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U.S. Department of Agriculture
U.S. Environmental Protection Agency

Draft
Unified National Strategy
for
Animal Feeding Operations

September 11, 1998

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Note: This document presents USDA and EPA's strategic plan for addressing the environmental and public health impacts associated with AFOs. It is not a substitute for existing Federal regulations and it does not impose any binding requirements on USDA, EPA, the States, Tribes, localities, or the regulated community. USDA and EPA's strategies for addressing AFOs may evolve and change as their understanding of the issues increases through further work and receipt of additional information.

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1.0 Introduction and Guiding Principles

1.1 Introduction

Over the past quarter century, the United States has made tremendous progress in cleaning up its rivers, lakes, and coastal waters. In 1972, the Potomac River was too dirty to swim in, Lake Erie was dying, and the Cuyahoga River was so polluted it burst into flames. Many rivers and beaches were little more than open sewers. Today, water quality has improved dramatically and many rivers, lakes, and coasts are thriving centers of healthy communities.

The improvement in the health of the nation's waters is a direct result of a concerted effort to enhance stewardship of natural resources and to implement the environmental provisions of Federal, State, Tribal and local laws. Pollution control and conservation programs have stopped billions of pounds of pollution from fouling the Nation's water, doubling the number of waters safe for fishing and swimming.

Despite tremendous progress, 40 percent of the Nation's waterways assessed by States still do not meet goals for fishing, swimming, or both. Pollution from factories and sewage treatment plants has been dramatically reduced, but runoff from city streets, agricultural activities, including animal feeding operations (AFOs), and other sources continues to degrade the environment and puts drinking water at risk.

A strong livestock industry (of which AFOs are a part) is essential to the nation's economic stability, the viability of many rural communities, and the sustainability of a healthful and high quality food supply for the American public.[1] USDA and EPA recognize that farmers and ranchers are primary stewards of many of our nation's natural resources, have played a key role in past efforts to improve water quality, and will be important partners in implementing measures to protect the environment and public health.

In February of this year, President Clinton released the Clean Water Action Plan (CWAP), which provides a blueprint for restoring and protecting water quality across the Nation. The CWAP describes over 100 specific actions to expand and strengthen existing efforts to protect water quality. It also identifies polluted runoff as the most important remaining source of water pollution and provides for a coordinated effort to reduce polluted runoff from a variety of sources. As part of this effort, the CWAP calls for the development of this USDA-EPA unified national strategy to minimize the water quality and public health impacts of AFOs.

[1] The livestock industry accounts for half of all sales in U.S. agriculture today (source: USDA, Economic Research Service. "Key statistical indicators of the food and fiber sector". *Agricultural Outlook.* March, 1998: 32).

1.2 Guiding Principles

This USDA-EPA Unified National Strategy for Animal Feeding Operations reflects several guiding principles:

(1) Minimize water quality and public health impacts from AFOs.

(2) Focus on AFOs that represent the greatest risks to the environment and public health.

(3) Ensure that measures to protect the environment and public health complement the long-term sustainability of livestock production in the United States.

(4) Establish a national goal and environmental performance expectation for all AFOs.

(5) Build on the strengths of USDA, EPA, State and Tribal agencies, and other partners and make appropriate use of diverse tools including voluntary, regulatory, and incentive-based approaches.

(6) Foster public confidence that AFOs are meeting their performance expectations and that USDA, EPA, local governments, States, and Tribes are ensuring the protection of water quality and public health.

(7) Coordinate activities among the USDA, EPA, and related State and Tribal agencies and other organizations that influence the management and operation of AFOs.

(8) Focus technical and financial assistance to support AFOs in meeting the national performance expectation established in this Strategy.

2.0 AFOs and Water Quality and Public Health Risks

2.1 Characteristics of AFOs

For purposes of this Strategy, AFOs are agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures or fields.

Approximately 450,000 agricultural operations nationwide confine animals.[2] USDA data indicate that the vast majority of farms with livestock are small. About 85% of these farms have fewer than 250 animal units (AUs).[3] An AU is equal to roughly one beef cow, therefore 1,000 AUs is equal to 1,000 beef cows or equivalent number of other animals.[4] Of these, in 1992 about 6,600 had more than 1,000 AUs and are considered to be large operations.

As a result of domestic and export market forces, technological changes, and industry adaptations, the past several decades have seen substantial changes in America's animal production industries. These factors have promoted expansion of confined production units, with growth in both existing areas and new areas; integration and concentration of some of the industries; geographic separation of animal production and feed production operations; and the concentration of large quantities of manure and wastewater on farms and in some watersheds.

In terms of production, the total number of animal units (AUs) in the U.S. increased by about 4.5 million (approximately three percent) between 1987 and 1992. During this same period, however, the number of AFOs decreased, indicating a consolidation within the industry overall and greater production from fewer, larger AFOs.[5]

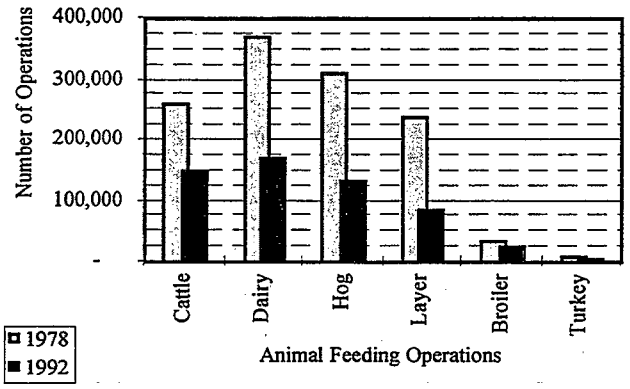

Figure 1: Industry Consolidation of Cattle, Dairy, Hog, Layer, Broiler and Turkey Animal Feeding Operations[6]

[2] General Accounting Office. *Animal Agriculture: Information on Waste Management and Water Quality Issues*, June 1995.

[3] USDA - ERS. 1992 Farm Costs and Returns Survey

[4] USDA and EPA currently use slightly different definitions for an animal unit, largely for the pork and poultry animal types.

[5] General Accounting Office. *Animal Agriculture: Information on Waste Management and Water Quality Issues*, June 1995

[6] General Accounting Office. *Animal Agriculture: Information on Waste Management and Water Quality Issues*, June 1995

Table 1. Increase in the Average Number of Animal Units per Operation (1978-1992)	
Cattle	56%
Dairy	93%
Hog	134%
Layer	176%
Broiler	148%
Turkey	129%
Data source: *Animal Agriculture: Information on Waste Management and Water Issues*, General Accounting Office, 1995.	

2.2 *Water Quality and Public Health Risks*

Despite significant progress in reducing water pollution, serious water quality problems persist throughout the country. Recent State reports of water quality conditions indicate that:

- Of the rivers and streams surveyed (53 percent of all perennial stream miles) 36% were partially or fully impaired and another 8% were threatened;
- Of the surveyed lakes (40 percent of all lake acres) 39% were partially or fully impaired and another 10% were threatened; and
- Of the estuaries surveyed by coastal states (72 percent of all estuarine waters) 38% were impaired and another 4% were threatened;
- Of the Great Lakes shore miles surveyed (94 percent of all shore miles) 97% were impaired and another 1% were threatened. [7]

Based on this monitoring information, States have identified about 15,000 individual waterbodies in 1996 that did not meet clean water goals.

While many diverse sources contribute to water pollution, States report that agriculture is the most widespread source of pollution in the nation's surveyed rivers. In the 22 States that categorized impacts from specific types of agriculture, animal operations impact about 35,000 river miles of those miles assessed.

[7] U.S. EPA 1998. *National Water Quality Inventory - 1996 Report to Congress*, Washington, DC.

AFOs can pose a number of risks to water quality and public health, mainly because of the amount of animal manure and wastewater they generate.[8] Manure and wastewater from AFOs have the potential to contribute pollutants such as nutrients (e.g., nitrogen, phosphorus), sediment, pathogens, heavy metals, hormones, antibiotics, and ammonia to the environment. Excess nutrients in water can result in or contribute to eutrophication, anoxia (i.e., low levels of dissolved oxygen), and, in combination with other circumstances, have been associated with outbreaks of microbes such as *Pfiesteria piscicida*.

Pathogens, such as *Cryptosporidium*, have been linked to impairments in drinking water supplies and threats to human health. Pathogens in manure can create a food safety concern if manure is applied directly to crops at inappropriate times. In addition, pathogens are responsible for some shellfish bed closures. Nitrogen, in the form of nitrate, can contaminate drinking water supplies drawn from ground water. Nutrients can also cause toxic algal blooms which may be harmful to human health.

While there are other potential environmental impacts associated with AFOs (e.g., odor, habitat loss, ground water depletion), this Strategy focuses on addressing surface and ground water quality problems. This Strategy will indirectly benefit other resources.

3.0 The National Goal and Performance Expectation For AFOs

3.1 Defining the Goal and Performance Expectation

USDA and EPA's goal is for AFO owners and operators to take actions to minimize water pollution from confinement facilities and land application of manure. To accomplish this goal, this Strategy establishes a national performance expectation that all AFOs should develop and implement technically sound and economically feasible Comprehensive Nutrient Management Plans (CNMPs) to minimize impacts on water quality and public health.

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[8] EPA, 1998, *National Water Quality Inventory - 1996 Report to Congress*; Hunt, P.G., et al. 1995. *Impact of animal waste on water quality in an eastern coastal plain watershed.* IN: Animal Waste and the Land-Water Interface, Kenneth Steele, Ed., Lewis Publishers, Boca Raton, FL, 589 pp.; Ackerman and Taylor, 1995, *Stream Impacts due to Feedlot Runoff.* IN: Animal Waste and the Land-Water Interface; South Dakota Association of Conservation Districts, SD Department of Environment and Natural Resources, and USDA Natural Resources Conservation Service, 1996, *Final Report - Animal Waste Management Team*; EPA Office of the Inspector General, March 1997, Animal Waste Disposal Issues, Audit Report No. E1XWF7-13-0085-7100142

3.2 Comprehensive Nutrient Management Planning

In general terms, a CNMP identifies actions or priorities that will be followed to meet clearly defined nutrient management goals at an agricultural operation. Defining nutrient management goals and identifying measures and schedules for attaining the goals is critical to reducing threats to water quality and public health from AFOs.

CNMPs should address, at a minimum, feed management, manure handling and storage, land application of manure, land management, record keeping, and management of other utilization options. While nutrients are often the major pollutants of concern, the plan should address risks from other pollutants, such as pathogens, to minimize water quality and public health impacts from AFOs. CNMPs should include a schedule to implement the management practices identified.

In addition to protecting water quality and public health, CNMPs should be site-specific and be written to address the goals and needs of the individual owner/operator, as well as the conditions on the farm (e.g., soils, crops). Plans should also be periodically reviewed and revised in cases where a facility increases in size, changes its method of manure management, or if other operating conditions change. CNMPs should encourage and facilitate technical innovation and new approaches to manure and nutrient management. Development and implementation of CNMPs is the ultimate responsibility of the AFO operator, with assistance as needed from certified industry staff, government agency specialists, private consultants and other qualified vendors.

The Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) is the primary technical reference for the development of CNMPs for AFOs. It contains technical information about utilization and conservation of soil, water, air, plant, and animal resources. The FOTG used in an individual field office is localized to consider particular characteristics for the geographic area for which it is prepared. The FOTG is divided into five sections:

Section I General Resource References - References, maps, price bases, typical crop budgets, and other information for use in understanding the field office working area or in making decisions about resource use and resource management.

Section II Soil and Site Information - Soils are described and interpreted to help make decisions about land use and management. In most cases, this will be a electronic database.

Section III Conservation Management Systems (CMS) - Guidance for developing conservation management systems. A description of the resource considerations and their acceptable levels of quality or criteria.

Section IV Practice Standards, Specifications and Supplements - Contains standards and specifications for conservation practices used in the field office. The standards contained in the National Handbook of Conservation Practices (NHCP) may be supplemented to reflect local conditions. The NHCP contains standards and specifications for over 150 conservation practices, many of which are applicable to CNMPs for AFOs. These standards are based on sound science and over 65 years of NRCS experience. New standards can be added to this handbook using a procedure outlined in the handbook that includes a public review/input process. Practice standards establish the minimum level of acceptable quality for planning, installing, operating, and maintaining conservation practices.

Section V Conservation Effects - Contains Conservation Practice Physical Effects (CPPE) matrices which outline the impact of practices on various aspects of the five major resources - soil, air, water, plants, and animals.

3.3 Comprehensive Nutrient Management Plan Components

USDA and EPA agree that the following components should be included in a CNMP, as necessary. The specific practices used to implement each component may vary to reflect site-specific conditions or needs of the watershed.

Feed Management - Where possible, animal diets and feed should be modified to reduce the amounts of nutrients in manure. For example, enzymes such as phytase can be added to animal diets to increase the utilization of phosphorus. Greater utilization of phosphorus by the animal reduces the amount of phosphorus excreted and produces a manure with a nitrogen-phosphorus ratio closer to that required by crop and forage plants.

Manure Handling and Storage - Manure needs to be handled and stored properly to prevent water pollution from AFOs. Manure and wastewater handling and storage practices should also consider odor and other environmental and public health problems. Handling and storage considerations should include:

Divert clean water - Siting and management practices should divert clean water from contact with feed lots and holding pens, animal manure, or manure storage systems. Clean water can include rainfall falling on roofs of facilities, runoff from adjacent lands, or other sources.

Prevent leakage - Construction and maintenance of buildings, collection systems, conveyance systems, and storage facilities should prevent leakage of organic matter, nutrients, and pathogens to ground or surface water.

Provide adequate storage - Dry manure, such as that produced in certain poultry and beef operations, should be stored in production buildings, storage

facilities, or otherwise covered to prevent precipitation from coming into direct contact with the manure. Liquid manure storage systems should safely store the quantity and contents of animal manure and wastewater produced, contaminated runoff from the facility, and rainfall. Location of manure storage systems should consider proximity to waterbodies, floodplains, and other environmentally sensitive areas.

Manure treatments - Manure should be handled and treated to reduce the loss of nutrients to the atmosphere during storage, to make the material a more stable fertilizer when land applied or to reduce pathogens, vector attraction and odors, as appropriate.

Management of dead animals - Dead animals should be disposed of in a way that does not adversely affect ground or surface water or create public health concerns. Composting, rendering, and other practices are common methods used to dispose of dead animals.

Land Application of Manure - Land application is the most common, and usually most desirable method of utilizing manure because of the value of the nutrients and organic matter. Land application should be planned to ensure that the proper amounts of all nutrients are applied in a way that does not cause harm to the environment or to public health. Land application in accordance with the CNMP should minimize water quality and public health risk. Considerations for appropriate land application should include:

Nutrient balance - The primary purpose of nutrient management is to achieve the level of nutrients required to grow the planned crop by balancing the nutrients that are already in the soil and from other sources with those that will be applied in manure, biosolids and fertilizer. At a minimum, nutrient management should prevent the application of nutrients at rates that will exceed the capacity of the soil and planned crops to assimilate nutrients and prevent pollution. Soils and manure should be tested to determine nutrient content.

Timing and methods of application - Care must be taken when land applying manure to prevent it from entering streams, other water bodies, or environmentally sensitive areas. The timing and method of application should prevent the loss of nutrients to ground or surface water and to minimize loss of nitrogen to the atmosphere. Manure application equipment should be calibrated to ensure that the quantity of material being applied is what is planned.

Land Management - Tillage, crop residue management, grazing management, and other conservation practices should be utilized to minimize movement to surface and ground water of soil, organic materials, nutrients, and pathogens from lands where manure is applied. Forest riparian buffers, filter strips, field borders,

contour buffer strips, and other conservation buffer practices should be installed to intercept, store and utilize nutrients or other pollutants that may migrate from fields to which manure is applied.

Record Keeping - AFO operators should keep records that indicate the quantity of manure produced and ultimate utilization, including where, when, and amount of nutrients applied. Soil and manure testing should be incorporated into the records management system.

Other Utilization Options - In vulnerable watersheds, where the potential for environmentally sound land application is limited, alternative uses of manure, such as the sale of manure to other farmers, composting and sale of compost to home owners, and using manure for power generation may need to be considered. All manure utilization options should be designed and implemented to reduce the risk to all environmental resources and must comply with Federal, State, Tribal and local law.

3.4 Technical Assistance for CNMPs

AFO owners and operators may seek technical assistance for the development and implementation of CNMPs from qualified specialists, including staff from Federal agencies such as the NRCS, State, and Tribal agricultural and conservation agency staff, Cooperative Extension Service agents and specialists, Soil and Water Conservation Districts (SWCDs), integrators, industry associations, other AFO operators, and private consultants. Qualified specialists should assist in implementation and provide ongoing assistance through periodic reviews and revisions of CNMPs, as appropriate.

The successful implementation of this Strategy depends on the availability of qualified specialists from either the private or public sectors to assist in the development and implementation of CNMPs. Measures to expand technical assistance resources are discussed more thoroughly in Section 5.0, Strategic Issue #1.

4.0. Relationship of Voluntary and Regulatory Programs

Voluntary and regulatory programs serve complementary roles in providing AFO owners and operators and the animal agricultural industry with the assistance and certainty they need to achieve individual business and personal goals, and in ensuring protection of water quality and public health. The regulatory program focuses permitting and enforcement priorities on high risk operations, a small percentage of all AFOs (see Figure 2). For most AFOs, however, a variety of voluntary

programs provide the technical and financial assistance to help producers meet technical standards and remain economically viable.

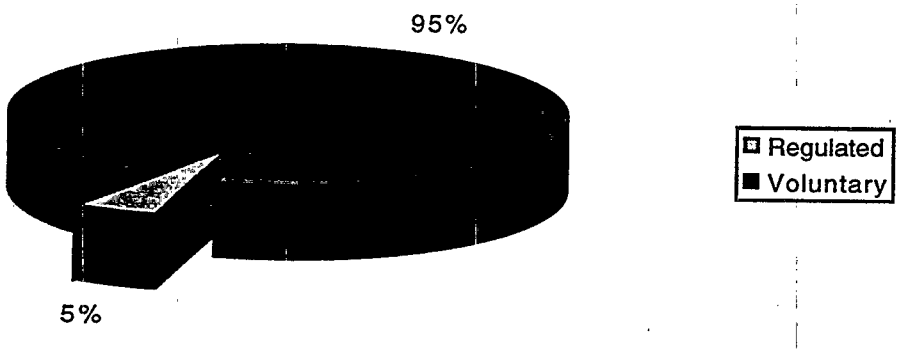

Figure 2: Estimated Percentage of Animal Feeding Operations Expected to be Regulated Under the Clean Water Act

4.1 Voluntary Program for Most AFOs

Voluntary programs provide an enormous opportunity to help AFO owners and operators and communities address water quality and public health concerns surrounding AFOs. For the vast majority of AFOs, voluntary efforts will be the principal approach to assist owners and operators in developing and implementing CNMPs, and in reducing water pollution and public health risks associated with AFOs. While CNMPs are not required for AFOs participating in voluntary programs, they are strongly encouraged as the best possible means of managing potential water quality and public health impacts from these operations. For those CNMPs that are developed as part of a State, Tribal, or Federal voluntary technical or financial assistance program, the responsible agency, in consultation with the local Soil and Water Conservation Districts, will approve the plan to ensure that it is sufficient to meet requirements for participation in such programs. AFO owners and operators will be full partners in the development and implementation of CNMPs through voluntary programs and will agree to implement those plans before receiving financial assistance.

The voluntary approach is built on the ethic of land stewardship and sustainability. A sustainable society requires a sustainable environment-one depends upon the other. For generations, most producers have maintained agricultural productivity in harmony with a healthy land–the essence of land stewardship. Today, agricultural producers still have the responsibility to be good

stewards of the land under their care. The voluntary development and implementation of a CNMP provide AFO operators with a way to embrace this stewardship ethic. USDA and EPA are proposing in this Strategy incentives to further the voluntary development and implementation of CNMPs.

Implementing voluntary programs requires the support of local leadership and full participation in planning and implementing conservation activities. Partnerships with Federal and State agencies, groups, SWCDs, Resource Conservation and Development (RC&D) Councils, private landowners; and between local leadership and science-based technical assistance are essential to success. Locally led conservation efforts, environmental education programs, and financial and technical assistance all help to build the land stewardship ethic that is fundamental to the success of a voluntary approach.

Locally Led Conservation - It is hard to overstate the importance of effective, locally led actions through the SWCDs in achieving national natural resource quality goals. This is particularly true for AFOs. USDA and EPA have a commitment to locally led conservation as one of the most effective ways to help individual landowners and communities achieve their conservation goals. Informed citizens are fundamental to making informed choices. Thus, locally led conservation is a logical complement to an investment in environmental education. Through the locally led approach, individuals can see how their actions fit with those of their neighbors.

Partnerships with grassroots organizations such as SWCDs, RC&D Councils, and others that promote the use of CNMPs, can help attain the goal of this Strategy. Through the locally led process, natural resource concerns are identified and proposals for local priorities are developed. SWCDs convene a local work group comprised of the district board members and key staff, NRCS staff; Farm Service Agency county committees and key staffs; and Cooperative Extension Service and other Federal, State, and local agencies interested in natural resource conservation. The SWCDs gather community input and bring the views of these local interests to work groups. These local work groups have the ability to identify problems and develop solutions locally. Also, they have knowledge of what resources are available to plan and implement the CNMPs.

Environmental Education - One of the best ways to help AFO operators or owners to participate in voluntary programs to reduce the potential impact of their operations on the environment is through education and outreach. There may be many well-managed AFOs, carefully following best management practices developed in the past, that are unintentionally contributing to water quality or other environmental degradation because of lack of access to the newest information. The agricultural research system continues to advance our understanding of the potential impacts of animal agriculture on the environment. USDA's Agricultural Research Service (ARS), Cooperative State Research, Education, and Extension Service (CSREES); EPA; State and Local governments; Land Grant Colleges and Universities and other institutions of higher learning; and the private sector are all actively involved in communicating

knowledge gained through the agricultural research system to AFO owners and operators.

Through an aggressive environmental education and outreach effort, USDA and EPA believe that awareness of possible problems can be heightened and producers will be able to identify practices that may be contributing to water quality problems. Once producers have an understanding of potential problems and solutions, they can take a proactive role in developing their CNMP through the voluntary program.

Technical And Financial Assistance Programs - There are numerous sources of technical and financial assistance, such as USDA, EPA, SWCDs, RC&D Councils, State agencies, and the private sector, to assist AFO owners and operators in developing and implementing CNMPs. Through technical assistance, owners and operators can receive help in developing CNMPs and implementing solutions. Financial cost-share and loan programs can help defray the costs of approved/needed structures (e.g., waste storage facilities for small operations) or to implement other practices, such as installation of conservation buffers to protect water quality. An increasing number of States have financial assistance programs that supplement or enhance Federal assistance.

Conservation Technical Assistance (CTA), NRCS's base conservation program, is a potential tool in helping landowners develop CNMPs. The Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), and Environmental Quality Incentives Program (EQIP) are assisting AFOs across the Nation in nutrient management. The Small Watershed Protection Program (PL 83-566) provides comprehensive resource management planning on a watershed basis to assist local land users in addressing water quality concerns related to AFOs. RC&D assists States and local units of government in planning, developing, and implementing programs for resource conservation and development. Plans address water quality, community and economic development, and other concerns of interest to the local citizens. The Conservation Buffer Initiative and the Watershed Survey and Planning Program also offer opportunities to assist livestock producers in managing their potential environmental risks.

AFO owners and operators may also participate in other State and Federal programs to improve water quality and to develop and implement polluted runoff abatement activities, including State cost-share programs and EPA Section 319 nonpoint source grants and the State Revolving Fund (SRF) program authorized under the Clean Water Act (CWA). Using all USDA, EPA, and other Federal State and local programs together as tools helps leverage resources to help AFO owners and operators in voluntarily addressing water quality and public impacts.

4.2 *Regulatory Program for Some AFOs*

The Federal CWA provides general authority for water pollution control programs, including several programs related to animal feeding operations (AFOs). A number of primarily large AFOs (i.e. about 2,000 facilities) have been issued permits under section 402 of the CWA. These permits, called National Pollutant Discharge Elimination System ("NPDES") permits, include conditions to limit pollution problems. In 42 States and the Virgin Islands, these NPDES permits are issued by States under authorization from EPA. These permits are generally written to implement national minimum standards (referred to as effluent guidelines) for large AFOs established in regulations. (A summary of the existing feedlots effluent limitations guidelines is included in Figure 3). NPDES permits for AFOs must also include conditions that assure attainment of any applicable State- or Tribe-established water quality standards. These standards include designated uses, water quality criteria to protect these uses, and an antidegradation policy. Best management practices necessary to ensure compliance with the CWA, such as those included in CNMPs, may be imposed in NPDES permits. Where water quality standards are not attained, response actions are defined through the Total Maximum Daily Load (TMDL) process under Section 303(d) of the Act and implemented through revised NPDES permits and other measures.

EPA's Effluent Limitations Guidelines for CAFOs

The effluent limitation allows no discharges to Waters of the U.S. except when chronic or catastrophic storm events cause an overflow from a facility designed, constructed, and operated to hold process generated wastewater plus runoff from a 25-year, 24-hour storm event. All NPDES permits for CAFOs with over 1,000 AUs other than non-producing facilities, must contain an equivalent or more stringent effluent limitation. See 40 CFR Part 412.

Figure 3: EPA's Effluent Limitations Guidelines for CAFOs

The existing provisions of the CWA and related EPA regulations provide authority for including a significant number of AFOs in the permit program beyond those that now have permits. These statutory and regulatory authorities related to AFOs are described below along with the approach EPA will follow in setting priorities for carrying out these authorities.

The CWA provides that no person may "discharge" a pollutant except in accordance with a permit issued under section 402 of the Act. A "discharge" is defined as "any addition of any pollutant to navigable waters from any point source." The term "pollutant" is broadly defined in the CWA and includes animal waste and related material.

The term "point source" as defined in the CWA includes any "discernible, confined and discrete conveyance" and specifically includes a "concentrated animal feeding operation" (CAFO). Thus, a discharge from a CAFO is prohibited except in accordance with an NPDES permit.

The term "animal feeding operation" or AFO is defined in EPA regulations as a "lot or facility" where animals "have been, are, or will be stabled or confined and fed or

maintained for a total of 45 days or more in any 12 month period and crops, vegetation, forage, growth or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility."

The regulations define a "concentrated animal feeding operation" or CAFO as an animal feeding operation where more than 1,000 "animal units" (as defined by the regulation) are confined at the facility; or more than 300 animal units are confined at the facility and:

- Pollutants are discharged into navigable waters through a manmade ditch, flushing system, or other similar man-made device; or

- Pollutants are discharged directly into waters that originate outside of and pass over, across, or through the facility or come into direct contact with the confined animals.

Poultry operations that remove waste from pens and stack it in areas exposed to rainfall or an adjacent watercourse have established a crude liquid manure system for process wastewater that may discharge pollutants. These facilities are CAFOs and therefore point sources under the NPDES program if the number of animals confined at the facility meets the regulatory definition at 40 CFR Part 122. Appendix B or if the facility is designated as a CAFO.

The regulations also provide, however, that no animal feeding operation is a CAFO as defined above if it discharges only in the event of a 25-year, 24-hour or larger storm event.

In addition, the NPDES permit issuing agency may, after conducting an on-site inspection, designate an animal feeding operation of any size as a CAFO based on a finding that the facility "is a significant contributor of pollution to the waters of the United States." A facility with 300 animal units or less, however, may not be designated as a CAFO under this authority unless pollutants are discharged from a man-made device or are discharged directly into waters passing over, across or through the facility or that otherwise come into direct contact with the confined animals.

Another regulatory program which addresses AFOs is the Coastal Nonpoint Pollution Control Program which is implemented under the authority of Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990. Section 6217 requires the 29 States and territories with NOAA-approved Coastal Zone Management Programs to develop enforceable policies and mechanisms to implement nonpoint source controls, known as management measures. Two management measures address facility wastewater and runoff from smaller AFOs, and another management measure addresses nutrient management on farms. In CZARA areas, permitted CAFOs are covered by the NPDES program while other AFOs would be covered by the CZARA management measures. EPA and NOAA should encourage States to

consider the priorities of this Strategy when implementing their Coastal Nonpoint Pollution Control Programs.

4.3 Land Application of Manure

EPA and USDA recognize that manure and other animal waste from CAFOs is commonly applied to the land. Proper land application of these resources has agricultural benefits, but improper land application can cause water quality and potential public health impacts.

As noted above, the addition of pollutants from a discrete conveyance (e.g. natural channel or gullies) to the waters is regulated under the CWA as a point source discharge. At the same time, the Act exempts "agricultural stormwater discharges" from the definition of a point source. EPA has in the past, and will in the future, assume that discharges from the vast majority of agricultural operations are exempted from the NPDES program by this provision of the Act. The agricultural stormwater exemption, however, does not apply in a small number of circumstances that meet the following criteria:

- The discharge is associated with the land disposal of animal wastes (e.g. manure or other animal waste) originating from a CAFO (which is defined as a point source in the CWA and is regulated as a point source); and

- The discharge is not the result of proper agricultural practices (i.e., in general, the disposal occurred without a CNMP developed by a public official or a certified private party or in a manner inconsistent with the CNMP).

NPDES permits should assure that the animal waste from the CAFO will be utilized properly and require reporting on whether the permittee has a CNMP and whether it is being implemented properly.

4.4 Priorities for the Regulatory Program

The NPDES permit program authorized by the CWA will be used to address the relatively small number of AFOs that are now causing water quality or public health problems or that pose a significant risk to water quality or public health. EPA and USDA believe that AFOs in several situations are CAFOs and should be priorities for NPDES permitting:

Significant Manure Production - Large facilities (those with greater than 1000 animal units) produce quantities of manure that are a risk to water quality and public health whether the facilities are well managed or not. Because the amount of manure stored is so large, a spill while handling manure or a breach of a storage system can release large quantities of manure and

wastewater into the environment causing catastrophic water quality impacts and threatening public health. Land application of large volumes of waste requires very careful planning to avoid water quality and public health impacts.

Of the estimated 450,000 animal feeding operations, only about 6,600 facilities had over 1,000 animal units as of 1992. Due to increases in the number of large facilities over the past six years, EPA and USDA believe that as many as 10,000 such facilities may exist today. EPA and USDA expect to update this estimate based on newer information. Based on size alone, these facilities are considered to be CAFOs and therefore are "point sources" subject to having an NPDES permit if they cause the addition of pollutants to waters. EPA believes that virtually all CAFOs with over 1,000 animal units are covered by the permit program and are a priority for permit issuance.

Unacceptable Conditions - Some facilities have unacceptable conditions that pose a significant risk of water pollution or public health problems. Specifically, facilities that have man-made conveyances that discharge animal waste to waters or have a direct discharge to waters that pass through the facility or come into direct contact with animals represent a significant risk to the environment and public health and are a priority for permit issuance. (As noted, AFOs with 300 or fewer AUs are CAFOs subject to permitting only where they have been designated as CAFOs by the permitting authority.)

There is insufficient data on which to base an estimate of the number of AFOs that have unacceptable conditions. EPA and USDA expect, however, that many, if not most, AFOs that now have unacceptable conditions will voluntarily address their unacceptable conditions to avoid the requirement to have a permit under the NPDES program.

Significant Contributors to Water Quality Impairment - In cases where water quality monitoring establishes that pollution from an individual facility with fewer than 1,000 animal units or a collection of facilities including those with fewer than 1,000 animal units is significantly contributing to, or is likely to significantly contribute to, impairment of a waterbody and nonattainment of a designated use, the facility or collection of facilities should be a priority for the NPDES permitting program.

Aggregate Water Quality Impacts on a Watershed Scale - EPA and USDA encourage States to use existing watershed assessment processes to determine whether a collection of AFOs is causing or contributing to watershed impairment. States should identify such watersheds for priority CAFO permitting. For example, the Clean Water Action Plan provides for a Unified Watershed Assessment Process to identify watersheds that are not meeting clean water and other natural resource goals.

In addition, States may consider identifying watersheds based on CWA section 303(d) lists or on assessments conducted by the interagency State technical committee. Such assessments may indicate, for example, that a high proportion of waters are impaired because of nutrient or pathogen problems attributable to animal manure or wastewater; that a watershed has more manure generated than there is land available to land apply manure in the watershed; or that water pollution associated with AFOs poses a significant threat to public health as a result of contamination of drinking water sources. EPA estimates that the number of AFOs that will be subject to the permit program as a result of identified watershed impairments to be between 1,000-3,000.

Site-specific Water Quality Impacts - Where the NPDES permitting authority has evidence that an individual AFO or group of AFOs significantly contribute to nonattainment of the designated use of an individual water body, these AFOs should be a priority for permit issuance. Based on water quality assessment information from States, the number of facilities that meet these conditions is estimated to be between 1,000 - 3,000 facilities.

This section has described permitting and enforcement priorities for the regulatory program based on existing CAFO regulations. EPA and USDA expect that the total number of CAFOs in the situations described above that will be priorities for coverage under NPDES permits will be in the range 15,000 - 20,000. About 2,000 CAFOs now have NPDES permits. EPA plans to refine and strengthen the existing regulations during the next several years (see Section 5.0, Strategic Issue #3).

4.5 CAFO CNMPs

NPDES permits for CAFOs will include conditions and other requirements that minimize the threat to water quality and public health and otherwise ensure compliance with the requirements of the CWA. EPA will issue guidance on the development of permits for CAFOs and will develop model permits. Among other things, the guidance will provide that permits include conditions that ensure compliance with national effluent guidelines applicable to CAFOs.

The EPA guidance will also recommend that CAFO permits require the development of a CNMP and its implementation on a schedule established in the permit. The guidance will incorporate NRCS's practice standards as the appropriate practice standards for CAFO CNMPs. Where elements of the CNMP are included in a NPDES permit, schedules for implementation of the practices or actions will be consistent with requirements of the CWA (i.e., compliance schedules will be consistent with State law and not exceed the five year term of the permit). Finally, permits will include any more stringent conditions that the permitting authority determines are necessary to meet State water quality standards.

CNMPs developed to meet the requirements of the NPDES permit program in general must be developed by a person certified to develop CNMPs, a qualified State agency official (e.g., cooperative extension agent), or by NRCS. Private parties may be certified by State or nonprofit groups (e.g., the Certified Crop Advisor Program of the American Society of Agronomy) approved by USDA, or certified directly by USDA through EQIP.

The ultimate responsibility for developing and implementing CNMPs resides with the CAFO owner and/or operator. If the CNMP is developed as a requirement of the NPDES permit program, the CNMP should be consistent with this Strategy and the regulatory agency will ensure that the CNMP meets the requirements of the CWA and is being implemented. State or Federal enforcement agencies will work to ensure compliance with permit requirements.

4.6 Smaller CAFOs Can Exit the Regulatory Program

Smaller CAFOs (those with fewer than 1000 AUs) that are not located in watersheds that are identified as impaired should be allowed to exit the permit program after the end of the five-year permit term. To exit the program these facilities must demonstrate that they have successfully addressed the initial condition that caused them to be designated as CAFOs, are fully implementing their CNMP, and offer evidence that they are in full compliance with their permit at the end of the permit term.

4.7 Good Faith Incentive

In many cases, AFOs are taking early voluntary actions in good faith to manage manure and wastewater in accordance with a CNMP. Some AFOs that are voluntarily implementing a CNMP may, however, have a discharge that makes them subject to the NPDES permitting program but does not cause them to be included in the permitting priorities described above (i.e., AFOs with 301-1000 AUs that do not discharge through a man-made conveyance or directly into waters of the U.S. that pass through their facility, and which are not significant contributors to nonattainment of a designated use as determined through water quality monitoring). NPDES permitting authorities will provide an opportunity for these AFOs to address the cause of the discharge before designating them as CAFOs.

5.0 Strategic Issues

Overview of Strategic Issues

This USDA/EPA Unified National Strategy on Animal Feeding Operations addresses seven major strategic issues:

Strategic Issue #1 - Building Capacity for CNMP Development and Implementation

Strategic Issue #2 - Accelerating Voluntary, Incentive-Based Programs

Strategic Issue #3 - Implementing and Improving the Existing Regulatory Program

Strategic Issue #4 - Coordinated Research, Technical Innovation, Compliance Assistance, and Technology Transfer

Strategic Issue #5 - Encouraging Industry Leadership

Strategic Issue #6 - Data Coordination

Strategic Issue #7 - Performance Measures and Accountability

Strategic Issue #1 Building Capacity for CNMP Development and Implementation

Description

The successful implementation of this Strategy depends on the availability of qualified specialists from either the private or public sectors to assist in the development and implementation of CNMPs. AFO owners and operators will need substantially increased access to technical assistance from the private and public sectors to support a strengthened regulatory program and, at the same time, implement an accelerated effort to help owners and operators meet their stewardship responsibilities through early, voluntary action.

Through prior or existing voluntary programs, NRCS has developed CNMPs for AFOs. NRCS estimates that at least 300,000 AFOs need to develop CNMPs or revise existing CNMPs to meet the performance expectation of this Strategy. EPA estimates that between 15,000 to 20,000 operations will be considered CAFOs and be required to develop and implement CNMPs as part of a permit.

Desired Outcomes

- Increase the number of certified specialists to develop CNMPs.
- Ensure that CNMPs are implemented under the guidance of qualified specialists.
- Consistent quality of CNMP development and implementation.
- All AFO owners have a CNMP developed by a certified specialist by 2008.

Actions

USDA and EPA will take the following actions, to the extent permitted by available appropriations, to increase the supply of qualified technical specialists available to assist AFO owners and operators develop and implement CNMPs:

1. USDA and EPA will review available certification programs for those developing CNMPs for AFOs to ensure technical adequacy and will provide training and standards for these certification programs to improve their ability to certify CNMPs to AFOs.

2. Facilitate and encourage participation of private sector consultants and technical advisors through certification, training, and other activities to ensure private sector sources of assistance can be effectively utilized by AFO owners and operators to develop and implement CNMPs.

3. Increase funding within the USDA NRCS Conservation Technical Assistance (CTA) Program and Cooperative Extension System to increase technically qualified field staff, train existing Federal and nonfederal staff, and provide enhanced technical support for Federal and nonfederal technical advisors.

4. Explore options for training and certifying AFO operators to develop and implement their own CNMPs.

5. USDA and EPA will facilitate the training of conservation contractors in the installation of practices specified in a CNMP.

6. USDA and EPA will provide assistance in the form of computer models or expert systems to assist in the development of CNMPs.

7. USDA and EPA will give priority to training those agencies and organizations that deliver services at the local level. The voluntary program is delivered at the local level through SWCDs, Cooperative Extension Service, USDA Service Centers, and the private sector. These local service providers should also be fully informed of the elements of the regulatory programs.

8. USDA and EPA will sponsor a national meeting to solicit ideas on how to build capacity for the development and implementation of CNMPs.

9. USDA will develop agreements with third-party vendors similar to the 1998 agreement with the Certified Crop Advisors (CCAs). CCAs will provide technical assistance to agricultural producers in nutrient management, pest management, and residue management. Any assistance provided under third party vendor agreements will meet NRCS standards and specifications, or State standards if more restrictive.

10. USDA, EPA, and the States should each analyze the potential impact of this Strategy on public and private resources and their availability to develop and implement CNMPs.

Strategic Issue #2 Accelerating Voluntary, Incentive-based Programs

Description

USDA and EPA agree that the release of pollutants to surface or groundwater from an AFO is to be minimized regardless of size or management activity. It is the ultimate responsibility of individual owners and operators, and the companies and industries they are involved with, to minimize the release of pollutants from their operations. Under this Strategy, most AFOs will minimize the risk of pollution by voluntarily developing and implementing a CNMP.

Desired Outcomes

- All AFOs develop and implement CNMPs by 2008.
- Minimize pollution from AFOs to the greatest extent practical.
- Ensure the maximum environmental benefit is obtained per public dollar expended.
- Ensure adequate financial incentives are available to minimize the economic impact of implementing CNMPs.
- Ensure that limited resource, minority, and other underserved producers have the opportunity to participate fully in the voluntary programs.

Actions

1. National Standards

Develop and Revise Practice Standards - To ensure that conservation policies and practices are current and sufficient to address water quality risks associated with AFOs, NRCS, in consultation with EPA and with input from States and other stakeholders, will identify practice standards which need to be developed or revised and propose a schedule for development or revision by November 1998. The process of revising practice standards at both the national and local level involves the public review of new or revised standards. The process should be streamlined to the maximum extent possible.

2. Planning and Implementation

AFO CNMP Guidance - USDA's NRCS has national responsibility for conservation planning policy and procedures and will provide guidance, in consultation with EPA, by January 1999 that can be used by AFO owners, operators, and others to develop a CNMP.

Comprehensive Nutrient Management Planning requires that individuals, including AFO owners and operators, qualified in the technical issues associated with AFOs, should develop the CNMP. Good CNMPs are the result of a process that ensures all elements of an operation are considered and that causes of problems, rather than symptoms, are addressed. The CNMP guidance will indicate what should be contained in the CNMP (such as aerial photos or plan maps, planned conservation practices and schedule of implementation, engineering designs for any constructed facilities for storing or handling manure, records of soil and nutrient tests, appropriate rates of land application to prevent the application of nutrients at rates that will exceed the capacity of the soil and planned crops to assimilate nutrients and prevent pollution, and records of practices and actions).

3. Outreach and Program Delivery

Fair and equitable treatment - USDA and EPA agree and will ensure through aggressive outreach that the technical and financial assistance provided in the voluntary efforts recommended by this Strategy will be available to persons without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. These outreach efforts are already underway and will accelerate with the release of this Strategy.

4. Financial Assistance for CNMP Implementation

Financial assistance can ease the burden on AFO owners and operators who are implementing CNMPs. Financial assistance will be particularly important in

helping existing AFOs improve the environmental performance of their operations. Failure to fund these programs at the level the President has requested will seriously constrain our ability to accelerate progress through voluntary action and sometimes causes an economic hardship for AFOs. This is particularly true of limited resource farmers.

The primary source of USDA assistance to AFO owners and operators is the Environmental Quality Incentive Program (EQIP), which was initiated in the 1996 Farm Bill. The Conservation Reserve Program (CRP) and the Small Watershed Protection Program (PL 83-566) are also available to AFO owners and operators meeting program eligibility requirements. EQIP has been funded at $200 million in 1997 and 1998. Approximately 45 percent of the funds were spent in each of these years to fund contracts with AFOs to develop and provide cost share incentives to help implement CNMPs that consider most of the issues this Strategy recommends be addressed in a CNMP. The requests for funds for AFOs during each of those years was for approximately $230 million-three times the amount available. The Administration has requested $300 million for EQIP for FY 1999.

The CRP provides farmers rental payments to set aside lands for various environmental purposes. The continuous sign-up provision of CRP targets the establishment of conservation buffers which are recognized as an important component of a CNMP. A provision of CRP , referred to as the Conservation Reserve Enhancement Program (CREP) allows States to join with the Federal government to increase rental rates paid to land owners by increasing funding for the CRP program with State funds. USDA established the Conservation Buffer Initiative in 1996 with the specific goal of establishing two million miles of buffers by 2002. In 1998, approximately $500 million was expended through CRP to establish an estimated 172,000 miles of buffers throughout the United States.

The PL 83-566 program received $86 million in FY 1997 and approximately $20 million was spent on 228 watershed plans that address water quality. A majority of these watershed plans address AFOs.

EPA has two funds that can be partially used to help many AFOs meet the performance expectation. The first is the 319 program, also known as the Nonpoint Source Management Program. Under section 319 of the CWA, States, Territories, and Tribes apply for and receive grants from EPA to implement nonpoint source pollution controls. Over $670 million have been available from this fund since 1990, with approximately 39 percent being directed toward agricultural issues, including AFOs.

The second EPA fund is the Clean Water SRF , which is a program used to make low interest loans (as low as zero percent) for important water quality projects. Managed by the States, the SRF program in each State can fund nonpoint source eligible implementation projects such as animal waste storage

facilities. The SRF program is funding approximately three billion dollars in projects each year with a cumulative total over the years of $20 billion. Since 1997, the SRF program has funded over $650 million in nonpoint source-eligible projects to clean up polluted runoff (including AFOs).

Currently, many States have cost-share programs that address water quality issues. Funds from these programs are available to owners or operators to assist in development and implementation of CNMPs. USDA and EPA strongly support such programs.

Options to help provide Federal financial assistance to AFO operators to develop and implement CNMPs include:

- Continue and increase the USDA-EPA collaboration on AFO issues particularly at the field level, to better target and leverage available resources from all applicable programs to assist AFOs in addressing water quality issues.

- Target Federal financial assistance to existing AFOs who need to develop or revise CNMPs to meet the performance expectation established by this Strategy.

- Significantly increase EQIP funding as requested in the President's budget to meet the expressed demand from AFO owners and operators for financial assistance.

- Encourage AFO owners and operators to take full advantage of the CRP program and establish conservation buffers as part of their CNMPs. Also encourage States to collaborate with the Federal government through the CREP provision of the CRP program.

- Encourage States to use 319 funding in implementing programs that address management issues of AFOs. In particular, EPA will work with States to target the requested increase in 319 funds to impaired watersheds.

- EPA will work with States to increase the number and dollar amount of loans made through the Clean Water SRF for priority projects to prevent polluted runoff, with the goal of increasing the annual percentage of funds loaned for this purpose to at least 10 percent (or about $200 million) by the year 2001. EPA will also work with States toward the goal of increasing to 25 the number of States using integrated priority-setting systems to make clean water funding decisions by the year 2000. EPA will work with States to promote the use of these funds for AFO implementation measures.

- Encourage States and Tribes to address AFO issues as they work with the community to develop watershed restoration action strategies for priority watersheds under the CWAP.

- Develop a tool package of financial assistance programs that will be available so that AFO owners, counties, SWCDs, and States can assess options and understand how to receive financial assistance.

Strategic Issue #3 Implementing and Improving the Existing Regulatory Program

Description

The CWA provides that all "point sources" of water pollution that discharge or add pollution to waters are subject to having a National Pollutant Discharge Elimination System (NPDES) permit under section 402 of the Act. Section 502 of the Act defines "concentrated animal feeding operations" or CAFOs as point sources. EPA regulations provide detailed criteria for determining when an AFO is also a CAFO subject to the NPDES permit program (see also Section 4.2 and 4.4 of this Strategy).

This Strategy clarifies the applicability and the requirements of the existing regulatory program, identifies permitting and enforcement priorities, and describes EPA's plans to strengthen and improve existing regulations. For those facilities covered by the NPDES permitting program, CNMPs will identify steps to protect water quality and public health and will be a key element of the permit.

Desired Outcomes

- Minimize pollution from CAFOs to the greatest extent practicable.

- Ensure the maximum environmental benefit is obtained per public dollar expended.

- Develop draft comprehensive CAFO permitting guidance and model permits by October 1998 and final guidance by January 1999.

- Develop comprehensive State CAFO permitting strategies beginning in early 1999.

- Issue Round I NPDES permits to all CAFOs beginning in Spring 1999.

- Revise the NPDES CAFO permitting regulations by December 2001.

- Review and revise as appropriate the effluent limitation guideline for poultry and swine by December 2001 and for beef and dairy by December 2002.
- Large CAFOs (greater than 1,000 AUs) have developed and are implementing CNMPs by 2003.
- All CAFOs in States where EPA administers the NPDES program have developed and are implementing CNMPs by 2003.
- Issue Round II NPDES permits to all CAFOs beginning in 2005.
- All CAFOs in NPDES authorized States have developed and are implementing CNMPs in 2005.

Actions

1. Improve Implementation of the Existing CWA Permitting Program

EPA will work with States to establish a two-phase approach to permitting CAFOs. Round I of CAFO permitting will occur under EPA's existing CAFO regulations. In Round II permits, core permit elements may be expanded to reflect revisions to the effluent guideline, permit program regulations, and State-adopted water quality standards for nutrients.

A. Round I Permits

In Round I, EPA will work with NPDES-authorized States to issue Statewide general NPDES permits to cover all CAFOs with greater than 1000 AUs and CAFOs with between 300-1000 AUs that have unacceptable conditions. These general permits will be issued starting in Spring 1999 and affected CAFOs will be expected to submit a notice of intent to be covered by the permit. General permits will require facilities to develop and implement CNMPs on a schedule identified in the permit, develop record keeping procedures, and routinely report on the implementation of the CNMP.

EPA and the NPDES-authorized States should use individual NPDES permits in Round I for exceptionally large operations, new operations or those undergoing significant expansion, operations with historical compliance problems, or operations with significant environmental concerns. States have flexibility in determining which CAFOs should have individual NPDES permits and should address this topic in State CAFO permitting strategies (see Section 1D below).

Also in Round I, EPA will work with the States and Tribes to issue watershed general permits for facilities in selected watersheds, including those identified as not meeting clean water goals. States are encouraged to develop watershed general permits for watersheds where there are aggregate water quality impacts from AFOs on a watershed scale (see Section 4.4).

Watershed general permits are based on existing EPA and State permitting authority. EPA's regulations on general permits (40 CFR 122.28) allow the issuance of a single permit to cover facilities that share common elements (e.g., CAFOs) within a specific geographic area (e.g., watershed). To be covered under a watershed general permit during Round I, AFOs with fewer than 1000 AUs need to be individually designated as "significant contributors" of water pollution and AFOs with fewer than 301 AUs also need to meet specific criteria (e.g., have a man-made conveyance through which pollutants are discharged into navigable waters or a direct discharge to waters passing through the facility).

These watershed general permits will allow for tailoring of NPDES permit requirements to the needs of a watershed. Watershed general permits could also tailor permit requirements to the realities of manure and wastewater management practices in a given locality and promote more effective public participation than would a Statewide general permit. Watershed general permits must be written to reflect any TMDL developed for the watershed. EPA encourages permit writers to use their best judgment in developing such permits.

States should also issue individual permits to individual facilities that are significant contributors of water pollution to waters that do not attain water quality standards, due in whole or part to AFOs.

B. Round II Permits

Round II permitting will include reissuance of Statewide general permits, individual permits, and watershed general permits; will begin at the end of the five-year permit term of Round I (i.e., about 2005); and will incorporate new requirements resulting from revisions to the existing CAFO effluent guideline and NPDES permitting regulations.

In addition to potential regulatory revisions that may affect CAFO permitting, Round II CAFO permits will incorporate requirements that reflect ongoing activities related to nutrient water quality criteria development. On June 25, 1998, EPA announced a national strategy for the development of regional nutrient criteria. The strategy describes the approach EPA will take for development of scientific information related to nutrients and to working with States to ensure adoption of nutrient criteria into State water quality standards. EPA will establish numeric criteria for nutrients within three years of their issuance or by 2000, as specified in the Clean Water Action Plan. EPA expects all States and Tribes to adopt and

implement numerical nutrient criteria into their water quality standards by December 31, 2003. All NPDES permits must be revised to incorporate requirements to meet State-adopted nutrient criteria as the permits are issued or reissued.

In Round II, EPA and States will continue to identify watersheds where cumulative effects of AFOs cause nonattainment of water quality standards and EPA and States will continue to identify as a priority for individual permits certain exceptionally large operations, those undergoing significant expansion or those with significant public interest.

Finally, in Round II, EPA will not include, and recommend that States not include, in reissued Statewide general permits any CAFO with fewer than 1000 AUs (or whatever appropriate threshold may exist because of revised regulations) that was included in a Round I permit if the CAFO is not located in a watershed that is identified as impaired and if the CAFO has successfully addressed the initial condition that caused them to be a CAFO, is fully implementing a CNMP, and offers evidence that it is in full compliance with its permit at the end of the permit term (See Section 4.6).

C. CAFO Permitting Guidance and Model Permits

EPA will develop comprehensive guidance on NPDES permitting of CAFOs including development of Statewide, individual, and watershed general permits. EPA will also develop model Statewide, individual, and watershed general permits. Guidance and model permits will be issued in draft by October 1998 and in final form by January 1999.

A key subject to be addressed in the guidance is the process for establishing schedules for development of CNMPs for those facilities covered by individual and general permits. These schedules for development of CNMPs should be appropriate to the circumstances in each State and should be described in detail in State-specific permitting strategies (see below). At a minimum, State-specific permitting strategies should provide for the development of CNMPs for the largest CAFOs (i.e., greater than 1,000 AUs) by 2003 and all CAFOs by 2005. In States where EPA administers the NPDES program, permits will require that all CAFOs have CNMPs by 2003.

The guidance will also address issues such as who is required to obtain a permit, elements of a permit (which may differ for new or expanding CAFOs and existing CAFOs), and different types of permits, including watershed general permits, consistent with the permitting priorities described in Section 4.4. EPA expects that permit elements will include specific performance measures for CNMP implementation, reporting (including reporting on CNMPs for land application and their implementation), and monitoring.

The model permits will provide that CNMPs developed pursuant to a permit, or that are directly related to issuance of a permit, should be provided to the permitting authority by the permittee. Some States have adopted approaches in their permitting programs that recognize the environmental responsibilities of corporate entities that participate in the operation of CAFOs. EPA will explore options for including such approaches in its model permits.

USDA and EPA agree that a CNMP developed by public sector parties or certified private parties should be a condition of an individual or general NPDES permit. EPA guidance will indicate that the CNMP should be the principal substantive pollution control provision of the permit and will incorporate NRCS's practice standards as the appropriate practice standards for CAFO CNMPs. Permits will include other provisions including any more stringent conditions necessary to meet the requirements of the CWA (See Section 4.5).

D. State-Specific CAFO Permitting Strategies

EPA and USDA recognize that the current law and regulations provide authority to issue permits to a larger group of CAFOs than is identified in the priorities described in Section 4.4. However, States are asked to prioritize NPDES permit issuance to address AFOs that fall into the three priority permitting categories, at a minimum, and any other AFOs the State determines should have permits consistent with the authority of the current law, following the general guidelines for Round I and Round II permitting described above.

Some States have significantly greater numbers of AFOs requiring permits than do other States. The capacity for development of CNMPs in the public and private sector will vary from State to State. Resources available for the management of the NPDES program also vary from State to State. And, the extent to which smaller AFOs (i.e. under 1,000 animal units) are significant contributors to water quality problems on a site-specific or watershed basis will vary among States. State-specific CAFO permitting strategies should address timing and approaches to permitting, including the basis for using individual and general permits and should reflect stakeholder and public input to the extent practicable.

EPA will assist States in evaluating their CAFO permitting efforts and in developing, beginning in early 1999, comprehensive strategies consistent with this national Strategy to enhance permitting, inspection, and enforcement activities for CAFOs. EPA will also work with States to develop performance measures that track environmental progress and programmatic efforts. Finally, EPA will work to develop State-specific CAFO permitting strategies in cooperation with States that do not administer the NPDES program.

EPA will work with States to ensure that EPA enforcement priorities are designed to complement and ensure successful implementation of this Strategy and are otherwise consistent with State-specific permitting strategies. However, notwithstanding these priorities, it should also be recognized that EPA may initiate enforcement action at any facility at any time under the Agency's authorities to address imminent and substantial endangerments.

Several States have permitting or licensing programs that address environmental issues and requirements for AFOs that go beyond the NPDES program. EPA intends to work with States to ensure that State and Federal programs work together smoothly to protect water quality and public health. EPA will also work with States that are authorized to administer the NPDES program to ensure that State programs meet the NPDES substantive and procedural requirements and issue NPDES permits. However, this Strategy is not intended to preclude States from adopting more stringent approaches in their NPDES programs.

2. Review and Revision of Existing Regulations

A. Feedlots Effluent Limitations Guidelines

EPA will, with input from USDA, States, Tribes, other Federal Agencies and the public, review and revise as appropriate, the effluent limitation guideline for poultry and swine by December 2001 and for beef and dairy cattle by December 2002. NRCS and other USDA agencies will participate on the regulatory workgroup to revise the regulations.

In 1974, EPA promulgated the Effluent Limitation Guidelines and New Source Performance Standards for the Feedlots Point Source Category (40 CFR 412). The effluent guidelines for feedlots applies to a subset of operations in the following animal sectors: beef and dairy cattle, swine, sheep, horses, broiler and layer chickens, turkeys, and ducks.

The guideline establishes a "no discharge" requirement for process wastewater which, in general, includes the manure from the feedlot as well as any precipitation that comes into contact with the manure or any products used in or resulting from the production of animals or direct products (e.g., milk, eggs). The requirement prohibits discharges except those that result from chronic or catastrophic events, including from a 25-year, 24-hour or larger storm event where a facility has been appropriately designed and constructed. This "no discharge" standard applies to existing as well as new facilities.

EPA expects that revisions to the effluent guidelines will:

- Be closely coordinated with any changes to the NPDES permitting regulations.
- Consider innovative and alternative technologies including the viability of treatment and discharge technologies and technologies that do not involve storage of liquid manure.
- Assess different management practices that minimize the discharge of pollutants and the cross-media transfer of pollutants.
- Evaluate alternative use and disposal options for manure that nonetheless capture their nutrient/energy value.
- Evaluate options for regulating dry manure handling systems.
- Evaluate the need for different requirements for new or expanding and existing facilities.

B. NPDES Permit Regulations

EPA will, with input from USDA, States, Tribes, other Federal Agencies, and the public, revise the NPDES permit program regulations regarding CAFOs by December 2001.

EPA intends to revise the existing permitting regulations to clarify expectations and requirements for CAFOs as well as to reflect the changes in the industry. NRCS and other USDA agencies will participate on the regulatory workgroup to revise the regulations. Revision of the permitting regulations will be closely coordinated with the revision of the Feedlots Effluent Limitations Guideline (40 CFR Part 412) because of the commonality of issues and the administrative efficiencies for EPA, States and all interested groups. Permits in effect on the date of new regulations will remain in effect until subsequently changed to incorporate the new requirements.

Key permitting issues that EPA intends to consider during the regulatory revision process include:

- Establishing specific requirements for new and significantly expanding facilities and monitoring requirements for permitted facilities.
- Clarifying requirements for effective management of manure and wastewater from CAFOs whether they are handled on-site or off-site.
- Explore alternative ways of defining CAFOs.
- Consider requirements for CAFOs to conduct self-evaluations of CNMP implementation and keep records of such evaluations on-site.
- Considering large poultry operations, consistent with the size threshold for other animal sectors, as CAFOs, regardless of the type of watering or manure handling system.
- Clarifying who may designate and the criteria for designating certain AFOs as CAFOs.

- Providing for the protection of sensitive water bodies such as source water protection areas, Outstanding National Water Resources, wetlands and other areas.
- Providing for expedited designation of smaller AFOs in watersheds identified for watershed general permits.
- Removing the exemption from permitting for AFOs that only discharge during a 24-hour 25-year or larger storm event.
- New, improved public review of general permit conditions applicable to individual facilities, including public notice of facilities to be covered.
- Consider defining all facilities regardless of size that have a man-made conveyance as a CAFO.
- Explore alternative approaches to ensuring that corporate entities support the efforts of individual AFOs to comply with permits and develop and implement CNMPs.

3. Improve Implementation of the Existing CWA Compliance and Enforcement Program

The following actions are designed to improve implementation of the existing CWA compliance and enforcement program for CAFOs and support implementation of this Strategy:

CAFO Compliance Assurance Implementation Plan Revisions - EPA will revise its CAFO Compliance Assurance Implementation Plan as necessary to ensure that EPA and State enforcement priorities support implementation of this Strategy. However, EPA may initiate emergency actions at any time against any AFO that presents an imminent or substantial endangerment.

Compliance Assistance - EPA will continue and expand compliance assistance efforts led by the National Agricultural Compliance Assistance Center consistent with the Strategy and changes to the regulatory program. As regulations are revised and implemented, EPA's initial efforts will focus on compliance assistance and later shift to a greater focus on enforcement activities.

CAFO Inspections - EPA will work with States to establish commitments for inspection of CAFOs with the goal of inspecting existing CAFOs (including unannounced periodic inspections to determine if CAFO CNMPs are being implemented) and other facilities that may need to be designated as CAFOs because they may fall into one of the categories that are priorities for NPDES permitting. EPA expects that training will be necessary for inspectors and will engage specialists familiar with AFOs and associated management practices to assist in this training.

Strategic Issue #4 Coordinated Research, Technical Innovation, Compliance Assistance, and Technology Transfer

Description

Coordinated research, technical innovation, compliance assistance, and technology transfer relative to the environmental management of AFOs are critical components of this Strategy. USDA and EPA, together with other Federal partners, will establish coordinated research, technical innovation, and technology transfer activities, and compliance assistance, and establish a single point information center.

Knowledge gaps exist in our understanding of the effects of AFOs on natural resources and environmental quality. Some of this lack of understanding is due to the fragmented structure of our research and data collection efforts, information residing in multiple locations with much of the information obtained with objectives different from those of this Strategy and different information being used by AFO managers, technical assistance specialists and regulators. For example, research is done primarily from an animal production and natural resource management perspective by the Agricultural Research Service (ARS), Economic Research Service (ERS), and the land-grant colleges and universities, among others. These entities also do research on economic issues such as economic impact, cost/benefit analyses, policy analyses, and resource use and environmental implications. EPA, U.S. Geological Survey (USGS), and university researchers conduct research on AFOs from an environmental quality viewpoint. EPA and USDA will, in coordination with the private sector, the land grant colleges and universities and others, develop a coordinated plan for research, development, and assessment.

Desired Outcomes

A coordinated approach to research, technical innovation, compliance assistance, and technology transfer.

Actions

A. Coordinated Research Plan - USDA and EPA will develop a coordinated AFO research plan by October 1999. This plan will establish priorities for future research including:

1. Methods to better manage manure to address nutrients, pathogens, and other pollutants.
2. Modification of animal diets to reduce nutrients in manure.
3. Mitigation of sites with excessive pollutants.
4. Evaluation of impacts of best management practices from farm and watershed perspectives.
5. Educational materials for all audiences that meet their conservation, regulatory, and production needs.

6. Alternative uses of animal manure, such as for energy production or for high value, low volume fertilizers.
7. Assessment of the climate change effects of methane and NOx emissions from AFOs
8. Assessment of the problem of air deposition of nutrients.
9. Assessment of food safety impacts from AFOs including pathogens, hormones, antibiotics, and metals and the water quality impacts resulting from the discharge of these and other compounds to the environment.
10. Assessment of the quality of existing monitoring data.
11. Alternatives to production methods that use animal confinement.
12. Establishment of soil phosphorous threshold levels.
13 Alternatives for transporting manure, manure distribution, and composting.
14. Water quality risk of dry manure management.

B. Coordinated Technology Transfer Plan - USDA and EPA will develop a coordinated AFO technology transfer plan by October 1999. The plan will describe how to disseminate the results of all research conducted by the agencies. The plan will also describe the establishment of a website on which to post all data results, analyses of the resulting information, comments or responses to the results or analyses, automated nutrient management tools, and any scholarly papers about the research project or related information.

C. Virtual Center - USDA and EPA will develop a Virtual Center with the goal of creating a single point of reference for both agencies, the individual producers, the livestock industry, and the general public. EPA and USDA will commit to developing a process for setting research priorities, coordinating research activities, participating in joint research endeavors, and sharing research results. The Virtual Center will consist of a website to be maintained by personnel from both USDA and EPA where research results, analyses, comments and responses to the research and scholarly papers on the research project or related information would be available to all.

Options

There are two options for realizing the three actions described above in this section. Regardless of which option is chosen, EPA and USDA will coordinate with the National Agricultural Library in Beltsville, Maryland, which currently serves as a USDA repository for research data and results, as well as the National Agriculture Compliance Assistance Center. These options are not mutually exclusive nor exhaustive:

1. Develop a National AFO Information and Research Center.

USDA and EPA would develop a National AFO Information and Research Center. Appropriate EPA offices and USDA agencies would provide support to the center. Other Federal agencies (e.g., USGS, Department of Energy) that are

conducting relevant research, information management, and technical assistance activities would be invited to join as associated members. Members of the center would contribute both financial and personnel support to the Center's activities. The Center would develop and manage a coordinated research program, compliance assistance, data exchange and coordinated technical assistance. In the short term, the Center would be tasked to complete the three action items described above.

2. Establish a National AFO Information and Research Working Group

USDA and EPA would establish a National AFO Information and Research Working Group. Appropriate EPA offices and USDA agencies would provide support to the working group. Other Federal agencies that are conducting relevant research, information management, and technical assistance activities would be invited to join as members. Members of the working group would contribute both financial and personnel support to the working group's activities, although each cooperating agency would be directly responsible for the management of its human and financial resources. The working group would develop and manage a coordinated research, information exchange, and technical assistance program. The working group would also collaborate and coordinate activities with other appropriate entities. The Working Group would be tasked to complete the three action items described above.

Strategic Issue #5 Encouraging Industry Leadership

Description

This Strategy intends to provide strong incentives for AFO owners and operators to develop and implement CNMPs. Other sections of the animal agriculture industry can also play a key role in helping to encourage adoption of these CNMPs and address water quality problems on individual AFOs. An example is the Comprehensive Environmental Framework for Pork Production Operations recommended by the National Environmental Dialogue on Pork Production. The Dialogue included representatives from State Agriculture and Environmental Agencies, USDA, EPA, and the pork industry. The National Pork Producers Council is recommending that the Framework would apply to all commercial pork production operations. The poultry industry is currently conducting a similar dialogue. These industry-led initiatives can significantly increase the voluntary adoption of CNMPs to protect water quality.

In addition to the animal agriculture industry, other groups (i.e., co-ops, the Certified Crop Advisors, and the National Association of Independent Crop Consultants) can play a key role in helping AFOs protect water quality and public health.

USDA and EPA invite comments on how the agricultural and livestock industries can play an active role in ensuring that all AFOs have CNMPs.

Desired Outcomes

The animal agriculture industry will take the lead in promoting and ensuring the protection of water quality on individual AFOs though development and implementation of CNMPs on all AFOs.

Actions

The following are actions that USDA and EPA may take to promote industry involvement. USDA and EPA request comment on which of these actions or other actions would benefit most from Federal involvement.

Industry-Led Initiatives - USDA and EPA will work with industry, in particular integrators, to identify opportunities for greater industry involvement in pollution prevention. This could include the integrators providing technical, educational, and financial assistance to producers and/or requiring CNMPs in contracts with producers. This could also include industry use of climate, soil, and crop information supplied by USDA and EPA to locate future operations. USDA and EPA will promote industry-led dialogues in different AFO sectors such as the recently concluded pork dialogue and the ongoing poultry dialogue.

Manure Brokering Networks - USDA and EPA will investigate with the industry the potential for manure brokering networks to make sure excess manure is available to the cropland which needs it.

AFO Owner/Operator Peer Network - USDA and EPA will promote with the industry a peer network of AFO owners and operators willing to assist other producers in their area with questions or assistance on CNMPs.

AFO Awards Program - USDA and EPA will work with AFO Industry groups to develop an awards program to promote innovative and effective water quality management of AFOs.

Disseminate Information - USDA and EPA will work with industry (associations, integrators, etc.) to disseminate information on the revised NPDES regulations and effluent guidelines, beginning in 2001.

Locally-Led Watershed Efforts - USDA and EPA will work with the AFO industry to promote locally led watershed efforts.

Industry-Developed Planning Tools - USDA and EPA will encourage and support industry efforts to develop and distribute planning tools to members to enable them to develop and implement CNMPs.

Environmental Reviews - USDA and EPA will promote industry efforts to conduct environmental reviews of members' AFOs to evaluate environmental performance and assist in enhancing environmental protection.

Manure/Fertilizer/Biosolids Dialogue - USDA and EPA will encourage dialogue on how to maximize the benefits of using manure, fertilizer, and biosolids.

Marketing and Promotion Orders - The 1996 Farm Bill authorized conservation as a purpose for marketing and promotion orders. Marketing and promotion orders allow an agriculture industry (e.g., livestock) to assess a charge on the product to be used for conservation and environmental activities. These marketing and promotion orders generate needed funds for an activity and can provide financial support for all its producers (e.g., growers). In implementing a marketing and promotion order (i.e., check-off program) through the Secretary of Agriculture, additional revenue can be generated to support, while maintaining a level playing field throughout the industry, needed nutrient management practices.

Strategic Issue #6 Data Coordination

Description

Several kinds of data are useful in assessing and managing the water quality impacts of AFOs. Ambient water quality information allows the identification of water quality impacts that may be attributable to AFOs. Aggregate information about multiple AFOs can be used to target both regulatory and voluntary activities, including watershed-level planning. Finally, information about individual AFOs is helpful for those assisting owners and operators in developing CNMPs, identifying facilities that may be subject to the regulatory program, and for the development and implementation of watershed-level plans. These three kinds of data are available from multiple sources, including USDA, EPA, USGS, Army Corps of Engineers, and State agencies.

Recently, questions have been raised regarding the public availability of some types of information related to AFOs-in particular, data related to individual AFOs used by USDA to assist in conservation planning. USDA and EPA affirm the need to protect the trust relationship that exists between farmers and USDA and as characterized by Secretary of Agriculture Dan Glickman's call to "maintain a firewall between voluntary and regulatory programs." On May 22, 1998, NRCS issued a policy statement that prohibits the release of AFO-specific information in conservation plans and case files that has been developed through voluntary technical and financial assistance programs. In accordance with EPA regulations most information on individual facilities, collected or generated as part of the NPDES program, is publicly available.

Desired Outcomes

USDA/EPA coordination on data sharing that protects the trust relationship between USDA and farmers and provides regulatory authorities with information that is useful in protecting water quality.

Actions

Joint Policy Statement on Data Coordination - EPA and USDA will develop a joint policy statement on information coordination. Both agencies agree to review existing policies and guidance based on the joint policy statement.

Water Quality Inventory Enhancements - EPA will improve the 305(b) Water Quality Inventory to better report the water quality impacts caused by AFOs.

Cost-Benefit Methodology - EPA and USDA will develop a joint evaluation of the costs and benefits of this Strategy and options considered in developing revised CAFO regulations. USDA and EPA will convene an interagency economic analysis work group to develop the economic analysis methodology and data that may be used in the analysis.

CAFO Inventory - To ensure a program that is consistent with NPDES program activities, EPA will develop an inventory of facilities subject to regulatory activities.

Strategic Issue #7 Performance Measures and Accountability

Description

USDA and EPA believe that it is critical to establish performance measures to gauge our success in implementing this Strategy and meeting relevant goals in each agency's strategic plan established under the Government Performance and Results Act. Three types of performance measures are important. First, USDA and EPA are committed to completing each of the actions described under the strategic issues. Second, there are a number of programmatic activities (e.g., number of AFOs with CNMPs, number of CAFOs covered by NPDES permits) that we will evaluate to measure the level of activity being devoted to addressing water quality impacts from AFOs. Finally, and most importantly, USDA and EPA will develop appropriate environmental outcome measures to measure our progress in implementing this Strategy.

We recognize that measurement of AFO progress in addressing water quality issues will take time for two reasons: (1) it will take time to develop appropriate measures; and (2) it will take time for water quality progress to be achieved (maybe decades in some watersheds).

Desired Outcomes

An effective performance measurement system for AFOs that includes appropriate programmatic output and environmental outcomes that allows USDA, EPA and other stakeholders to determine the level of success and to improve AFO-related programs.

Actions

Performance Measurement - USDA, EPA, and other Federal agencies will establish a joint work group to develop a coordinated set of programmatic outputs and environmental outcome measures for this Strategy and identify a baseline against which to measure performance. The work group will seek input from States and SWCDs and will develop a performance measurement approach for AFOs by October 1999

Watershed Nutrient Load Estimates - USDA and EPA will estimate by January 2000 a baseline of nutrient loads to watersheds with potential excess nutrients from animal waste using data from fertilizer sales, USGS/EPA nutrient loading analysis, Census of Agriculture, permit limits, and other estimates.

6.0 Roles

The successful implementation of this Strategy calls for a number of individuals and organizations to fulfill several key roles. These key roles are described in the following paragraphs.

- Federal Government - It is the Federal government's responsibility to establish minimum national expectations, technical standards, and regulatory requirements for AFOs, and to help provide the tools to achieve these expectations, standards, and requirements. EPA, through the CWA, Coastal Zone Act Reauthorization Amendments, and the Safe Drinking Water Act, is charged with the regulatory responsibilities, including permitting, compliance assurance, and enforcement, that relate to AFOs. USDA, through conservation, research, and education provisions of the Farm Bill and other legislation, is largely responsible for programs that help AFOs meet performance expectations through voluntary efforts. There are many ways that USDA, EPA, and other Federal agencies can work together to assist animal producers and the public including collaboration on research, education, technical assistance and financial assistance. USDA and EPA, in particular, will work closely and cooperatively, to ensure that the goals and expectations of this Strategy are met and its guiding principles are reflected in our combined and independent activities.

- State/Local Government - State and local governments often have the responsibility for implementing Federal programs. For example, 42 States and the Virgin Islands are authorized to implement the current CWA provisions that affect CAFOs. States also implement various nonpoint source control programs, including cost-share programs. States and SWCDs are key partners in implementing environmental and conservation programs. State Land Grant Universities are the primary mechanism to deliver agricultural research and extension programs. State, local, and Federal governments, and private sector partners work together to ensure that the actions taken on the ground are appropriate and cost effective. State and local governments also help determine where water quality and public health protection must be enhanced beyond the minimum performance expectations established through Federal programs, and often deal with local issues such as siting and odor.

- Individual Producers - No matter what size an operation or from what management activity, the release of pollutants to surface or groundwater from an AFO is to be avoided. It is the responsibility of individual owners and operators, and the companies and industries they are involved with, to minimize the release of pollutants from AFOs. Every operation should be implementing a CNMP that minimizes the risks of pollution.

- Integrators - Integrators should ensure that their contract growers are environmentally responsible. Feed mills and processing plants should incorporate the environmental impacts of the dissociated production operations into the siting and sizing of their plants. Integrators can also help develop alternatives for manure use and transport.

- Livestock Industry - The livestock industry as a whole has an obligation to educate its members and to provide leadership to ensure that its practices do not adversely impact society or the environment. Many sectors of the livestock industry have shown leadership by moving forward to establish new, industry-led efforts to improve the siting and management of AFOs, and to provide training to operators. This leadership must be enhanced and continue.

- Other Private Sector - The private sector can continue to contribute to new technologies and innovative strategies that capitalize on the nutrient and energy value of animal manure and related by-products of AFOs. This would include vendors and consultants of animal manure treatment and management systems. Various organizations, including livestock organizations and AFO-related companies provide educational programs to inform AFO owners and operators about Federal and State goals, standards, rules, and permitting processes, and to teach them how they can protect environmental quality and comply with regulatory provisions. The agricultural and environmental consulting community can also respond by helping to ensure that appropriate technical resources are available to assist with development of CNMPs for producers. Fertilizer producers and dealers can provide information on

integrating use of manure and other nutrient sources to ensure appropriate nutrient use.

- Research and Educational Institutions - Public and private research organizations provide much of the knowledge and technology to better manage and utilize manure and related by-products of livestock production. USDA's and EPA's research, education, and technical assistance programs will provide leadership in developing new and innovative technologies for AFOs and analyzing their effectiveness.

- Watershed or Community Responsibilities - Every watershed where the concentration of AFOs is a potential source of pollution should have a watershed- or area-wide plan that helps AFO owners, operators, and others to work together to prevent pollution. Such planning is particularly important in areas where problems exist, such as where the quantity of manure and nutrients produced by AFOs exceeds what can be safely applied to land to meet crop needs. Locally led watershed efforts promote coordinated and integrated decision making to find sound, locally acceptable ways to achieve environmental quality.

- Environmental Groups- Environmental groups and grass-roots organizations play an important role in focusing public attention on environmental concerns with respect to animal production activities. Environmental groups can provide "on-site" reports about specific environmental quality concerns and can educate its members, the general public, the agricultural community and the media about important environmental concerns at the local, State, and national level.