

# A Compendium of State Approaches for Manure Management

## Background

Throughout history, people who raise livestock and poultry have used manure as a fertilizer, soil amendment, energy source, and even construction material. Today, farmers and ranchers manage tons of animal manure on 1.3 million farms and ranches in the United States. When manure is properly managed, stored, and utilized to maximize its value and minimize its pollution potential, the environment, farmers and ranchers benefit (see [Beneficial Uses of Manure and Environmental Protection](#)).

When excess nutrients, pathogens, organic matter and solids from manure discharge to surface waters they can cause excess algae growth and deplete the water of oxygen needed by fish and other aquatic life; they can also make the water unsafe for recreational activities and as a source of drinking water. Manure pollutants can also leach through the soil and enter the groundwater, making it unsafe for drinking.

The Clean Water Act [National Pollutant Discharge Elimination System \(NPDES\) Concentrated Animal Feeding Operation \(CAFO\) program](#) provides a federal foundation for regulating discharges from some animal feeding operations. However, the widest array of programs, policies and tools originate with state programs, and include: variations on the federal NPDES program; state regulatory programs and voluntary programs. This compendium focuses on elements of state programs, ranging from specialized tools and training to state-specific regulations and permitting.

## Compendium

This compendium provides examples of state programs for promoting good manure management at animal feeding operations. The examples are noteworthy because they show clear evidence of on-the-ground implementation and focus on meaningful environmental outcomes.

The write-ups for each of the manure management programs in the compendium include:

- An overview of the state program feature (e.g., state permit provision, program component, tool, or guidance relating to manure management)
- Excerpts of state permit or regulatory language, as relevant
- Information on which operations are covered under the state effort
- Background on state frameworks and resources that serve as the basis for the program feature
- Information on on-the-ground implementation, including the level of participation
- Results of implementation
- References to key state resources

EPA does not consider this list to be exhaustive and may add additional case studies to the compendium as they are identified and developed.

The inclusion of any particular state program feature for manure management should not be read as an EPA endorsement of the state program for AFOs as a whole. The compendium also should not be construed as a rating or ranking of any kind. In addition, this document does not impose any new legally binding requirements on EPA, states, or the regulated community. EPA has made every attempt to ensure the accuracy of the examples included in this document, and provided states with the opportunity to review and comment on the write-ups. If a conflict exists between this compendium and any statute, regulation, or permit, the statute, regulation or permit is the final authority.

## Permits and Regulatory Programs

Part A of the compendium provides examples of program features for manure management that have a regulatory basis, such as permit provisions and other regulatory program elements. The examples include program features such as manure transfer requirements, facility registration requirements, and nutrient management inspector qualifications. Some examples are components of the state's NPDES program, others are based on state-specific non-NPDES requirements. Each example is identifiable as such by the symbols shown at the right.



- California: Implementing TMDL Wasteload Allocations
- Michigan: Manure Transfer Requirements
- Minnesota: Feedlot Registration
- Nevada: CAFO Drainage Collection Requirements
- Oregon: Plan Review and Public Notice of Substantial Changes
- Virginia: Nutrient Management Inspector Qualifications

## Non-Regulatory Tools, Guidance, and Support

Part B includes examples of non-regulatory tools, guidance, or other program features related to manure management. These examples include program features such as manure relocation programs, manure spreading advisory tools, and farmer and rancher training.

- Delaware: Manure Relocation Program
- Delaware: Nutrient Management Planning Assistance
- Oregon: Manure Spreading Advisory Tool
- Oregon: Recordkeeping Calendar and Online Database
- South Dakota: Environmental Training Program for Livestock Producers

## **Integrated Approaches**

Part C of the compendium describes state regulatory features that integrate approaches across environmental media. These approaches address surface water quality impacts from manure management and environmental impacts in other areas such as air quality, groundwater, or emergency response. Although these program features are outside the scope of the CWA, they are included because they illustrate effective approaches to integrating environmental protection in a single regulatory tool, thereby simplifying requirements for farmers and ranchers.

- California: Lagoon Construction Standards
- California: Groundwater Protection
- Minnesota: Air Emissions Plan
- New Mexico: Groundwater Protection

## **Conclusion**

The purpose of this document is to share some transferable examples of state programs that are successful in promoting good manure management at animal feeding operations. The state examples that are included are implemented on the ground, and are focused on achieving environmental benefits. This is meant to be a living document which EPA intends to add additional case studies to in the future. Suggestions for additional case studies can be sent to [CAFO\\_Team@epa.gov](mailto:CAFO_Team@epa.gov).