Feedlot Financial Needs Report

for Feedlots with Less Than 300 Animal Units
to Comply with Applicable State Rules and Statutes by October 1, 2010

Minnesota Board of Water & Soil Resources

Minnesota Board of Water and Soil Resources
January 2008

Acknowledgements

This report was prepared by the Board of Water and Soil Resources in cooperation with the Minnesota Department of Agriculture, Minnesota Pollution Control Agency and USDA-Natural Resources Conservation Service. The primary author was Al Kean, Chief Engineer, Board of Water and Soil Resources (651-297-2907).

The spreadsheet methodologies and computations used in this report are similar to those used by the Minnesota Department of Agriculture for the report titled: Feedlot Financial Needs Assessment Report, Revised - 2004, dated February 1, 2004. Mr. Dwight Wilcox, Agricultural Development and Financial Assistance Division, Minnesota Department of Agriculture conducted the associated spreadsheet computations for this report.

The assistance provided by all who contributed to the preparation of this report is gratefully acknowledged.

Electronic Copy Availability

This report is available electronically at: http://www.bwsr.state.mn.us

Cost of Preparing Report

Estimated Labor Costs:	$9,500
Printing and Incidental Costs:	$200
Total Estimated Costs:	$9,700

Table of Contents

List of Tables

List of Figures

Summary and Analyses

Legislature Directive

In 2007, the Minnesota Legislature directed the Board of Water and Soil Resources (BWSR) to report on the financial needs to bring all feedlots in the state having less than 300 animal units into compliance with Pollution Control Agency rules by October 1, 2010, considering Minnesota Statutes, Section 116.07, Subd. 7, Para. (p), which limits enforcement unless 75% cost-share is available.

Background

The livestock industry is a very important component of Minnesota's economy. It provides billions of dollars in annual economic activity. Livestock manure is a valuable organic fertilizer and soil conditioner that provides both nutrients and organic matter for enhanced crop production, reduced soil erosion and improved soil quality. However, if not properly managed, runoff from feedlots, and from fields on which manure is applied, can contribute nitrogen, phosphorus and bacteria to surface and ground water causing water quality degradation. Minnesota has been a national leader in environmental protection related to feedlot runoff and manure management, including effective delivery systems for financial and technical assistance, as well as regulation. This involves broad cooperation of federal, state and local government units, livestock producers and producer groups, the University of Minnesota, private crop advisors, private engineers and others.

Key Findings

1) Owners of animal feedlots and/or manure storage areas for 50 or more animal units, or 10 or more animal units located in shoreland (within 300 feet from a stream or river, or 1,000 feet from a lake) are required by the state Feedlot Rules to register. Approximately 25,000 feedlots were required to be registered on January 1, 2007. Because the number of feedlots having less than 500 animal units continues to decline for all species, approximately 21,000 feedlots are estimated to be required to be registered on October 1, 2010.
2) Approximately 90% of the feedlots required to register have less than 300 animal units.
3) Approximately 5,800 (27%) of the feedlots required to be registered on October 1, 2010 are estimated to need environmental upgrades to comply with the Feedlot Rules, of which approximately 5,050 have less than 300 animal units (63% are cattle feedlots, 22% are dairy).
4) Feedlot runoff and manure storage environmental upgrades are primary needs for most feedlots that are not in compliance with the Feedlot Rules. Manure nutrient management plans are required by the Feedlot Rules for feedlots that require an Interim Permit (to correct a pollution problem) and for feedlots with 300 or more animal units that do not use a Commercial Animal Waste Technician or certified private manure applicator for land application of manure. Engineering and agronomy technical assistance is critical for implementation of effective and enduring feedlot environmental upgrades and nutrient management plans.
5) The estimated feedlot financial needs (in current $) associated with compliance with the Feedlot Rules for feedlots having less than 300 animal units are summarized in Table SA 1.

Table SA 1. Estimated Financial Needs for Feedlots with Less Than 300 Animal Units to Comply with the Feedlot Rules (current $)

a) *Feedlot runoff management and temporary manure storage upgrades* – (eligible for federal and/or state cost-share and low interest loans)	*$190 Million*
b) *Direct engineering assistance* – (provided by federal and local government staff via federal and state funding)	*$28 Million*
c) *Manure nutrient management incentives and technical assistance* – (eligible for federal program incentive payments, or federal / state / local direct technical assistance)	*$10 Million*
d) *Manure handling and application equipment* – (eligible for state program low interest loans)	*$160 Million*
TOTAL	*$388 Million*
75% of component a) + component b) + component c)	*$180 Million*

6) Although the total estimated feedlot financial needs for compliance with the Feedlot Rules remains high, progress toward full compliance statewide continues to be made through cooperative efforts of livestock producers, federal, state and local government units, the University of Minnesota, private engineers, private crop consultants and others. Since the current Feedlot Rules were adopted on October 23, 2000, federal and state programs and livestock producers have invested approximately $89 million in environmental upgrades of feedlots, manure nutrient management, pasture management and associated manure handling and application equipment (total average of about $13 million per year). Because the cost of compliance with the Feedlot Rules can be substantial, livestock producers with an existing pollution problem often seek grants, loans and technical assistance to help design and implement environmental upgrades. An estimated 900 - 1,300 feedlots were assisted with environmental upgrades during the period 2001 – 2007. This includes many partial upgrades in accordance with the Open Lot Agreement of the Feedlot Rules for open feedlots with less than 300 animal units. Feedlots with Open Lot Agreements are required to implement full environmental upgrades by October 1, 2010, to comply with the Feedlot Rules, subject to Minnesota Statutes, Section 116.07, Subd. 7, Para. (p).

7) The estimated current annual financial and technical assistance available through federal and state programs for environmental upgrades of feedlots (all sizes), nutrient management, pasture management and manure handling and application equipment are summarized below.

Table SA 2. Current Annual Financial and Technical Assistance for Feedlot, Nutrient Management and Pasture Management Environmental Upgrades (All feedlot sizes)

a) Cost-share for feedlot runoff management, manure storage and pasture management practices	*$ 6.2 Million/Yr.*
b) Direct engineering technical assistance	*$1.3 Million/Yr.*
c) Nutrient management incentive grants and technical assistance	*$4.4 Million/Yr.*
d) Loans for constructed improvements	*$2.1 Million/Yr.*
e) Loans for manure handling and application equipment	*$2 Million/Yr.*
TOTAL	*$16 Million/Yr.*

8) The estimated current number of feedlots of all sizes assisted into compliance with the Feedlot Rules on an annual basis by all programs is approximately 100, of which an estimated 50 are dairy feedlots, 35 are cattle feedlots and 15 are feedlots with other species. For feedlots with less than 300 animal units, the estimated current total assisted into compliance per year is 80, of which an estimated 40 are dairy feedlots, 25 are cattle feedlots and 10 are feedlots with other species. The information available about projects assisted by federal programs has become more limited in recent years by confidentiality policies of Farm Bill programs. Many feedlot environmental upgrade projects involve multiple funding types (grants, loans and cash) and sources (federal and state programs and livestock producers).

9) The federal Environmental Quality Incentives Program (EQIP) administered by the USDA Natural Resources Conservation Service (NRCS), is the largest separate source of grant and incentive funding for voluntary implementation of livestock related environmental upgrades, including feedlot runoff and manure storage, nutrient management and pasture management.

   a) The 1996 Farm Bill set the maximum feedlot size for EQIP eligibility at less than 1,000 animal units and raised the maximum cost-share grant amount from $50,000 per project to $100,000 per project. The 2002 Farm Bill raised the cap to $450,000 per project, removed the size limit and eliminated eligibility for partial upgrades. The NRCS in Minnesota currently has a limit of $250,000 per project for waste storage facilities and manure digesters. In 2001, it was estimated that 80% of EQIP financial assistance for feedlot environmental upgrades went to feedlots with less than 300 animal units. At the current time, it is estimated that approximately 50% of EQIP funding for feedlot environmental upgrades goes to feedlots with less than 300 animal units.

   b) In recent years, the EQIP cost-share rate was reduced from 75% to 50% and then converted to flat rates per conservation practice. The amount of federal technical assistance funding per project has also been limited to not-to-exceed rates per conservation practice (based on typical NRCS costs) for private Technical Service Providers and 50% of the not-to-exceed rates for technical assistance provided by state or local government units. The conservation practice rates and technical assistance rates for most feedlot runoff and manure storage practices are based on animal units. Due to these federal program constraints, state funded feedlot cost-share and technical assistance has become more critical for piggybacking with, and leveraging of, federal funding and livestock producer investments in feedlot environmental upgrades.

10) The state Feedlot Water Quality Management (FWQM) Cost-Share Program administered by the Board of Water and Soil Resources is a key state grant program for eligible feedlot runoff, manage storage and pasture management environmental upgrades.

   a) Funding was first appropriated for this program in 1999. Through fiscal year 2007, the funding level ranged from $1.5 to $2.1 million per year from the General Fund. For fiscal years 2008 and 2009, the $1.5 million per year in General Fund appropriations was eliminated and $1.5 million per year was designated for feedlot water quality cost-share in Clean Water Legacy Act appropriations, which are targeted to listed impaired waters.

   b) Program eligibility is limited to existing feedlots with a pollution problem.

   c) Cost-share is limited to 75% combined state and federal cost-share, up to $50,000 per project.

d) The maximum eligible feedlot size was less than 500 animal units until fiscal year 2007, when it was raised to less than 1,000 animal units. The current size limit is less than 300 animal units, in accordance with current appropriation language.

e) For fiscal years 2001 - 2007, approximately 85% of program cost-share funding went to feedlots with less than 300 animal units (annual range of 71% to 97%).

f) This program is administered through Soil and Water Conservation Districts, which work directly with livestock producers, other federal and state financial and technical assistance program administrators, and delegated county or MPCA regulators.

11) The Agricultural Best Management Practices (AgBMP) Loan Program, administered by the Minnesota Department of Agriculture in cooperation with local government units and private lenders, is a key loan program for feedlot runoff, manure storage, pasture management, and manure handling and application equipment. Loans are often sought by livestock producers for their share of cost-shared projects and for components of environmental upgrade projects that are not eligible for cost-share. Following are key program criteria.

a) Maximum loan amount is $100,000 per project.

b) Maximum term of loan is 10 years.

c) Maximum interest rate 3%.

d) Project must support the applicable Local Water Management Plan.

Analyses

1) Cattle and dairy feedlots make up the largest fractions of feedlots with less than 300 animal units estimated to need environmental upgrades to comply with the Feedlot Rules (63% and 22%, respectively).

2) ***Dairy Feedlots:*** The recent annual rate of closure of dairy operations with less than 300 animal units ranges from 6% for feedlots with 100-299 animal units to 9% for feedlots with 10-49 animal units.

a) If an ongoing annual closure rate of 7% is assumed for the estimated 1,100 dairy feedlots with less than 300 animal units required to register that do not comply with the Feedlot Rules, and the current estimate of 40 of these feedlots per year being assisted into compliance continues, it is estimated that all of the noncompliant dairy feedlots with less than 300 animal units would either be in compliance with the Feedlot Rules or closed in approximately 15 years.

b) For an assumed annual closure rate of 7% and a rate of assistance into full compliance of 70 dairy feedlots per year, approximately 10 years would be required to achieve full compliance for dairy feedlots with less than 300 animal units.

c) The estimated annual financial assistance needs in current $ for scenarios 2) a) and b) are indicated in Table SA 3., assuming 75% cost-share for feedlot runoff and manure storage practices.

Table SA 3. Rates, Time and Estimated Financial Needs for Feedlot Rules Compliance of Dairy Feedlots with Less Than 300 Animal Units

(1) Estimated Annual Rate of Closure of Dairy Feedlots with < 300 AU (%)	(2) Number of Dairy Feedlots with < 300 AU Assisted into Compliance per Year	(3) Estimated Years Until All Dairy Feedlots Comply	(4) 75% of Estimated Annual Costs for Feedlot Runoff and Manure Storage Practices	(5) Estimated Annual Need for Direct Engineering Assistance	(6) Estimated Annual Need for Nutrient Management Incentives and Technical Assistance	(7) Total Cost-Share and Technical Assistance Needs Sum of Columns (4) – (6)	(8) Estimated Annual Loan Need (structural practices, manure handling and application equipment)
7	40	15	$1.7 M	$0.3 M	$0.2 M	$2.2 M	$1.1 M
7	70	10	$2.9 M	$0.6 M	$0.4 M	$3.9 M	$3.1 M

3) ***Cattle Feedlots:*** The recent annual rate of closure of cattle feedlots with less than 300 animal units ranges from 4% for feedlots with 100-299 animal units to 1.5% for feedlots with 10-49 animal units. An estimated 3,200 cattle feedlots with less than 300 animal units do not comply with the Feedlot Rules.

   a) If an ongoing annual closure rate of 3% is assumed for cattle feedlots with less than 300 animal units that are not in compliance with the Feedlot Rules, and the current rate of assistance into full compliance remains constant at 25 feedlots per year, approximately 50 years would be required to achieve full compliance for cattle feedlots.

   b) For an ongoing closure rate of 3% for cattle feedlots with less than 300 animal units, approximately 270 of these noncompliant feedlots would need to be brought into compliance with the Feedlot Rules per year in order to achieve full compliance of these feedlots within 10 years.

   c) The estimated annual financial assistance needs in current $ for scenarios 3) a) and b) are indicated in Table SA 4, assuming 75% cost-share for feedlot runoff and manure storage practices.

Table SA 4. Rates, Time and Estimated Financial Needs for Feedlot Rules Compliance of Cattle Feedlots with Less Than 300 Animal Units

(1) Estimated Annual Rate of Closure of Cattle Feedlots with < 300 AU (%)	(2) Number of Cattle Feedlots with < 300 AU Assisted into Compliance per Year	(3) Estimated Years Until Fully Comply	(4) 75% of Estimated Annual Costs for Feedlot Runoff and Manure Storage Practices	(5) Estimated Annual Need for Direct Engineering Assistance Funding	(6) Estimated Annual Need for Nutrient Management Incentives and Technical Assistance	(7) Total Cost-Share and Technical Assistance Needs Sum of Columns (4) – (6)	(8) Estimated Annual Loan Need (Structural Practices, Manure Handling and Application Equipment)
3	25	50	$0.62 M	$0.12 M	$0.12 M	$0.8 M	$0.7 M
3	270	10	$6.7 M	$1.3 M	$1.4 M	$9.4 M	$7.3 M

4) In addition to the need for cost-share and loan funding, a challenging factor for the estimates presented in Analyses items 2) and 3) above is technical assistance. If the amount of cost-share and loan funds available for feedlot environmental upgrades was substantially increased, the availability of public and private technical assistance would be a more critical limiting factor than it is at this time. Since EQIP funding for livestock related conservation practices was substantially increased in recent years, the availability of qualified technical assistance has been a constraint for feedlot environmental upgrade projects. The current EQIP technical assistance funding limits discussed in Findings item 7) above are part of this challenge, necessitating more piggybacking of technical assistance funding sources. Although Minnesota has a number of private Technical Service Providers (TSPs) (USDA program certified) for feedlot engineering assistance, these individuals and firms are limited in number and tend to assist relatively larger projects with more potential for technical assistance funds. Therefore, technical assistance for small feedlots is expected to continue to be a limiting factor for the rate of feedlot environmental upgrades to comply with the Feedlot Rules.

Main Report

Legislative Directive

Following is the applicable directive of the 2007 Legislature to the Board of Water and Soil Resources (BWSR).

"By January 1, 2008, the board shall report to the senate and house of representatives environmental finance divisions on the financial needs to bring all feedlots in the state that are under 300 animal units into compliance with Pollution Control Agency rules by October 1, 2010, and comply with the requirements of Minnesota Statutes, section 116.07, subdivision 7, paragraph (p)."

Applicable State Rules and Statutes

Feedlot Rules

The Minnesota Pollution Control Agency (MPCA) rules referenced in the Legislative directive are for *Animal Feedlots, Chapter 7020*: (http://www.revisor.leg.state.mn.us/bin/getpub.php?pubtype=RULE_CHAP&year=current&chapter=7020), also referred to as the state Feedlot Rules.

Statutes Regarding Minnesota Pollution Control Agency Authorities

Minnesota Statutes, Chapter 116 Pollution Control Agency, Section 116.07 Powers and Duties., Subdivision 7. Counties; Processing of applications for animal lot permits.,

Paragraph (c):

For the purpose of administration of rules adopted under this subdivision, the commissioner and the agency may provide exceptions for cases where the owner of a feedlot has specific written plans to close the feedlot within five years. These exceptions include waiving requirements for major capital improvements.

Paragraph (p):

Unless the upgrade is needed to correct an immediate public health threat under section 145A.04, subdivision 8, or the facility is determined to be a concentrated animal feeding operation under Code of Federal Regulations, title 40, section 122.23, in effect on April 15, 2003, the agency may not require a feedlot operator:

(1) to spend more than $3,000 to upgrade an existing feedlot with less than 300 animal units unless cost-share money is available to the feedlot operator for 75 percent of the cost of the upgrade; or

(2) to spend more than $10,000 to upgrade an existing feedlot with between 300 and 500 animal units, unless cost-share money is available to the feedlot operator for 75 percent of the cost of the upgrade or $50,000, whichever is less.

State Water Quality Standards
Minnesota Rules, Chapter 7050,
Section 7050.0215 Requirements for Animal Feedlots., Subpart 2. Effluent limitations for a discharge.

A. Any person discharging pollutants to surface waters of the state from an animal feedlot or manure storage area who is not regulated by federal requirements under part 7050.0212, subpart 1, shall comply with the following limitations after allowance for pollutant removal by a treatment works:

5-day biochemical oxygen demand	25 milligrams per liter (arithmetic mean of all samples taken during any calendar month).

If the discharge is directly to or affects a lake or reservoir, the person discharging the pollutants shall comply with the nutrient control requirements of part 7050.0211, subpart 1.

B. The effluent limitations in item A. are not applicable whenever rainfall events, either chronic or catastrophic, cause an overflow from an animal feedlot or manure storage area designed, constructed, and operated:

(1) to meet the effluent limitations in item A. for rainfall events less than or equal to a 25-year, 24-hour rainfall event for that location; or

(2) to collect and contain the runoff from a 25-year, 24-hour rainfall event for that location.

Section 7050.211 Facility Standards.
Subpart 1a. Total phosphorus effluent limits. Where the discharge of effluent is directly to or affects a lake or reservoir, phosphorus removal to one milligram per liter shall be required. The limit must be a calendar month arithmetic mean unless the commissioner finds, after considering the criteria listed in items A and B, that a different averaging period is acceptable. In no case shall the one milligram per liter limit exceed a moving mean of 12 monthly values reported on a monthly basis, or a simple mean for a specified period, not to exceed 12 months. Calendar month effluent limits in effect on February 7, 2000, must remain in effect unless an assessment of the criteria listed in items A. and B. indicate a different averaging period is acceptable. A different averaging period is acceptable when:

A. the effects of the phosphorus loading from the facility on the receiving water or downstream water resources is generally not measurable; and

B. the treatment technologies being considered offer environmental, financial, or other benefits.

In addition, removal of nutrients from all wastes shall be provided to the fullest practicable extent wherever sources of nutrients are considered to be actually or potentially detrimental to preservation or enhancement of the designated water uses. Dischargers required to control nutrients by this subpart are subject to the variance provisions of part 7050.0190.

Brief Overview of the Feedlot Rules

The Feedlot Rules include four major sections:

- Registration program,
- Permit program,
- Delegated county program, and
- Technical standards regarding discharge, design, construction, operation and closure of feedlots, including manure storage areas and land application of manure.

Following is a brief overview of these rule requirements, as context for the definition of feedlot financial needs to comply with the Feedlot Rules. A more detailed overview of the Feedlot Rules is available at: (http://www.pca.state.mn.us/publications/wq-f1-20.pdf).

Registration Program

Owners of animal feedlots or manure storage areas for 50 or more animal units, or 10 or more animal units located in shoreland (within 300 feet from a stream or river, or within 1,000 feet from a lake) are required to register. The first deadline for registration was January 1, 2002. Feedlot registration must be updated at least once during each 4-year period after January 1, 2002. Feedlot owners register by filling out and submitting an MPCA registration form to a County Feedlot Officer in a delegated county, or to the MPCA, or through filling out and submitting a feedlot permit application, when a permit is required.

Permit Program

Although all feedlots are required to comply with state water quality standards and other technical provisions of the Feedlot Rules, most are not required to have an operating permit. Feedlot owners with fewer than 300 animal units are not required to have a permit for the construction of a new facility or expansion of an existing facility, if the facility does not have a pollution hazard and construction is in accordance with the technical standards of the Feedlot Rules. Feedlot permits are required as follows:

- **Construction Short-Form Permit** – required for feedlot construction activities at feedlots with 300 to less than 1,000 animal units that do not have a pollution hazard and are not defined as a Concentrated Animal Feeding Operation (CAFO).
- **Interim Permit** – required for feedlots identified as having a pollution hazard and for feedlots or manure storage areas having 300 or more animal units prior to applying manure or process wastewater on certain lands with high soil phosphorus test levels, on special protection areas with land slopes exceeding 6%, or in a drinking water supply management area.
- **National Pollutant Discharge Elimination System (NPDES) Permit**, or **State Disposal System (SDS) Permit** (operating permits) – required for all feedlots with 1,000 or more animal units, or that are defined as a Concentrated Animal Feeding Operation (CAFO).

Delegated County Feedlot Program

Delegation agreements between county boards and the MPCA allow counties to administer state feedlot program authorities and responsibilities for non-CAFO feedlots and manure storage areas with less than 1,000 animal units. The primary purpose is to enable local administration of the feedlot program. There are currently 54 counties in Minnesota with feedlot program delegation agreements (http://www.pca.state.mn.us/publications/wq-f1-01.pdf). Therefore, the feedlot program for the majority of feedlots in Minnesota with less than 300 animal units is administered

at the county level, in cooperation with the MPCA. Delegated counties have a designated County Feedlot Officer. Delegated county program responsibilities include feedlot registration, permitting, inspection and complaint resolution. Delegated counties also coordinate education and provide connection to financial and technical assistance providers. State funding for county feedlot program administration is provided by the MPCA through the Natural Resources Block Grant administered by the BWSR.

Technical Standards

The technical standards of the Feedlot Rules include requirements for planning, design, construction and operation of feedlots and manure storage areas, for process wastewaters, and for related manure handling and land application activities (manure management). These standards apply to owners of animal feedlots and manure storage areas, and any person involved with storing, transporting, disposing or utilizing animal manure or process wastewaters. The technical standards include an option for owners of animal feedlots capable of holding less than 300 animal units, and having open lots meeting certain eligibility requirements, to sign an Open Lot Agreement with the MPCA and implement required interim corrective measures by October 1, 2005 and fully comply with Feedlot Rule technical standards by October 1, 2010. These technical standards, together with applicable program policies and practice standards, govern the feedlot financial and technical assistance provided by federal and state environmental protection grant and loan programs.

Other Feedlot Financial Needs Assessment Reports

The Minnesota Department of Agriculture (MDA) previously prepared two reports regarding feedlot financial needs for compliance with the state Feedlot Rules by October 1, 2010. These reports were developed in cooperation with other federal, state and local government units involved in feedlot pollution abatement in Minnesota, for all livestock species (hogs; dairy; cattle; poultry; and sheep, horses and other) and feedlot sizes subject to the Feedlot Rules. MDA and BWSR recently coordinated with other government units to update the report again. Following are the MDA report titles and links.

Feedlot Financial Needs Assessment Report, February 1, 2001
(http://www.mda.state.mn.us/news/publications/animals/feed&feedlots/dmt/financialneedsassessment.pdf)

Feedlot Financial Needs Assessment Report, Revised-2004, February 1, 2004
(http://www.mda.state.mn.us/news/publications/animals/feed&feedlots/assessmentrevised.pdf)

Feedlot Financial Needs Assessment Report, Revised - 2008
(Link to electronic copy not available when this report was published.)

These Feedlot Financial Needs Assessment Reports are source documents for this report. The associated snapshots in time enabled several definitions of trends regarding numbers and sizes of feedlots, progress toward full compliance with the Feedlot Rules, and estimated financial and technical assistance needs for compliance of all sizes of feedlots, including feedlots with less than 300 animal units.

Sources of Applicable Information
The following sources of information were used for the MDA Feedlot Financial Needs Assessment Report, Revised - 2008 and this report:

1) 2007 Minnesota Agricultural Statistics Report – MDA and USDA National Agricultural Statistics Service (NASS) (includes data from 2002 - 2006)
   - Inventory of livestock in Minnesota by specie or type on January 1 of the applicable year.
   - Number of livestock operations in Minnesota by specie or type (any farm having one or more head of livestock on hand at any time during the year).
   - Estimated future change in numbers of feedlots, based on changes during recent years.
2) MPCA Feedlot Registration Data – available on the eLINK database administered by the BWSR
   - Distribution of feedlots by specie, size and location in Minnesota.
3) Ag BMP Loan Program – MDA
   - Annual local estimates of noncompliant feedlots by specie and size.
   - Feedlot pollution abatement project cost information.
4) Feedlot Water Quality Management (FWQM) Cost-Share Program data – BWSR
   - Numbers, costs and grants for cost-shared feedlot pollution abatement projects by specie and size.
5) Environmental Quality Incentives Program (EQIP) data – USDA Natural Resources Conservation Service (NRCS)
   - Numbers of practices and amount of federal cost-share and incentive payments for feedlot pollution abatement projects and comprehensive nutrient management plans.
6) Clean Water Partnership Grant and Loan Program data – MPCA
   - Approximate grant and loan amounts and feedlots assisted by these programs.
7) Section 319 Grant Program data – MPCA
   - Approximate grant and loan amounts and feedlots assisted by this program.

Numbers of Feedlots in Minnesota by Livestock Specie and Size
The 2001 Feedlot Financial Needs Assessment Report used 1997 U.S. Census of Agriculture data and the 2000 Minnesota Agricultural Statistics Report as the primary sources of data to define the number of feedlots in Minnesota by livestock specie and size. The MDA Dairy Farm Count data at the end of 1996 compared well to these primary sources of data.

The 2004 Feedlot Financial Needs Assessment Report used the MPCA Feedlot Registration Data from 5-19-03 as the primary source of information to define the number of feedlots in Minnesota by livestock specie and size. Feedlot data provided by local government units in their 2003 Ag BMP Loan Program applications, as well as the MDA Dairy Farm Count data for 2003, compared reasonably well to the 2003 Feedlot Registration Data.

For the 2008 Feedlot Financial Needs Assessment Report and this report, the 2007 Minnesota Agricultural Statistics Report was used to define the number of livestock and feedlot operations by specie in Minnesota on January 1, 2007. The MPCA Feedlot Registration Data for January 1,

2002 through November 15, 2007 was used to help distribute the total numbers of livestock and feedlots into size categories by specie.

Feedlot "enterprises" were used in the 2004 and 2008 Feedlot Financial Needs Assessment Reports and this report, because different livestock species typically require different types of facilities and individual noncompliant feedlot enterprises typically require different environmental upgrades. A feedlot "operation" can involve more than one feedlot "enterprise".

Table 1 shows the resulting estimate of the total number of feedlot enterprises in Minnesota by specie and size on January 1, 2007 that are required to register. This analysis identified approximately 6,600 feedlot enterprises with less than 10 animal units, and 5,200 feedlot enterprises with 10 - 49 animal units located outside of shoreland and other sensitive areas (total 11,800 feedlot enterprises) that are not required to register and are expected to have a low probability of noncompliance with the Feedlot Rules. A total of approximately 4,500 feedlot operations were identified as having multiple enterprises (i.e. different livestock species) with greater than 10 animal units in each enterprise.

Table 1. Estimated Numbers of Feedlot Enterprises Required to Register by Specie and Size on January 1, 2007

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU	TOTAL
	Number of Feedlot Enterprises						
Hogs	374	917	1,446	451	617	234	4,039
Dairy	1,250	1,694	2,299	183	152	23	5,601
Cattle	3,656	4,478	4,078	580	309	55	13,156
Poultry	38	64	263	109	172	115	761
Sheep, Horses, Other	676	196	148	21	12	4	1,057
TOTAL	5,994	7,349	8,234	1,344	1,262	431	24,614

Table 1 and the associated estimates in the 2001 and 2004 Feedlot Financial Needs Assessment Reports indicate that the vast majority (approximately 90%) of feedlots required to register in Minnesota have less than 300 animal units.

Figure 1 shows the locations and density of feedlots in Minnesota with less than 300 animal units, based on the MPCA 2007 Feedlot Registration Data on December 31, 2007. This includes small feedlots that are not required to register because the feedlot has <10 animal units within shoreland, or < 50 animal units outside shoreland. Figure 2 shows the locations of feedlots of all sizes, based on the same Feedlot Registration Data.

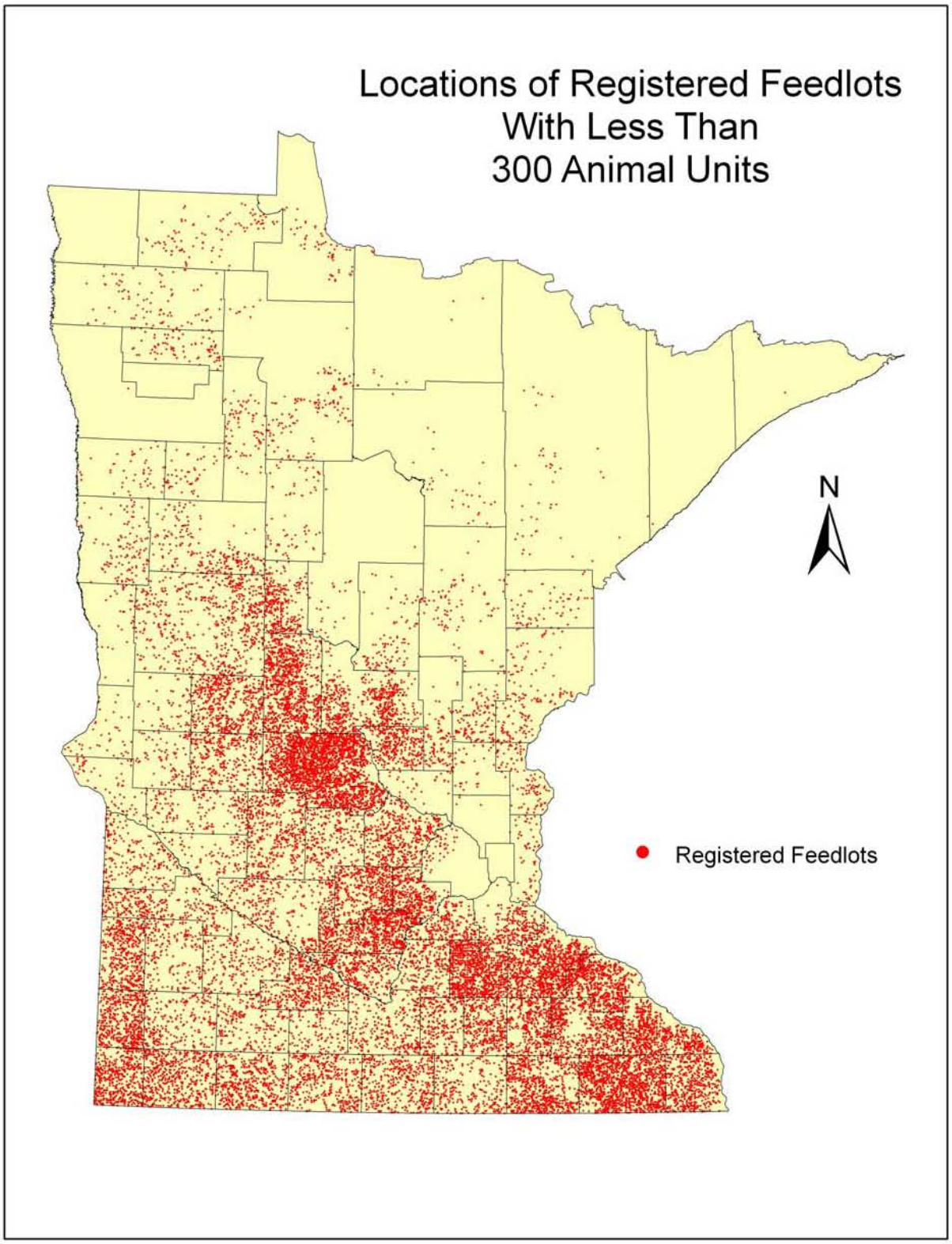

Figure 1. Locations of Registered Feedlots With Less Than 300 Animal Units

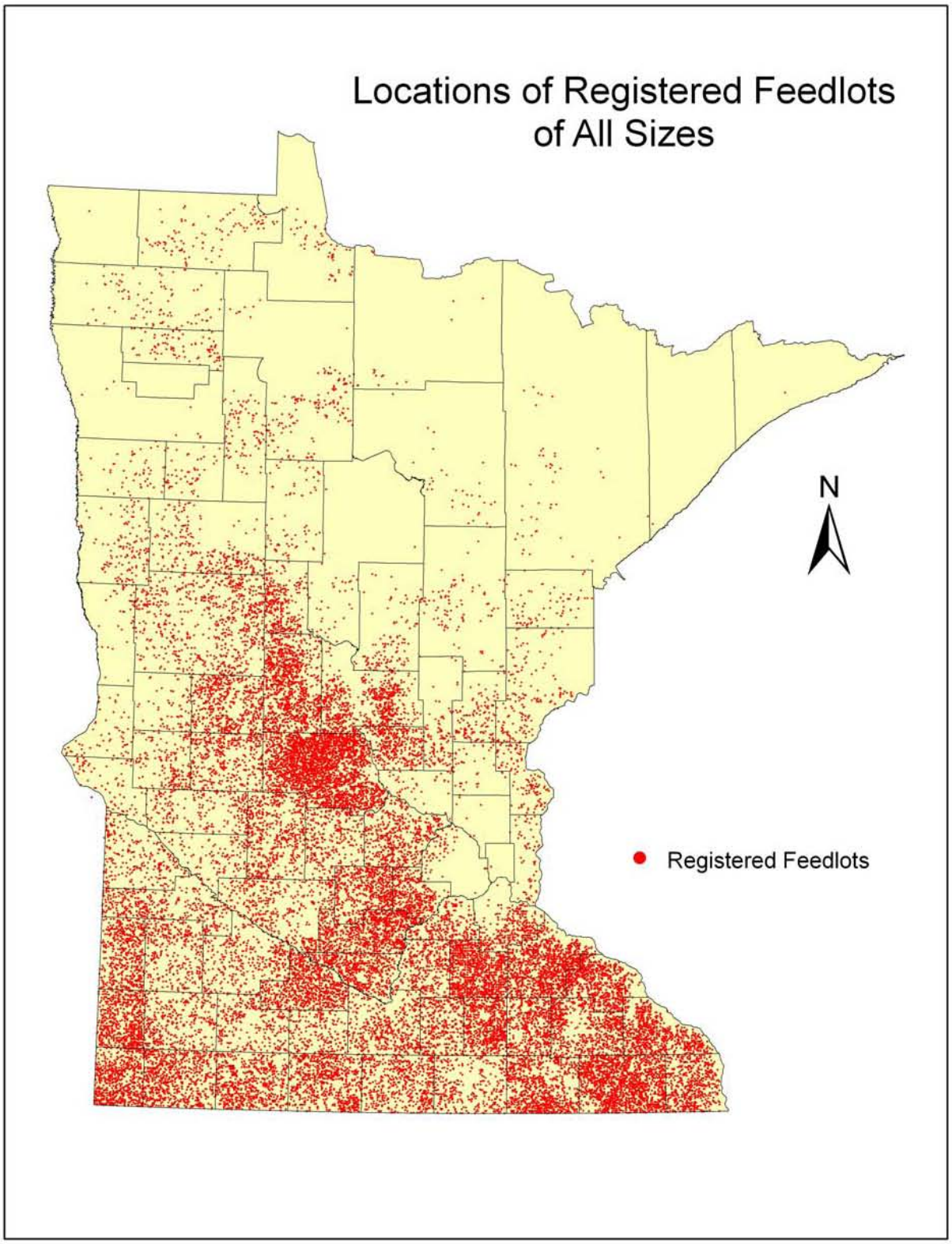

Figure 2. Locations of Registered Feedlots of All Sizes

Table 2 shows the estimated current distribution by specie of feedlots having less than 300 animal units and required to register. Note that cattle feedlots have been the largest fraction by specie since the 2001 report and have become a significantly larger fraction since 2004, because small feedlots for hogs and dairy have declined at a more rapid rate than for cattle (see Table 3 below).

Table 2. Distribution by Specie of Feedlot Enterprises Having < 300 Animal Units and Required to Register

Specie	Distribution of Feedlot Enterprises Having < 300 Animal Units and Required to Register		
	2001	2004	2008
Hogs	17%	18%	13%
Dairy	38%	31%	24%
Cattle	43%	45%	56%
Poultry	1%	1%	2%
Sheep, Horses and Other	1%	5%	5%
TOTALS	100%	100%	100%

Annual Rate of Change in Feedlot Numbers

Comparison of the Minnesota Agricultural Statistics data for January 1, 2003 and January 1, 2007 indicates that the total number of feedlots in Minnesota continues to decline for most size categories, with the exceptions of hog, dairy and cattle feedlots with 500 or more animal units, which are increasing in numbers. The total number of dairies decreased at a faster rate than the total head of milk cows during this period, indicating a consolidation of dairy operations. The total head of beef cattle increased during this period, while the total number of operations with beef cattle decreased, also indicating consolidation of operations. This is also true for hogs. Table 3 indicates the average annual rate of change in the number of feedlots by specie and size category between January 1, 2003 and January 1, 2007.

Table 3. Average Annual Percent Change in Feedlot Numbers by Specie and Size

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU
	Average Annual Percent Change in Feedlot Numbers					
Hogs	-8.3%	-5.0%	-5.6%	-1.2%	+3.6%	+3.6%
Dairy	-8.9%	-7.3%	-6.0%	-3.7%	+2.1%	+2.1%
Cattle	-1.5%	-3.5%	-4.2%	-4.2%	+0.8%	+6.3%
Poultry	-1.3%	-1.3%	-1.3%	-1.3%	-1.3%	-1.3%
Sheep, Horses, Other	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%

The Open Lot Agreement (OLA) provisions of the Feedlot Rules require full compliance with the technical standards by October 1, 2010 for participating feedlots having less than 300 animal units. Approximately 4,900 feedlot owners signed an Open Lot Agreement. Some of these small feedlots have been found to not have a pollution hazard and others have implemented, or are planning to implement, environmental upgrades to comply with the Feedlot Rules. A substantial number are undecided or waiting for financial and technical assistance. It's not clear how the October 1, 2010 deadline for full compliance of Open Lot Agreement feedlots might affect the rate of change in the number of small feedlots. The MPCA, delegated counties, Soil and Water Conservation Districts (SWCDs) and others continue to work with feedlot owners who signed an Open Lot Agreement to evaluate, plan for and bring these feedlots into compliance. These efforts make use of available financial and technical assistance from state and federal programs and consider the long-term plans of feedlot owners. Minnesota Statutes, Section 116.07, Paragraph (p) and Paragraph (c) (see descriptions on page 9) may also affect the decisions of feedlot owners with Open Lot Agreements regarding closure, or implementation of environmental upgrades, with or without expansion.

Estimated Number of Feedlot Enterprises on October 1, 2010

Assuming the average annual rates of change in feedlot numbers by specie and size shown in Table 3 are representative for the next several years, the estimated number of feedlot enterprises on October 1, 2010 can be computed, as shown in Table 4. These numbers are based on the information in Table 1 and Table 3, with an assumption that the numbers of feedlot enterprises on October 1, 2010 are reasonably represented by the numbers computed for January 1, 2011.

Table 4. Estimated Number of Feedlot Enterprises on October 1, 2010 Required to Register

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU	TOTAL
	Number of Feedlot Enterprises by Size and Species						
Hogs	264	747	1,150	430	710	269	3,570
Dairy	862	1,251	1,792	157	165	27	4,254
Cattle	3,445	3,879	3,437	489	319	70	11,639
Poultry	36	61	250	103	163	109	722
Sheep, Horses, Other	606	176	133	19	11	4	949
TOTAL	5,213	6,114	6,762	1,198	1,368	479	21,134

Percent of Noncompliant Feedlot Enterprises

The annual application for the Ag BMP Loan Program includes a survey of participating local government units (not feedlot regulators) regarding the number of feedlot enterprises in their jurisdiction and the number of noncompliant feedlot enterprises, by specie and size. Nearly all areas of the state having feedlots are included in the survey. Table 5 shows the statewide percent of feedlot enterprises that do not comply with the Feedlot Rules by specie and size, based on survey results for 2006. The significant percentages for feedlots with greater than 1,000 animal units (which require an NPDES or SDS permit) are based on extrapolation of data available from a few counties for this size category and may not accurately reflect statewide percentages.

Table 5. Percent of Feedlot Enterprises that do not Comply with the Feedlot Rules by Specie and Size

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU	Overall
	Noncompliant Feedlot Enterprises						
Hogs	17.3%	18.1%	17.3%	19.3%	18.2%	0.8%	17.0%
Dairy	20.3%	28.5%	31.4%	23.4%	17.9%	3.6%	28.3%
Cattle	22.8%	32.2%	33.6%	40.2%	53.9%	7.3%	30.6%
Poultry	77.8%	43.8%	16.7%	20.0%	17.4%	8.1%	21.4%
Sheep, Horses, Other	31.3%	28.2%	37.6%	18.8%	10.0%	0.0%	31.0%
All Species							26.7%

Table 6 compares the overall percent of feedlots required to register that were estimated to not comply with the Feedlot Rules in the 2001, 2004 and 2008 Feedlot Financial Needs Assessment Reports.

Table 6. Overall Percent of Feedlots Required to Register that do not Comply with the Feedlot Rules

2001 Feedlot Financial Needs Assessment Report	40%
2004 Feedlot Financial Needs Assessment Report	34%
2008 Feedlot Financial Needs Assessment Report	27%

Note that the estimated percent of noncompliant feedlots has decreased significantly during the past seven years. Expected reasons for this decrease include:

- feedlot inventories and inspections by delegated counties and Soil and Water Conservation Districts have better defined the number of compliant and noncompliant feedlots;
- many of the feedlots that have closed during this period likely did not comply with the Feedlot Rules;
- new and expanding feedlots (typically larger feedlots) must build in compliance with the Feedlot Rules; and
- during this period, many feedlots have implemented environmental upgrades to comply with the Feedlot Rules.

Numbers of Noncompliant Feedlot Enterprises

Table 7 indicates the estimated numbers of feedlot enterprises needing environmental upgrades to comply with the Feedlot Rules by October 1, 2010. These estimates are based on the information in Table 4 and Table 5.

Table 7. Estimated Number of Feedlot Enterprises Needing Environmental Upgrades to Comply with the Feedlot Rules by October 1, 2010

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU	TOTAL
	Number of Noncompliant Feedlot Enterprises						
Hogs	46	135	199	83	129	2	594
Dairy	175	356	563	37	30	1	1,162
Cattle	784	1,249	1,156	197	172	5	3,563
Poultry	28	27	42	21	28	9	155
Sheep, Horses, Other	190	50	50	4	1	0	295
TOTAL	1,223	1,817	2,010	342	360	17	5,769

Table 8 compares the estimated number of noncompliant feedlots defined in the 2001, 2004 and 2008 Feedlot Financial Needs Assessment Reports for feedlots with less than 300 animal units required to register and for all feedlots required to register.

Table 8. Estimated Number of Feedlots Required to Register that Need Environmental Upgrades to Comply with the Feedlot Rules

Feedlot Financial Needs Assessment Report	Noncompliant Feedlots < 300 Animal Units	Noncompliant Feedlots All Sizes
2001	6,000 Operations	7,100 Operations
2004	6,500 Enterprises	7,800 Enterprises
2008	5,050 Enterprises	5,800 Enterprises

Note that the 2001 Feedlot Financial Needs Assessment Report defined noncompliant feedlot "operations", while the 2004 and 2008 Feedlot Financial Needs Assessment Reports defined noncompliant feedlot "enterprises". The 2008 report identified approximately 4,500 feedlot operations that have more than one feedlot enterprise in the operation (typically different species or age classes).

Estimated Current Financial Needs for Compliance with the Feedlot Rules

Feedlot Runoff and Manure Storage

Table 9 indicates typical costs for feedlot runoff and manure storage environmental upgrades to comply with the Feedlot Rules. These costs were based on Feedlot Water Quality Management Cost-Shared projects in recent years, as well as reported costs for feedlot projects utilizing Ag BMP Loans in recent years and Environmental Quality Incentives Program (EQIP) project information.

Table 9. Typical Feedlot Runoff and Manure Storage Environmental Upgrade Costs

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU
	Typical Feedlot Environmental Upgrade Costs					
Hogs	$20,000	$35,000	$50,000	$70,000	$80,000	$90,000
Dairy	$30,000	$45,000	$70,000	$85,000	$100,000	$120,000
Cattle	$20,000	$30,000	$45,000	$65,000	$80,000	$95,000
Poultry	$24,000	$25,000	$26,000	$27,000	$29,000	$30,000
Sheep, Horses, Other	$20,000	$25,000	$27,000	$30,000	$35,000	$40,000

Taking the number of noncompliant feedlot enterprises in Table 7 times the average costs for feedlot environmental upgrades in Table 9 produces Table 10, the estimated feedlot financial needs for feedlot runoff management and manure storage to comply with the Feedlot Rules.

Table 10. Estimated Feedlot Financial Needs for Feedlot Runoff Management and Manure Storage to Comply with the Feedlot Rules (in $1,000s)

Specie	10-49 AU	50-99 AU	100-299 AU	300-499 AU	500-999 AU	>1000 AU	TOTAL
	Feedlot Financial Needs - Runoff and Manure Storage ($1,000s)						
Hogs	$900	$4,700	$10,000	$5,800	$10,300	$200	$31,900
Dairy	$5,300	$16,000	$39,400	$3,100	$3,000	$100	$66,900
Cattle	$15,700	$37,500	$52,000	$12,800	$13,800	$500	$132,300
Poultry	$700	$700	$1,100	$600	$810	$270	$4,180
Sheep, Horses, Other	$3,800	$1,300	$1,400	$100	$40	0	$6,640
TOTAL	$26,400	$60,200	$103,900	$22,400	$27,950	$1,070	$241,920
Total for < 300 AU			$190,500				

The estimates in Table 10 include some, but not all, associated technical assistance needs, because substantial technical assistance is provided directly by NRCS or SWCD staff and is not included in the typical costs indicated in Table 9.

Direct Engineering Assistance Financial Needs

Environmental upgrades for feedlot runoff, manure storage and related feedlot practices nearly always require engineering assistance (site investigation, alternatives analysis, design and construction inspection). The typical costs in Table 9 for these types of upgrades do not include all of the engineering assistance costs required for these environmental upgrades. A portion of the associated technical assistance in Minnesota has been provided directly by NRCS or SWCD staff and funded separately via the federal Environmental Quality Incentives Program, the Conservation Operations component of the NRCS budget or the state Nonpoint Engineering Assistance Program. The additional needs for direct engineering assistance are estimated at 15% of the total project costs. For feedlots with less than 300 animal units needing feedlot runoff and manure storage upgrades to comply with the Feedlot Rules, the estimated need for this

engineering assistance is $28 million. For all sizes of noncompliant feedlots, the estimated financial need for this engineering assistance is $36 million.

Manure Management Plan Financial Needs

The Feedlot Rules require feedlots with 100 to 999 animal units that are required to obtain an interim permit (i.e. have an identified pollution hazard) to develop, implement and annually update a manure management plan. Feedlots with 300 or more animal units that are not required to obtain an interim permit must also have a manure management plan, unless the manure is applied by a Commercial Animal Waste Technician (licensing administered by MDA) or a certified private manure applicator.

Assuming all noncompliant feedlots with 100 - 299 animal units (estimated 2,010 feedlots, as indicated in Table 7) will need to obtain an interim permit and develop a manure management plan, and that the average cost for initial plan development by a nutrient management specialist is $2,000 per plan, the associated cost for feedlots with less than 300 animal units is $4 million. Assuming the average cost to annually update these manure management plans is $1,000 and that financial assistance would be available for 3 years (EQIP limit), the associated cost for feedlots with less than 300 animal units is $6 million. (Total of $10 million for noncompliant feedlots with less than 300 animal units, or about $5,000 per feedlot.)

For feedlots with 300 - 999 animal units on October 1, 2010, approximately 700 are estimated to need environmental upgrades to comply with the Feedlot Rules (Table 7). All of these feedlots are expected to need to develop and implement a manure management plan to comply with the Feedlot Rules. It is estimated that 50% of the remaining feedlots in this size range (930 feedlots) also need a manure management plan to comply with the Feedlot Rules. Based on an assumption of an average 30% higher cost per feedlot in this size category than for feedlots with less than 300 animal units, the associated financial need for feedlots with 300 - 999 animal units is approximately $11 million.

Programs that currently provide incentive grants for nutrient management planning are the federal Environmental Quality Incentives Program (EQIP) and state Clean Water Legacy Act cost-share and incentive grants. EQIP requires that a Comprehensive Nutrient Management Plan (CNMP) be developed prior to cost-sharing of major feedlot runoff and manure storage practices. EQIP currently provides annual nutrient management incentive payments for a maximum of 250 acres for 3 years at $4.00/acre for basic nutrient management with manure and $8.00/acre for intensive nutrient management with manure (i.e. $3,000 - $6,000 per producer). In fiscal year 2007, Clean Water Legacy Act appropriations funded nutrient management technical assistance projects in southeast and south central Minnesota to promote adoption of enhanced nutrient management plans, with a focus on livestock producers.

The state Feedlot Water Quality Management Program does not cost-share for nutrient management planning, because the State Cost-Share Program is limited to enduring practices that have a minimum life of 10 years. However, nutrient management planning is an eligible cost for the state Ag BMP Loan Program. Technical assistance for nutrient management planning is available through private crop consultants and to a limited extent through local, state and federal government sources. Federal and state agencies and the University of Minnesota continue to help

train and certify private crop advisors and others to provide technical assistance for CNMPs and manure management plans that fulfill Feedlot Rule requirements.

Financial Needs for Manure Handling and Application Equipment Upgrades

Compliance with the Feedlot Rules can necessitate upgrades in manure handling and application equipment. The only manure handling and application equipment that is eligible for federal and state cost-share is manure transfer into a waste storage facility. However, essentially all manure handling and application equipment is eligible for the Ag BMP Loan Program and Clean Water Partnership Program loans. The annual Ag BMP Loan Program survey of local government participants generates local estimates of livestock producer needs for upgraded manure handling and application equipment. Based on the most recent estimates, a total of approximately 11,600 feedlots were identified as needing upgraded manure handling and application equipment. This includes 8,200 feedlots with less than 300 animal units required to register, 1,400 feedlots with 300 or more animal units required to register and 2,000 feedlots with 10-49 animal units that are not required to register (located outside of shoreland or other sensitive areas). Ag BMP Loan Program data regarding costs for manure handling and application equipment provide a cost basis for estimating associated feedlot financial needs. The 2008 Feedlot Financial Needs Assessment Report includes estimates of feedlot numbers by specie and size, typical costs and financial needs for this component of feedlot financial needs. Following are resulting estimates.

- $160 million for feedlots with less than 300 animal units required to register,
- $40 million for feedlots with 300 or more animal units, and
- $30 million for feedlots with 10-49 animal units not required to register,
- resulting in a total of $230 million for feedlots of all sizes.

Summary of Financial and Technical Assistance Needs for Feedlot Rule Compliance

Table 11 provides a summary of the estimated financial and technical assistance needs for Feedlot Rule compliance.

Table 11. Summary of Financial and Technical Assistance Needs for Feedlot Rule Compliance

Financial Need Category	Feedlots with < 300 AU ($ Millions)	Feedlots with 300 or more AU ($ Millions)	Total for all Sizes of Feedlots ($ Millions)
Feedlot Runoff and Manure Storage (Federal and/or state cost-share eligible)	$190 (75% = $140)	$50 (75% = $40)	$240 (75% = $180)
Direct Engineering Assistance (Eligible via state and federal programs for technical assistance)	$28	$8	$36
Manure Management Planning (Eligible for EQIP incentives and other technical assistance)	$10	$11	$21
Manure Handling and Application Equipment (Eligible for Ag BMP and CWP Loans)	$190	$40	$230
TOTALS	$418	$109	$527

Feedlot Environmental Upgrade Funding Since Adoption of the Current Feedlot Rules
Substantial investments by federal, state and local governments and livestock producers have been directed to compliance with the Feedlot Rules prior to and since the current rules became effective on October 23, 2000. Federal and state conservation and water quality protection programs have provided both grants and loans for environmental upgrades at existing noncompliant feedlots, including feedlot runoff management (e.g. clean water diversions, settling basins, filter strips), manure and runoff storage (e.g. earthen basins, steel tanks or stacking slabs) and equipment for improved manure handling and land application of manure. For state fiscal years 2001-2007, an average of 85% (annual range 71% to 97%) of the state Feedlot Water Quality Management Cost-Share Program funds went to feedlots with less than 300 animal units. Prior to 2002, when the feedlot size limit for EQIP funding was less than 500 animal units, approximately 80% of EQIP funding for feedlot upgrades went to feedlots with less than 300 animal units. The feedlot size limit for EQIP was raised to 1,000 animal units in 1997 and removed in 2003. It is estimated that approximately 50% of EQIP funding currently goes to feedlots with less than 300 animal units. However, EQIP funding for all sizes of feedlots has increased substantially since 2000.

Federal, state and local government units have provided direct technical assistance, or cost-share for private technical assistance, for feedlot runoff management and manure storage practices. Some federal, state and local programs have provided incentive funding and/or technical assistance for enhanced nutrient management planning and implementation. Livestock producers have also invested considerable funds for feedlot environmental upgrades through loans and cash to cost-share feedlot runoff and manure storage projects, to finance enhanced nutrient management planning and for manure application equipment or services.

Feedlot environmental upgrades can enhance livestock health and productivity, and improved manure nutrient management can reduce fertilizer costs. However, the associated costs for feedlot environmental upgrades are often substantial. For many feedlots, particularly small ones, the economic benefits of environmental upgrades do not outweigh the costs within planning timeframes. Therefore, financial and technical assistance are sought by the majority of eligible owners of feedlots that do not comply with the Feedlot Rules.

Through the various programs and associated partnerships, substantial numbers of feedlots have implemented environmental upgrades since the current Feedlot Rules were adopted. Table 12 summarizes the estimated total amounts invested by the various programs and partners for 2001 - 2007. Many feedlot pollution abatement projects involve a combination of funding sources (federal, state and livestock producer) and types (grants, loans and producer cash). The federal EQIP program substantially increased funding for livestock and manure management practices for environmental protection since the current Feedlot Rules were adopted. However, during recent years the maximum federal cost-share rate was reduced from 75% of project costs to approximately 50% and then to flat payment rates for individual conservation practices. This has generally necessitated more piggybacking of state and federal program funding to make 75% cost-share available for feedlot environmental upgrade projects in accordance with Minnesota Statutes, Section 116.07, Subdivision 7, Paragraph (p). In recent years, federal funding for technical assistance has also been reduced from 75% cost-share to not-to-exceed rates (based on average NRCS costs) for each practice, if provided by a private Technical Service Provider

(TSP), or 50% of the not-to-exceed rate, if provided by a local or state government unit through a Contribution Agreement with the NRCS. (The not-to-exceed rates for most feedlot runoff and manure storage practices are based on animal units.) This has also increased the need for piggybacking of technical assistance funding sources.

Table 12. Estimated Funding for Environmental Upgrades of Feedlots, Nutrient Management and Pasture Management 2001 - 2007 (All feedlot sizes)

Funding Source	Funding Type	Estimated Total Amount (Millions)
Environmental Quality Incentives Program (EQIP) – NRCS (feedlot runoff and manure storage)	Grants	$19
Environmental Quality Incentives Program (EQIP) – NRCS (nutrient management and/or pasture management)		$10
Feedlot Water Quality Management (FWQM) and Regular State Cost-Share – BWSR	Grants	$13
EPA Section 319 Program – MPCA	Grants	$2
Clean Water Partnership (CWP) – MPCA	Grants	$2
Clean Water Legacy Act (CWLA) – BWSR	Grants for Practices	$0.8
Ag BMP Loan Program – MDA (feedlot runoff, manure storage and pasture management practices)	Loans	$13
Ag BMP Loan Program – MDA (manure handling and application equipment)	Loans	$11
Clean Water Partnership (CWP) – MPCA	Loans	$3
Nonpoint Engineering Assistance (NPEA) Program – BWSR (Grants to 11 Technical Services Areas of SWCDs statewide)	Grants for Direct Technical Assistance	$4
EQIP and Conservation Operations Direct Technical Assistance – NRCS	Direct Technical Assistance	$6
Clean Water Legacy Act (CWLA) – BWSR	Grants for Technical Assistance	$0.7
Livestock Producers (in addition to loans above)	Cash and Other Loans	$4
TOTAL		**$89**
Average Annual		**$13**

Current Financial and Technical Assistance for Livestock Environmental Upgrades
As illustrated in Table 12, a number of federal and state programs provide financial and technical assistance for nonpoint pollution reduction, including feedlot, manure/nutrient management and pasture management environmental upgrades. These programs are administered by several different federal and state agencies, often in cooperation with Soil and Water Conservation Districts and counties. The types of assistance provided include cost-share and incentive grants, loans and direct technical assistance (engineering and manure/nutrient management planning).

Cost-Share and Incentive Grants
Following are summaries of the primary sources of cost-share and incentive grant funding for feedlot and other livestock operation environmental upgrades.

Environmental Quality Incentives Program (EQIP) – NRCS:
EQIP is a competitive federal program for a variety of conservation practices on private lands. In recent years, approximately 60% of EQIP funding has been targeted to environmental quality improvements associated with livestock, including feedlot runoff and manure storage improvements, nutrient management, grazing management, livestock exclusion from waters and related practices. EQIP funding in Minnesota was increased from about $5 million in FY 2001 to about $15 million in FY 2003 and to about $25 million in FY 2008. Following are key criteria for EQIP related to feedlots:

- Eligible feedlots must have an existing pollution problem;
- The 1996 Farm Bill established an eligible size limit of 1,000 animal units and the 2002 Farm Bill eliminated the size limit;
- A feedlot facility can expand up to 25% as part of an eligible feedlot environmental upgrade;
- Ranking criteria includes feedlot pollution potential based on MinnFARM / FLEval (feedlot evaluation models) rating, priority of receiving waters and distance to receiving waters;
- In recent years, practice payment rates have changed from 75% to 50% to the current flat rate per practice based on the number of animal units;
- Feedlot environmental upgrades that include certain structural practices, must have a Comprehensive Nutrient Management Plan (CNMP) prior to construction.
- Any contract with a total EQIP payment obligation greater than $150,000 must be signed by the NRCS Regional Assistant Chief and manure storage and digester projects have a limit of $250,000 in Minnesota.

These criteria have resulted in substantially more cost-share and incentive funding going to larger feedlots than in past years. Prior to 2001, approximately 80% of EQIP feedlot cost-share funds went to feedlots with less than 300 animal units. Since the 2002 Farm Bill, this percentage has decreased to an estimated 50%, but the total EQIP funding available has increased.

Feedlot Water Quality Management (FWQM) Cost-Share – BWSR:
This designated state feedlot cost-share has been available since 1999 and is administered through SWCDs and the State Cost-Share Program as competitive grants. The appropriation amount has ranged from $1.5 to $2.1 million per year and in recent years has been $1.5 million per year. For FY 2008, the source of funding was changed from the state General Fund to Clean Water Legacy Act funding and the maximum feedlot size limited to less than 300 animal units.

This Clean Water Legacy Act funding is also limited to watersheds of impaired waters of the state. Following are key eligibility and funding criteria:

- Feedlot must be at least 5 years old and have an existing pollution hazard;
- The feedlot size limit was under 500 animal units until FY 2007, when it was increased to less than 1,000 animal units and then reduced to less than 300 animal units for FY 2008 and FY 2009 by appropriation language;
- Limited to 75% combined state and federal cost-share up to $50,000 per project;
- For FY 2008 and FY 2009, eligible feedlots are limited to those in watersheds of listed impaired waters;
- Prioritization criteria includes: riparian location; participation in a recognized stewardship program (e.g. Minnesota Milk Producers Association Environmental Quality Assurance (EQA) Program, or the Environmental Assessment Program (EAP) sponsored by the National Pork Producers); and feedlot pollution potential based on MinnFARM / FLEval rating;

State Cost-Share Program – BWSR:

This program provides cost-share for a wide variety of erosion control and water quality improvement practices on private lands and is administered in partnership SWCDs. A limited amount of this cost-share is used for feedlot and pasture management environmental upgrades. Eligibility criteria includes:

- Feedlot must be at least 5 years old and have an existing pollution hazard;
- Feedlot size must be under 1,000 animal units; and
- Limited to 75% combined state and federal cost-share up to $50,000 per project.

Clean Water Partnership (CWP) Grant Program – MPCA:

This competitive program involves a Phase 1 diagnostic study and then Phase 2 implementation, which can involve cost-share grants for feedlot environmental upgrades. Participating local government units must match state implementation funding 1:1.

Section 319, Clean Water Act – MPCA:

Minnesota receives a certain amount of federal funding from EPA each year, a portion of which is competitively allocated to local and state entities for grants to implement the state Nonpoint Management Plan, including feedlot environmental upgrades. This funding requires 1:1 nonfederal match.

Clean Water Legacy Act (CWLA) – BWSR:

Funding to date includes statewide competitive cost-share and incentive payments for a wide variety of water quality restoration practices defined in TMDL Implementation Plans for impaired waters. Funding was first appropriated in fiscal year 2007.

Table 13 summarizes the recent annual amounts of funding provided by these grant programs for feedlot and other livestock operation environmental upgrades.

Table 13. Summary of Estimated Current Annual Federal and State Grant Funding for Feedlot and Livestock Environmental Upgrades (All feedlot sizes)

GRANT PROGRAMS Name of Program	FY 2008 Funding	Estimated Annual Amount for Feedlot and Manure Nutrient Mgmt. Environmental Upgrades	Approximate Number of Projects or Plans Assisted Annually	Feedlot Runoff & Manure Storage	Nutrient Mgmt. Incentives	Engineering &/or Nut. Mgmt. TA	Manure Application Equipment	Eligibility Requirements
Environmental Quality Incentives Program (EQIP) – NRCS (Feedlot runoff and manure storage) Federal funding source	$25,000,000 (All types of eligible conservation practices)	$4,000,000	50	X	X	X		Agricultural producers. Existing pollution problem and up to 25% feedlot expansion. No feedlot size limit. Flat rates per practice and not-to-exceed rates for technical assistance. Grants of $150,000 or more require Regional Assistant Chief approval.
Environmental Quality Incentives Program (EQIP) – NRCS (Nutrient Mgmt.) Federal funding source		$3,600,000	900		X	X		
Feedlot Water Quality Management Cost-Share – BWSR State funding source (CWLA funding source for FY 08-09)	$1,500,000	$1,500,000	40	X		X		Existing feedlot pollution problem. Max. size <300 AU. Max. grant up to 75% or $50,000 whichever is less. Located in impaired watershed. Statewide competitive selection.
State Cost-Share Program – BWSR State funding source	$1,700,000 (All types of eligible practices)	$300,000	10	X		X		Wide range of conservation practices eligible, including feedlot environmental upgrades. Max. size <1,000 AU. Max. grant up to 75% or $50,000 whichever is less.
Clean Water Partnership (CWP) Grant Program – MPCA State & Federal funding sources	$2,300,000 (Program)	$200,000	6	X	X	X		Feedlot must be within the watershed project area and cannot be under an enforcement action.
Section 319 Clean Water Act Nonpoint Source Grant Program – MPCA Federal funding source	$1,000,000 (Program)	$100,000	4	X	X	X		Competitive program for various types of nonpoint source projects.
Clean Water Legacy Act (CWLA) – BWSR (Restoration Cost-Share) State funding source	$550,000 (Program component)	$50,000	3	X		X		Wide range of conservation practices eligible, including feedlot environmental upgrades. Max. size <1,000 AU. Max. grant up to 75% or $50,000 whichever is less.
TOTALS	**$32,050,000**	**$9,750,000**						

Loans

Following are summaries of the primary sources of loan funding for feedlot and other livestock operation environmental upgrades.

Agricultural Best Management Practices (AgBMP) Loan Program – MDA:

This program provides low-interest loans to farmers, farm supply businesses and rural landowners for various water quality improvement practices, including feedlot and other livestock operation environmental upgrades. Practices can include feedlot runoff management and treatment practices, manure storage practices, pasture management practices, and manure handling and application equipment. This program is typically administered by a county environmental office or SWCD, in cooperation with the MDA. Following are key program funding criteria:

- Maximum loan amount is $100,000 per project.
- Maximum term of loan is 10 years.
- Maximum interest rate 3%
- Project supports Local Water Management Plan.

Clean Water Partnership (CWP) Loan Program – MPCA:

This competitive program awards loan funds to local government units that have completed a CWP Phase 1 watershed assessment study for nonpoint pollution reduction. A wide variety of nonpoint pollution reduction practices are eligible. For fiscal year 2008, an estimated 9% of allocated funds will assist feedlot and livestock environmental upgrade projects.

Ag Improvement Loan Program, Rural Finance Authority (RFA) – MDA: The Rural Finance Authority provides financial assistance to a variety of farms through loan participation programs. Feedlot runoff management and manure storage are eligible through the Agricultural Improvement Loan Program. However, this type of farm improvement has been a small component in the overall use of this program.

Manure Digester Loans – MDA: The MDA currently provides zero interest (0%) loans for installation of technically feasible manure digesters. There is a $250,000 maximum limit. All construction and equipment costs related to the digester are eligible. The applicant must meet standard loan underwriting requirements.

Table 14. Summary of Estimated Current Annual Federal and State Loan Funding for Feedlot and Livestock Environmental Upgrades (All feedlot sizes)

LOAN PROGRAMS Name of Program	FY 2008 Funding	Estimated Annual Amount for Feedlot and Livestock Environmental Upgrades	Approximate Number of Projects Assisted Annually	Feedlot Runoff & Manure Storage	Nutrient Mgmt. Tech. Assistance	Engineering Technical Assistance	Manure Application Equipment	Eligibility Requirements
AgBMP Loan Program – MDA (Constructed Improvements) Federal and State funding sources	$14,900,000	$1,600,000	60	X	X	X		Farmer, rural landowner, farm supplier; Project approved by LGU; Max. loan amount $100,000; Max. size < 1000 Animal Units
AgBMP Loan Program – MDA (Manure Handling and Application Equipment) Federal and State funding sources		$2,000,000	80		X		X	
Clean Water Partnership (CWP) Loan Program – MPCA Federal funding source	$3,600,000	$300,000	15	X	X	X		Feedlot must be in the watershed project area and cannot be under an enforcement action.
Ag Improvement Loan Program – MDA State funding source	As needed from bond sales	$50,000	2	X		X		Max. net worth: ~$250,000; 45% program loan participation; Max. loan amount: $125,000
Manure Digester Loan Program – MDA State funding	$250,000	$150,000	1	X		X		Technically feasible and credit worthy
TOTAL	$18,750,000	$4,100,000						

Direct Technical Assistance

The grant and loan programs outlined above can provide limited amounts of funding for engineering and nutrient management technical assistance. The NRCS provides supplemental direct technical assistance by engineering and agronomy staff for a wide variety of conservation practices, including feedlot environmental upgrades, manure / nutrient management and pasture management. This technical assistance is funded through the EQIP and Conservation Operations budgets of the NRCS. The state also provides funding for direct engineering assistance through Nonpoint Engineering Assistance Program grants to 11 Technical Services Areas of SWCDs for shared engineers and technicians. Table 15 summarizes estimated current annual amounts of funding from these sources that is utilized for feedlot, manure / nutrient management and pasture management technical assistance.

Table 15. Summary of Estimated Current Annual Feedlot, Livestock and Nutrient Management Direct Technical Assistance (All feedlot sizes)

DIRECT TECHNICAL ASSISTANCE Name of Program	FY 2008 Funding	Estimated Annual Amount for Feedlot and Livestock Environmental Upgrades	Approximate Number of Projects or Plans Assisted Annually	Feedlot Runoff & Manure Storage	Nutrient Mgmt. Tech. Assistance	Engineering Technical Assistance	Manure Application Equipment	Eligibility Requirements
Nonpoint Engineering Assistance (NPEA) – BWSR State funding source	$1,060,000	$500,000	50		X	X		State and/or federal conservation project cooperator. Implemented via SWCDs and their joint powers boards.
NRCS Engineering and Agronomy Technical Assistance Federal funding sources	$4,000,000	$1,600,000	50 feedlot projects 400 new plans, 700 plan updates		X	X		Agricultural producer and federal feedlot and/or nutrient management project cooperator.
Clean Water Legacy Act (CWLA) – BWSR (Technical Assistance) State funding source	$800,000	$200,000	100 new nutrient mgmt. plans		X	X		State and/or federal water quality restoration or protection project cooperator.
TOTALS	**$5,860,000**	**$2,300,000**						

Table 16 summarizes the total estimated annual amount of financial and technical assistance currently available for feedlot, nutrient management and pasture management environmental upgrades for all sizes of feedlots

Table 16. Current Annual Financial and Technical Assistance for Feedlot, Nutrient Management and Pasture Management Environmental Upgrades (All feedlot sizes)

Type of Financial or Technical Assistance	Estimated Annual Amount
Cost-share for feedlot runoff management, manure storage and pasture management practices	*$ 6.2 Million*
Direct engineering assistance	*$1.3 Million*
Nutrient management incentive grants and technical assistance	*$4.4 Million*
Loans for constructed improvements	*$2.1 Million*
Loans for manure handling and application equipment	*$2 Million*
TOTAL	*$16 Million*