlying, yet less obvious, problems became evident. There are other indications that impacts from non-point source run-off, habitat degradation and watershed disturbances may be worsening. Siltation (sediment filling underwater areas where fish live) and habitat degradation (such as removal of logs, pools, plants, and other physical structures) are leading causes of aquatic life impairment in Ohio streams and rivers. These impairments are the result of agricultural land use, intensive urbanization and suburban development as well as other human activities. These problems could slow further improvements in Ohio's water quality.

How Livestock Manure Impacts Water Quality

The main sources of livestock impacts on surface water are inadequately managed feedlots or barnyards, unprotected manure stacks, improperly managed manure handling and storage facilities and improper or untimely manure applications. The most visible consequence of waters being contaminated and polluted by animal manure is the destruction of aquatic life (fish kills).

Livestock manure contains several pollutants that can harm the aquatic environment, cause water quality problems in streams and ponds and contaminate drinking water supplies. One of the most damaging pollutants is ammonia, which is toxic to aquatic life at low levels of concentration. Nutrients found in livestock waste, such as nitrogen and phosphorus, can cause excessive algae growth in streams and ponds. When algae and other aquatic plants decompose, oxygen levels may fall too low, causing fish and other aquatic species to suffocate. Livestock manure also contains bacteria and nitrate nitrogen, which may cause health problems for humans or animals. The presence of bacteria and/or nitrates in a water resource may make it unsuitable for drinking or recreation.

Ohio's Livestock Programs

Slightly less than half of Ohio's 78,000 farms have some type of livestock operation. Under state and federal laws, most do not require a permit for installation or operation of manure storage and handling facilities. The majority of farms not under permit are provided technical assistance on a voluntary basis by a variety of agencies and allied industry businesses, whose purpose is to provide technical and financial assistance programs that provide practices and incentives to help prevent water quality problems. Sources of assistance include the following:

OSU Extension: provides information and education on aspects of livestock production, facilities, nutrition, genetics, environment and manure management. Assistance is available through local county offices from agricultural/natural resource agents or specialized teams of agents with additional training and expertise in specific areas of interest. These agents also have the resources of the OSU College of Food, Agriculture

& Environmental Sciences, as well as research information resources of the Ohio Agricultural Research & Development Center. Please refer to page 16 for a list of applicable OSU Extension publications.

USDA-NRCS: provides technical assistance to livestock producers to address natural resource concerns related to livestock and crop production and administers conservation programs by providing technical, educational and financial assistance to landowners and users through local SWCDs.

ODNR-DSWC: works with local SWCDs to develop nutrient management plans and agricultural pollution abatement programs to address water quality concerns. It also administers the Agricultural Pollution Abatement Cost-Share Program for voluntary implementation of agricultural pollution abatement practices, and provides engineering assistance to local SWCDs for implementation of best management practices. Violations of the Division's standards are enforced through a Chief's Order.

ODA: The Livestock Environmental Permitting Program regulates and enforces state laws and rules for large livestock farms in Ohio, which includes issuing permits to -- and conducting inspections of -- such operations. In addition to the Livestock Environmental Permitting Program, the department administers programs to control diseases of livestock and performs pathological and biological agricultural testing through the Division of Animal Industry. The department's Division of Plant Industry also protects producers by administering laws to ensure financial responsibility of livestock dealers and licensed grain handlers. Its Dairy Division is responsible for conducting inspections of dairy farms and processing facilities to ensure that appropriate sanitation standards are followed.

Ohio EPA, Division of Surface Water: provides information, education and assistance with the agency's regulatory activities. In addition to currently having the authority to issue National Pollutant Discharge Elimination System (NPDES) permits to regulate CAFOs, the agency uses information on water chemistry, fish and macroinvertebrate communities to identify water resource problems in Ohio. This enables the targeting of resources to address the identified causes of water quality impacts in affected watersheds.

Ohio EPA, Division of Environmental & Financial Assistance: offers programs and/or projects that assist in watershed planning, deliver technical and financial assistance at the local level to implement best management practices through the Water Pollution Control Loan Fund, which provides below-market interest rate loans for non-point source water pollution control activities and is jointly administered by the Division of Environmental and Financial Assistance (DEFA) and the Ohio Water Development Authority (OWDA). Many non-point source pollution reduction activities are also supported through funds obtained from section 319 of the federal Clean Water Act. These funds are administered through the Division of Surface Water.

Who Regulates What?

Ohio Department of Agriculture

All livestock farms with at least:

- 700 mature dairy cows
- 1,000 beef cattle or heifers
- 2,500 swine weighing more than 55 lbs.
- 10,000 swine weighing less than 55 lbs.
- 30,000 ducks (other than liquid manure systems)
- 5,000 ducks (liquid manure handling systems)
- 30,000 chickens (liquid manure handling systems)
- 125,000 chickens except layers (other than a liquid manure system)
- 82,000 laying hens (other than liquid manure systems)
- 1,000 veal calves
- 500 horses
- 10,000 sheep or lambs or
- 55,000 turkeys

must apply to the ODA for a permit to install and permit to operate prior to constructing new or expanding livestock facilities, which would include livestock buildings, waste treatment, storage or disposal facilities even if they do not plan to discharge pollutants into a stream. Existing facilities of these sizes or larger that have not been permitted must also apply for a permit to operate. Existing facilities permitted by the Ohio EPA may either come into the ODA permitting program

through a review compliance certificate (RCC) and receive a permit to operate at the end of five years or obtain an ODA permit to operate immediately.

Both new and existing facilities must operate in accordance with a permit to operate from the ODA's Livestock Environmental Permitting Program. Producers building new facilities that do not initially need a permit, but plan future expansions that will require a permit are highly encouraged to construct the initial facility to comply with ODA's permit to install standards.

The Livestock Environmental Permitting Program's rules, chapter 901 of the Ohio Administrative Code (OAC), cover the following areas: enforcement (penalties, fines), odor control plans, insect and rodent control plans, plans for closure, emergency action plan, operating records required, how dead animals will be disposed of, manure management (storage, application, treatment, utilization), inspections, maintenance and monitoring records, siting criteria and public participation.

Farms with 10 times the number of animals listed in the above table must also apply for and obtain a certified livestock manager's certificate and meet several other additional permitting and siting criteria. Additionally, farms that previously held permits to install with the Ohio EPA must be inspected and obtain a review compliance certificate by August 19, 2004. By August 19, 2007, these farms must obtain their operating permit.

Rule Enforcement & Penalties

Facilities covered under ODA permits will undergo regular inspections to ensure compliance with the goal of preventing problems from occurring. Those facilities that do not follow the rules, including best management practices (BMPs) and causing water quality problems, will receive notices of violations and may be subject to escalated enforcement actions with penalties. Examples of types of violations include, but are not limited to, operating a facility without proper permits, not following permit requirements as issued, discharging manure into waters of the state. Enforcement actions for these violations can result in fines up to \$25,000/day of violation, depending on the severity, intent and actions taken to mitigate impacts to the environment.

Ohio Environmental Protection Agency

The Ohio EPA currently has delegation authority from the US EPA to issue federal Clean Water Act NPDES permits that regulate CAFOs until such authority is transferred to ODA.

SB 141, which was signed into law in December 2000, transferred permitting and regulating CAFOs in Ohio from the Ohio EPA to ODA. The legislation also authorized ODA to become Ohio's delegated authority for issuing NPDES permits to CAFOs as well. However, for this to occur, ODA will need to obtain such authority and approval from the US EPA. Until ODA receives such authority and approval from this respective federal agency, NPDES permits for CAFOs will be issued by the Ohio EPA.

The US EPA's new rules for CAFOs that became effective in April 2003 require such operations to apply for a federal (NPDES) permit, submit an annual report, develop and follow a plan for handling, storing and applying animal manure and wastewater. The rules include management practices for both production and land application areas. Many of these requirements are identical to the ODA's requirements for state permits.

The new rules removed the previous 25-year, 24-hour storm and poultry "dry manure" exemptions. To be exempted from the NPDES permit requirements a facility must demonstrate that it has no potential to discharge. Additionally, new large swine, veal calf and poultry CAFOs must be designed and maintained to contain a 100-year, 24-hour storm.

What is a CAFO?

To be considered a CAFO, a livestock or poultry farm must first meet the definition of an animal feeding operation (AFO), which is defined as a facility that confines animals for at least 45 days in a 12-month period and there is no grass or other vegetation in the confinement area during the normal growing season. An operation is a CAFO if it meets the definition of an animal feeding operation (AFO) and meets one of the following CAFO definitions:

Large CAFO - An operation is a large CAFO if it has at least:

- 700 mature dairy cows
- 1,000 beef cattle or heifers
- 2,500 swine weighing more than 55 lbs.
- 10,000 swine weighing less than 55 lbs.
- 30,000 ducks (other than liquid manure systems)

- 5,000 ducks (liquid manure handling systems)
- 30,000 chickens (liquid manure handling systems)
- 125,000 chickens except layers (other than a liquid manure system)
- 82,000 laying hens (other than liquid manure systems)
- 1,000 veal calves
- 500 horses
- 10,000 sheep or lambs or
- 55,000 turkeys

IMPORTANT NOTE: Multiple AFOs of the same animal definition, on adjoining tracts of land under the same ownership or utilizing the same manure storage or treatment facilities or land application areas, under the same ownership, are considered as one facility.

Medium CAFO - An operation is a medium CAFO if a man-made ditch or pipe carries pollutants from an operation to surface water, **or** animals come into contact with surface water running through the area where they are confined, **and** the operation has at least:

- 200 mature dairy cows
- 300 beef cattle or heifers
- 750 swine weighing more than 55 lbs.
- 3,000 swine weighing less than 55 lbs.
- 10,000 ducks (other than liquid manure handling systems)
- 1,500 ducks (liquid manure handling system)
- 9,000 chickens (liquid manure handling system)
- 37,500 chickens except layers (other than liquid manure handling systems)
- 25,000 layers (other than liquid manure handling systems)
- 300 veal calves
- 150 horses
- 3,000 sheep or lambs or
- 16,500 turkeys

No matter the size of a livestock, dairy or poultry facility, if it is an AFO, it may be designated a CAFO if, after being inspected by a permitting authority (Ohio EPA and/or ODA's Livestock Environmental Permitting Program), it is found to be adding a significant amount of pollutants to surface waters. It is also important to note that the NPDES permit will cover both the production area and the land application areas.

Who is required to obtain an NPDES permit and when?

"Newly regulated" facilities, which would be livestock farms that currently hold a permit to install and/or permit to operate with the Ohio EPA or ODA and do not have a discharge, have until April 2006 to submit their NPDES application to the appropriate agency. Facilities that were not exempted CAFOs (would only discharge in the event of a 25-year, 24-hour storm) under the previous rules must apply for a NPDES permit immediately. Also, large (and in some cases medium) facilities that have a spill or release of pollutants at less than a 25-year, 24-hour storm event must apply for a NPDES permit immediately.

"New dischargers" must apply within 90 days of meeting the necessary criteria. An example of a "new discharger" would be an AFO that meets the definition of a medium-size CAFO.

"New sources," which would be newly constructed CAFOs, must apply for a permit 180 days prior to commencing the operation. "Designated CAFOs" must apply within 90 days after receiving a notice that they have been designated as such.

If the new regulations require you to apply for an NPDES permit, the government **may or may not** notify you of that fact. Livestock and poultry farmers are responsible for submitting the application even if the government does not personally notify them to do so.

Permit Violations

According to section 903.99 of the Ohio Revised Code (ORC), anyone found to be operating a CAFO without a state permit to install or permit to operate is guilty of a misdemeanor of the third degree on the first offense, a misdemeanor of the second degree on a second offense, and a misdemeanor of the first degree on a third or subsequent offense. Each 10 day period that the offense continues constitutes a separate offense.

Additionally, anyone found to be violating the terms, conditions and/or provisions of a permit to install, a permit to operate or a NPDES permit, shall be fined not more than \$25,000. Each day of violation constitutes a separate offense. Anyone who is found to provide false statements on an NPDES permit application is subject to similar penalties.

NPDES Stormwater Permit

Effective March 1, 2003, if during the construction of a livestock or poultry facility one or more acres will be cleared, graded and/or excavated, an NPDES stormwater construction permit must be obtained from the Ohio EPA before commencing construction of the facility. This is also required for the disturbance of one or more acres for the construction of any facility or building, regardless of its use or purpose, such as residential, commercial, machinery storage, parking lot, grain bins, etc.

Sanitary/Sewage Permit

Installation of sewage treatment or disposal systems, such as employee restroom wastewater, is regulated by the Ohio EPA Division of Surface Water. A permit to install needs to be obtained prior to beginning construction of the sewage treatment or disposal system.

Ohio Water Quality Standards (OAC 3745-1-04)

These standards specify that all surface waters of the state must be free from the following pollutants as a result of human activity: suspended solids, floating debris, color, odor, toxic substances and nutrients that create nuisance growths of aquatic weeds and algae. The discharge of pollutants to the state's waters is regulated by the Ohio EPA through the NPDES permit process. This applies to any controlled, direct discharges to the waters of the state, as well as storm water discharges from many types of facilities, including confined animal facilities.

Dischargers of pollutants may be liable for civil penalties of up to \$10,000 for each day of violation (ORC 6111.07). In addition, criminal penalties can be assessed up to \$25,000 or up to one year of imprisonment or both (ORC 6111.99).

Ohio Department of Natural Resources, Division of Soil & Water Conservation

ODNR-DSWC has adopted rules and standards (OAC 1501) for agricultural pollution abatement per ORC 1511 and 1515, which cover land application and utilization standards for animal manure as well as standards for the design and construction of manure storage and treatment facilities and other potential sources of pollution from livestock farms, such as milk house waste and silage leachate. The standards reference the practices recommended in the *Ohio Livestock Manure and Wastewater Management Guide*

(Bulletin 604), available at OSU extension offices, and the USDA-NRCS *Field Office Technical Guide*, available at local SWCD offices or www.nrcs.usda.gov/technical/cfotg/. Standards describe best management practices that prevent water pollution from manure, soil erosion on cropland and logging areas.

Ohio livestock facilities that are considered small or medium in size are not required to have a manure management plan for land application. However, acquiring an approved manure management plan is not only an asset to the operation but can also protect the landowner and/or livestock producer if problems arise. The plans consider (1) characteristics of the animal waste; (2) the amount of land available for application, its topography, and the cropping system; (3) the method of land application; (4) the time of year for land application; (5) nutrient status of the soil and other factors.

Producers are encouraged to go the extra mile and develop a Comprehensive Nutrient Management Plan (CNMP), a planning tool for livestock operations that addresses production and natural resource goals by combining conservation practices and management to create a workable system to balance nutrient input and utilization. There are six components of a CNMP -- manure and wastewater handling and storage, feed management, land treatment practices, nutrient management, record keeping and other utilization options.

Manure storage and treatment facilities should be designed and constructed according to best management practices and USDA-NRCS technical guidelines, specifications and standards. This is especially important if the facility will eventually be expanded and require a permit from the ODA and Ohio EPA, which would require documentation of design and construction standards.

The DSWC rules are enforceable when a written, signed and dated complaint by a private individual is submitted to the local soil and water conservation district or the Chief of DSWC and when the subsequent investigation results in discovery of ground and/or surface water pollution as a result of failure to use best management practices. The rules are also enforceable without a complaint when the Division determines that a violation exists.

While a majority of the operations in Ohio do not require some type of permit, there are several areas of Ohio law that do regulate livestock farms in the Buckeye State.

- ODNR-DSWC's agricultural pollution abatement authority (ORC 1515 and 1511, OAC 1501:15-5-01 through 18) provides for the investigation of any pollution to waters of the state upon receipt of a written complaint filed with the local SWCD or chief of the ODNR-DSWC. Under HB 152, which became law in 2003, if a violation of the agricultural pollution abatement laws results in the chief of the ODNR-DSWC issuing a Chief's Order, the order may be referred to additional agencies to require a state operating permit and NPDES permit.
- Also as a result of HB 152, the chief of ODNR-DSWC may refer a facility that is violating Ohio's Agricultural Pollution Abatement Rules & Standards for which a Chief's Order will be issued to ODA to also be permitted as a medium or designated CAFO. In other words, such a facility would be required to obtain a permit to operate. If best management practices cannot be implemented without modifying the existing facility, a permit to install would also be required. However, the permit to operate would not be required five years after it has been issued if the problem(s) caused by the facility to require such a permit have been satisfactorily corrected.
- Ohio's Stream Litter Act (ORC 1531.29) specifies that any person placing wastes into Ohio's waters may be guilty of a violation. Individuals with a first offense may be fined up to \$500, or 60 days in jail, or both. Corporations may be fined up to \$3,000 for the first offense and \$5,000 for subsequent offenses. Arrests made under this section are heard in criminal court and the judge may levy fines. No damage to, or kills of, fish or wildlife needs to be involved in a case of stream litter.
- If fish or wildlife are killed as a result of a pollutant discharge, the party responsible is charged with all environmental damages, including the value of the wildlife killed. The value of the wildlife is based on current market prices. The guilty party also pays all investigation and clean-up costs.

TYPE OF OPERATION	PERMIT REQUIRED	AGENCY
Large CAFO	NPDES PTI, PTO	Ohio EPA* ODA
Medium AFO --no discharge and animals not coming into contact with surface waters in production area	None Should voluntarily develop manure management plan or CNMP and have it approved by local SWCD	ODNR/DSWC, SWCD
--discharge and/or animals come into contact with surface waters in production area (Medium CAFO)	NPDES	Ohio EPA* ODNR-DSWC, SWCD
Medium or small AFO with historical record of non-compliance with ODNR-DSWC's Agricultural Pollution Abatement Rules & Standards	PTO, PTI (If BMPs cannot be implemented without modifying the existing facility)	ODA ODNR-DSWC, SWCD
Small AFO adding significant pollutants to surface waters (Designated CAFO)	NPDES (after being inspected by delegated authority and ruled to be doing so)	Ohio EPA*
If 1 or more acres will be cleared, excavated, and/or graded during the construction of a livestock, dairy or poultry facility.	NPDES Stormwater (construction) permit	Ohio EPA*

* NPDES permitting authority will remain with the Ohio EPA until the US EPA delegates (transfers) this authority to the ODA.

Authority of Local Officials

According to the ORC, county commissioners and township trustees, as well as their boards of zoning and zoning appeals, cannot restrictively zone agriculture on parcels of land consisting of five or more contiguous acres. Additionally, HB 152 further clarified the authority of local officials and agencies to regulate animal agriculture:

An owner or operator of an animal feeding facility who holds a permit to install, a permit to operate, a review compliance certificate, or a NPDES permit or who is operating under an operation and management plan approved by the chief of the ODNR-DSWC, or by the supervisors of the local SWCD, shall not be required by any political subdivision of the state or any officer, employee, agency, board, commission, department or other instrumentality of a political subdivision to obtain a license, permit or other approval pertaining to manure, insects or rodents, odor or siting requirements for installation of an animal feeding facility. [ORC 903.25]

Nuisance Laws

Nuisance law is based on the right of landowners to be free from unreasonable interference with the enjoyment of their property. Nuisance

claims against livestock and poultry producers often involve situations such as odor problems, dust, noise, flies, rodents, water contamination or manure spills.

Ohio Nuisance Laws

Excessive odor from the feeding of animals is considered a public nuisance under the ORC 3767. The inspection of nuisance situations is under the jurisdiction of an inspector appointed by the board of county commissioners. The local health department usually handles inspections. However, the Ohio Revised Code (ORC) does provide an "agricultural exemption" for individuals (1) operating outside of municipal corporations and (2) whose operations conform to generally accepted agricultural practices that considerably reduce adverse effects on public health, safety, or welfare. Individuals violating the nuisance section of the code may be guilty of a fourth-degree misdemeanor. Violators can be fined up to \$250 or sentenced to thirty days in jail, or both, for a first offense.

If a nuisance lawsuit is brought against a livestock or poultry producer, changes in production practices may have to be made, damages may have to be paid, or the operation may be closed.

The primary steps a producer can use to avoid these types of action are to have good records, use a manure management plan, follow best management practices and adopt best available technologies.

Complaints

Citizens who observe pollution incidents are encouraged to report such occurrences to the ODA Livestock Environmental Permitting Program, Ohio EPA and/or local SWCD office, which all have authority to investigate such situations. Nuisance complaints should be made to the local (county) board of health. Ohio law provides for local health boards to receive and investigate nuisance complaints, and if verified, issue an order to abate conditions that pose health, safety and welfare risks to humans.

Spill Response

ODA's Livestock Environmental Permitting Program, Ohio EPA and the ODNR-DSWC all have the authority to respond to a complaint and ability to require spill clean-up as a result of a discharge impacting the "waters of the state." In addition, you may want to contact your local SWCD and/or emergency management agency (EMA), depending on the nature and severity of the spill.

The party causing the discharge can accomplish the clean-up or it can be done by a spill response company and charged back to the party causing the discharge. It is in the best interests of all producers to prevent all discharges, have an emergency action plan in place to address potential problems and promptly report and clean-up any spills that may occur.



Financial Assistance

The state of Ohio provides financial assistance for agricultural operations through various programs. The Ohio EPA administers the Water Pollution Control Loan Fund, which provides below-market interest rate loans for non-point source water pollution control activities. This program also provides technical assistance in the planning, design, construction and management of these projects.

Another assistance program available to Ohio farmers is the Ohio Family Farm Loan Guarantee Program, which is administered by ODA. The Family Farm Loan Guarantee Program may be used in support of projects that require capital for land acquisition; constructing, reconstructing, rehabilitation, remodeling, renovating, enlarging or improving agricultural buildings and the purchase of machinery and equipment. In addition, limited "soft costs" related directly to the fixed asset expenditure may be included. Examples of eligible soft costs include architectural/engineering expenses, installation costs for machinery, and financing costs for lender loans. Funds from the program may not be used for working capital, refinancing, rolling stock, inventory/receivable financing, speculative real estate development, relocation costs or livestock. For information about this respective program, contact the Ohio Rural Development Partnership at 1-800-282-1955 or the Office of Financial Incentives for the Ohio Department of Development (ODOD) at 1-800-848-1300.

Water Pollution Control Loan Fund (WPCLF)

The Fund is jointly administered by the Ohio EPA's Division of Environmental and Financial Assistance (DEFA) and the Ohio Water Development Authority (OWDA). DEFA is experienced in coordinating financing packages with the Ohio Public Works Commission, Community Development Block Grant Program, Rural Development and other sources of public financial assistance. This coordination can help in achieving the most appropriate and effective combination of public financial assistance.

Since 1989, the WPCLF has awarded loans based primarily upon readiness to proceed. The program has always had sufficient funds available to award loans without the necessity of having to select "fundable" projects from among a pool of applicants. The Fund uses the Integrated Priority System (IPS) as a tool to rate various types of water resource protection projects according to their relative contributions to water quality. The IPS includes point source and non-point source water quality needs as well as human health factors to form the priority ranking system.

The Fund uses a linked deposit program for financing certain projects. Instead of borrowing directly from the Fund, a linked deposit loan is made to the applicant by a private lending institution. The below-market interest rate for the loan

is supported by a WPCLF-funded certificate of deposit (CD) with the lender. Linked deposit loans have been awarded for best management practices such as manure storage facilities and the use of conservation tillage equipment. Other funded best management practices include filter strips and grassed waterways, fencing and alternative watering sources, and the construction of wetlands to treat process water from dairy operations.

The linked deposit program provides an economic incentive for farmers to voluntarily implement best management practices to control non-point source pollution. Voluntary efforts such as these may preclude the necessity for regulatory approaches. At the local level, the program is administered by SWCDs. Interested soil and water conservation districts should contact the Ohio EPA to express interest in developing a non-point source program for a respective watershed. Local banks would need to be contacted to see if they would be interested in participating in the program in a respective watershed. When a watershed management plan, finding of no significant impact, memorandum of understanding and participating bank agreements are completed, the structure for the program is in place and linked deposit loans can be awarded. Typically, the local SWCD, USDA-NRCS, Ohio EPA and other groups or individuals work together within the watershed on these four items.

Landowners can work with banks that they regularly do business with, assuming that their bank participates in the program. Participating banks earn the same amount of profit as they normally would on their other loans. In addition, the banks that participate can offer this as an additional service to their established agricultural customers. The Fund's CD is insured by the Federal Deposit Insurance Corporation, and thus is secure.

The steps for an agricultural non-point source loan are generally as follows:

- A landowner develops, with local SWCD staff, an individual soil and water conservation plan that conforms with a watershed management plan developed for the watershed in which the land is located.
- The landowner obtains a certificate of qualification from the local SWCD's board of supervisors, identifying the proposed improvements in the land's soil and water conservation plan that are eligible for funding.
- The landowner applies for a loan from one of the local area banks participating in the WPCLF Linked Deposit Program.
- After the landowner presents the certificate of qualification, the bank evaluates the credit-worthiness of the landowner using its criteria. If respective criteria are met, the bank then enters into a loan agreement with the landowner.
- The bank sends an investment request form, which identifies the landowner and the terms of the loan, and a copy of the landowner's certificate of qualification to the Ohio EPA DEFA.
- Upon approval, the Ohio EPA DEFA and OWDA deposit with the bank, through a certificate of deposit, funds equal to the face value of the loan to the landowner. The term of the deposit is equal to the term of the bank's loan with the landowner, but in no case is longer than 20 years.
- The interest rate on the CD is discounted below the bank's normal cost of funds, as determined by a comparison to the interest rates of US Treasury notes and bonds. The bank's repayment schedule on the CD contains semi-annual payments of principal and interest to the WPCLF.

It is important to note that facilities that meet the definition of a CAFO are considered point sources under the Clean Water Act and will not be able to obtain funding as a non-point source project. For additional information about the WPCLF and/or its linked deposit loan program, contact DEFA at (614) 644-2798 or (614) 644-2832.

Tax Increment Financing (TIF)

Tax increment financing (TIF) is a mechanism to finance public infrastructure by redirecting new real property tax revenues to a targeted debt retirement fund. Generally, a portion of the value of new real property improvements occurring on specified parcels are exempted within the formal local TIF authorizing legislation. While a portion of the value of the real property improvements is exempt, the property owner must agree to make a Service Payment in Lieu of Taxes equal to the amount of real property taxes the improvement would have generated had the property not been exempted. This payment is due at the same time property taxes are payable.

The TIF authorizing legislation must declare that the specified real property improvements have a public purpose. In addition, the TIF revenue stream can only be used to finance public infrastructure directly serving the real property specified in the authorizing legislation. Only that portion of the public infrastructure directly attributed to the incremental demand resulting from the specified real property improvements are eligible for TIF financing.

There are several types of TIF financing authorized within the ORC - municipal, township and county - and each varies to some degree. Some tax redirection capability also exists within the ORC.

To be eligible, public infrastructure improvements specified within the authorizing legislation may already be complete, in the process of construction, or to be made. ODOD, which oversees this program, suggests that the real property improvements to the specified parcels should not begin until after the TIF legislation and Service Payment in Lieu of Taxes contract are in place. However, an improvement under construction, but which has not yet been assessed for property taxation, may be eligible.

Local jurisdictions implementing a TIF may exempt up to 75 percent of the value of the real property improvements. The term of the exemption can be for up to 10 years. The exemption level can be increased to up to 100 percent and up to 30 years with the approval of the affected board of education. The term and exemption percentage must be stated within the TIF authorizing legislation.

In a study recently conducted by the Ohio State University of dairy farm growth and expansion in Van Wert and Paulding counties, all seven of the dairy farms that participated in the study also participated in the TIF program. In four of the seven agreements, part of the tax money was directed as "gifts" to local schools. Since it was a gift, it protected the school's state funding.

Such payments in lieu of taxes are the same as if the farm were paying the taxes directly to the county. However, with the TIF set-up, the money goes directly to the school, county highway department, etc., rather than through the county general budget and fund first where it could be split up many different ways and not necessarily going to the areas being impacted the most by

new and larger farms. The strategy behind the TIF is that the "gifts" redistribute the money to the parts of local government that may need it the most to cover the costs resulting from new live-stock farms. For example, money going directly to the county highway department would help cover the cost of more heavy equipment travelling on county roads.

Although tax money is being redirected, farms participating in this respective program are paying the same dollar amount. Therefore, they actually are not receiving a "tax break." Likewise, depending on a county, township or municipality's situation, TIFs may also be available to other businesses.

For additional information about TIFs, contact the ODOD's Office of Tax Incentives at (614) 466-4551.

USDA-NRCS EQIP

Historically, the approach to resolving non-point source pollution has been one of voluntary acceptance and adoption of programs. Educational and technical assistance programs have been utilized for many years and have seen great success in improving the acceptance of land management changes in the form of best management practices. Often the producer's perception of best management practices effect on profitability can slow the likelihood of taking the perceived risks in changing management strategies. Incentive and cost-share programs are designed to offset the cost and reduce the risks of converting to and the adoption of less polluting farm management practices.

One of the most successful incentive and cost-share programs is the Environmental Quality Incentives Program (EQIP), which is administered by the USDA-NRCS. As a voluntary program, EQIP provides technical assistance, cost-share payments and incentive payments to assist crop and livestock producers with environmental and conservation improvements on farming operations. Under the 2002 Farm Bill, EQIP will authorize, subject to annual federal budget appropriations:

- \$400 million in funding in 2002, \$700 million in 2003, \$1 billion in 2004, \$1.2 billion in 2005 and 2006, and \$1.3 billion in 2007.
- 50% to 75% cost-share unless the producer is a limited-resource farmer/rancher. In this situation, the cost-share can be increased to a maximum of 90% of the first \$5,000.00 of an individual EQIP contract.
- Funding for livestock operations is targeted at 60% of the annual program allocation.

- There is no animal unit cap for cost-share eligibility. (Under the previous Farm Bill, large operations, typically those that required permits, were ineligible.)
- Contracts are evaluated and offered based upon the use of cost-effective conservation practices, the use of practices that address national priorities and an optimization of environmental benefits.
- To be eligible, the producer is required to prepare a conservation plan stating the intended practices and environmental purposes. (Confined livestock feeding operations must prepare a CNMP.)
- Length of the contract period is 1-10 years, and there is no annual payment limitation. However, the sum of all EQIP payments to an individual or entity cannot exceed \$450,000 from 2002-2007. Under the previous farm bill, producer payments were limited to \$10,000 per year or \$50,000 for any multi-year contract.

Implementation of EQIP is guided in part by the USDA-NRCS State Technical Advisory Committee, which provides direction, guidance, counsel and advice to the USDA-NRCS State Conservationist. Members of the technical advisory committee include representatives from state and federal agencies, farm and commodity organizations, industry and environmental groups, agricultural producers and OSU Extension. Committee meetings are open to the public and are typically held four to six times per year.

In addition to the State Technical Committee, locally led conservation advisory groups have been established to guide natural resource conservation efforts. While the mission of these local advisory groups is to define and set conservation priorities and secure funding sources to resolve environmental problems, they hold much of the responsibility for implementing EQIP on a local basis.

Local advisory groups also have the initial responsibility for developing local ranking criteria changes in farming practices and structures that will improve environmental quality. The State Technical Advisory Committee and State Conservationist will also provide evaluation and ranking

criteria. The local advisory groups review producer applications, contracts and monetary allocations based upon previously identified local needs. Local SWCD, NRCS and OSU Extension staffs provide technical and educational assistance to agricultural producers. This assistance will be available for developing CNMPs, conservation plans and implementation of approved plans.

For more information about EQIP, contact your local SWCD office or USDA-NRCS service center.

ODNR-DSWC Agricultural Pollution Abatement Cost-Share Program

Funding for this program is made available to ODNR by the Ohio General Assembly through general revenue funds. The program is administered by DSWC and implemented with assistance from local SWCDs. The program provides cost-share assistance to land owners/operators to implement best management practices to reduce pollution of waters of the state from sediment or waste from agricultural operations. The program provides three different levels of assistance - high, medium and low - dependent upon the best management practices being funded. Each funding level has a 75% cost-share rate with a respective "not to exceed" maximum level of \$15,000, \$10,000 and \$5,000. The following practices are eligible for funding through the program:

- animal waste storage structures
- settling basins and filter strips
- critical area seeding and fencing
- off-stream watering and stream crossing stabilization
- roofing and gutters
- water diversions
- grassed waterways
- water and sediment control basins
- erosion control structures
- wetland treatment facilities
- manure and mortality composting facilities
- heavy use areas
- swine manure aeration systems
- tile outlet control for liquid manure
- access roads

Sign-up for the program is continuous. For more information about the program, please contact your local SWCD office.

Strategies for Making Livestock Operations Compatible with Neighbors and the Community

Regardless of the size or type of operation, there are many things that producers should take into consideration before expanding their current operation and/or constructing a new production facility. Many of the following strategies and tips will have a place in the development and implementation of an effective environmental protection plan. Producers are highly encouraged to consider incorporating these suggested strategies and tips into their planning process.

1. Consider location and visibility when planning new facilities or modifying existing sites. Consider distance from roads, neighbors and public areas (parks, streams, schools, churches, etc.).

2. Study prevailing wind patterns and topography and consider how neighbors might be affected by odors. With existing facilities, consider fences and trees to "stack" odors.

3. Develop a landscape plan that keeps production facilities and manure storage units from becoming an eyesore and blends facilities into the landscape. Landscaping techniques should be utilized that help to project a positive image to viewers of your operation. Consider use of screening, hills, berms, earth tone colors, low noise fans, shrubs and flowers and/or decorative fences.

4. Comply with all regulations. Go beyond minimal standards required or recommended, if feasible. Exceed set-back distances if possible when building new facilities.

5. Adopt and follow a good neighbor policy. Being a good neighbor means being considerate and responsible, and it means communicating about things you do that may affect your neighbors. Here are some "good neighbor tips" for you to consider:

- Develop and follow a manure management plan that takes into account neighbors, as well as the environment. Communicate manure management plans to neighbors, including times and potential locations for spreading. Determine dates and locations that should be avoided.
 - When mistakes happen, take responsible, appropriate and corrective actions.
 - Support your local community and events with your business and patronage. Buy inputs locally if feasible; use local services such as veterinarians and builders.
 - Don't spread manure on Fridays, especially the Friday before a holiday weekend. Encourage neighbors to let you know about times when a fresh application of manure may infringe on their entertainment or family plans.
 - Spread manure in the most environmentally friendly method, so that nutrients are absorbed by crops.
 - Take the time to explain what you do and why. For example, spreading manure on cropland recycles nutrients and puts the manure to productive use.
 - Explain why, at planting and harvest times, farmers must work late into the night and on weekends.
 - Take opportunities to educate.
 - Be helpful to your neighbors.
6. Communicate by keeping neighbors informed of pending changes and actions. Conduct tours for officials and regulatory staff, as well as similar events for neighbors and local officials.
7. Establish a complaint system. Encourage neighbors to contact you to discuss issues or concerns with your operation.

Tips to Consider Before Developing a New Operation or Expanding Your Existing Operation

1. Be sure that your location is a "best" choice and have other options available. Consider asking a third party to conduct a site evaluation using a scoring system such as the one that is available through the Livestock Environmental Assurance Program (LEAP).
2. Research local weather records to determine wind direction and micro climates.
3. Meet with your neighbors - farmers and non-farmers - to discuss the new operation or any changes you plan to make to an existing facility.
4. Plan for the worst: develop and adopt an emergency action plan just in case.
5. Start your permit process with Ohio EPA and ODA well in advance (6 to 10 months) of anticipated construction. Begin communicating with neighbors and the community at the same time.
6. If your operation does not require a permit, begin working with the local SWCD and NRCS to develop a CNMP 6 to 12 months in advance of anticipated construction.
7. Follow recommended specifications, guidelines and standards in the construction of your facility.
8. Two to three months in advance of construction, meet with your county engineer and economic development director to discuss grants and other programs (TIFs, enterprise zones, etc.) that may help offset additional costs the new or expanding facility may impose on public infrastructure, such as road maintenance, repair and improvements. Such consultation and planning needs to occur in advance of construction as most of these types of programs must be developed and approved prior to construction.
9. Work with your county engineer and township trustees to identify transportation (haul) routes for trucks, equipment and machinery, etc., that will result in minimal impact or damage to public infrastructure. If at all possible, site your operation so that it has convenient and nearby access to state and federal highways.
10. Discuss your plans with commodity organizations, farm organizations, and affiliated groups. They may help you avoid problems.
11. Be prepared should your project require a public hearing.
12. Be honest and up-front with all communications.
13. Expect that not everyone will be in favor of your project. Even the most sound plans won't satisfy everyone.
14. Arrange for tours of facilities that are similar to what you are planning. Strive to turn the fear of the unknown into the knowledge of the known.
15. Do business locally when possible and feasible.
16. Keep your operation neat and clean. People also smell with their eyes.
17. Know your rights but don't flaunt them. Cooperation and communication will go much further than confrontation in most situations.
18. Recognize that people don't forget. It takes years to overcome even one bad experience. Some opposition to your project may have nothing to do with livestock, odor or the environment. Identify what the true challenges are and address them. Be ready to change if it will make a difference.
19. Comply with all regulations.
20. Remember: actions speak louder than words.

(Reference: Community Relations Module, Environmental Assurance Program, National Pork Producers Council.)

Additional Resources

Ohio Department of Agriculture's website (www.ohioagriculture.gov): specific program fact sheets and application forms.

The following publications are available from your local OSU Extension office **or** by visiting the Internet at <http://ohioline.osu.edu>.

OSU Extension Bulletins

Bulletin 604	LIVESTOCK MANURE & WASTEWATER MANAGEMENT GUIDE
472	OHIO AGRONOMY GUIDE
473	PEST MANAGEMENT RECOMMENDATIONS FOR LIVESTOCK BUILDINGS
792	MODERN COMPOSTING
804	POULTRY MANURE MANAGEMENT & UTILIZATION
818	BEST MANAGEMENT PRACTICES FOR PREVENTING CONTAMINATION OF OHIO'S SURFACE & GROUND WATER

OSU Extension Fact Sheets

AEX 314	WATER TESTING
701	CONTROLLING ODORS FROM CONFINED LIVESTOCK FACILITIES
702	NARROW GUTTER/GRAVITY DISCHARGE SYSTEMS FOR HANDLING SWINE MANURE
703	SAFETY AND LIQUID MANURE HANDLING
706	HANDLING MILKING CENTER WASTEWATER TO AVOID POLLUTION
707	LAND APPLICATION OF WASTES...SPREADING & INJECTION
708	AVOIDING STREAM POLLUTION FROM ANIMAL MANURE
711	COMPOSTING SWINE MORTALITY PRINCIPLES & OPERATION
712	SWINE COMPOSTING SITE SELECTION
713	SWINE COMPOSTING FACILITY DESIGN
AS 09	QUESTIONS PERTAINING TO LARGE DAIRY ENTERPRISES IN OHIO: ENVIRONMENT
10	QUESTIONS PERTAINING TO LARGE DAIRY ENTERPRISES IN OHIO: COMMUNITY IMPACT
11	QUESTIONS PERTAINING TO LARGE DAIRY ENTERPRISES IN OHIO: ECONOMIC IMPACT
12	QUESTIONS PERTAINING TO LARGE DAIRY ENTERPRISES IN OHIO: GENERAL INFORMATION ABOUT THE DAIRY INDUSTRY
13	QUESTIONS PERTAINING TO LARGE DAIRY ENTERPRISES IN OHIO: ANIMAL & HUMAN HEALTH
ANR 04	LAND APPLICATION OF POULTRY LITTER
AGR 208	LAND APPLICATION OF ANIMAL MANURE

Midwest Plan Service Handbook (www.mwpsHQ.org)

MWPS 18	LIVESTOCK WASTE FACILITIES
2	FARMSTEAD PLANNING
3	SHEEP HOUSING & EQUIPMENT
6	BEEF HOUSING & EQUIPMENT
7	DAIRY HOUSING & EQUIPMENT
8	SWINE HOUSING & EQUIPMENT
14	HORSE HOUSING & EQUIPMENT
32	COMPOSTING TO REDUCE THE WASTE STREAM

Livestock Waste Facilities Handbook, MWPS-18
Manure Characteristics, MWPS-18, Section 1
Manure Storages, MWPS-18, Section 2
Outdoor Air Quality, MWPS-18, Section 3
Concrete Manure Storages Handbook, MWPS-36

Livestock & Poultry Environmental Stewardship (LPES) Curriculum: CAFO Fact Sheets are available at <http://www.lpes.org/CAFO.html>

Natural Resource, Agriculture & Engineering Service (NRAES):
<http://www.nraes.org/publications/waste.html>

- Anaerobic Digesters for Dairy Farms (ABEN-458)
- Animal Agriculture and the Environment: Nutrients, Pathogens & Community Relations (NRAES-96)
- Dairy Manure Management (NRAES-31)
- Dairy Manure Systems: Equipment & Technology (NRAES-143)
- Earthen Manure Storage Design Considerations (NRAES-109)
- Estimating a Mass Nutrient Balance (NRAES-103)
- Farm Waste Management Makes \$ense (NRAES-111)
- The Food Processing Residual Management Manual (NRAES-92)
- Guideline for Dairy Manure Management from Barn to Storage (NRAES-79)
- Liquid Manure Application Systems: Design, Management & Environmental Assessment (NRAES-79)
- Liquid Manure Application Systems Design Manual (NRAES-89)
- Managing Nutrients & Pathogens from Animal Agriculture (NRAES-130)
- Nutrient Management: Crop Production & Water Quality (NRAES-101)
- Nutrient Management Handbook (NRAES-102)
- Nutrient Management Software (NRAES-100)
- Poultry Waste Management Handbook (NRAES-132)
- Priority Animal Waste Management Research & Education Needs (NRAES-162)
- Utilization of Food Processing Residuals: Selected Papers representing university, industry and regulatory applications (NRAES-69)
- Waterborne Pathogens in Agricultural Watersheds (NRAES-147)

Supplemental Documents

- "Animal Waste Management Programs for Water Quality Protection in Ohio (prepared for the Animal Waste Committee of US EPA Region V)," Kevin Elder, Mark Wilson.
- 2002 Ohio Integrated Water Quality Monitoring & Assessment Report, Ohio EPA Division of Surface Water.
- Livestock Environmental Assurance Program (LEAP), (www.ohleap.org):
 - Personal Environmental Audit
 - Site Evaluation
 - Odor Management
 - Handling Manure to Protect the Environment
 - Nutrient Management
 - Broiler and Turkey Litter Management and Mortalities Disposal
 - Feedlot Management
 - Grazing Management
 - Layer Operation Management of Manure, Mortalities, and Egg Wash Water
 - Milking Center Wastewater Treatment
 - Silage Storage
 - Developing a CNMP
 - Environmental Assessment and Action Plan
 - Building Positive Neighbor Relations
 - Emergency Management Plan
 - Meeting Regulatory and Incentive Program Requirements
 - Biosecurity Fundamentals for Livestock, Dairy, and Poultry Farms
 - Equine Facility Management Basics
 - Evaluating Your Horse Keeping Facility

Contacts

- Ohio Department of Agriculture
 - Livestock Environmental Permitting Program (614) 387-0470
 - Animal Industry, State Veterinarian (614) 728-6220
 - Director's Office (614) 466-2732
- Ohio Department of Natural Resources
 - Division of Soil & Water Conservation, Chief's Office (614) 265-6618
 - Resource Management, Administrator (614) 265-6684
- Ohio Department of Development (614) 466-5188
- Ohio Environmental Protection Agency
 - Director's Office (614) 644-2782
 - Division of Surface Water (614) 644-2001
 - Division of Environmental and Financial Assistance (DEFA) (614) 644-2798
 - (614) 644-2832
- Ohio State University Extension (Columbus)
 - Office of the Assistant Director (614) 292-4077
- USDA - Natural Resources Conservation Service
 - State Conservationist (614) 255-2472
- Ohio Cattlemen's Association (614) 873-6736
- Ohio Dairy Producers (419) 523-6294
- Ohio Livestock Coalition (614) 246-8288
- Ohio Pork Producers Council (614) 882-5887
- Ohio Poultry Association (614) 882-6111
- Ohio Sheep Improvement Association (614) 246-8293
- Ohio Farm Bureau Federation (614) 249-2400
- Your local:
 - OSU Extension office local phone book
 or <http://ohioline.osu.edu/county/index.php>
 - USDA-NRCS service center local phone book
 or http://oip.usda.gov/scripts/ndCGI.exe/oip_public/state?state=OH
 - Soil & Water Conservation District (SWCD) office local phone book
 or www.dnr.state.oh.us/soilandwater/swcds.htm

Agronomic rate - the rate of application of nutrients from any source to the land or an amount of nutrients removed by the crop based on nutrient content of the manure to be applied, nutrient needs of the current or planned crops and nutrient holding capacity of the soil.

Animal feeding operation (AFO) -- a facility that confines animals for at least 45 days in a 12-month period *and* there is no grass or other vegetation in the confinement area during the normal growing season.

Aquifer - an underground consolidated or unconsolidated geological formation or series of formations that are hydraulically connected and that have the capability to receive, store and yield useable quantities of water to wells (does not include perched groundwater).

Best management practice (BMP) - a cultural or engineering technique, management strategy, practice or combination of practices that have been determined and accepted to be the most effective and practical technological, economic and institutional controls as a means of preventing or reducing non-point source pollution in a local area. May include, but not be limited to, structural and non-structural practices, conservation practices, operation and maintenance procedures.

Biosecurity - policies and measures developed and implemented to protect the food supply and agricultural resources from contamination. Also refers to those measures taken to keep disease agents out of populations, herds, flocks or groups of animals where they do not already exist. Significant areas of concern include sanitation, isolation of incoming or returning animals, cleaning, disinfection and traffic control to limit the risk of disease-causing agents between facilities or a facility's production units.

Buffer strip - setback of an area of permanent vegetation, often planted along the edge or contour of a land application site usually for management practices, including practices to slow the flow of water or the velocity of wind, capture sediment and other materials before they leave the farm and become pollutants. Types of buffers include filter strips, field borders, grassed waterways, field windbreaks, shelterbelts, contour grass strips, vegetated cover and riparian buffers.

Comprehensive Nutrient Management Plan (CNMP) - a planning tool for livestock operations that addresses production and natural resource goals. It combines conservation practices and management to create a workable system to balance nutrient input and utilization. While Ohio livestock producers have successfully used manure management planning for decades, the CNMP concept was created to address the growing national water quality concerns from animal feeding operations. The six components of a CNMP include manure and wastewater handling and storage, feed management, land treatment practices, nutrient management, record keeping and other utilization options.

Controlled direct discharge - a man-made conveyance, such as a pipe, which carries wastewater. Usually the farmer has the ability to operate and control this system.

Discharge - not a controlled, directed flow. Could include wash water from a milking parlor, silo drainage, lagoon overflows or manure run-off from a feedlot.

Drainageway - an area of short-term, low-gradient non-erosive concentrated surface water run-off that occurs during or shortly after precipitation events and is not a river, stream, ditch or grassed waterway; normally planted with crops each year.

Ground water - any water below the surface of the earth in a zone of saturation, but does not include perched water.

Injection - the placement of manure beneath the surface of the soil in the crop root zone but not extending beyond the boundary of a land application site and using equipment specifically designed for this purpose.

Integrated pest management - a sustainable approach that combines the use of prevention, avoidance, monitoring and suppression strategies that minimizes and reduces the activity and presence of insects and rodents and keeps such activity and presence below economically damaging levels; minimizing chemical use to reduce pest resistance and the harmful effects of pest control on human health and environmental resources. Includes management, biological controls and the judicious use of chemical controls.

Liquid manure - manure containing more than or equal to 80 percent liquid.

Man-made conveyance - although not defined by Ohio law, a man-made conveyance is interpreted as a means to intentionally pass pollutants or water in and/or out. Examples are tile lines, pipes, ditches and spillways. The term "man-made" means constructed by a man for the purpose of transporting wastes or water.

Manure application - the placement of manure within the boundaries of a land application site by spraying or spreading onto the land surface; injection below the land surface in the crop root zone using equipment specifically designed for this purpose; or incorporation into the soil by means of the mixing of manure with the surface soil using standard agricultural practices, such as tillage.

Manure storage or treatment facility - any excavated, diked or walled structure or combination of structures designed for the biological stabilization, holding or storage of manure. These facilities include manure storage ponds, manure treatment lagoons and fabricated structures.

Manure storage pond - a type of manure storage or treatment facility consisting of an earthen impoundment made by constructing an embankment and/or excavating a pit, the purpose of which is to store or settle manure; contains liquid manure.

Manure treatment lagoon - designed similar to a manure storage pond with the purpose of which to biologically treat manure; contains liquid manure.

National Pollutant Discharge Elimination System (NPDES) permit - this permit is required of all Concentrated Animal Feeding Operations (CAFOs). A general storm water permit is required if more than 1 acre of land will be disturbed during construction. (For the definitions of an Animal Feeding Operation [AFO] and a CAFO, refer to page 6.)

Non-point source pollution - Any source of pollution which is diffuse and does not have a single point of origin or is not produced into receiving waters from a specific outlet; generally carried off the land by stormwater run-off.

Process generated wastewater - Water directly or indirectly used in the operation of a feedlot for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning or flushing pens, barns, manure pits or other feedlot facilities; or direct contact swimming, washing or spray cooling of animals, and dust control.

Solid manure - manure containing greater than 20 percent total solids.

Source water protection area - the surface and subsurface area that provides water to a public water supply.

Staging or staging area - the site used for placement of manure at the time of delivery in such a manner as to facilitate land application within 24 hours for the duration of the land application at that site. Staging includes the transfer of liquid manure from transport vehicles to land application equipment for subsurface injection.

Stockpile - field placement of the amount of manure to be used at a land application site.

Storage period - length of time anticipated between manure clean-out events.