MINNESOTA OFFICE OF THE LEGISLATIVE AUDITOR

Animal Feedlot Regulation

SUMMARY

This report examines the environmental regulation of animal feedlots.

During the 1990s, Minnesota has experienced a significant growth in the number of large animal feedlots, particularly swine facilities. There has also been an increasing tendency for owners of large feedlots to live offsite. Neighbors of these facilities have become increasingly concerned about the potential environmental impacts of animal feedlots on the air they breathe, the water they drink, and the lakes and streams they use for recreational purposes. Concerns have also been raised about the economic impact of large feedlots on existing producers.

As a result of the growing controversy over feedlots, the 1998 Legislature authorized the preparation of a generic environmental impact statement (GEIS) by the Environmental Quality Board. The GEIS will examine the long-term effects of the livestock industry on Minnesota's environment and economy. Because the GEIS is expected to take at least two years to complete, the Legislative Audit Commission directed our office to conduct a shorter and more focused study of animal feedlots. Our evaluation focuses on the adequacy of the environmental regulation of feedlots by the Minnesota Pollution Control Agency (MPCA) and the counties that have chosen to participate in the feedlot regulation program. In particular, our evaluation addresses the following issues:

- **Does MPCA review feedlot permit applications in a thorough and timely manner? Does MPCA conduct appropriate inspections of feedlots prior to issuing permits and during construction?**

- **Do MPCA and counties provide adequate oversight of feedlots on an ongoing basis, including taking appropriate actions to ensure that feedlots, when closed, are not pollution hazards?**

- **Does MPCA adequately analyze pollution risks for large feedlots that require preparation of an environmental assessment worksheet (EAW)?**

- **Does MPCA adequately respond to complaints about feedlot pollution and adequately enforce existing laws, rules, and permit conditions?**

- **What are the strengths and weaknesses of county feedlot programs? Does MPCA provide sufficient oversight of county feedlot programs?**

- **What are the deficiencies in MPCA's current administrative rules regulating feedlots and will MPCA's proposed rules adequately address the problems?**

- **Do MPCA and the counties have adequate resources to operate feedlot regulatory programs? If additional resources became available, where should they be targeted?**

In conducting this study, we interviewed MPCA management and staff, county regulatory staff, other state and local agency staff, livestock producers, environmental groups, concerned citizens, and other state and national experts. We reviewed MPCA permit, enforcement, and environmental review files in detail. We surveyed county regulatory officials and personally visited with some of them. We also reviewed existing reports and literature on feedlot pollution and regulation and examined information on the regulatory activities of other states. Finally, we visited feedlots in rural Minnesota to see firsthand the steps being taken to address water and air pollution concerns.

Overall, we found that MPCA's feedlot program has several strengths, including the design standards applied to new or expanded feedlots, the monitoring of water quality at certain large feedlots, and the relatively new monitoring of air quality. However, the program also has numerous weaknesses. These weaknesses include a lack of timeliness in reviewing and approving permit applications, insufficient review of some permit applications, limited follow-up on expired interim permits, insufficient resources devoted to visiting sites prior to permit approval or during construction, insufficient oversight of feedlots once they are in operation except in response to complaints, poor tracking of staff responses to citizen complaints, a weak but improving enforcement program, little or no meaningful oversight of delegated county feedlot programs, and the failure to update rules since the late 1970s.

BACKGROUND

Minnesota is among the top five states in turkey, hog, and milk production.

The livestock industry is a significant component of the state's agricultural economy. Livestock and related products such as milk and eggs bring in almost as much cash revenue as crop production in Minnesota. In 1997, cash receipts from the livestock industry totaled $4.1 billion, with the dairy sector accounting for 30 percent of cash revenue. Other large components of the industry include hogs (29 percent), cattle and calves (24 percent), and poultry and eggs (15 percent). Turkeys dominate the poultry and egg sector, accounting for more than 60 percent of poultry and egg cash receipts.

Minnesota ranks high nationally in a number of livestock categories. Minnesota is the second highest among the 50 states in turkey production after North Carolina. Minnesota trails only Iowa and North Carolina in the number of hogs and pigs. In terms of the number of milk cows and milk production, Minnesota ranks fifth among the 50 states. Minnesota is also third in cheese production, fifth in butter production, fifth in ice cream production, and ninth in egg production.

MPCA is the principal agency responsible for regulating animal feedlots in Minnesota. A feedlot is any lot, building, or combination of lots and buildings in which animals are confined and manure may accumulate. State officials do not know exactly how many feedlots there are in Minnesota. In 1997, MPCA estimated that Minnesota had about 45,000 farms with animal feedlots, but there are probably fewer feedlots today.

The main purpose of feedlot regulation is to protect Minnesota citizens from pollution caused by animal manure. Manure is a valuable resource that can provide beneficial nutrients to the soil and thus help in the production of crops. However—if improperly stored, transported, or disposed—manure may pollute lakes and streams or drinking water sources. Manure can also produce unpleasant and annoying odors and emissions, possibly affecting the health of nearby residents. In addition, emissions from manure may contribute to acid rain and greenhouse gas effects.

Both MPCA and some counties regulate feedlots.

MPCA's regulation of feedlots takes many forms. The agency requires any feedlot owner with 50 or more animal units to apply for a feedlot permit if a new feedlot is proposed, an existing feedlot is expanded or its operation is changed, or the ownership of a feedlot is changed.[1] MPCA is also responsible for adopting rules on feedlots, conducting environmental reviews of large feedlots, overseeing compliance with feedlot rules and permit conditions, investigating complaints about feedlots, and taking enforcement action against feedlot owners who violate state pollution laws, agency rules, or permit conditions. Funding for feedlot regulation by MPCA for the 1998-99 biennium was $3.2 million. The base level of staffing for feedlot regulation is 24 full-time equivalent positions, which includes 15 staff in MPCA's St. Paul office, 5 staff in regional offices around the state, and 4 vacant positions. This base level does not include MPCA managers or environmental review staff.

Minnesota law allows MPCA to delegate some of its feedlot regulation responsibilities to counties. To become a delegated county, the county board must pass a resolution stating that it assumes responsibility for processing permit applications, accompanied by a statement describing permitting procedures. It must also receive written approval from MPCA and appoint a county feedlot officer who is responsible for distributing feedlot permit application forms, helping farmers complete the applications, inspecting feedlots to ensure that they comply with agency rules and local feedlot ordinances, and maintaining feedlot permit records. In 1998, 47 counties had delegation agreements with MPCA. Counties received $2.1 million in state aid for feedlot regulation in the 1998-99 biennium.

1 Within shoreland areas, a permit is required under similar circumstances for feedlots with more than ten animal units. An "animal unit" is a measure that attempts to rate animals based on the volume and nutrient content of the manure they produce. For example, a mature dairy cow is considered to be 1.4 animal units, a slaughter steer or heifer is 1.0 animal unit, a hog over 55 pounds is 0.4 animal units, a hog under 55 pounds is 0.05 animal units, a turkey is 0.018 animal units, and a chicken is 0.01 animal units.

A delegated county does not issue all of the permits for feedlots within its county boundaries. Delegated counties are responsible for issuing permits for feedlots with less than 300 animal units, provided that all potential pollution hazards at these feedlots have been corrected, and for feedlots between 300 and 1,000 animal units that do not have a potential pollution hazard. The county must forward all other feedlot permit applications to MPCA.

PERMITTING

Most of the permits MPCA issues are either "interim permits" or "certificates of compliance." An interim permit is issued for new construction or for a feedlot that poses a potential pollution hazard to the environment. An interim permit expires after ten months and should be replaced with a certificate of compliance once construction has been completed satisfactorily or corrective action has been taken to eliminate the pollution hazard. A certificate of compliance has no expiration date and indicates that a feedlot meets agency standards. MPCA also issues National Pollution Discharge Elimination System (NPDES) permits to certain large feedlots (over 1,000 animal units) that have the potential to discharge to waters of the state. Roughly 16,000 feedlots in the state have state or county feedlot permits, and about 23 of these are NPDES permits. Currently, MPCA charges permit fees only for NPDES permits.

Current MPCA design standards for manure storage structures appear adequate.

Before MPCA issues permits, the agency usually reviews plans and specifications for all proposed manure storage structures to ensure that the structures are designed in a manner that will not degrade ground or surface water quality. In general, we found that:

- **MPCA has adequate design standards for structures that store manure.**

For example, MPCA's design standards for earthen basins tend to be more stringent than those in other states. Additionally, MPCA has guidelines for the construction of concrete pits that help to minimize the chance that these structures will leak or collapse. MPCA is monitoring about a dozen earthen basins that have been constructed since the agency toughened its standards in 1993 to gather information on the long-term adequacy of these basins. MPCA is also considering alternative ways of addressing concerns about potential leakage from unlined earthen basins installed before the standards were changed.

Plans and specifications for proposed manure storage systems are just one piece of information submitted with a feedlot permit application. Applicants must also provide information on proposed construction, site location, and manure management. Based on a random sample of permits we reviewed, we found that:

- **MPCA staff review permit applications and document their review in an inconsistent manner.**

For example, we found that some certificates of compliance were issued without MPCA receiving the necessary documentation required in the permits. Sometimes important documents had not been received such as a consulting engineer's certification that construction occurred in accordance with design specifications and permit requirements. We also found that often no written record of required karst reviews were on file for feedlots built in southeastern Minnesota's geologically sensitive karst region.

One particular area of concern is manure management plans. Current MPCA rules require feedlot permit applicants to submit a manure management plan that describes manure handling and application techniques and acreage available for manure application. MPCA uses this information to ensure that there are enough acres to spread the manure and that the method of spreading manure is appropriate. However, we found that:

- **Manure management information currently required by MPCA is inadequate.**

Manure management plans do not normally require a nutrient analysis of the manure generated or soil tests of the land on which manure will be applied. Manure nutrient analysis is essential to precise manure management since there can be wide variability in the nutrient value of manure. Without nutrient analysis, manure could be overapplied and could negatively affect the quality of ground or surface water. Soil analysis of phosphorus is particularly useful in certain environmentally sensitive locations to avoid excess application of phosphorus and potential negative impacts on surface water.

We also found that MPCA does not always verify the acreage information provided by the feedlot owner on the number of acres available for land application of manure. For example, we found discrepancies in some files between the number of acres the feedlot owner noted as available for land application of manure and the number available according to aerial photographs. The discrepancies sometimes were not noted in the permit files by MPCA staff.

MPCA needs to focus more attention on inspecting proposed feedlot sites and construction work.

Site inspections prior to construction are useful to verify information on the permit application and to evaluate the site's potential for pollution. For example, it is useful to inspect the site to gain a better understanding of the geological conditions and the presence of environmentally sensitive areas such as wells and sinkholes. Inspections during and after construction are useful to ensure that facilities, such as underground concrete pits, are constructed according to design specifications. We found that:

- **MPCA permitting staff do not normally conduct a site visit when they review a permit application or when a facility is being constructed.**

Eighteen percent of the permit files we reviewed contained evidence that MPCA conducted a site visit. MPCA staff told us that the agency has not normally conducted a site visit when reviewing a permit application. In the past, they have felt that their limited resources could be used more effectively to review construction plans, topographic maps, aerial photographs of the site, manure management plans, and information provided by the permit applicant to determine

whether the proposed feedlot poses a potential for environmental harm. If the permitting staff have concerns about the site, they may visit the site or ask someone from the regional office to visit the site. In lieu of site visits during and after construction, MPCA has sometimes relied on certification by a feedlot owner's consulting engineer that structures were built according to the specifications on file with the agency. However, these certifications have not been required or enforced on all permits.

We also found that MPCA does not regularly track how long it takes to issue an interim permit or certificate of compliance. Based on our review, MPCA took a median of 113 days to issue an interim permit and 61 days to issue a certificate of compliance. Although there are many reasons for delays in feedlot permit issuance, such as local opposition to the feedlot or incomplete application information, we believe that:

MPCA has had problems issuing permits in a timely manner and following up on expired permits.

- **The main cause of delay in issuing permits was the backlog of permits at MPCA.**

Our sample of permit applications suggests that it takes about one to two months between the time MPCA receives a complete application and the time an MPCA engineer begins to review the application.

MPCA typically issues interim permits for ten months, after which they expire. Once an applicant completes construction and provides verification to MPCA that the interim permit conditions have been satisfactorily met, MPCA can convert the interim permit to a certificate of compliance. We found that:

- **MPCA does not adequately follow up on expired interim permits.**

MPCA has several file cabinets full of interim permits, many of which have expired. Our sample of interim permits revealed that more than two-thirds had expired at some point. Nearly half had expired and to date had not been converted to certificates of compliance.

Overall, we found that because its staff is concentrated in St. Paul, MPCA has focused too many of its permitting efforts on reviewing engineering plans. Even though the agency has made efforts in recent years to inspect more facilities, we do not think that MPCA devotes sufficient attention to visiting feedlot sites prior to permit approval as well as during and after construction. Counties with the resources to do inspections have told us that field visits help ensure that the site is suitable for locating a feedlot and that manure storage facilities are constructed according to specifications. MPCA management also has told us that they would like to shift some of their emphasis from document reviews in St. Paul to more inspections of construction work. We recommend that:

- **MPCA should conduct more site visits prior to issuing feedlot permits, particularly for feedlots in environmentally sensitive areas.**

- **MPCA should conduct more site visits of feedlots during and after construction work, particularly when the feedlot is in an environmentally sensitive location or the construction involves contractors or engineers that MPCA is unfamiliar with or has had problems with on previous feedlot projects.**

- **MPCA should strive to provide a thorough review of all permit applications and ensure that required documents are filed with the agency in a timely manner.**

- **MPCA should develop a tracking system to make sure that feedlot owners follow through on permit requirements and should notify feedlot owners with expired interim permits and consider appropriate actions.**

- **MPCA should track the timeliness of its performance in issuing feedlot permits and strive to reduce its permitting backlog and the time producers wait for their applications to be reviewed.**

ENVIRONMENTAL REVIEW

Another important function performed by MPCA and sometimes by counties is the environmental review of certain proposed feedlots. According to rules established by the Minnesota Environmental Quality Board (EQB), an environmental assessment worksheet (EAW) must be prepared for any proposed new total confinement feedlot with a capacity of 2,000 or more animal units or an expansion of an existing total confinement feedlot resulting in an increase in capacity of 2,000 or more animal units. For partial confinement facilities, an increase in capacity of 1,000 or more animal units requires an EAW.

In the last year, MPCA has improved its environmental review of feedlots, although it has had problems dealing with an increased workload.

An EAW may also be prepared for a smaller project if the governmental unit responsible for permitting the facility decides that the project, because of its nature or location, may have the potential for significant environmental effects. The responsible governmental unit, which may be either MPCA or a county, may make this decision based on its own knowledge or upon evidence presented to it in a petition signed by at least 25 citizens.

During calendar year 1998, MPCA experienced a dramatic increase in its environmental review workload. The number of environmental assessment worksheets assigned to MPCA grew from an annual average of 10 for the period 1995-97 to 22 in 1998. There has also been an increase in the number of citizen petitions for EAWs assigned to MPCA. As of the middle of October, the number of petitions had grown from an annual average of 8 in 1996 and 1997 to 12 in 1998. The result of the dramatic growth in MPCA's environmental review workload has been an increase in the time it takes MPCA to complete a routine EAW, from about three to four months to five to nine months. MPCA's ability to promptly respond to citizen petitions has also been affected.

We reviewed a sample of EAWs done by MPCA and a number of citizen petitions decided by MPCA. Overall, we think that:

- **MPCA has improved its environmental review of feedlot projects.**

This improvement has largely occurred in the last year as MPCA has become more knowledgeable about hydrogen sulfide and ammonia emissions from feedlots. As a result, the agency has been able to more effectively respond to citizen concerns about odors.

Public input has been an important factor in the environmental review process.

In general, we think that the environmental review process has been useful in providing needed citizen input into MPCA's permitting and regulatory practices. Environmental review has resulted in MPCA imposing special permit conditions on particular feedlots when citizen input or other information has demonstrated the environmental need for such conditions. The process has also helped bring about changes in how MPCA handles permits for other facilities not undergoing environmental review.

There has been some dissatisfaction with EQB's "connected action rule" that requires multi-site feedlot projects to undergo a mandatory EAW if their combined increase in animal units exceeds 2,000 for total confinement projects or 1,000 for partial confinement projects. The rule may cause two "connected" sites to undergo an environmental review even though the sites are far enough apart that their environmental impacts are not cumulative. In response to such concerns, the 1998 Legislature directed the EQB to reconsider its connected action rule as it pertains to feedlots and to propose changes in the rule if appropriate. The EQB has drafted a proposed rule change that would eliminate the connected action provision for feedlots but instead lower the increase in capacity triggering a mandatory EAW for a total confinement facility from 2,000 to 1,000 animal units. The proposal would also require a mandatory EAW for new or expanding feedlots of any size in certain environmentally sensitive areas.

Increasing the number of feedlots undergoing environmental review may not be the highest priority.

We are concerned that the proposed rule could increase MPCA's environmental review workload. MPCA had difficulties coping with an increased workload in 1998 and had estimated that the EQB rule change would increase the number of EAWs by 10 to 15 per year. The proposed rule change could require MPCA to shift more resources to environmental review activities unless market conditions cause fewer large feedlot expansions to be proposed or the livestock industry downscales expansion plans to under 1,000 animal units to avoid mandatory EAWs. While we are supportive of the environmental review process, we are also aware of the many other needed improvements in feedlot regulation such as increased site visits, more timely enforcement actions, and increased review of manure management practices. We think that these improvements, if implemented, have the potential to affect more feedlots than environmental review is likely to affect and thus should be given higher priority than increasing the number of EAWs conducted by MPCA. We recommend that:

- **The Legislature should review the need for, and the potential cost of, the Environmental Quality Board's proposed rule on the environmental review of feedlots.**

OVERSIGHT

Feedlot regulation should not focus entirely on the issuance of permits. There is a need for ongoing oversight of permitted facilities and scrutiny of unpermitted feedlots as well. A detailed feedlot inventory can help identify facilities needing permits as well as facilities with previously unknown pollution problems. In addition, a regulatory agency should periodically inspect all permitted facilities on an ongoing basis to ensure that facilities are being operated in accordance with the permits and that pollution problems are not occurring. It is also important for a regulatory agency to ensure that appropriate steps are taken to protect the environment from water pollution when a feedlot closes and is no longer in operation.

There are weaknesses in the oversight of permitted feedlots.

We found that there are significant deficiencies in MPCA's oversight of feedlots on an ongoing basis. For example:

- **There is no statewide inventory of feedlots.**

Only a limited number of counties have done detailed feedlot inventories enabling them to identify where pollution problems exist. MPCA does not attempt to identify feedlots needing permits that have failed to apply for and obtain them. In addition, due to staffing constraints:

- **MPCA does not conduct periodic inspections of feedlots once they are in operation.**

A facility is likely to be inspected only if it is the subject of a complaint or enforcement action. We also found that:

- **MPCA has no way to track when feedlots are closed and has insufficient staff resources to check on whether closed feedlots are cleaned up in a timely manner.**

MPCA has not kept adequate records of water quality complaints.

As part of an effective regulatory program, MPCA must ensure that its rules and regulations are followed by feedlot owners. Because it does not do routine inspections of feedlots, MPCA relies primarily on the public to inform the agency when a producer violates feedlot rules or engages in practices that endanger the environment. When it receives a complaint that a producer may have violated environmental laws, feedlot rules, or permit requirements, MPCA generally investigates the complaint. If it finds that the complaint is valid and a pollution hazard exists, MPCA considers taking steps to ensure that the feedlot owner corrects the problem and minimizes the threat of pollution. We found that:

- **MPCA does not adequately keep records of water quality complaints relating to feedlots, so we were unable to systematically analyze the agency's timeliness and thoroughness of complaint investigations.**

MPCA has improved its enforcement efforts but still has problems completing enforcement cases in a timely manner.

In some cases, MPCA also pursues sanctions against violators. Enforcement is important both to correct the immediate environmental threat and to deter the violator and other feedlot owners from committing future violations. MPCA has several enforcement tools at its disposal, including a notice of violation, an administrative order, an administrative penalty order, a stipulated settlement, a civil court action, and criminal prosecution. We found that:

- **MPCA has taken several significant enforcement actions that have resulted in penalizing feedlot owners and correcting conditions and practices that posed a threat to water quality.**

However,

- **MPCA takes a long time to complete enforcement actions, and some uncooperative feedlot owners have been able to avoid enforcement for several years.**

For the most part, MPCA relies on its regional staff to pursue enforcement action when warranted. We found that some regional staff are more aggressive in pursuing enforcement actions while others generally choose not to pursue enforcement. At least one regional office has not been undertaking enforcement efforts involving feedlots. As a result, enforcement caseloads are uneven and those staff with large caseloads have trouble keeping up, resulting in delays. We found other reasons for delays, including the reluctance of some county attorneys to file criminal charges and the reluctance of MPCA to take formal court action when feedlot owners fail to comply with their orders.

In response to a governor's budget proposal resulting from growing concerns about air pollutants emitted from feedlots, the 1997 Legislature required MPCA to develop a protocol for measuring hydrogen sulfide levels, monitor feedlots with suspected odor problems, and take appropriate actions to bring feedlots into compliance with hydrogen sulfide standards. Overall, we think that:

- **MPCA has developed a good initial program to respond to citizen complaints about feedlot odors.**

MPCA has done a good job monitoring hydrogen sulfide emissions, but research has not yet established how emissions can best be controlled.

As of September 1998, MPCA staff had monitored 82 feedlots and found 26 to have potential violations of the standard for hydrogen sulfide. MPCA is working with those facilities identified as having potential violations to identify corrective or preventive measures that will reduce hydrogen sulfide emissions and perhaps odor complaints as well. In contrast to its handling of water pollution complaints, MPCA has done a good job of documenting complaints about feedlot odors and air emissions over the last year. MPCA has also responded appropriately to complaints by monitoring air emissions in a generally timely manner. However:

- **MPCA's air quality monitoring and compliance program for feedlots will face a number of challenges as it attempts to develop a policy on what mitigation steps various types of feedlots need to follow.**

The basic challenge that MPCA faces is that research into feedlot emissions and odor control does not yet have the answers to many of the relevant questions, such as how well technologies will work under various conditions or how long particular remedies will last. Because of these and other uncertainties, MPCA must be careful not to order excessively costly remedies if less costly remedies are available. MPCA also needs to make sure that it prescribes remedies that address the true source of odors and emissions. Additional research efforts by MPCA and others are needed to achieve these goals.

To address the shortcomings in the oversight of existing feedlots, we recommend that:

- **The Legislature should carefully consider the need for additional county feedlot inventories along with the budget request it will receive for the Generic Environmental Impact Statement on Animal Agriculture.**

- **MPCA should require its staff to record all complaints received about feedlots and briefly document how each complaint was resolved.**

- **MPCA should require regular status reports from investigators to ensure that progress is being made on water quality enforcement cases.**

- **MPCA should assign more staff to water quality enforcement activities in order to reduce the backlog and speed up resolution of cases.**

- **MPCA should ensure that regional offices are consistent in their willingness to investigate potential water quality violations.**

COUNTY FEEDLOT PROGRAMS

Some counties have excellent regulatory programs, while others have inadequate programs.

MPCA's feedlot program depends on delegated counties to issue feedlot permits, oversee feedlot operations, and minimize environmental pollution from feedlots. Ideally, a good county feedlot program should have an inventory of feedlots in the county, know which feedlots pose environmental problems, and have a plan to address the pollution problems. County officials should also thoroughly review new and expanded feedlot permit applications and ensure that feedlots are constructed in accordance with MPCA rules and guidelines, local zoning ordinances, and sound engineering practices. We found that county programs vary considerably in the degree to which they are funded and have the desired regulatory practices in place. Counties also vary in the type and extent of environmental risks that result from their geographical and geological features. Minnesota has programs in some counties that are less than adequate and has programs in other counties that are exemplary and more advanced than MPCA's own regulatory efforts.

In particular, we found that:

- **Counties vary considerably in the amount of resources they devote to feedlot regulation. Only part of this variation is due to county differences in the number of feedlots.**

County feedlot budgets in 1998 ranged from $3,540 to $125,000. The number of full-time equivalent staff devoted to feedlot regulation in delegated counties ranged from 0 to 3. Sixteen counties reported that less than 0.5 FTE staff worked on feedlot regulation. Some of this variation is expected due to differences in the number of feedlots. However, there is also considerable variation among counties that have similar numbers of feedlots. We also found that:

- **Counties vary considerably in the level of feedlot inventory they have completed.**

There are three levels of feedlot inventories. A Level 1 inventory is the most basic, and indicates all sites where livestock are present. A Level 2 inventory identifies sites where a potential for pollution exists, and a Level 3 inventory identifies sites where an actual pollution hazard exists. Based on our survey of county feedlot officers and other information we received from MPCA, we estimate that about 51 of the state's 87 counties have completed or are working on a feedlot inventory. Thirteen counties have completed or are working on a Level 3 inventory, 28 have completed or are working on a Level 2 inventory, and 10 counties have completed or are working on a Level 1 inventory. We estimate that statewide, about 36 counties (including 6 delegated counties) do not have a feedlot inventory completed or in progress.

We also found that:

- **There are wide differences among delegated counties in the extent to which they visit proposed new feedlots, existing feedlots, or abandoned feedlots.**

Most delegated counties visit all proposed feedlots before construction of new facilities begins, but only one-third of the counties visit all feedlots during or after construction to ensure the facilities are built according to design specifications and are environmentally sound. Additionally, few counties do routine inspections of existing feedlots to ensure that they are operating in accordance with permit requirements and feedlot rules, and few counties visit abandoned feedlots to ensure that they are closed properly.

Better MPCA oversight of county programs is needed.

Although MPCA delegates authority to counties with feedlot programs, we found that:

- **MPCA has provided little oversight of county feedlot programs, although it has recently made efforts to require delegated counties to meet some minimal requirements as a condition of remaining in the feedlot program.**

Unless a county requests assistance, MPCA does little to check on the thoroughness of county site inspections and does not verify the information that counties submit on their county feedlot officer reports. In particular, MPCA does not appear to check whether counties are matching the state aid they receive with cash or in-kind contributions from non-state sources. Oversight is important because county programs can be affected by local politics, which may sometimes cause programs to lack necessary environmental safeguards.

There is also a need for improved training and technical assistance for counties. County feedlot officers expressed concern to us about the adequacy of training provided by MPCA. Only 30 percent of those responding to our survey of county feedlot officers thought that MPCA training was "good" or "very good." Some counties want better technical training, while others want more on-the-job training. We recommend that:

- **MPCA should provide more effective oversight of county feedlot programs. The agency should establish expectations and standards for county feedlot programs and ensure that counties are meeting their financial obligations set forth in law.**

- **MPCA should attempt to ensure that county feedlot officers receive adequate training.**

Despite our concerns about some county programs and MPCA's lack of oversight, we think that:

- **MPCA should encourage, and the Legislature should support, the participation of additional counties in the feedlot program.**

With adequate technical support and proper oversight, counties can provide a valuable regulatory service. County staff will always be located closer to regulated facilities than MPCA and thus be able to more efficiently visit the sites of proposed feedlots, check on construction, and follow up on complaints. Increasing the number of counties in the feedlot program would also help to reduce MPCA's permitting workload and enable the agency to improve its performance in a number of areas. Adding more counties would also leverage county funds and make it less costly to the state to improve feedlot regulation than appropriating funds for more MPCA staff.

MPCA needs to develop more cost-effective ways of reducing water pollution problems at small feedlots.

We have also noticed that, even in counties with good inventories and adequate regulatory budgets, it can often be difficult to get owners of small existing feedlots to correct potential water pollution problems. Owners of small facilities lack adequate resources and may not be able to borrow money at a reasonable interest rate. In addition, public funds available for assisting feedlot owners are limited. As a result, some counties do not even bring these feedlots to MPCA's attention, since MPCA will generally not accept anything less than a perfect solution in which the pollution potential is reduced to zero. An alternative approach in some cases might be for MPCA to accept a less than perfect, but more cost-effective, solution to pollution abatement. Such an approach could be more effective in reducing manure runoff from open lot feedlots than the current policy and should

probably be applied only to existing feedlots under 300 animal units due to restrictions in federal rules. Consequently, we recommend that:

- **The Legislature, MPCA, and other policy makers should consider alternative ways of reducing water pollution emanating from small existing feedlots, including the need for additional public funds as well as more cost-effective ways of achieving a reduction in water pollution.**

FEEDLOT RULES

One of the key reasons why there have been problems with animal feedlot regulation is that:

- **MPCA's administrative rules for feedlots are outdated.**

MPCA has been working to draft new feedlot rules since early 1995.

There are numerous problems with the existing rules, which have not been revised since 1978. They do not adequately address land application of manure, manure stockpiling, manure storage structures, and the proper closure of feedlots. In addition, the rules do not sufficiently spell out the responsibilities of counties in the delegated county program. The existing rules do not establish the responsibilities of consultant engineers working for feedlot owners in inspecting construction to make certain that work is done according to design specifications and MPCA permit requirements. The rules also fail to address feedlot siting issues such as whether new construction or expansion should be allowed in environmentally sensitive areas.

As a result of these and other concerns, MPCA began working on new feedlot rules in early 1995. Due to concerns that MPCA has taken too long to develop new rules, the 1998 Legislature set a deadline of June 1, 1999 for MPCA to adopt new rules. However:

- **It is unlikely that MPCA will meet the legislative deadline for completing the rulemaking process.**

As of mid-January 1999, MPCA staff had still not finished drafting rule changes. While the bulk of the drafting work is done, staff have yet to coordinate how some of sections of the draft affect others and they are still seeking comments from outside parties on the draft. The agency may be able to issue proposed rules by sometime in March 1999, but is unlikely to complete the rulemaking process until late in the year. Despite the length of time it will have taken to draft and adopt rule changes, we think that:

- **MPCA has put much thought and effort into the drafting process, has aggressively sought outside comments, and appears to be pursuing changes that will address many of the concerns we have about existing rules.**

MPCA is giving thought to streamlining the feedlot permit system.

We are hesitant to provide a more specific endorsement of MPCA's work at this time, since the drafts have changed over time and may continue to change. Furthermore, we do not know exactly what rules MPCA will propose and take to hearings. We have some concerns about the direction the drafts have taken. For example, we are concerned that some of the proposed permit requirements may create a large workload for MPCA which its resources are inadequate to handle. We are also concerned that proposed permitting changes, such as the elimination of interim permits and the use of "short form" permits, may not allow MPCA to assure that a site is appropriate for use as a feedlot or that the design complies with agency requirements. The agency believes these changes will help streamline the permitting system so that some resources can be moved from permit application and design review to inspection of construction work and existing feedlot operations. In addition, streamlining may help MPCA provide a more timely response to permit applicants. MPCA management thinks, and we tend to agree, that resources should be shifted from an area of relative strength to areas of weakness in its feedlot program. Our concern is that the draft rules, as well as MPCA's regulatory and staffing practices, need to be designed so as to minimize the environmental risks of reducing MPCA's review of permit applications. We think that there are still some important issues to be worked out.

MPCA RESOURCES

We think that there are two fundamental resource problems adversely affecting MPCA's performance:

- **Until recently, MPCA has not had enough staff working on feedlot regulation, and**

- **Too few of MPCA's feedlot staff are located outside of St. Paul.**

MPCA has not been able to perform its regulatory functions in a timely and thorough manner. The agency has been unable to keep up with its workload in permitting, enforcement, and environmental review. In addition, MPCA has not been sufficiently thorough in its review of permits and lacks an adequate presence in the field for the purpose of reviewing proposed feedlot sites, inspecting construction work, and overseeing existing feedlots. Furthermore, the agency needs to provide much better oversight of counties in the feedlot program. Finally, MPCA has not done a good job of tracking its own performance in responding to complaints or processing permits.

MPCA needs to have more of its feedlot staff in outstate offices.

Only about 25 percent of existing feedlot staff are located outside of St. Paul. MPCA's centralization makes it difficult for the agency to visit the sites of proposed new feedlots or feedlot expansions, inspect construction work, periodically visit existing facilities, and carry out its complaint handling and enforcement responsibilities. While MPCA has five to six feedlot staff located in regional offices around the state, attempting to manage these staff from St. Paul has been a cumbersome and inefficient arrangement.

In September 1998, MPCA management attempted to address some of these staffing and management concerns by assigning a new manager to bring focus and direction to feedlot regulation and temporarily reassigning eight full-time equivalent staff to feedlot related activities during fiscal year 1999. The agency also plans to use four vacant positions in the feedlot program to increase its staffing in MPCA offices outside of St. Paul.

In general, we think that:

- **MPCA can implement some of the recommendations in this report by using existing resources.**

MPCA can make some improvements using existing resources.

Even without increased resources, MPCA could do a better job of reviewing permit applications, tracking interim permits, tracking complaint investigations, managing enforcement cases, and providing a basic level of county program oversight. MPCA could also develop cost-effective strategies for addressing water pollution problems at small feedlots as well as policies for addressing hydrogen sulfide and other air emission problems.

In addition, the four vacant positions in the feedlot program could be used to increase the number of site visits conducted prior to issuing permits, during feedlot construction, or after feedlots are in operation. The positions could also be used for complaint investigations, enforcement activities, or technical assistance to feedlot owners who need to correct potential pollution hazards. MPCA could also consider moving some of its existing feedlot staff to decentralized locations to assist in these functions.

However, we also think that:

- **MPCA and counties will probably need additional resources to address certain problems in feedlot regulation.**

Other improvements may require additional resources.

The temporary reassignment of staff to feedlot activities is scheduled to end on June 30, 1999. Without additional resources, MPCA is unlikely to be able to monitor whether feedlots have been properly closed. The agency will also be unable to conduct periodic inspections of operating feedlots except by either selecting a small sample of feedlots for compliance reviews or focusing on a few watersheds each year. We also think that progress in identifying and addressing long-standing pollution problems with small feedlots could be slow. Some delegated counties have made progress in addressing pollution problems and MPCA may be able to develop strategies to help other delegated counties make progress. However, MPCA does not have the resources to effectively run programs in non-delegated counties or to take over programs in delegated counties that are not doing an adequate job.

A better way of addressing some of these concerns would be for MPCA to encourage more counties to participate in the feedlot program, have clear expectations about their responsibilities, and provide greater technical support and oversight. However, that approach will require additional funding for county programs, including more funding for detailed county feedlot inventories, technical assistance to feedlot owners, and possibly more financial assistance to

feedlot owners if policy makers want to speed up progress in addressing pollution problems.

We also find that:

- **It is difficult to assess how much of an increase in resources MPCA may need to improve its feedlot program.**

It is difficult to estimate how market forces may affect the agency's workload in the future. Declining hog prices, for example, could reduce the number of permit applications for new or expanded swine feedlots. In addition, regulatory changes being considered by MPCA and EQB or in the process of being implemented may affect MPCA's workload. MPCA's new feedlot rules might require the agency to issue new five-year renewable permits to all existing feedlots and EQB's proposed "connected action" rule may increase MPCA's environmental review workload. In addition, MPCA needs to meet legislative deadlines for issuing NPDES permits to existing feedlots with 1,000 or more animal units. On the other hand, MPCA is considering possible ways of streamlining its permitting system, and these changes may reduce the impact of other changes on the agency's workload. Finally, MPCA's future workload will depend on how many more counties choose to participate in the feedlot program. While increased participation may require more resources for MPCA oversight and technical assistance, it would also reduce MPCA resources devoted to issuing permits in the newly participating counties.

In addition to economic and regulatory uncertainties, it is difficult to quantify MPCA's staffing needs because the agency does not have data on the average amount of staff time needed to perform certain tasks such as permit review. Internally, MPCA staff have estimated that the feedlot program, including related functions such as environmental review and air quality monitoring, needs twice the current number of staff to adequately perform its duties. We are skeptical of such estimates because they are not based on workload estimates and the number of hours needed to complete major tasks. In our view:

- **If MPCA requests an appropriation for additional feedlot staff, it should provide the Legislature with detailed information on its estimated workload and the average amount of time it takes to complete major tasks.**

Alternative funding sources should be considered.

We also recommend that:

- **Before appropriating additional funds for more MPCA staff, the Legislature should consider whether funds from other MPCA activities could be permanently reallocated to feedlot regulation.**

MPCA has already temporarily reallocated staff from other programs to feedlot regulation. However, funding for some of those staff came from fees collected from non-feedlot facilities regulated by the agency. MPCA may not be able to

use these funds for feedlot regulation on a permanent basis. Nevertheless, MPCA and the Legislature should consider whether there are funds within the agency that could be permanently reallocated to feedlot regulation without impairing the programs currently receiving those funds.

If the Legislature determines that additional funding for feedlot staff is justified, it could consider using fee revenue as an alternative to general fund appropriations. Currently, the general taxpayer finances most of the cost of feedlot regulation. The only existing feedlot fees are for NPDES permits. Revenue from NPDES permit fees will be increasing as more feedlots are required to obtain an NPDES permit. These additional revenues and funds from new fees being considered by MPCA could be used to provide additional support for the feedlot regulation program. However, MPCA and the Legislature should consider the impact of a fee-based approach on the livestock industry. More than other regulated industries, the livestock industry operates in very competitive markets that do not ordinarily allow producers to raise their prices if local fees are raised. It would be particularly difficult to justify new fees in the hog industry if the current low prices continue.