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U.S. Environmental Protection Agency
Unified National Strategy
for
Animal Feeding Operations
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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 improved measures to protect the environment and public health.

In February 1998, 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 111 specific actions to expand and strengthen existing efforts to protect water quality, such as improving sewage treatment, controlling industrial waste, and protecting recreational waters. 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, including urban storm water, subsurface sewage disposal, and air deposition. 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.

This Unified National Strategy for Animal Feeding Operations presents USDA and EPA's plan for addressing the water quality and public health impacts associated with AFOs. USDA and EPA issued a draft of this Strategy on September 16, 1998, and requested public comment during a 120-day period. In addition, 11 national "listening sessions" were held throughout the U.S. to discuss the draft Strategy and hear public feedback. The final Strategy reflects written comments received as well as issues raised during the listening sessions. USDA and EPA appreciate the public feedback on the draft Strategy and will continue to seek public involvement in implementing the activities described in the final

Strategy.

This Strategy is not a new regulation nor is it 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 policies for addressing AFOs may evolve and change as their understanding of the issues increases through further work and receipt of additional information.

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. Promote, support, and provide incentives for the use of sustainable agricultural practices and systems.
6. 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.
7. 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.
8. Coordinate activities among the USDA, EPA, and related State and Tribal agencies and other organizations that influence the management and operation of AFOs.
9. Focus technical and financial assistance to support AFOs in meeting the national goal and 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, fields, or on rangeland. Winter feeding of animals on pasture or rangeland is not normally considered an AFO.

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) This data comes from an analysis of the 1992 Agricultural Census. 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.(5) Section 4.2 discusses the regulatory definition of an animal feeding operation as well as the conversions for the different animal species.

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. Despite USDA support for sustainable agricultural practices, these factors have promoted expansion of confined production units, with growth in both existing areas and new areas; integration and concentration of some 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.(6)

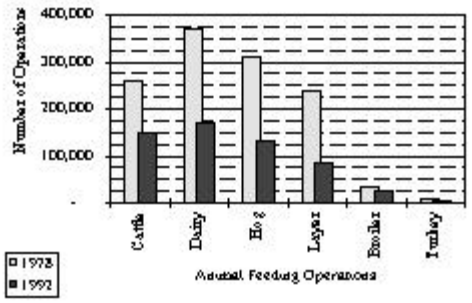

Figure 1: Industry Consolidation of Cattle, Dairy, Hog, Layer, Broiler and Turkey Animal Feeding Operations(7)

Table 1. Increase in the Average Number of Animal Units per Operation (1978-1992)(8)

Cattle	56%
Dairy>	
Hog	134%
Layer	176%
Broiler	148%
Turkey	129%

2.2 Water Quality and Public Health Risks

Despite significant progress in reducing water pollution, serious water quality problems persist throughout the country and are caused by a range of different sources. The CWAP, along with other Federal, State and Tribal water quality assessments, details the sources and magnitude of these water quality problems. Agriculture, municipal point sources, urban runoff, industrial point sources and hydromodification are listed as the leading sources of the remaining problems. Although it is difficult to determine the exact contribution of any particular source on a national basis, it is widely recognized that 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.(9)

Manure and wastewater from AFOs have the potential to contribute pollutants such as nutrients (e.g., nitrogen, phosphorus), organic matter, sediments, 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), toxic algal blooms which may be harmful to human health and, in combination with other circumstances, have been associated with outbreaks of microbes such as *Pfiesteria piscicida*. Decomposing organic matter can reduce oxygen levels and cause fish kills.

Pathogens, such as *Cryptosporidium*, have been linked to impairments in drinking water supplies and threats to human health. Pathogens in manure can also 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.

USDA and EPA recognize that there are other potential environmental impacts associated with AFOs. For example improperly managed or sited AFOs may produce odors that nearby residents find objectionable. Odor concerns cannot be resolved in this National strategy, but may be minimized through local mechanisms, such as zoning. While this Strategy focuses on addressing surface and ground water quality problems, other environmental impacts such as ground water depletion, habitat loss and dust will receive indirect benefit from implementation of this Strategy.

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 is based on a national performance expectation that all AFOs should develop and implement technically sound, economically feasible, and site-specific Comprehensive Nutrient Management Plans (CNMPs) to minimize impacts on water quality and public health.

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. The CNMP should fit within the total resource management objectives of the entire farm.

CNMPs should address, as necessary, feed management, manure handling and storage, land application of manure, land management, record keeping, and 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.

In addition to protecting water quality and public health, CNMPs should be site-specific and be developed and implemented to address the goals and needs of the individual owner/operator, as well as the conditions on the farm (e.g., number of animals, soils, crops, climate). For example, CNMPs developed for facilities in humid areas may include practices that are different from those developed for facilities in arid climates. CNMPs should include a schedule to implement the management practices identified. 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, sustainable agricultural systems, and new approaches to manure and nutrient management. The AFO owner or operator is ultimately responsible for the development and implementation of CNMPs regardless of who provides technical assistance.

While many other technical references may be used as supplements, 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 an 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 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 - Animal diets and feed may be modified to reduce the amounts of nutrients in manure. Feed management can include the use of low phosphorus corn and enzymes such as phytase, that can be added to non-ruminant animal diets to increase the utilization of phosphorus. Reduced inputs and 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.(10)

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 permanent and temporary storage facilities should prevent leakage of organic matter, nutrients, and

pathogens to ground or surface water.

Provide adequate storage - Liquid manure storage systems should safely store the quantity and contents of animal manure and wastewater produced, contaminated runoff from the facility, and rainfall. Dry manure, such as that produced in certain poultry and beef operations, should be stored in production buildings or storage facilities, or otherwise stored in such a way so as to prevent polluted runoff. Location of manure storage systems should consider proximity to water bodies, 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 (e.g. nitrogen and phosphorus) 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 commercial 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 methods of application should minimize the loss of nutrients to ground or surface water and the 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 on which manure is applied.

Record Keeping - AFO operators should keep records that indicate the quantity of manure produced and how the manure was utilized, including where, when, and amount of nutrients applied. Soil and manure testing should be incorporated into the record keeping system. Records should be kept when manure leaves the AFO.

Other Utilization Options - 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 also be appropriate. 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 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), Land Grant Colleges and Universities (LGCU), integrators, industry associations, other AFO operators, and private consultants. Qualified specialists will also be needed to assist in implementation and to 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 the private and 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.

3.5 Assuring the Quality of CNMPs

USDA and EPA recognize that a range of expertise may be needed to develop and implement site-specific CNMPs. A quality CNMP will help assure that the national goal of this strategy is met. USDA and EPA recommend that certified specialists be used to develop CNMPs. Although such a certified specialist may be used, AFO owners and operators are solely responsible for implementing their CNMPs. USDA and EPA also encourage AFO owners and operators to become certified specialists to ensure the quality of their CNMPs. USDA and EPA support the efforts of States and nonprofit groups (e.g., the Certified Crop Advisor Program of the American Society of Agronomy) to develop appropriate certification programs.

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.

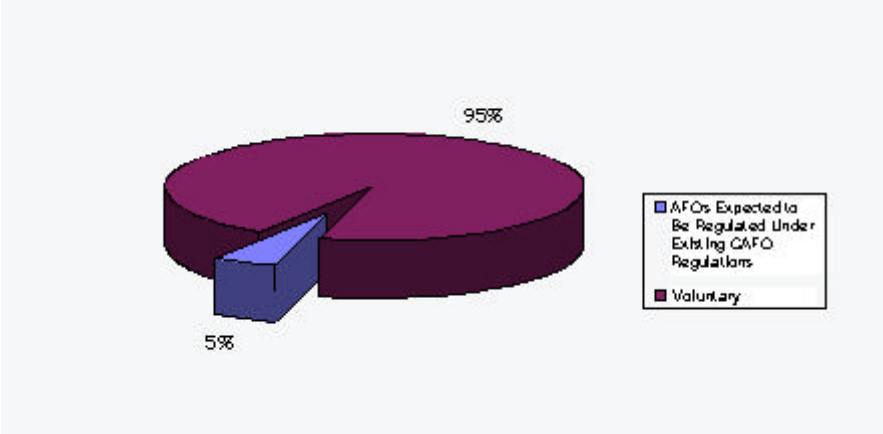

Figure 2: Estimated National Percentage of Animal Feeding Operations Expected to be Regulated Under the Existing CAFO Regulations

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 site-specific CNMPs, and in reducing water pollution and public health risks associated with AFOs. While CNMPs are not required for AFOs participating only in voluntary programs, they are strongly encouraged as the best possible means of managing potential water quality and public health impacts from these operations.

States should support development of voluntary CNMPs to the extent that this effort is consistent with other clean water program implementation priorities. For those CNMPs that are developed as part of a State, Tribal, or Federal voluntary technical or financial assistance program, the responsible State or Tribal agency (e.g., Department of Agriculture, Water Quality Agency, or Conservation Agencies), will approve the plan to ensure that it is sufficient to meet requirements for participation in such programs. This process may include consultation with the local SWCD. AFO owners and operators will be full partners in the development and implementation of CNMPs through voluntary programs.

The voluntary approach is built on the ethic of land stewardship and sustainability. A sustainable society requires a sustainable environment—one depends on the other. For generations, most producers have maintained agricultural productivity in harmony with a healthy land—the essence of land stewardship and sustainable agriculture. Today, agricultural producers still have the responsibility to be good stewards of the land under their care. The voluntary development and implementation of CNMPs provide AFO operators with a way to embrace agricultural sustainability and 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, agricultural groups, SWCDs, Resource Conservation and Development (RC&D) Councils, Cooperative Extension Boards, 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. Partnerships with grassroots organizations such as SWCDs, RC&D Councils, Cooperative Extension Service, and others that promote the use of CNMPs, can help attain the goal of this Strategy. Through the locally led approach, individuals can see how their actions fit with those of their neighbors.

Locally led conservation begins with public outreach sponsored by local SWCDs to involve all agencies, organizations, businesses, and individuals in the community that have an interest in natural resources conservation. The process intentionally reaches out to those with diverse opinions and involves a wide spectrum of ideas in assessing conservation needs to meet local concerns, establishing local priorities, identifying resources, developing and implementing a conservation plan, and reviewing and evaluating needs and

accomplishments.

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. Producers are experimenting with new systems, which include sustainable and alternative systems, adapting practices to their particular farm and management strategies. USDA's Agricultural Research Service (ARS), Cooperative State Research, Education, and Extension Service (CSREES); EPA; SWCDs, 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. A partnership with the AFO owners and operators and the organizations that represent them is essential in the collection and dissemination of research results in this educational effort.

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, Land Grant Colleges and Universities, 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 or rotational grazing systems to protect water quality. An increasing number of States have financial assistance programs that supplement or enhance Federal assistance. Most financial assistance programs require the recipients to agree to implement particular practices as a condition of receiving funding.

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, including those related to AFOs. RC&Ds assist States and local units of government in planning, developing, and implementing programs for resource conservation and development. Plans address water quality, sustainable agriculture, 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. One of the results of the Wetlands Reserve Program (WRP) is to enhance or create wetlands, which may provide non-point source pollution abatement for surface water. The WRP can be used for the purpose of minimizing water quality impacts from AFOs.

AFO owners and operators may also participate in and utilize 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's National Agriculture Compliance Assistance Center, EPA's Section 319 nonpoint source grants and the Clean Water State Revolving Fund (CWSRF) 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). About 2,000 primarily large AFOs have been issued permits by EPA and the States under section 402 of the CWA. These permits, called National Pollutant Discharge Elimination System (NPDES) permits, include conditions to limit pollution problems. In 43 States and the Virgin Islands, the States are authorized by EPA to issue these NPDES permits. These permits are generally written to implement national minimum standards (referred to as effluent guidelines) established in regulations for large AFOs. (A summary of the existing feedlots effluent limitation guidelines is included in Figure 3). NPDES permits 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 generally would be 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.

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. The statutory and regulatory authorities that relate 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).

EPA's Effluent Limitation Guidelines for CAFOs

The effluent limitation guidelines allow no discharges to Waters of the U.S. except when chronic or catastrophic rainfall 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 Limitation Guidelines for CAFOs

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."

An AFO is a "concentrated animal feeding operation" or CAFO if it meets the regulatory definition of CAFO or if it is designated as a CAFO. The regulations define a 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.

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.

Poultry operations that remove waste from pens and stack it in areas exposed to rainfall or adjacent to a watercourse may be considered to have established a crude liquid manure system. Therefore, a facility that stacks waste in this way and that otherwise meets the regulatory CAFO definition (40 CFR Part 122, Appendix B) may be considered to be a CAFO subject to the NPDES program.

1000 Animal Unit Equivalents in Existing CAFO Regulations[1]

Animal Type	***Number of Animals***
Slaughter and Feeder Cattle	1,000
Mature Dairy Cattle	700
Swine[2]	2,500
Sheep or Lambs	10,000
Horses	500
Turkeys	55,000
Laying Hens or Broilers[3]	100,000
Laying Hens or Broilers[4]	30,000
Mixed	1,000 Animal Units

Under the NPDES regulations, any person who discharges or proposes to discharge pollutants to the waters of the U.S. from a point source (including a CAFO) must apply for a permit. As courts have found, where a CAFO has had a past discharge, it must apply for a permit under the regulations. The NPDES authority will issue a permit unless it determines that the facility does not have a potential for a discharge.

The regulations also provide that no animal feeding operation is a CAFO under the regulatory definition if it discharges only in the event of a 25-year, 24-hour or larger storm event. (NPDES authorities can, however, designate such operations as CAFOs.) Currently, EPA's policy is to treat only AFOs that meet the regulatory definition of a CAFO or have been designated CAFOs as point sources subject to the NPDES program (see Section 5.0, Strategic Issue #3, Review and Revision of Existing Regulations).

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, point sources, including CAFOs, are covered by the NPDES program while AFOs and other nonpoint sources 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.

EPA believes that pollution of groundwater may be a concern around CAFOs. EPA has noted in other documents that a discharge of pollutants via hydrologically connected groundwater to surface waters may be subject to NPDES requirements. In addition, EPA has authority to consider contamination of various environmental media in establishing effluent limitation guidelines. EPA intends to address this issue in future regulations.

4.3 Coordination with State and Tribal Programs

States and Tribes play a critical role in the development and implementation of national and State and Tribal resource protection programs. USDA and EPA are committed to work in partnership with States and Tribes. USDA and EPA believe the need for a national goal and performance expectations for AFOs can be balanced with the need for flexibility to address the various needs and priorities of the States and Tribes, including coordination with other clean water programs.

Many States have used an array of voluntary and regulatory programs over the years that support the national goal and performance expectation of this Strategy. There also have been numerous changes to State and Tribal laws, regulations and programs to address water quality concerns with AFOs. USDA and EPA agree that States and Tribes play an important part in achieving the national goal and performance expectation of this Strategy. USDA and EPA expect to work with States and Tribes to implement effective programs to achieve the national goal and performance expectation of this Strategy. In the case of the small percentage of AFOs covered by existing regulatory requirements (i.e., CAFOs), implementation of the national goal and performance expectation will be guided by the Clean Water Act. This Strategy in no way is intended to limit the ability of States and Tribes to establish more stringent requirements.

USDA and EPA have included actions in this Strategy to address a range of State and Tribal issues. These issues include:

- The need for additional resources to assist States to implement voluntary and regulatory programs;
- Improved integration of AFO-related activities with other Federal and State water quality programs (e.g., TMDLs, ongoing watershed efforts);
- Working with States, Tribes, and other partners (e.g., through State Technical Committees) to develop appropriate priorities for delivery of federal programs (e.g. education, funding and technical assistance) consistent with State priorities;
- Working with each of the States to determine the best mix of approaches to achieve the national goal and performance expectation, including NPDES permits under the Clean Water Act for a small percentage of AFOs and voluntary programs for most AFOs; and
- Work with States to review, and modify as appropriate, existing State NPDES Program authorizations to incorporate ongoing or new regulatory approaches for CAFOs that meet or exceed the requirements of and, therefore, are functionally equivalent to the NPDES Program.

EPA's Regional Administrators and the USDA Regional and State leadership will take a lead role, with support from USDA and EPA headquarters, to work with State and Tribal environmental and agricultural agencies to determine how existing and proposed State and Tribal AFO programs may achieve the national goal and performance expectations of this Strategy.

4.4 Land Application of Manure

EPA and USDA recognize that animal manure and wastewater 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, as it relates to the land application of manure and wastewater, however, would not apply in a small number of circumstances such as when:

- The discharge is associated with the land disposal of animal manure and wastewater 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 manure and wastewater from the CAFO will be utilized properly and require periodic reporting on whether the permittee has a CNMP and whether it is being implemented properly.

4.5 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 cause water quality or public health problems or that pose a significant risk to water quality or public health. AFOs in several of the following situations are CAFOs and should be priorities for NPDES permitting and enforcement:

Significant Manure Production - Large facilities (those with greater than 1000 animal units) produce quantities of manure that can be a risk to water quality and public health. 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 manure and wastewater also requires very careful planning to avoid water quality and public health impacts.

These large facilities are considered to be CAFOs and therefore are "point sources" subject to having an NPDES permit and are a priority for NPDES permit issuance. 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 and enforcement. 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 seven 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.

Unacceptable Conditions - Some facilities with fewer than 1000 AUs 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 manure and wastewater to waters or have a direct discharge to waters that pass through the facility or come into direct contact with animals are a priority for permit issuance and enforcement. (As noted, it is currently is EPA's policy that AFOs with 300 or fewer AUs are subject to the NPDES program only

where they have been designated as CAFOs by the NPDES 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 those 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 provides evidence 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 impairment of a water body or a watershed and non-attainment of a designated use, facilities that are contributing to the impairment should be designated as CAFOs and are a priority for permit issuance and enforcement.

EPA encourages States to use existing watershed assessment processes, such as the CWA section 303(d) listing process, to evaluate the causes of water quality impairment. Such an assessment may indicate, for example, that a water body is 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 because such pollution may contaminate a public water supply or sensitive ground water area. Source water assessments are one mechanism States can use to determine whether a public water supply is susceptible to contamination from an AFO. EPA estimates that between 2,000-6,000 AFOs will be designated as CAFOs because they are significant contributors of pollution in watersheds with identified impairments.

This section has described permitting and enforcement priorities for the regulatory program based on existing CAFO regulations. EPA expects 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.

4.6 CAFO CNMPs

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

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 rely on 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 and State law (e.g., compliance schedules that do not exceed the five year term of the permit). The guidance will recognize that a feed management component of a CNMP may be used to affect the nutrient content of manure but will not prescribe feed management as a CNMP component. Finally, permits will include any more stringent conditions that the permitting authority determines are necessary to meet State water quality standards and other requirements established under State law.

In addition, the guidance will recommend that CNMPs developed to meet the requirements of the NPDES permit program in general must be developed by a certified specialist, a qualified State agency official (e.g., cooperative extension agent), or by NRCS.

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. The regulatory agency should

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.

4.7 Incentives for Implementing CNMPs

Smaller CAFOs Can Exit the Regulatory Program

Smaller CAFOs (those with fewer than 1000 AUs) should be allowed to exit the permit program after the end of the five-year permit term if they meet certain conditions. To exit the program, a facility would be expected to demonstrate that it has successfully addressed the conditions that caused it to be defined or designated as a CAFO and that it is fully implementing its CNMP, and would be expected to offer evidence and certify that it is in full compliance with its permit at the end of the permit term. In the event a facility that has exited the program has a subsequent discharge, the permitting authority should again consider the facility subject to permitting.

Good Faith Incentive

In many cases, AFOs with less than 1,000 AUs may be taking early voluntary actions in good faith to manage manure and wastewater in accordance with a CNMP. Specifically, some AFOs that are voluntarily implementing a CNMP may have a discharge that makes them subject to being designated as CAFOs under the NPDES permitting program but does not cause them to be included in the permitting priorities described above in Section 4.5. NPDES permitting authorities should consider providing an opportunity for these AFOs to address the cause of the discharge before designating them as CAFOs.

Tax Incentives to Encourage Improved Stewardship

Among the actions in the CWAP, an interagency taskforce has identified and assessed current and potential tax incentive proposals related to water pollution prevention and natural resource enhancement. A barrier analysis and options analysis has been conducted and a final report is being developed. The report will identify potential changes, with any appropriate offsets, for proposals in future budgets. This can be a potential financial incentive for an AFO owner or operator to develop and implement a CNMP.

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 implement an accelerated effort to help owners and operators meet their sustainability and stewardship responsibilities through early voluntary action and, at the same time, support a strengthened regulatory program.

Through prior or existing voluntary programs, NRCS has develop nutrient management plans. Those plans did not include all the components of a CNMP for an AFO. Based on a current Workload Analysis Process, NRCS estimates that at least 330,000 AFOs need to develop CNMPs or revise existing nutrient management plans to meet the performance expectation of this Strategy. While some capacity exists within NRCS to develop some components of CNMPs, it is estimated to take up to two years for NRCS to be fully prepared to develop and assist with implementation of CNMPs. For example, NRCS will be updating conservation practice standards, developing and delivering training, and certifying its employees. During this interim period NRCS will also develop plans that will be more inclusive of the components of a CNMP and in the short term will develop guidance that others can use to develop and assist in the implementation of CNMPs.

Desired Outcomes

- Increase the number of certified specialists to develop CNMPs.
- Consistent quality of CNMP development and implementation.
- All AFO owners have a CNMP developed by a certified specialist.
- Ensure that CNMPs are implemented under the guidance of qualified specialists.
- Provide appropriate flexibility for States and Tribes to achieve the national performance expectation.
- Support State efforts to build capacity for CNMP development and implementation.

Actions

The following actions, to the extent allowed by available appropriations, are intended 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 for AFOs. USDA and EPA will support the development of State certification programs.

2. USDA and EPA will 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. USDA will increase funding within the 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. The Administration proposes to increase CTA by $20 million in FY 2000.

4. USDA and EPA will explore options for training and certifying AFO owners and 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, in cooperation with States, by March 2000 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.

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 should 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 are expected to minimize the risk of pollution by voluntarily developing and implementing a CNMP.

Desired Outcomes

- All AFOs develop and are implementing CNMPs by 2009.
- Minimize pollution from AFOs to the greatest extent practical.
- Ensure the maximum environmental benefit is obtained per dollar expended.
- Ensure adequate financial incentives are available to minimize the economic impact of implementing CNMPs.
- Ensure that limited resource, minority, and other under-served producers have the opportunity to participate fully in the voluntary programs.
- Provide appropriate flexibility for States and Tribes to achieve the national performance expectation.
- Coordinate with the States on the delivery of Federal voluntary programs to address State and local priorities.

Actions

1. National Conservation Practice Standards

Develop and Revise National Conservation Practice Standards - To ensure that

conservation policies and practices are current and sufficient to address water quality risks associated with AFOs, in consultation with EPA and with input from States and other stakeholders, NRCS will identify practice standards which need to be developed or revised and propose a schedule for development or revision by September 1999. 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 September 1999 that can be used by AFO owners, operators, and others to develop a CNMP.

Comprehensive Nutrient Management Planning is a process through which individuals, including AFO owners and operators, qualified in the technical issues associated with AFOs, should develop CNMPs. 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 (e.g., nitrogen and phosphorus) 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). On-farm assessment processes may be used to help local service providers determine priorities for assisting AFOs.

3. Outreach and Program Delivery

Fair and equitable treatment - USDA and EPA will undertake aggressive outreach to ensure 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.

Coordination with State and Tribal Programs - USDA and EPA will work closely with the States and Tribes to ensure that the delivery of Federal programs and assistance supports State and Tribal program priorities. Existing coordination efforts such as the work of the State Technical Committees can be very useful in coordinating priorities among the voluntary programs and with the regulatory program.

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 fully fund assistance at requested levels 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 financial 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 and $174 million in 1999. Approximately 45 percent

of the funds in each of these years 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 three times the amount available. The Administration has requested $300 million for EQIP for FY 2000.

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 $87 million in FY 1997 and $90 million in FY 1998 and approximately $20 million per year was spent on 228 watershed plans that address water quality. A majority of these watershed plans address AFOs.

EPA has two programs that provide funds to States that can be partially used to help many AFOs meet the performance expectation. The first is the CWA Section 319 program, also known as the Nonpoint Source Management Program. Under section 319, States, Territories, and Tribes apply for and receive grants from EPA to implement nonpoint source pollution controls. Over $870 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 State Revolving Fund (CWSRF) , which is a State-run program used to make low interest loans (as low as zero percent) for important water quality projects. Managed by the States, the CWSRF program can fund a variety of activities to control nonpoint source pollution, including collection, treatment, storage, and land application of both liquid and solid manures. The CWSRF program is currently funding approximately three billion dollars in projects annually with a cumulative total since its inception of $23 billion. Since 1988, the CWSRF program has funded over $840 million in nonpoint source projects, including AFOs, to address polluted runoff.

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 encourage such programs.

To help provide Federal financial assistance to AFO owners and operators to develop and implement CNMPs, USDA and EPA will, as appropriate:

- Continue and increase 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.

  To further support the objectives of the Clean Water Action Plan and this Strategy, EPA proposes for FY 2000 to allow states to reserve up to an amount equal to 20% of their CWSRF capitalization grants to provide grants of no more than 60% of the costs of implementing nonpoint source and estuary management projects. Projects receiving grant assistance must, to the maximum extent practicable, rank highest on the State's list used to prioritize projects eligible for assistance. Grants may also be used in combination with loans for agricultural entities which might otherwise find loans unaffordable.

- Encourage States and Tribes to address AFO issues as they develop watershed restoration action strategies for priority watersheds under the CWAP.
- Develop a tool package of financial assistance programs by December 2000 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

This Strategy describes 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 should identify steps to protect water quality and public health and should be a key element of the permit.

Desired Outcomes

- Minimize pollution from CAFOs to the greatest extent practicable.
- Ensure the efficient use of resources to optimize environmental benefits.
- Priority CAFOs are covered by NPDES permits, by January 2000, that require development and implementation of CNMPs.
- Review and revise as appropriate the effluent limitation guidelines for feedlots and the NPDES CAFO permitting regulations.
- Provide appropriate flexibility for States and Tribes to achieve the national performance expectation.

Actions

1. Improve Implementation of the Existing CWA Permitting Program

EPA, in cooperation with State and Tribal partners, will substantially improve implementation of the existing NPDES permitting program for CAFOs. This section lays out a two-phase approach to permitting of CAFOs, and describes flexibility within the existing regulatory program and improved tools for permitting.

A. NPDES Permitting of CAFOs

EPA will work with States to establish a two-phase approach to permitting CAFOs. Round I of CAFO permitting will begin this year, will focus on large CAFOs (i.e., over 1,000 animal units(AUs)), and will occur under EPA's existing regulations. Starting in 2005, Round II permits will reflect revisions to the effluent guidelines, permit program regulations, and State-adopted water quality standards.

Round I Permits for CAFOs (2000-2005)

In Round I, EPA and NPDES-authorized States will give top priority to issuing Statewide general NPDES permits and, where appropriate, individual permits, to cover all CAFOs with significant manure production (i.e., greater than 1000 AUs).

General permits should be issued not later than January 2000 and affected CAFOs will be expected to submit a notice of intent (NOI) to be covered by the permit. General permits should require facilities to develop and implement CNMPs on a schedule identified in the permit, develop record keeping procedures, routinely monitor, and otherwise report on the implementation of the CNMP and compliance with the permit. These general permits should require that the public have access to and be able to review any NOI, CNMP and other relevant reports that are developed pursuant to a permit. The public would not have access to information that a CAFO has appropriately justified as confidential business information. EPA does not expect that information about typical manure management practices will be confidential.

There are situations where a general permit may not be appropriate. 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.

CAFOs can result in environmental problems other than surface water pollution, including odor, and ground water and drinking water contamination. EPA encourages States to develop innovative programs that build on the foundation of an NPDES permit and also use new technologies and other approaches that result in a more comprehensive response to environmental impacts associated with CAFOs. Where a State develops an NPDES program that provides a more comprehensive response to environmental issues at CAFOs, EPA will defer to the State’s judgment with respect to the use of individual or general permits.

Individual permits should be issued as expeditiously as possible. When setting schedules for issuance of individual permits, EPA and States should consider State-specific circumstances such as the total number of CAFOs with greater than 1,000 AUs, the need to issue individual NPDES permits to new or exceptionally large facilities, and the availability of technical assistance for development of CNMPs. States may give permitting priority to impaired water bodies (such as 303(d) listed waters or those identified in State water quality management plans).

Beginning on the date of this Strategy, EPA plans to issue and strongly recommends that States issue individual permits to new CAFOs only where the permits are consistent with CWA requirements and the priorities described in this Strategy. EPA emphasizes that all CAFOs must have an NPDES permit to discharge and are subject to enforcement action if they discharge without such a permit.

Also in Round I, EPA and NPDES-authorized States and Tribes should issue permits for

those CAFOs smaller than 1,000 AUs with unacceptable conditions and watershed general permits for facilities that have fewer than 1,000 AUs and are CAFOs because they cause or contribute to water pollution in watersheds where there are aggregate water quality impacts from AFOs on a watershed scale (see Section 4.5 – Significant Contributors to Water Quality Impairment). EPA and States should issue these permits by the end of 2002 whenever possible. Some States may be able to issue these permits sooner than 2002 and other States may need additional time.

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). Watershed general permits may cover any CAFO in a watershed that is not covered by an individual permit. These watershed general permits would allow for tailoring of NPDES permit requirements to the needs of a watershed. Watershed general permits could also tailor permit requirements to the manure and wastewater management practices in a given locality and promote more effective public participation than would a Statewide general permit. These watershed general permits should require that the public have access to and be able to review any NOI, CNMP and other relevant reports that are developed pursuant to a permit. The public would not have access to information that a CAFO has appropriately justified as confidential business information. EPA does not expect that information about typical manure management practices will be confidential.

EPA expects that the term of Round I permits will be five years and that these permits will not need to be revised or reissued to reflect changes to the effluent limitation guidelines or CAFO permitting regulations.

Round II Permits for CAFOs (2005-2010)

The second round of CAFO permits should begin in 2005 with the reissuance of general permits for CAFOs with greater than 1,000 AUs. In addition, EPA and NPDES-authorized States and Tribes should reissue individual permits as their five-year permit terms expire during the second round and issue new individual permits consistent with this Strategy (e.g., new facilities over 1,000 AUs). Finally, EPA and States should reissue CAFO other general permits where water quality issues are not resolved as a result of the initial Round I permit.

Round II NPDES permits should incorporate any new requirements resulting from revisions to the CAFO permitting regulations and effluent guidelines for feedlots. In addition, Round II CAFO permits would incorporate refinements to site-specific CNMPs and address any additional requirements necessary to meet water quality goals and objectives (e.g., State water quality standards for nutrients).

B. Recognition of State and Tribal CAFO Permit Programs

EPA is committed to strengthen partnerships with States and Tribes to ensure that the CAFO permitting activities called for in this Strategy are well coordinated with State programs. In cases where EPA issues NPDES permits in a non-authorized State, EPA will work closely with State agencies to complement and support State programs related to AFOs and CAFOs. Most States, however, have authority to issue CAFO NPDES permits consistent with this Strategy.

EPA recognizes that some States may be implementing permitting programs under State law that meet or exceed the requirements of and, therefore, are functionally equivalent to the NPDES Program, as provided in 40 CFR Part 123. The NPDES regulations provide for the recognition of these State programs as NPDES permitting programs (40 CFR Part 123). Where a State can demonstrate that its program meets the requirements of an NPDES program consistent with 40 CFR Part 123, EPA will amend the current NPDES authorization to recognize the State program. The procedures for review and public notice of a State program revision in Part 123 apply to these actions. Where a State indicates an interest in amending its NPDES program authorization to recognize a State permitting program, EPA will make every effort to make this amendment expeditiously. In the case of requests to amend a program authorization to cover permits for CAFOs with more than

1,000 AUs, States should propose program amendments by October 1, 1999. EPA will act on CAFO program proposals within 45 days so that States can meet the goal of issuing NPDES permits for these large CAFOs by January 2000.

In the case of CAFOs with fewer than 1,000 AUs, EPA expects that some States may want to work during 2000 and 2001 to modify State authorities, regulations or procedures so that EPA is able to recognize them as NPDES programs consistent with the program modification procedures in 40 CFR 123.

EPA will also work with States to ensure that enforcement priorities are designed to complement and ensure successful implementation of this Strategy. However, notwithstanding these priorities, it should also be recognized that EPA may take action for discharges without a permit or discharges in violation of a permit, and initiate emergency actions at any time against any AFO that presents an imminent or substantial endangerment.

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. The permitting guidance and model permits will be issued in draft by May 1999 and in final form by August 1999.

Among the subjects to be addressed in the guidance is the process for establishing CNMP development schedules for those facilities covered by individual and general permits. These CNMP development schedules should be appropriate to the circumstances in each State. The largest CAFOs (i.e., greater than 1,000 AUs) should develop and begin implementation of CNMPs by 2003 and all other CAFOs by 2005.

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, and will clarify the criteria for issuing individual permits (e.g., exceptionally large operations, new operations or those undergoing significant expansion, operations with historical compliance problems, or operations with significant environmental concerns), consistent with the permitting priorities described in Section 4.5. EPA expects that permit elements will include specific performance measures for CNMP development and implementation, monitoring, and reporting (including reporting on CNMPs for land application and their implementation, notice of discharges, and spill response reporting). In addition, the guidance will recommend public notice procedures for CAFOs covered by general, watershed-specific, and individual permits and mechanisms for public review of and access to CNMPs developed pursuant to a permit.

The guidance will provide that in those instances where a CAFO owner or operator transfers its manure and wastewater to another person for land application off-site (i.e., at a location apart from the CAFO), it is appropriate for the NPDES authority to include conditions in the permit to require the CAFO owner or operator to do one or more of the following:

- Provide data on nutrient content to the off-site recipient;
- Record the recipients of the animal manure and wastewater being transferred off-site;
- Obtain a certification from the off-site recipient that it has a CNMP.

The model permits will provide that CNMPs developed pursuant to a permit, or that are directly related to issuance of a permit, must be provided to the permitting authority by the permittee. In addition, EPA will consider including in the model permits a procedure for CAFOs with greater than 1,000 AUs that opt not to apply for a permit, to notify the permitting authority of this intention. 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 believes that corporate entities that exercise substantial operational control over a CAFO should be co-permitted along with the CAFO owner/operator and will clarify this in the CAFO permitting guidance.

EPA believes 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 generally should be the principal substantive pollution control provision of the permit and will rely on NRCS's practice standards as the appropriate practice standards for CAFO CNMPs. NPDES permitting authorities may, however, impose other provisions including any more stringent conditions necessary to meet the requirements of the CWA.

2. Review and Revision of Existing Regulations

EPA plans to review and revise as appropriate several existing regulations that pertain to CAFOs. The regulatory review and revision process will be conducted in accordance with applicable legal requirements (e.g., Administrative Procedure Act, Regulatory Flexibility Act). Among the factors that EPA will consider are the risk to water quality and public health, ease of implementation, enforceability, burden on the regulated community, and statutory requirements.

A. Feedlots Effluent Limitation Guidelines

EPA will, with input from USDA, States, Tribes, other Federal Agencies and the public, review and revise as appropriate, the effluent limitation guidelines for feedlots. EPA is under a court-ordered schedule to revise the guidelines for poultry and swine by December 2001 and for beef and dairy cattle by December 2002. EPA is currently discussing revisions to this schedule with the parties to the litigation. NRCS and other USDA agencies will participate on the regulatory workgroup to advise EPA on the technical and implementation aspects related to any proposed revisions.

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

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 rainfall events that cause an overflow from a facility designed, constructed, and operated to contain all process waste waters plus the runoff from a 25-year, 24-hour storm. 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 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 (e.g., to the air and to ground water).
- 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.
- Consider investments which may have been made to develop and implement CNMPs

B. NPDES Permit Regulations

EPA, with input from USDA, States, Tribes, other Federal Agencies, and the public, expects to revise the NPDES permit program regulations regarding CAFOs in coordination with revisions to the Effluent Guidelines for Feedlots.

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 advise EPA on the technical and implementation aspects related to any proposed revisions. Revision of the permitting regulations is expected to be closely coordinated with the revision of the Feedlots Effluent Limitation 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 monitoring and reporting requirements for permitted facilities.
- Clarifying requirements for effective management of manure and wastewater from CAFOs whether they are handled on-site or off-site.
- Clarifying whether and under what conditions AFOs may be subject to NPDES requirements.
- Explore alternative ways of defining CAFOs (e.g., facilities that have a man-made conveyance, regardless of size).
- Consider requirements for CAFOs to conduct self-certifications and 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.
- Who may designate and the criteria for designating certain AFOs as CAFOs.
- Protection of sensitive or highly valuable water bodies such as public water supplies, Outstanding National Water Resources, Sole Source Aquifers, wetlands, ground water recharge areas, zones of significant ground/surface water interaction, and other areas.
- Requiring CAFOs to have an NPDES permit even if they only discharge during a 25-year, 24-hour or larger storm event.
- Requiring individual permits for CAFOs in some situations.
- Appropriate public review of general permit conditions applicable to individual facilities, including public notice of facilities to be covered.
- Explore alternative approaches to ensuring that corporate entities support the efforts of individual CAFOs to comply with permits and develop and implement CNMPs.

C. TMDL Regulations

EPA expects to propose the TMDL implementation rule in 1999. EPA may consider clarifying its authority to designate AFOs as CAFOs in an NPDES-authorized State. EPA may consider using this authority in those situations where:

- EPA disapproves a State's TMDL implementation plan; and
- EPA determines that the AFOs in the TMDL implementation plan are causing or contributing to the impairment.

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:

A. CAFO Compliance Assurance Implementation Plan Revisions - EPA will revise its CAFO Compliance Assurance Implementation Plan as necessary to ensure that EPA and State compliance and enforcement priorities support implementation of this Strategy. EPA will continue to work with states to develop and implement CAFO permitting, compliance assistance and enforcement priorities consistent with this Strategy. However, EPA may take action for discharges without a permit or discharges in violation of a permit, and initiate emergency actions at any time against any AFO that presents an imminent or substantial endangerment.

B. Compliance Assistance - EPA will continue and expand compliance assistance efforts led by the National Agriculture 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.

C. 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. Under the current CAFO Compliance Assurance Implementation plan, EPA and States should identify the universe of CAFOs and inspect all CAFOs in priority areas (e.g., watersheds) by FY 2001, and ensure that all other CAFOs are inspected by FY 2003. EPA will evaluate the need to make any adjustments to these goals. 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.

D. Information Needs for the Regulatory Program – EPA will work with States to identify the information needed to manage and oversee the national regulatory program for CAFOs.

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, should coordinate in these areas.

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.

USDA and EPA intend to support education, technical assistance, and financial incentives for AFO owners and operators to modify existing operations, or to establish new operations, that adopt sustainable production systems and practices. In so doing, USDA and EPA intend to highlight AFO owners and operators with successful models of sustainable systems.

USDA and EPA also intend to support the research outlined in the National Commission on Small Farms Report (January 1998). For example the USDA-CSREES Sustainable Agricultural Research and Education (SARE) competitive grant program provides valuable management strategies and farming practices for small farms.

Desired Outcome

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

Actions

1. USDA-EPA AFO Information, Education, and Research Working Group

USDA and EPA will establish a National AFO Information, Education, and Research Working Group. Appropriate EPA offices and USDA agencies would provide support to the working group. The ARS, for example, has established national programs on "Manure and Byproduct Utilization" and "Integrated Farming Systems" which address research and technology issues identified in this Strategy including alternative sustainable animal production systems. USDA and EPA 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 EPA's National Agriculture Compliance Assistance Center. 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 below:

A. Coordinated Research Plan - 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. This process will result in a coordinated AFO research plan which 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 risk to human health due to the release of pathogens, hydrogen sulfide gas, ammonia gas, and particulates from AFOs, as well as the climate change effects of methane and NOx emissions from AFOs.
8. Assessment of the problem of air deposition of nutrients.
9. Assessment of the water quality and fish and wildlife impacts from AFOs including pathogens, hormones, antibiotics, and metals and the food safety 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 wet and dry manure management.

B. Coordinated Technology Transfer and Education Plan - USDA and EPA will develop a coordinated AFO technology transfer and education plan by December 1999. The plan will describe how to disseminate the results of AFO-related research.

C. Virtual Center - USDA and EPA will develop a Virtual Center by December 2000 with the goal of creating a single point of reference for both agencies, the individual producers, the livestock industry, and the general public. The Virtual Center will consist of a web-site to be maintained by personnel from both USDA and EPA where research results, analyses, comments and responses to the research, automated nutrient management and record keeping tools, and scholarly papers on the research project or related information would be available to all. The web-site would also contain relevant information on State and Federal approaches to management of AFOs and may include State and Federal statutes, regulations, policies, example permits, inspection forms, compliance assistance materials, design criteria, etc. To the extent possible, the site will link to sources of this information and will coordinate with other related AFO information dissemination efforts. With respect to research information, an ethic of confidentiality will be maintained on this web-site.

2. Sustainable Agriculture

USDA and EPA will support the policy recommendation of the President's Council on Sustainable Development Taskforce Report on Sustainable Agriculture to "Promote the research needed to support a sustainable U.S. agriculture".

3. Livestock Environmental Issues Curriculum Development and Implementation Project

The project will develop a nationally recognized, producer-oriented core curriculum addressing high profile livestock environmental issues. A nationwide team of project participants from 11 land grant universities will work closely with EPA and USDA to increase livestock producers' understanding of the principles of environmental management and to foster compliance with all environmental requirements that affect this sector. The project will develop materials and other tools to help producers use common-sense, cost-effective approaches to meeting these requirements. Livestock producers and information providers will be able to access these curriculum resources through multiple, readily accessible delivery methods.

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 sectors 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, through the results of the National Poultry Dialogue has endorsed a number of actions that parallel the goal of this Strategy and the cattle industry has a long record of promoting land stewardship. These are examples of industry-led initiatives that 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.

Desired Outcome

- The animal agriculture industry will take a leadership role 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.

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 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 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 States, Tribes, and AFO Industry groups to consider options for developing an awards program to promote innovative, sustainable and other 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 needed nutrient management practices, while maintaining a level playing field throughout the industry.

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 relationship of trust 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 Outcome

- 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, in cooperation with States, will identify ways to 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 evaluate the need to 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 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, percent of CAFOs in compliance) 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 work closely with the States to develop appropriate environmental outcome measures to measure our progress in implementing this Strategy.

USDA and EPA 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, States, Tribes, and other stakeholders to determine the level of success and to improve AFO-related programs.
- Provide appropriate flexibility for States and Tribes to achieve the national performance expectation.

Actions

Performance Measurement - USDA, EPA, States, Tribes, 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, determine how to effectively utilize information tools (e.g., Census of Agriculture, National Water Quality Inventory, Natural Resource Inventory), and identify a baseline against which to measure performance. The work group will seek input from SWCDs and other stakeholders and will develop a performance measurement approach for AFOs by January 2000.

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 manure and wastewater using watershed adjusted data from fertilizer sales, USGS/EPA nutrient loading analysis, Census of Agriculture, permit limits, and other estimates.

6.0Roles

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 role 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 setting 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/Tribal Government - State and Tribal governments often have the

responsibility for implementing water resource protection programs. Most States and Tribes will have a key role in developing comprehensive plans for ensuring that appropriate voluntary and regulatory programs are coordinated and implemented to achieve the national goal and performance expectation of this Strategy. For example, 43 States and the Virgin Islands are authorized to implement the current CWA provisions that affect CAFOs. States and Tribes also implement various nonpoint source control programs, including cost-share programs and, in cooperation with local governments, drinking water source protection programs. State Land Grant Universities are the primary mechanism to deliver agricultural research and extension programs. State, Tribal, 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 Tribal governments also help determine where water quality and public health protection must be enhanced beyond the minimum performance expectations established through Federal programs.

- Local Government - Local governments can provide incentives for AFO owners and operators to address water quality and public concerns and often deal with local issues such as siting and odor. SWCDs and States are key partners in implementing environmental and conservation programs
- 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 continue and be enhanced.
- 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 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.

(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)

(2)General Accounting Office. Animal Agriculture: Information on Waste Management and Water Quality Issues, June 1995.

(3)USDA - ERS. 1992 Farm Cost and Returns Survey.

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

(5)The 1997 Agricultural census data on the number and size of agricultural operations nationwide that confine animals was not available at the time of publication.

(6)General Accounting Office Animal Agriculture: Infomation on Waste Management and Water Quality issues, June 1995

(7)General Accounting Office Animal Agriculture: Infomation on Waste Management and Water Quality issues, June 1995

(8)General Accounting Office Animal Agriculture: Infomation on Waste Management and Water Quality issues, June 1995

(9)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, 589pp.; 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.

(10)While feed management can be an important tool for achieving a preferred balance of nutrient in manure, USDA and EPA do not intend to propose prescribing feed practices. Feed management is not a conservation practice in the NRCS FOTG.