



**NORTH DAKOTA
DEPARTMENT OF HEALTH**

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April 3, 2000

Governor Edward T. Schafer
Governor's Office
600 East Boulevard Avenue
Bismarck, ND 58505-0001



Dear Governor Schafer:

Since statehood, agriculture has been the main industry in North Dakota and a primary part of the state's economic base. North Dakota's livestock industry has been an essential component of the state's agricultural economy and important to the viability of many rural communities.

In the past, North Dakota's livestock industry primarily has involved cow-calf operations and other similar livestock production, rather than large-scale feeding and finishing operations. Other states have been wrestling with the environmental and zoning issues of larger operations for the past decade. For example, larger operations result in larger quantities of manure and wastewater on some watersheds.

The Department of Health has, in the past, been asked to address land-use issues, such as effects of uses on neighboring land values and incompatible uses over which the department has no direct jurisdiction. Recent difficulties in locating several large-scale hog production facilities raised the issue of how and where to locate such large animal feeding operations in North Dakota. Litigation involving the EnviroPork facility resulted in the introduction of legislation during the 1999 legislative session.

After much negotiation and many drafts, the Legislature passed Senate Bills 2355 and 2365 to limit and guide political subdivisions and the Department of Health in regulating the larger animal feeding operations. Zoning is a local government power delegated by state law to counties and townships.

Your Executive Order 1999-03 reads, in part:

"The Department shall establish a working group with interested political subdivisions, or their associations, to develop model zoning regulations for the subdivisions to implement as they deem appropriate; . . ."

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The Department of Health established a work group and facilitated six meetings of the work group and a subcommittee of the work group. Two documents were prepared as work products:

1. "History of the Development of a Model Zoning Ordinance for Animal Feeding Operations." This document provides summary details for the work group, for each of its meetings, and for each of its subcommittee meetings.
2. "A Model Zoning Ordinance for Animal Feeding Operations." This document contains the model zoning ordinance for animal feeding operations developed by the work group, including other information deemed relevant to counties and townships which may assess, develop and adopt such an ordinance. The local governments have discretion to alter the model to address local concerns and to meet local needs.

The model ordinance conforms to zoning authority granted by law to counties and townships, as amended by SB 2355. This model ordinance has two tiers:

The first tier suggests setbacks and reverse setbacks for new and existing animal feeding operations which—when implemented by local governments—can improve the protection of the right to practice farming and ranching. No local government permits are required.

1. Setback distances relate to the size of the animal feeding operation and increase after 300 animal units at 1,000, 2,000 and 5,000 animal units. Setback distances also relate to the nature of the animal feeding operation; that is, distances for hog operations are greater than distances for other livestock operations with sizes greater than 1,000 animal units.
2. Those livestock operations having more than 300 animal units would benefit, as would their neighbors. The exact number of these operations is unknown; however, it is less than one-half of 1 percent of all livestock operations in the state.

The second tier suggests those animal feeding operations that are a conditional (or special) use of land and, thus, should be permitted. Animal wintering operations are excluded. This tier would assist local government with their police powers pertaining to size-related safety, health and general public welfare matters of animal feeding operations. The conditional uses suggested are:

1. New animal feeding operations that would be capable of handling, or that expand to handle, more than 1,000 animal units.
2. Existing animal feeding operations that expand to handle more than 1,000 animal units.

3. Those animal feeding operations that expand to handle at least 2,000 or 5,000 animal units. This provision recognizes that safety, health and public welfare issues can escalate as the size of animal feeding operations increase.

The model zoning ordinance for animal feeding operations is a workable solution to land-use compatibility issues confronting some local governments across the state. The ordinance will not please everyone across the state. Some people will prefer longer odor setback distances and some will prefer lower size thresholds applied as conditional uses. These concerns likely will arise again when counties or townships evaluate, propose and adopt zoning ordinances for animal feeding operations.

The department has received numerous requests for copies of this document; please advise when we can provide copies to them. Distribution to local units of government, their associations and the work group will also be arranged.

It's our hope that the principles in the model zoning ordinance for animal feeding operations will become widely accepted in North Dakota. On behalf of my staff, we appreciate the opportunity to work on this project.

Sincerely,



Murray G. Sagsveen
State Health Officer

Enc. as noted

cc: Francis Schwindt

A
MODEL ZONING ORDINANCE
FOR
ANIMAL FEEDING OPERATIONS

Developed by a
ZONING WORK GROUP
for Animal Feeding Operations

Final
March 2000

Facilitated by the



NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section
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PREAMBLE

Public concern about odors produced by animal feeding operations and agricultural concern for rights to practice farming and ranching emerged within North Dakota during 1998. As remedies for these concerns, the 1999 North Dakota Legislative Assembly approved amendments to law that (1) limited the powers of local governments to prohibit or prevent the use of land or buildings for farming or ranching but allowed local governments to regulate the nature and scope of concentrated feeding operations, and (2) established a state standard for odors. The 1999 legislation was Senate Bills 2355 and 2365.

Subsequent to signing this legislation, Governor Edward T. Schafer issued Executive Order 1999-03, which reads in part:

The Department of Health shall . . . take steps reasonably necessary to protect the environment of the state of North Dakota, according to its responsibilities under law; and,

The Department shall establish a working group with interested political subdivisions, or their associations to develop model zoning regulations for the subdivisions to implement as they deem appropriate; . . .

The Department of Health arranged for and facilitated meetings of the work group and a committee of the work group. The work group was comprised of representatives of two livestock producer associations, three boards of county commissioners, two township officers associations, two city officers and the Department of Health. At times, several other people participated in meetings or assisted the work group, including county planners and land-use administrators.

This document is the product of the work group. It represents the consensus recommendation of the work group for zoning of concentrated feeding operations, sometimes referred to as feedlots or animal feeding operations. Its purpose is to:

- ☞ Provide a reference, or model, for zoning and ordinances pertaining to concentrated feeding operations for use by the local governments across North Dakota.
- ☞ Remind local governments of their roles in protecting public safety and health and in planning the uses, conservation and protection of natural resources, including land for farming and ranching.
- ☞ Foster uniform zoning ordinances for concentrated feeding operations among counties and townships. Since regional differences in population density, climate, and soil and water resources occur across the state, local governments can revise the model as appropriate.
- ☞ Avoid duplication among state environmental protection rules and local government zoning ordinances.

INTRODUCTORY COMMENTARY

A summary of the reasons for, and the content of, an ordinance for animal feeding operations.

DEVELOPER AWARENESS

As some counties or townships in North Dakota become increasingly urban, especially those that contain the larger population centers, there is a need to reduce the conflict between farms and ranches and rural property owners. Normal facets of farming and ranching must be recognized by new and potential rural property owners and developers who make these properties available for non-farming or non-ranching uses.

Counties and townships should consider preparing educational materials for potential property developers and buyers; the materials should explain that aspects of some normal activities of farming or ranching can be displeasing to non-farm or non-ranch occupants. For example, informational materials were developed by Spokane County and are available: "Code of the West: Agriculture, Access and Mother Nature." Long Range Planning Department, Public Works Building, 1116 W. Broadway, Spokane, WA.

Normal farming and ranching practices can create these conditions:

- ✓ Animal production can cause odors, flies and noise.
- ✓ Crop production can create road and field dust.
- ✓ Applications of fertilizers and pesticides are common.
- ✓ Slow-moving vehicles and extra-wide equipment are common on roadways.
- ✓ Early morning or late evening truck traffic or chemical applications can occur.

State law places limitations on the ability of people affected by agricultural operations to bring nuisance actions to limit or stop such activities. (See N.D.C.C. chapter 42-04.)

LEGAL AUTHORITY

The North Dakota legislature has given political subdivisions the authority to enact local zoning ordinances for the purpose of promoting health, safety, morals, public convenience, general prosperity and public welfare. (See, for example, N.D.C.C. § 11-33-01, which is the county zoning authority.) In general, however, the law does not allow political subdivisions to enact any regulation or restriction that prohibits or prevents "the use of land or buildings for farming or ranching or any of the normal incidents of farming or ranching." (See, for example, N.D.C.C. § 11-33-02, subsection 1.)

The 1999 amendments to the law addressed an important legal question: whether concentrated feeding operations were “industrial” operations over which counties and townships could exercise their traditional zoning authority, or whether they were “farming” operations over which political subdivisions had no zoning authority? The legislature answered this question. First, it defined farming and ranching to include livestock “feeding”; second, it gave counties and townships authority to “regulate the nature and scope of concentrated feeding operations” permissible within their jurisdictions and to “set reasonable standards, based on the size of the operation” to govern its location. The legislation also forbids counties and townships from banning concentrated feeding operations from their jurisdictions and from prohibiting the reasonable diversification or expansion of farming or ranching operations. The amendments give counties and townships discretion to adopt their own standards regulating the size, nature and location of feedlots subject to the limitations outlined above. The amended law is provided in Appendix I.

FUNCTION OF AN ORDINANCE

There appears to be a misunderstanding among many people in North Dakota as to how zoning functions. Many believe that, because rural areas beyond incorporated cities have historically been agricultural production areas, they are zoned agriculture and are entitled to protection from encroachment of non-agricultural land use. This is not the case. Zoning authorities maintain that farming and ranching areas are not protected from encroachment until they are delineated in comprehensive land-use plans. Comprehensive land-use plans are required by law before adoption of land-use ordinances. Apparently, most rural areas of the state are not covered by comprehensive land-use plans; therefore, there is no protection from encroachment by incompatible land use.

If conflict in land use is to be constrained by local governments so as to protect the right to practice farming or ranching and to foster compatibility with nearby land use, local government officials choosing to adopt an ordinance for animal feeding operations must:

- Adopt comprehensive land-use plans, which delineate land uses and specify land use objectives and policies.
- Adopt separation distances (aka setbacks or reverse setbacks) that reflect qualifiable or quantifiable odor characteristics and odor dispersal. (Compliance with the odor provisions of 1999 SB2365 is not a defense in nuisance litigation, N.D.C.C. chapter 42-01.)
- Identify those new land uses that do not conform to the objectives and policies for delineated agricultural areas so as to infringe on the rights of farming or ranching (not included in the model zoning ordinance for animal feeding operations).
- Identify those new and existing animal feeding operations that, due to size (e.g., number of animal units), present safety hazards, affect natural resources, affect surrounding areas or other means of infringing on the rights of others.

MODEL LAND-USE POLICY

State laws which allow zoning by local governments require comprehensive plans that contain land-use goals, etc. Suggested goals, objectives and policies - for inclusion in a comprehensive land-use plan as deemed appropriate - are provided.

LAND-USE COORDINATION

Development within the zoning jurisdiction of a city shall be determined by that city. Development within the zoning jurisdiction of a county or township that may affect property within a city's zoning limits should be reviewed cooperatively by the board of county commissioners or the township board and the city.

ENVIRONMENT AND PUBLIC SAFETY AND HEALTH

Goal: Develop, adopt and administer zoning ordinances that are consistent with the objectives and policies of this comprehensive land use plan.

Objective A: Manage new development.

Policy A1: Encourage rural residential development, as needed, to locate areas that are in non-productive for farming or ranching.

Policy A2: Protect farming or ranching from non-agricultural development of land uses that would hinder the operations or productivity of farming or ranching. A proposed change in land use should not cause conflict with existing farming or ranching.

Objective B: Promote conservation of natural resources.

Policy B1: Encourage development in ways that conserve natural and agricultural resources. Developments or land use should not pose unacceptable exploitation of natural and agricultural resources or unacceptable risk of polluting air, land or water.

Policy B2: Encourage programs and activities that reduce and control soil erosion and that prevent the growth and spread of weeds.

Objective C: Promote public safety and health.

Policy C1: Encourage programs and activities that discourage siting of development in a flood way or flood plain and that reduce and prevent air, soil or water pollution.

MODEL AFO ZONING ORDINANCE

A suggested zoning ordinance pertaining to animal feeding operations is provided for use by local governments as deemed appropriate. A summary of the work group's discussions that governed substance of this model ordinance is included in a subsequent chapter of this document.

This land-use ordinance for animal feeding operations includes the following sections.

1. General Provisions
 - 1.1 Definitions
 - 1.2 Equivalent Animal Numbers
 - 1.3 Environmental Provisions
 - 1.4 Enforcement
 - 1.5 Severability

2. Setback Requirements
 - 2.1 Water Resource Setbacks
 - 2.2 Odor Setbacks

3. Conditional Uses
 - 3.1 Permit Procedures
 - 3.2 Ownership Change
 - 3.3 Operational Change

1. GENERAL PROVISIONS

1.1 DEFINITIONS

Terms used in this ordinance have the same meaning as given by the laws and rules of the state of North Dakota, specifically chapter 33-16-03 of the North Dakota Administrative Code. The definitions for these terms and for additional terms (bold print) are:

“Animal feeding operation” means a place where: livestock have been, are, or will be confined, concentrated and fed for 45 or more days in any 12 month period; pasture, crops, or other vegetation are not normally managed or sustained for grazing during the normal growing season; and, animal waste or *manure* accumulates. This term does not include an *animal wintering operation*. Adjoining animal feeding operations under common ownership are considered to be one animal feeding operation, if they use common areas or systems for *manure* handling.

“Animal wintering operation” means the confinement of cattle or sheep used or kept for breeding purposes in a feedlot or sheltered area at any time between October 15 and May 15 of each production cycle under circumstances in which these animals do not obtain a majority of their feed and nutrients from grazing. The term includes the

weaned offspring of cattle and sheep, but it does not include (1) breeding operations of more than 1,000 animal units or (2) weaned offspring which are kept longer than 120 days and that are not retained for breeding purposes.

“**Due process**” involves two essential elements; (1) notice and (2) an opportunity for a hearing. The notice must adequately describe the potential action that might affect the person(s) being notified and it must provide the person(s) a reasonable time to respond. If the person(s) request(s) a hearing, the hearing must be fair and allow the person(s) to present relevant evidence and arguments.

“Existing” means in place and operating on the date this ordinance is effective.

“Livestock” means any animal raised for food, raw materials or pleasure, including, but not limited to, beef and dairy cattle, bison, sheep, swine, poultry and horses. Livestock also includes fur animals raised for pelts.

“Manure” means fecal material and urine from livestock, as well as animal-housing wash water, bedding material, rainwater or snow melt that comes in contact with fecal material or urine.

“Operator” means an individual or group of individuals, a partnership, a corporation, a joint venture, or any other entity owning or controlling one or more *animal feeding operations* or *animal wintering operations*.

“**Shall**” means that the requirement is mandatory, rather than optional.

“Surface water” means *waters of the state* located on the ground surface such as lakes, reservoirs, rivers and creeks.

“Waters of the state” means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, and all other bodies or accumulations of water on or under the surface of the earth, natural or artificial, public or private, situated wholly or partly within or bordering upon the state, except those private waters that do not combine or effect a junction with natural surface or underground waters just defined.

1.2 EQUIVALENT ANIMAL NUMBERS

An “animal unit equivalent” is a unitless number developed from the nutrient and volume characteristics of *manure* for a specific *livestock* type. The term “animal units” is used to normalize the number of animals (e.g., head) for each specific *livestock* type which produce comparable bulk quantities of *manure*. The animal unit equivalents for types of *livestock* and the numbers of *livestock* for facility size thresholds of 300 animal units (a.u.), and so forth, are listed in the following table.

Livestock Type	Animal Unit Equivalent	Equivalent Numbers of the Livestock (hd) for Four Sizes (a.u.) of Animal Feeding Operations			
		300 a.u.	1,000 a.u.	2,000 a.u.	5,000 a.u.
1 horse	2.0	150 hd	500 hd	1,000 hd	2,500 hd
1 dairy cow	1.33	225	750	1,500	3,750
1 mature beef	1.0	300	1,000	2,000	5,000
1 beef feeder - finishing	1.0	300	1,000	2,000	5,000
1 beef feeder - backgrounding	0.75	400	1,333	2,667	6,667
1 mature bison	1.0	300	1,000	2,000	5,000
1 bison feeder	1.0	300	1,000	2,000	5,000
1 swine, > 55 lbs	0.4	750	2,500	5,000	12,500
1 goose or duck	0.2	1,500	5,000	10,000	25,000
1 sheep	0.1	3,000	10,000	20,000	50,000
1 swine, nursery	0.1	3,000	10,000	20,000	50,000
1 turkey	0.0182	16,500	55,000	110,000	275,000
1 chicken	0.01	30,000	100,000	200,000	500,000

1.3 ENVIRONMENTAL PROTECTION

The *operator* of a new facility for animal feeding is expected to locate, construct, operate and maintain the facility so as to minimize, reduce or abate effects of pollution on environmental resources and on public safety and health. The *operator* of an existing facility is expected to operate and maintain the facility so as to minimize, reduce or abate effects of pollution on environmental resources and on public safety and health. Each *operator* shall comply with applicable state laws and rules, including the laws and rules administered by the North Dakota Department of Health and with any permits granted by that department.

1.4 ENFORCEMENT

In the event of a violation of this ordinance or a judgement on a civil action by the North Dakota Department of Health, the local unit of government, after due process, can order cessation of a facility for animal feeding within a reasonable period of time and until such time as the *operator* corrects or abates the cause(s) of the violation. If the cause(s) of the

violation are not remedied within a reasonable period of time as set by the local unit of government, the permit may be revoked.

1.5 SEVERABILITY

If any paragraph, sentence, clause or phrase of this ordinance is for any reason held to be invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portion of this ordinance .

2. SETBACK REQUIREMENTS

2.1 WATER RESOURCE SETBACKS

The *operator* of a new *animal feeding operation* that has more than 1,000 animal units shall not locate or establish that operation:

- A. Within a delineated source water protection area for a public water system. The source water protection areas for water supply wells include the entire wellhead protection area. For the *surface-water* intakes of public water systems, source water protection areas include all or portions of the surface water that supplies the water for the public water system, including all or portions of the surface-water's shoreline.
- B. (*The following provision is optional.* Within 1,200 feet (365.6 meters) of a private ground water well which is not owned by the *operator* or within 1,500 feet (457.1 meters) of a public ground water well which does not have a delineated source water protection area.)
- C. (*The following provision is optional.* Within 1,000 feet (304.7 meters) of surface water which is not included in a source water protection area.)

2.2 ODOR SETBACKS

The *operator* of a new facility for an *animal feeding operation* shall not locate that operation within the extra territorial zoning jurisdiction of an incorporated city.

An owner of property shall locate and establish a residence, business, church, school, public park or zone for residential use so as to provide a separation distance from any *existing animal feeding operation*. The separation distances, or setbacks, are listed in the following table. An owner of property who is an *operator* may locate the owner's residence or business within the setbacks.

Setback Distances for <i>Animal Feeding Operations</i>		
Number of Animal Units	Hog Operations	Other Animal Operations
fewer than 300	none	none
300 - 1000	0.50 mi (0.805 km)	0.50 mi (0.805 km)
1001 or more	0.75 mi (1.207 km)	0.50 mi (0.805 km)
2001 or more	1.00 mi (1.609 km)	0.75 mi (1.207 km)
5001 or more	1.50 mi (2.414 km)	1.00 mi (1.609 km)

The *operator* of a new *animal feeding operation* shall locate the site of that operation from existing residences, businesses, churches, schools, public parks and areas of property that are zoned residential so as to exceed the corresponding listed setback from these places.

If notified in writing by an *operator* of a planned future expansion of an *animal feeding operation*, the local unit of government may implement the corresponding odor setback for a temporary time period not to exceed two years, after which time the setback will remain in effect only if the expansion was completed.

A local unit of government may, upon recommendation of the zoning commission or land use administrator, increase or decrease a setback distance for a new *animal feeding operation* after consideration of the proposed operation's plans, if it determines that a greater or lesser setback distance is necessary or acceptable, respectively, based upon site conditions or demonstrable safety, health, environmental or public welfare concerns.

3. CONDITIONAL USES

3.1 PERMIT PROCEDURES

3.1.A. Applicability.

The *operator* of a new *livestock facility* or an *existing livestock facility*, which meets the definition of an *animal feeding operation* and which is a conditional (or special) use of land as listed below, shall apply for and obtain a conditional (or special) use permit.

1. A new *animal feeding operation* that would be capable of handling, or that expands to handle, more than 1,000 animal units is a conditional (or special) use of land.
2. An *existing animal feeding operation* that expands to handle more than 1,000 animal units is a conditional (or special) use of land.

Whenever the capacity of an *animal feeding operation* is expanded to handle more than 2,000 or 5,000 animal units, the *operator* shall apply for a new conditional (or special) use permit.

3.1.B. Procedure.

The local unit of government may practice any or all of the provisions in the following subparagraphs in harmony with the permitting process of its general zoning regulations.

1. Application for a conditional use (or special use) permit shall be submitted to the local unit of government for tentative approval. The local unit of government shall notify the Department of Health that it has received such application.
2. The local unit of government shall notify by certified mail all property owners having property within the corresponding odor setback distance of a proposed new *animal feeding operation*. This notification must occur within 21 days of receiving the application. The approval process utilized by the local unit of government may include at least one advertised public hearing.
3. Following tentative approval or denial of the application by the local unit of government, the applicant shall be notified by letter of the decision, including conditions imposed, if any.
4. The applicant shall then forward its application for a conditional (or special) use permit, together with the tentative approval by the local government, to the North Dakota Department of Health.
5. Following a review by the Department of Health of the operator's application for a state permit, the Department of Health will notify the local unit of government of its decision.
6. The conditional (or special) use permit will become final following the granting of a permit by the Department of Health.
7. A conditional (or special) use permit granted to the operator of a new animal feeding operation shall be put into use within twenty-four (24) months, or the permit shall lapse and the operator may re-apply.

3.1.C. Application Requirements.

The application for a conditional use (or special use) permit to operate a facility for an *animal feeding operation* shall include a scaled site plan. If the facility will handle more than 1,000 animal units, the scaled site plan shall be prepared by a registered land surveyor, a civil engineer or other person having comparable experience or qualifications. The local unit of government may require any or all of the following elements, or require additional elements,

in its site plan review process when needed to determine the nature and scope of the animal feeding operation.

1. Proposed number of animal units.
2. Total acreage of the site of the facility.
3. Existing and proposed roads and access ways within and adjacent to the site of the facility.
4. Surrounding land uses and ownership, if the operation will have the capacity to handle more than 1,000 animal units.
5. A copy of the permit application submitted by the applicant to the Department of Health.

3.2 OWNERSHIP CHANGE

An *operator* of a facility that includes an *animal feeding operation* having a permit granted by this ordinance shall notify the local unit of government of the sale, or the transfer of the ownership of that operation.

3.3 OPERATING CHANGE

An *operator* of a facility that includes an *animal feeding operation* having a permit granted by this ordinance shall notify the local unit of government of intent to include an alternate *livestock* type. The notice shall be given at least 120 days prior to the anticipated date of the change.

STATUTORY AUTHORITY FOR JOINT POWERS AGREEMENTS

Cooperative or Joint Administration by Counties and Townships of Authority to Regulate Concentrated Feeding Operations

N.D.C.C. § 54-40.3-01 allows counties, townships or other political subdivisions to enter into agreements with other political subdivisions for the cooperative or joint administration of any power or function authorized by law or assigned to one or more of them. Counties and townships may use this authority to pool resources, cut red tape, and make their services and functions more cost effective, timely, efficient and responsive.

The 1999 Legislature amended N.D.C.C. § 11-33-02 and N.D.C.C. § 58-03-11 to clarify the power and function of counties and townships to regulate animal feeding operations. Counties and townships may wish to explore the possibility of cooperative or joint regulation of concentrated feeding operations to avoid unnecessary duplication of these regulations and to satisfy the purpose and intent of N.D.C.C. § 11-33-02 and N.D.C.C. § 58-03-11.

1. Factors Relevant Under Amended Law.

The 1999 Legislature amended N.D.C.C. § 11-33-02 and N.D.C.C. § 58-03-11 to clarify that counties and townships may "regulate the nature and scope of concentrated [animal] feeding operations." These amendments are given under the "INTRODUCTORY COMMENTARY" of this document.

In implementation of the amended laws, counties and townships may find it easier to ensure there are places for the development of animal feeding operations within their jurisdictions and to ensure there are reasonable and consistent regulations governing the nature and scope of operations, if they adopt one regulation for both counties and townships. One way of doing this would be for townships to relinquish their zoning authority over concentrated feeding operations to counties. Another way would be to enter into an agreement for cooperative or joint administration.

2. Decision Choices for a Cooperative or Joint Administration Agreement.

Counties and townships can structure agreements for joint or cooperative regulation of animal feeding operations in several ways. The factors, which are relevant to determining whether a county or township should enter into a cooperative or joint administration agreement with other counties or townships, are listed in Appendix II. One factor is cost. Another is representation. A third is working out the details of such an agreement. There are almost endless ways of structuring such agreements. state agencies and county and township organizations may be willing to help if interest is shown.

CLOSING COMMENTARY

A summary of the prevailing work group discussion that governed the substance of the model zoning ordinance for animal feeding operations.

The work group acknowledges that many counties and townships within the state have constraints on the resources needed for effective administration of zoning and zoning ordinances. The work group also acknowledges that compliance with detailed requirements of zoning and zoning ordinances by many people who practice farming and ranching could be a significant burden. Thus, the work group endeavored to achieve a practical and functional model ordinance supported with a model land use policy (required by law).

A report titled “History of the Development of a Model Zoning Ordinance for Animal Feeding Operations” provides information about the work group and its meetings.

The work group recognizes that the model zoning ordinance likely does not accommodate all existing zoning preferences and provisions of local units of government across the state. Thus, the model ordinance may be amended by a local unit of government as deemed appropriate. A **summary** of the prevailing discussion governing the substance of the model ordinance is provided below.

ROLE OF THE ND DEPARTMENT OF HEALTH (DoH)

- ▶ Local units of government, as well as the livestock producers, prefer that the Department of Health shoulder responsibility for protection of natural resources from pollution via its rules for animal feeding operations, including land application of manure, without additional detail in a local ordinance for animal feeding operations.
- ▶ An ordinance for animal feeding operations should be consistent in choice and use of terms as applied or defined in state laws and rules.

PUBLIC WATER SYSTEM SOURCE WATER SETBACKS

- ▶ New animal feeding operations should avoid locating in areas which have been delineated for the protection of waters of the state, including both surface water and ground water, which are used as drinking water. The federal Safe Drinking Water Act requires EPA-approved state plans for the delineation of those waters-of-the-state used as water resources for public water systems. While the state plan for North Dakota does not prohibit location of new animal feeding operations within delineated areas, the best interests of the owners/operators of animal feeding operations and the owners of the public water systems are not served by siting these operations within delineated source water protection areas.

- ▶ Maps of delineated source water protection areas for public water systems are available on the World Wide Web.
- ▶ The model ordinance does not propose setbacks from those portions of flood plains that are not within delineated source water protection areas of Public Water Systems. Local governments should include a provision concerning land uses in flood plain areas.

ODOR SETBACKS

- ▶ The choices for separation distances (setbacks) for animal feeding operations were balanced with the state odor standard (1999 SB 2365, N.D.C.C. chapter 23-25). The state odor standard makes an odor concentration of seven or more odor concentration units a violation of the standard at distances greater than one-half mile. This standard applies to all animal feeding operations, regardless of the type of livestock or the number confined and fed by the operation.
- ▶ Reported information indicates that amount of odors produced by confined swine feeding operations are greater than amounts of odors produced by other livestock types. After odors are released from animal-housing or manure-storage structures, the atmosphere governs the downwind transport and dispersion of the odors.
- ▶ The strength of odors released into ambient air and transported from animal feeding operations depends upon the construction of the animal housing and manure storage units and the topography of the site, as well as the type and number of animals. There is no apparent threshold based solely on the numbers of animals at which the downwind odor possibly could become a troublesome issue.
- ▶ General zoning provisions usually establish setbacks for buildings and structures from roadways; thus, no specific roadway setback for animal feeding operations is necessary.
- ▶ A framework for odor easements should be developed by the local unit of government when deemed appropriate. state law indicates that odor easements can be obtained by the owners/operators of animal feeding operations from owners of other property located beyond one-half mile (subparagraph b of paragraph 2 of section 11 of N.D.C.C. chapter 23-25).

CONDITIONAL-USE SIZE THRESHOLD

- ▶ The state laws which allow zoning indicate that a local unit of government “. . . can not prohibit through regulation, the reasonable diversification or expansion of a farming or ranching operation.” The interpretation of the words “prohibit” and

“reasonable” intertwine with selection of the appropriate regulatory (in the model ordinance) size threshold for animal feeding operations.

- ▶ The number of animal feeding operations that have been issued permits by the Department of Health is about 440. (The Department presently requires any livestock feeding operation with more than 200 animals units to obtain a permit, and it anticipates a rule change adjusting this threshold to 300 animal units so as to be consistent with federal regulation.) Currently, there are: about 80 operations with 300 or more animal units; nearly 60 operations with more than 500 animal units; and nearly 30 operations with more than 1,000 animal units. Based upon a recent survey, other livestock feeding operations may not have permits because the operators are unaware of the rule permit requirements. The total number of animal feeding operations is unknown.
- ▶ While a local permit requirement for animal feeding operations with less than 1,000 animal units would involve some paperwork, public hearings, etc., on the part of owners/operators, matters of public safety, health, and general public welfare should not be overlooked.
- Additional summary details of the work group’s discussion of this issue are provided in Appendix I of the report titled “History of the Development of a Model Zoning Ordinance for Animal Feeding Operations.”

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APPENDIX I

Legislative Revisions of Local Zoning Law

ROLE OF LOCAL GOVERNMENTS

Although the North Dakota's constitution (Article VII, section 6) and law (NDCC chapter 11-09.1) grant home rule authority to counties, the model language proposed herein assumes that local governments in the state have only those powers expressly granted, or reasonably implied in, the law.

The 1999 North Dakota Legislative Assembly increased protection of farming and ranching in the state by amending laws that allow a county and/or a township to divide, or zone, all or any parts of the county or township into districts. Section 11-33-02 of the North Dakota Century Code, which grants zoning authority to counties, now states:

1. For any or all of the purposes designated in section 11-33-01, the board of county commissioners may divide by resolution all or any parts of the county, subject to section 11-33-20, into districts of such number, shape, and area as may be determined necessary, and likewise may enact suitable regulations to carry out the purposes of this chapter. These regulations must be uniform in each district, but the regulations in one district may differ from those in other districts. A regulation or restriction may not prohibit or prevent the use of land or buildings for farming or ranching or any of the normal incidents of farming or ranching. For purposes of this section, "farming or ranching" means cultivating land for production of agricultural crops or livestock, or raising, feeding, or producing livestock, poultry, milk, or fruit. The term does not include producing timber or forest products, nor does the term include a contract whereby a processor or distributor of farm products or supplies provides grain, harvesting, or other farm services.
2. A board of county commissioners may regulate the nature and scope of concentrated feeding operations permissible in the county; however, if a regulation would impose a substantial economic burden on a concentrated feeding operation in existence before the effective date of the regulation, the board of county commissioners shall declare that the regulation is ineffective with respect to any concentrated feeding operation in existence before the effective date of the regulation.
3. A regulation may not preclude the development of a concentrated feeding operation in the county. A regulation addressing the development of a concentrated feeding operation in the county may set reasonable standards, based on the size of the operation, to govern its location.
4. For purposes of this section, "concentrated feeding operation" means any livestock feeding, handling, or holding operation, or feed yard, where animals are concentrated in an area that is not normally used for pasture or for growing crops and in which animal wastes may accumulate, or in an area where the space per animal unit is less than six hundred square feet [55.74 square meters]. The term does not include normal wintering operations for cattle. For purposes of this section, "livestock" includes beef cattle, dairy cattle, sheep, swine, poultry, horses, and fur animals raised for their pelts.
5. A board of county commissioners may not prohibit, through regulation, the reasonable diversification or expansion of a farming or ranching operation.

6. This chapter does not include any power relating to the establishment, repair, and maintenance of highways or roads.

COUNTY POWERS

First. state law allows, but does not require, boards of county commissioners to take action to promote safety, health and public welfare. Section 11-33-01 of the North Dakota Century Code states, in part:

For the purpose of promoting health, safety, morals, public convenience, general prosperity, and public welfare, the board of county commissioners of any county may regulate and restrict within the county, subject to section 11-33-20 and chapter 54-21.3, the location and the use of buildings and structures and the use, condition of use, or occupancy of lands for residence, recreation, and other purposes.

However, section 11-33-02, as quoted under the “Role of Local Governments” above, defines the scope of zoning regulations that pertain to farming or ranching and concentrated feeding operations.

Second. Zoning divides land into districts so as to enable compatible and adjoining land uses to co-exist in each district and to separate incompatible land uses from each other. Thus, a zoning ordinance consists of: (1) a map that divides the jurisdiction (county or township) into districts for classes of use, which typically are residential, recreational, commercial, industrial, agricultural and other; and (2) written conditions that establish criteria under which the land may be developed and used for the particular land use class. Section 11-33-02, as quoted earlier in this chapter, grants authority to county commissions to divide the county and to set reasonable standards, based upon size, to govern locations of concentrated feeding operations.

Third. A prerequisite for adopting a zoning ordinance is a comprehensive land use plan for the jurisdiction. Section 11-33-03 of the North Dakota Century Code states, in part:

These regulations shall be made in accordance with a comprehensive plan and designed for any or all of the following purposes:

1. To protect and guide the development of non-urban areas.
2. To secure safety from fire, flood, and other dangers.
5. To conserve and develop natural resources.

These regulations shall be made with a reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses. The comprehensive plan shall be a statement in documented text setting forth explicit goals, objectives, policies and standards of the jurisdiction to guide public and private development within its control.

TOWNSHIP POWERS

Sections 58-03-11, 58-03-12 and 58-03-13 of the North Dakota Century Code contain similar requirements, as described above, for townships that choose to establish zoning districts and regulate development.

APPENDIX II

Elements of a Cooperative or Joint Administration Agreement

N.D.C.C. § 54-40.3-01 provides:

1. Any county, city, township, city park district, school district or other political subdivision of this state, upon approval of its respective governing body, may enter into an agreement with any other political subdivision of this state for the cooperative or joint administration of any power or function that is authorized by law or assigned to one or more of them. Any political subdivision of this state may enter into a joint powers agreement with a political subdivision of another state or political subdivision of a Canadian province if the power or function to be jointly administered is a power or function authorized by the laws of this state for a political subdivision of this state and is authorized by the laws of the other state or province. A joint powers agreement may provide for:
 - a. The purpose of the agreement or the power or function to be exercised or carried out.
 - b. The duration of the agreement and the permissible method to be employed in accomplishing the partial or complete termination of the agreement and for disposing of any property upon the partial or complete termination.
 - c. The precise organization, composition, and nature of any separate administrative or legal entity, including an administrator or a joint board, committee, or joint service council or network, responsible for administering the cooperative or joint undertaking. Two or more political subdivisions which enter into a number of joint powers agreements may provide a master administrative structure for the joint administration of any number of those agreements, rather than creating separate administrative structures for each agreement. However, no essential legislative powers, taxing authority, or eminent domain power may be delegated by an agreement to a separate administrative or legal entity.
 - d. The manner in which the parties to the agreement will finance the cooperative or joint undertaking and establish and maintain a budget for that undertaking. The parties to the agreement may expend funds pursuant to the agreement, use unexpended balances of their respective current funds, enter into a lease-option to buy and contract for deed agreements between themselves and with private parties, accumulate funds from year to year for the provision of services and facilities, and otherwise share or contribute property in accordance with the agreement in cooperatively or jointly exercising or carrying out the power or function. The agreement may include the provision of personnel, equipment, or property of one or more of the parties to the agreement that may be used instead of other financial support.
 - e. The manner of acquiring, holding, or disposing of real and personal property used in the cooperative or joint undertaking.

- f. The acceptance of gifts, grants, or other assistance and the manner in which those gifts, grants, or assistance may be used for the purposes set forth in the agreement.
 - g. The process to apply for federal or state aid, or funds from other public and private sources, to the parties for furthering the purposes of the agreement.
 - h. The manner of responding for any liability that might be incurred through performance of the agreement and insuring against that liability.
 - i. Any other necessary and proper matters agreed upon by the parties to the agreement.
2. Any county, city, township, city park district, school district, or other political subdivision of this state may enter into an agreement in the manner provided in subsection 1 with any agency, board, or institution of the state for the undertaking of any power or function which any of the parties is permitted by law to undertake. Before an agreement entered into pursuant to this subsection is effective, the respective governing body or officer of the state agency, board, or institution must approve the agreement and the attorney general must determine that the agreement is legally sufficient.
 3. An agreement made pursuant to this chapter does not relieve any political subdivision or the state of any obligation or responsibility imposed by law except to the extent of actual and timely performance by a separate administrative or legal entity created by the agreement. This actual and timely performance satisfies the obligation or responsibility of the political subdivision.

Thus, as defined by N.D.C.C. § 54-40.3-01, a cooperative or joint administration agreement relating to regulating concentrated animal feeding operations may contain the following elements:

1. The purpose of the agreement;
2. The duration of the agreement and procedure for termination;
3. The organization, composition and nature of its administering board;
4. Budget and financing;
5. Location and who will own or lease the property, if needed;
6. How to handle gifts, grants or other assistance, if needed or relevant;
7. The process to apply for federal or state aid, or other funds, if relevant;
8. Liability and insurance; and
9. Any other necessary and proper matters agreed upon by the parties to the agreement.

**HISTORY OF
THE DEVELOPMENT
OF A MODEL ZONING ORDINANCE
FOR ANIMAL FEEDING OPERATIONS**

Final

March 2000



**NORTH DAKOTA DEPARTMENT OF HEALTH
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FORWARD

This report was prepared pursuant to Executive Order 1999-03, which indicates that “The Department of Health shall report to my office, [the] progress, status and successes of implementing Senate Bill 2355.” It provides information on the history of the formation of a Work Group assembled to develop a model zoning ordinance for animal feeding operations. It describes the process by which the work group was assembled, the outcome of meetings of the work group and the outcome of a subcommittee of volunteers who prepared a draft handbook for the model zoning ordinance.

The department appreciates the contributions of members of the work group and its subcommittee; specifically, the sharing of concerns and constructive comments during meetings was instrumental in improving an understanding of the issues surrounding the livestock industries and land use administration by local government.

The work product of the work group is a report titled “A Model Zoning Ordinance for Animal Feeding Operations.”

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BACKGROUND

Since statehood, agriculture has been the primary industry in North Dakota and a primary part of the state's economic base. North Dakota's livestock industry has been an essential component of North Dakota's agricultural economy and important to the viability of many rural communities.

In recent years, domestic and export market forces and technological changes have caused substantial changes in the nation's animal production industries. These factors have prompted expansion of confined animal production and feeding operations because of their advantages in economics of scale and ability to adopt the new technologies. The growth of larger operations has resulted in larger quantities of manure and wastewater on some watersheds and the separation of animal production and feeding operations.

In the past, North Dakota's livestock industry has primarily involved cow-calf operations and other similar livestock production, rather than the large-scale feeding and finishing operations. Other states have been wrestling with the environmental and zoning issues of large operations for the past decade. Difficulties in locating two large-scale hog production facilities, one in the southwest corner of the state and the other in the northeast corner, raised in North Dakota the issue of how and where to locate such large animal feeding operations. Litigation involving the second, the EnviroPork facility, resulted in the introduction of legislation in the 1999 legislative session. After much negotiation and many drafts, the Legislative Assembly passed Senate Bills 2355 and 2365 to limit and guide political subdivisions and the Department of Health in regulating the larger animal feeding operations.

More specifically, SB 2355 amended NDCC chapters 11-33 and 58-03 with similar language pertaining to the zoning authority granted to counties and townships, respectively. The amendments concerning county zoning state, in part:

2. A board of county commissioners may regulate the nature and scope of concentrated feeding operations permissible in the county; however, if a regulation would impose a substantial economic burden on a concentrated feeding operation in existence before the effective date of the regulation, the board of county commissioners shall declare that the regulation is ineffective with respect to any concentrated feeding operation in existence before the effective date of the regulation.
3. A regulation may not preclude the development of a concentrated feeding operation in the county. A regulation addressing the development of a concentrated feeding operation in the county may set reasonable standards, based on the size of the operation, to govern its location.
4. For purposes of this section, "concentrated feeding operation" means any livestock feeding, handling, or holding operation, or feed yard, where animals are concentrated in an area that is not normally used for pasture or for growing crops and in which animal wastes may accumulate, or in an area where the space per animal unit is less than six hundred square feet [55.74 square meters]. The term does not include normal wintering operations for cattle. For purposes of this section, "livestock" includes beef cattle, dairy cattle, sheep, swine, poultry, horses, and fur animals raised for their pelts.

5. A board of county commissioners may not prohibit, through regulation, the reasonable diversion or expansion of a farming or ranching operation.

Within one week of signing SB 2355, Governor Edward T. Schafer issued Executive Order 1999-03. This order states, in part:

1. The Department of Health shall monitor implementation of Senate Bill 2355, and take steps reasonably necessary to protect the environment of the state of North Dakota, according to its responsibilities under law; and
2. The Department shall establish a working group with interested political subdivisions, or their associations to develop model zoning regulations for the subdivisions to implement as they deem appropriate; and
3. The Department of Health shall report to my office, progress, status and successes of implementing Senate Bill 2355.

The department's role was that of a facilitator in arranging for the work group and conducting its meetings.

THE AFO WORK GROUP

The department arranged for membership on the work group by contacting the North Dakota Association of Counties the North Dakota League of Cities, and the North Dakota Township Officers' Association. Each of the three associations was invited to designate three representatives for the work group.

The North Dakota Association of Counties responded by designating three individuals; the North Dakota League of Cities named about five candidates, and the department contacted two for the work group; and the Township Officers Association named its secretary. The department, after making some inquiries and having been informed by the Ward County Land Use Administrator that the county had recently updated its comprehensive land use plan, then contacted the chair of the county township officers association, who offered to serve on the work group.

Finally, two producer groups also joined the work group during its first meeting. The members of the work group are listed in the following table.

WORK GROUP MEMBERS	
NAME	AFFILIATION
Claus Lembke	Burleigh County Commissioner
Constance Triplett	Grand Forks County Commissioner
Roger Chinn	McKenzie County Commissioner

Jerry Lein	Wahpeton, Director of Public Works
Steve Frovarp *	Hazen, City Planner
Bryan Hoime *	President, ND Township Officers Assoc.
Donny Malcomb	Chair, Ward County Township Officers Assoc.
Wade Moser *	Executive VP, ND Stockmen's Assoc.
Doug Dukart	Milk Producers Association of ND

During the formation of the work group, several other people expressed interest in the project to develop a model zoning ordinance for animal feeding operations. These people were informed of the first meeting of the work group, and they are listed in the following table.

STAKEHOLDERS REQUESTING TO BE KEPT INFORMED OF THE WORK GROUP'S ACTIVITIES	
NAME	AFFILIATION
Carl Hokenstad *	City Planner, Bismarck-Burleigh
Carole McMahon	Zoning Administrator, Grand Forks County
Linda Kingery	Planner, Red River Regional Planning Council
Barbara Berge *	Planning & Zoning Director, Morton County
Audrey Boe Olsen *	Consulting Planning, Fortuna
Mark Johnson	Executive Director, ND Association of Counties
Connie Sprynczynatyk	Executive Director, League of ND Cities
Scott Birchall	Carrington Research Extension Center
Carl Altenberndt	Planner, Lake Agassiz Regional Council
Norma Duppler	Planning & Zoning Administrator, Barnes County
Don Siebert	Land Use Administrator, Ward County
Roger Scheibe *	Dairy Commissioner, ND Dept. of Agriculture
Charlotte Meier	Executive Director, ND Pork Producers
Dave Muehler	ND Turkey Federation
Brian Kramer	ND Farm Bureau
April Fairfield	Public Policy Analyst, ND Farmers Union
Brad Stevens	Energy & Environmental Research Center
Isis Stark or Mark Trechock *	Dakota Research Council

FIRST MEETING OF THE WORK GROUP

In preparation for the first meeting of the work group, the department assembled information into a three-ring binder for each member of the work group. This information pertained to the following topics: background for formation of the work group, local zoning laws, results of a survey of county auditors or land use administrators and results of a survey of livestock producers about manure management practices, a report by the National Association of Counties on the role of counties pertaining to animal feeding operations,¹ the North Dakota livestock rules (NDAC chapter 33-16-03), reports of two studies of the odors emitted from livestock feeding operations, and examples of ordinances pertaining to livestock feeding operations.

The first meeting of the work group on AFO Zoning was held on July 27, 1999. A notice and agenda for the meeting was distributed to everyone listed in the tables above. Several people were invited to present information on the topics of existing animal feeding operations across the state, a survey of operators of existing operations as to their awareness of regulatory requirements and their manure handling practices, the issues of encroachment that might be addressed by zoning, and the experiences of two ongoing zoning proposals.

The first meeting of the work group was a success in bringing together people who were interested in zoning of animal feeding operations, in identifying the guiding factors for developing a model zoning ordinance and in creating a follow -up action. The record of the first meeting was distributed to everyone who had attended the meeting and to others who had expressed an interest the work group's activities as noted above. A portion of this record follows.

HIGHLIGHTS OF COMMENTS AND DISCUSSION DURING THE WORK GROUP'S FIRST MEETING

- ✓ land uses are changing; for example, growth and sprawl of larger cities into rural areas is occurring, and it should be anticipated through planning and zoning
- ✓ the zoning concept was originally introduced into law to address nuisance problems between incompatible land uses
- ✓ as farms become fewer and as net returns decrease, family farms are becoming larger
- ✓ size of the animal operation does matter, as larger operations introduce environmental and health concerns due to increased scale of activity usually in confined areas
- ✓ animal feeding operations are changing with improved technologies; some technologies may reduce odor problems

¹ Senate Bill 2355 (1999) used and defined the term "concentrated feeding operation." A substitute term, "animal feeding operation," is used throughout this document and the handbook for the model zoning ordinance. The definition used in these documents for "animal feeding operation" follows the definition given by the Environmental Protection Agency.

- ✓ the DOH needs to demonstrate to EPA that its "feedlot" program satisfies environmental protection criteria to maintain program delegation; a strong state program tuned into local circumstances provides the DOH with the ability to make such demonstration
 - ✓ duplication among state, county and township rules and ordinances should be avoided
 - ✓ a significant portion of existing producers lack an awareness of rule requirements and another significant portion have not been permitted by the DOH, thus would not be in compliance with rules
 - ✓ one out-of-state local jurisdiction provides information to developers of new property in rural areas which alerts these developers of rural activities which create dust, noise, traffic and odor; this approach could be considered in North Dakota
 - ✓ 1,348 of about 1,800 townships within the state are organized; some townships in several counties have relinquished zoning authority to the county, but the number which have is unknown
 - ✓ agricultural practices, population densities, climate as well as perceived need for zoning control of AFOs vary among local jurisdictions and regions of the state; however, uniformity of adopted ordinances is preferred where possible
 - ✓ a joint powers agreement between local jurisdictions is permissible under law and could reduce the administrative and enforcement burdens of an AFO zoning ordinance while also standardizing the ordinance through out a county or broader region
 - ✓ zoning emphasis should be on the larger animal feeding operations
 - ✓ setbacks should consider the type of animal and the number of animal units
 - ✓ a reverse setback issue occurs where residential dwellings are built near an established AFO
 - ✓ the goal for completion of a model zoning ordinance is January 1st of next year
-

SUMMARY OF SUBCOMMITTEE'S WORK

During the conclusion of the first meeting of the work group, a subcommittee of volunteers was formed to draft a model ordinance. The subcommittee included three members of the work group. As the meetings of the subcommittee were sequentially announced, three additional people by their choosing also joined the meetings of the sub-committee. The names of the persons who participated in the work of the subcommittee are flagged with an asterisk [*] in tables above.

First Meeting - 24 August 1999

Prior to the first meeting of the subcommittee, the department prepared a matrix of issues for consideration by the subcommittee as to merit for inclusion in a draft model ordinance. The matrix was based upon review of issues included in other model, draft or adopted zoning ordinances. Prior to the meeting, the matrix was distributed to the work group, other people who were interested in the actions of the work group, and the subcommittee. The matrix was

complex, containing a two-tiered level of potential detail for the model ordinance that could apply to intermediate or larger, respectively, sizes of animal feeding operations.

During the subcommittee's first meeting, it chose to simplify the matrix by narrowing the scope of the issues for the model ordinance, as well as by reducing those issues which could be approached with the two-tiered level of detail. The subcommittee also discussed setbacks and reverse setbacks for odors, coordination of the zoning permitting process with the department's permitting process and merits of cooperative or joint powers agreements. In concluding its first meeting, two members of the subcommittee volunteered to assist the department with assembling an initial draft of the model ordinance.

A significant outcome of this meeting was an agreement on separation distances as setbacks or reverse setbacks between animal feeding operations and other (non-agricultural) land-use development for each of four sizes of animal feeding operations. The four sizes were 300, 1,000, 2,000 and 5,000 animal units. The foundation for the shortest distance, which is one-half mile, was the state odor standard, which had been re-established in the NDCC via 1999 SB 2365. The lower size of 300 then implied a threshold for an initial ordinance draft at which a zoning permit would become necessary.

The state odor standard makes an odor concentration of seven or more odor concentration units a violation of the standard at distances greater than one-half mile. This standard applies to all animal feeding operations, regardless of the type of livestock or the number confined and fed by the operation. Nevertheless, hog operations were assigned larger setbacks due to the nature of odors emitted from them.

An initial draft was assembled, and the department expanded the scope of the document for the model ordinance to include a preamble, zoning law, summary commentary and a bibliography. These additional sections were added in anticipation that this information would be needed by other people to understand the content of the model ordinance. Subsequently, these sections helped facilitate subcommittee discussion.

Second Meeting - 12 October 1999

The materials used by the subcommittee for its second meeting were assembled initial drafts of the sections and the model zoning-ordinance elements for a handbook.

The outcome of the second meeting:

- Resulted in several changes to the preamble and the introductory commentary, which describes zoning law, by adding emphasis on the expanded rights to practice farming and ranching from Senate Bill 2355.
- Resulted in several significant and minor changes to the model ordinance.
- Resulted in the subcommittee taking ownership of the draft document by virtue of the decisions that had occurred.

Third Meeting - 26 October 1999

The third meeting of the subcommittee was a marathon meeting that lasted more than four hours. The outcome of this meeting also resulted in further refining of the wording of the emerging handbook for a model zoning ordinance applicable to animal feeding operations.

A summary of consensus among participants attending the third meeting for aspects of the model ordinance handbook is listed in the following table. Consensus is based upon observation of no expressed and unresolved concerns.

HANDBOOK ELEMENT	CONSENSUS	REMAINING UNRESOLVED CONCERN of ONE or MORE SUBCOMMITTEE MEMBERS
Preamble	yes	
Intro Commentary	yes	
Model Land Use Policy	yes	
Model AFO Ordinance	---	
1. Definitions	yes	
2. Equiv. Animal Num.	yes	
3. Permit Procedures	no	permit process, hinges on AFO size threshold when permit required
4. Ownership Change	no	paperwork, hinges on item #3
5. Operating Change	no	paperwork, hinges on item #3
6. Environmental Protection	yes	
7. Water Resource Setbacks	yes	
8. Odor Setbacks	yes	but, hinges on item #3
-. Closure	omit	issue lacks definition
-. Abandonment	omit	issue lacks definition
9. Enforcement	yes	
10. Severability	yes	
Joint Powers Agreements		detailed narrative not discussed
Closing Commentary		detailed narrative not discussed

Ordinance Applicability.

The subcommittee's third meeting brought into focus those concerns regarding the applicability of the draft for a model ordinance for animal feeding operations. These concerns

centered on the size threshold, expressed in animal units, at which operations would be regulated by the model zoning ordinance. Some aspects of the discussion on this issue are described in the "Introductory Commentary" and the "Closing Commentary" for the model ordinance. A summary of the details of the principal aspects of the applicability issue is presented in the Appendix for the benefit of local government officials who might proceed to evaluate, develop and adopt an ordinance.

SECOND MEETING OF THE WORK GROUP

The second meeting of the work group was held on November 30, 1999. A notice for the meeting was distributed to everyone listed in the two tables above. The notice included the subcommittee's draft for an AFO zoning handbook, which contained draft model land-use policies with objectives and a draft model zoning ordinance, as well as a draft of this report.

The ordinance applicability issue described above was reviewed for the meeting participants. A few substantive word changes were made in the model ordinance.

SALIENT COMMENTS DURING THE WORK GROUP'S SECOND MEETING

- ✓ persons planning non-agricultural development in agricultural land-use areas should be expected to know and become aware of livestock producers located nearby, and they should be expected to follow zoning process for obtaining a land-use variance in a delineated agricultural land-use area
 - ✓ (existing) livestock producers in agriculturally zoned areas should be protected from encroachment of non-agricultural land-use development without the burden of obtaining zoning permits
 - ✓ the typical range-cattle operation has about 75 cows
 - ✓ the legislature clearly confined use of zoning ordinances as applied to farming and ranching to the non-normal incidents of farming and ranching
 - ✓ most counties have not adopted comprehensive land use plans and, thus, have not delineated agricultural land-use areas; developers there do not need to seek a land-use variance
 - ✓ existing livestock producers (AFOs) which are normal practices of farming or ranching should not be required to obtain a zoning permit, unless undertaking a major expansion
 - ✓ the permitting process of zoning is needed to document the location and size of AFOs
 - ✓ abandoned farm homes are now being repopulated by 'urban' families, who expect urban services
 - ✓ one purpose for a the model ordinance is to foster consistent AFO zoning criteria among local governments; however, it can be amended as deemed appropriate for local circumstances; currently, fewer than 10 of the state's counties are considering ordinances for animal feeding operations
 - ✓ inventories of existing AFOs by local governments might be a service to land-use developers, as well as necessary for the general land-use planning function of local government
-

A conceptual solution to the applicability size threshold emerged during the second meeting of the work group. Parts 1 and 2 are preferred policy principles, while parts 3 and 4 inject the size thresholds of animal feeding operations, which would be non-normal incidents of farming and ranching and subject to conditional-use (aka special-use) zoning permits.

- 1st. Local governments should adopt comprehensive land use plans and delineate agricultural land-use areas. This process is necessary so as to create the foundation in land-use planning for protection of the practices of farming and ranching. Land-use should be in harmony with first-in-time uses, such as agriculture, consistent with the legal doctrine of coming to the nuisance.
- 2nd. People developing non-traditional, non-agricultural uses of land should need a zoning variance prior to developing land within an agriculturally zoned area. The process of obtaining such variance in the normal administration of zoning can inform all land-use stakeholders of potential land-use conflict.
- 3rd. The word “existing” as applied to animal feeding operations should be defined in the ordinance, and its meaning should be those animal feeding operations in place and operating when the ordinance of a local unit of government takes effect.
- 4th. Option a.

New AFOs. The zoning permit applicability size thresholds for new animal feeding operations should be 300 animal units for hogs and a larger number for other livestock types, which was not specified in deference to option b. Hog operations generally emit odors that can be obtrusive.

Existing AFOs. The zoning permit applicability size threshold for existing animal feeding operations, other than hogs, should be 1,000 animal units. The threshold for hogs should be a lower number, which was not specified in deference to option b, because hog operations generally emit odors that can be obtrusive.

- 4th. Option b.

New AFOs. The zoning permit applicability size threshold for new animal feeding operations, regardless of livestock type, should be 300 animal units. The stronger odor emitted by hog operations has already been considered in the odor separation (setback) distances.

Existing AFOs. An existing animal feeding operation, regardless of livestock type, should be required to have a permit whenever the operation increases capacity to handle more than 300 animal units, whether by a single expansion or cumulatively by several expansions. (The size baseline for an existing animal feeding operation would be the capacity of the operation on the date the ordinance takes effect.)

Permitted AFOs.² A permitted animal feeding operation, regardless of livestock type, should be required to have a **new** permit whenever the operation increases capacity to handle more than 300 animal units, whether by a single expansion or cumulatively by several expansions.

The work group favored 4-b over 4-a because it more equitably applies a zoning permit requirement to new and existing (as defined) animal feeding operations but does not require existing operations, regardless of size, to obtain a zoning permit unless expanding to handle more than 300 animal units. This choice signals an interpretation of non-normal incidents of farming and ranching or the reasonable diversification or expansion of farming and ranching (1999 SB 2355). That is, the model ordinance should require zoning permits whenever a new animal feeding operation is constructed to handle more than 300 animal units and whenever an existing or a permitted operation expands capacity to handle additional livestock of 301 or more animal units, whether by one or more increments of expansion.

SUMMARY OF COMMENTS PERTAINING TO A FOURTH DRAFT

On January 4, 2000, concurrence or comments were solicited by the department from the work group, its subcommittee and other stakeholder contacts pertaining to “A Model Zoning Ordinance for Animal Feeding Operations.” The quoted document was the fourth draft prepared by the department on behalf of the work group from discussions during prior meetings of the work group or its subcommittee. This draft contained the latest round of revisions arising from a meeting of the work group held on November 30, 1999.

Comments were received from the eight people. Some comments did not seek changes to the content of the model ordinance for animal feeding operations, while other comments did. For example, the following comments did not seek changes to the model ordinance, but rather were recommendations to:

- a. Clarify the purpose of the conditional (or special) use permits in section 3.A.
- b. Move the last paragraph of section 8 pertaining to odor setbacks forward as the first paragraph of that section.
- c. Add a statement in the “Closing Commentary” that the water resource provisions of section 7 do not address siting of animal feeding operations in flood plains.
- d. Change the tone of the document by including greater emphasis on developer awareness.

² The meeting’s participants concluded that “each subsequent cumulative expansion exceeding 300 animal units requires a permit.” Given the definition for “existing,” a distinction was necessary between existing and permitted operations.

- e. Include noise, truck traffic and chemical application, in addition to odor and dust, as aspects of farming or ranching activities under “Developer Awareness.”
- f. Add the web site for the Local Government Environmental Assistance Network, www.lgean.org, to the Reference Bibliography.

In addition to item a above, another comment observed that the setback provisions of the model ordinance as written are independent of the criteria, such as hazards and effects on environmental resources, which create the need for conditional use permits.

Those recommendations for changes in the model ordinance for animal feeding operations were:

- g. Include a category for swine less than 55 pounds within the table of section 2.
- h. Remove the requirement in section 3.C that “a registered land surveyor, civil engineer or other person ...” must prepare the site plan for those operations with fewer than 1,000 animal units.
- i. Remove item 4 of section 4.C, which requires an application for a permit to include information about “surrounding land uses, zoning and ownership,” because the local government should be responsible for this information.
- j. Change the threshold at which operators would be required to apply for and obtain a permit from 300 animal units to 1,000 animal units.

Given the comment that setbacks in the model ordinance are independent of required conditional use permits, the ten sections of the model ordinance were rearranged into three sections with subsections as follows:

- 1. General Provisions
 - 1.1 Definitions
 - 1.2 Equivalent Animal Numbers
 - 1.3 Environmental Provisions
 - 1.4 Enforcement
 - 1.5 Severability
- 2. Setback Requirements
 - 2.1 Water Resource Setbacks
 - 2.2 Odor Setbacks
- 3. Conditional Uses
 - 3.1 Permit Procedures
 - 3.2 Ownership Change
 - 3.3 Operational Change

It is likely that most people participating in meetings of the work group did not disassociate the required setbacks from the required permits even though drafts had not linked the two. A

clear disassociation of setbacks for animal feeding operations greater than 300 animal units would free up the threshold for conditional-use permits based upon a size threshold when size can infringe (for reasons other than odor) on the rights of nearby people. The disassociation has merit because the state odor standard (1999 SB 2365) applies to all animal feeding operations regardless of size or type of livestock.

Items b, c and f have been addressed with changes as recommended.

Item g has been addressed by using a value of 0.1 animal equivalent units for a nursery pig. (See section 1.2) South Dakota uses 0.1 animal equivalent units per nursery pig and Minnesota uses 0.05.

Items h and i have been addressed by inserting language that these items would be required for operations larger than 1,000 animal units. (See section 3.1)

Items d and e have been addressed within a rewritten "Introductory Commentary" chapter of the document. The prior narrative in this chapter was transferred into an appendix.

Items a and j are interdependent: a has been addressed in the rewritten "Introductory Commentary," and the zoning permit applicability section of the model ordinance has been rewritten. (See section 3.1, the size threshold remains at 300 animal units). An adjustment for item j was not developed from the record of the work group's November 30th meeting; for example, setting the threshold greater than 300 animal units.

In addition, one comment indicated that the document was too long: Appendix II, titled "History of the Development of a Model Zoning Ordinance for Animal Feeding Operations" has been removed for printing as a separate document.

THIRD MEETING OF THE WORK GROUP

The third and final meeting of the work group was held on February 29, 2000. A notice for the meeting was distributed to everyone listed in the two tables above. The notice included a fifth draft for an AFO zoning handbook, which contained draft model land-use policies with objectives and a draft model zoning ordinance, as well as an updated draft of this report.

The primary outcome of this meeting was adoption of revised size from 300 to 1,000 animal units for animal feeding operations that would be conditional (or special) use of land. The consensus for the change acknowledged that as a model ordinance local governments can select the size with which to meet local concerns and specific circumstances.

APPENDIX

Applicability of an Ordinance for Animal Feeding Operations

Aspects of Applicability.

Normal zoning procedures of local units of government often require permits prior to construction of buildings and structures. Conditional use (aka special use) permits are issued when proposed buildings or construction is inconsistent with the functional use of the zoned district. The permitting procedures have requirements that are necessary for public participation and for assessment of proposed new construction with established construction criteria.

Two primary purposes for the application of zoning to animal feeding operations have emerged from the sub-committee's deliberations.

One purpose is to foster compatible uses within agriculturally zoned land through separation distances (setbacks) where a new animal feeding operation must distance itself from certain other uses of the land, such as residences, school, churches, etc. The separation distances are intended to disengage the odor, as well as, fly, dust and noise aspects of animal feeding operations from the neighbors of these operations so as to protect the right to practice farming or ranching by fostering harmony (negating complaints).

Another purpose is to protect operators of existing animal feeding operations from encroachment through reverse setbacks (as rights to practice farming and ranching) where new development could not locate within those distances. Thus, this second purpose, in turn, affords subsequent encroachment protection to newly constructed animal feeding operations.

Both purposes follow the duty of local governments to promote public safety, health and welfare; the location of buildings and structures; the occupancy of lands; and the conservation and development of natural resources (NDCC chapters 11-33 and 58-03).

One question arises as to whether the conditional-use permit is the tool needed to implement setbacks and reverse setbacks, regardless of the size of the animal feeding operation. In a simplistic concept, are the permits needed so as to place animal feeding operations "on the map" in a zoned district and so as to establish the "buffer" which is meant to protect the rights of farming by controlling encroachment. The apparent answer is yes.

Another question arises as to whether the conditional uses apply, by virtue of present zoning procedures, to atypical animal feeding operations. For example, in the context of "normal incidents of farming or ranching" (1999 SB 2355), non-normal or atypical incidents would be the larger animal feeding operations. The apparent answer is yes.

Two factors that were briefly discussed by the subcommittee and that relate to the interpretations of the phrase “normal incidents of farming or ranching” (1999 SB 2355) are described in more detail below.

First. The number of animal feeding operations that have been issued permits by the Department of Health is about 440. The department presently requires any livestock feeding operation with more than 200 animals units to obtain a permit. Based upon a recent survey of the livestock industry, some operators of livestock feeding operations larger than 200 animal units may not be aware of rule permit requirements.

Currently, there are:

- about 80 operations with 300 or more animal units;
- nearly 60 operations with more than 500 animal units;
- nearly 35 operations with more than 700 animal units; and
- nearly 30 operations with more than 1,000 animal units.

A bar diagram of these groupings of permitted animal feeding operations follows. The total number of animal feeding operations, which would include those having fewer than 200 animal units, is unknown. In 1997, there were 12,744 beef cow farms; 797 hog farms; 1,170 dairy farms; and 1,101 sheep farms.³ The total number of farms in North Dakota was 31,000 in 1998.

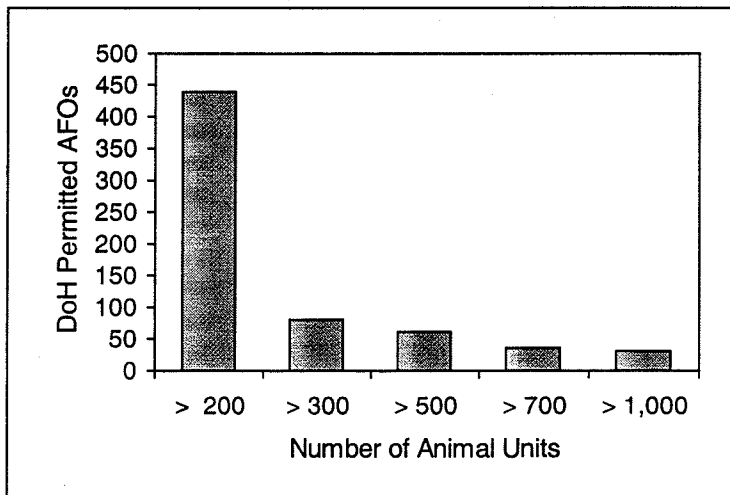


Figure 2. The number of animal feeding operations permitted by the Department of Health for thresholds of numbers of animal units.

Second. Another factor that ought to be considered, however, is the strength of odors emitted into the atmosphere from the combination of animal housing and manure storage structures of animal feeding operations. Odor strength conventionally is expressed as the number of odor

³ Source: Farming in North Dakota, <http://www.ag.ndsu.edu/farming/farmingprimer.htm>

units per second. It generally increases with the number of confined animals, but is also highly dependent upon the type of housing and the type of manure storage structures, including open surface area. The point scatter diagram which follows demonstrates relationships between the number of animal units and the emitted strength of odors from animal housing, which includes confounding factors such as the type of animal housing. The 16 data points on the diagram include one beef steer operation, two Holstein dairy operations, three poultry operations and 10 swine operations.⁴ The emitted strength of odors does not include manure storage structures that are not within the animal housing.

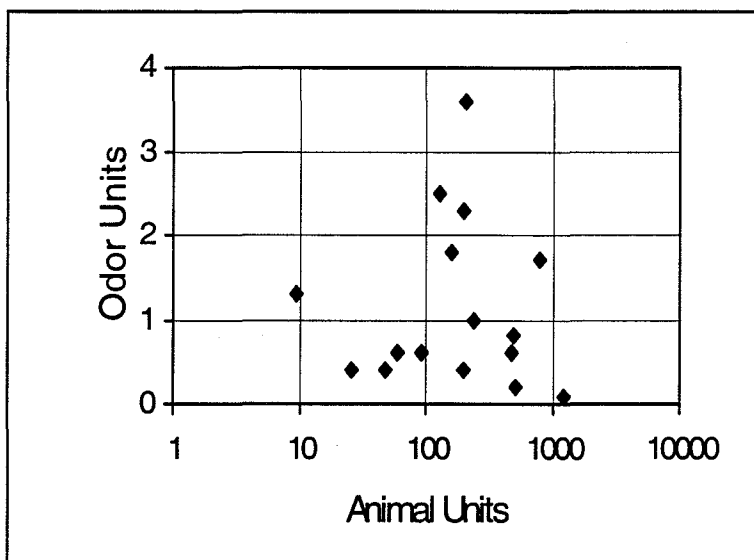


Figure 3. Scatter plot of source odor strength as a function of the number of animal units.

The Pearson correlation for the 16 data points is a -0.21, which indicates no functional dependance for odor source strength on the number of animal units for this data set. The poor correlation likely is influenced or confounded by the type of animal housing. An odor emission strength of two odor units per second is not synonymous with an ambient air concentration of two odor concentration units.

Odor concentrations downwind of animal feeding operations depend upon wind speed and other atmospheric characteristics governing odor dispersal. For example, higher wind speeds dilute odors. The potential frequency of excursions of odors at specific places downwind can be estimated, and this frequency varies by direction, because wind occurs more frequently from some directions than from others. Assessment of odor concentrations at specific places downwind of animal feeding operations requires application of atmospheric transport and

⁴ Source: Jacobson, Larry D., et al. July 18-22, 1999. Odor and Gas Emissions from Animal Manure Storage Units and Buildings, ASAE Paper No. 994004, ASAE, St. Joseph MI.

dispersion calculations or computer models.⁵ Field measurements of odors downwind of animal feeding operations can also be used (1999 SB 2365).

The data set shown in the figure above does not display an apparent best-fit line signature from which an applicability size threshold would be apparent. Since intended separation distances between farming and ranching and other developments originated from concern regarding odor complaints and concern regarding the right to farm or ranch, the source odor strength data favor setting the size threshold at a lower number of animal units. (The separation distances at which odors might cause a conflict with neighboring land uses selected by the first meeting of the sub-committee were not changed during the second or third meetings of the sub-committee.)

A minority view during the third meeting was that existing or new animal feeding operations with fewer than 1,000 animal units already are protected by virtue of being located in an area zoned for agriculture. This view asserted that the burden of knowing the locations of animal feeding operations should be on developers of alternate uses of land through the process of obtaining a variance to agricultural zoning, since the existing ranch or farm would be first in time. This view also indicated concern about subjecting operators to the application information and procedures, including public participation in hearings, as presented in the draft ordinance. The view assumes that the majority of local units of government have adopted comprehensive land-use plans that delineate agricultural-use districts. Another consequence of this view is that local governments might be expected somehow to have the information at hand so that setbacks and reverse setbacks could be applied.

A majority view during the last meeting was that setbacks can apply to new animal feeding operations with more than 300 animal units and can conform to SB 2355; thus, the threshold should be at 300 animal units so as to provide the intended benefit of setbacks and reverse setbacks. Furthermore, some of these subcommittee members also expressed the view that the protection of rights to farm and ranch via reverse setbacks cannot be given to existing animal feeding operations without application of common practices for issuing conditional-use permits, because zoning officials otherwise have no way of knowing where the existing operations are located.

It was noted that state rule thresholds currently apply at 200 and 1,000 animal units, but that the Department of Health hopes to change its 200 threshold to 300 animal units so as to be the same as EPA regulations. The size threshold of animal feeding operations that release odors of sufficient strength such that conflict might arise between those larger operations and neighboring land uses (at setback distances greater than one-half mile) is elusive, because the types of animal housing, as well as the types of manure storage, determine in odor strength. Thus, a threshold, whether at 300 or 1,000 animal units, follows the thresholds for permits required by federal or state rule as a substitute for a threshold derived from odor information.

⁵ Source: Jacobson, Larry D., et al. Odor Rating System Demonstration Project, March - August 1997, Final Report. Department of Biosystems and Agricultural Engineering, University of Minnesota. St. Paul MN.

During the subcommittee's third meeting, the Department of Health proposed an option that would change the threshold from 300 to 1,000 animal units and that an operator of an existing animal feeding operation with fewer than 1,000 animal units be given zoning protection if the operator "registers" (meaning written notice including certain information) that operation with the local unit of government. This proposal was unanimously rejected.

Summary of the Applicability Issue.

The purpose of the separation distances of the model ordinance is to disengage the odor, as well as fly, dust and noise aspects, of animal feeding operations from the neighbors of these operations so as to protect the right to practice farming or ranching by fostering harmony (negating complaints). Separation distances would be imposed as setbacks on new animal feeding operations and as reverse setbacks on encroaching development. Local units of government cannot achieve this purpose without knowing where new animal feeding operations are proposed to be located or where existing operations are located.

The designated land-use districts (zones or zoning) of land-use plans and the conditional-use permits, granted in accordance with adopted plans and designated districts for the jurisdictional areas of local governments, provide the mechanisms for recognition and promotion of separation distances.

The notable features for each of the two applicability size thresholds for the permitting function of zoning, namely 300 and 1,000 animal units, are listed below.

Threshold of 300 animal units relative to a threshold of 1,000 animal units

- ① A threshold of 300 animal units is consistent with the threshold at which the federal rules for animal feeding operations apply. The department plans to amend the state feedlot rules upward from 200 animal units to 300 animal units so that the state rule threshold becomes the same as federal regulation.
- ② If the operator of an existing animal feeding operation implements a "major" expansion so as to exceed 300 animal units, this operator would have to apply for a conditional-use permit and would then be protected from subsequent encroachment via the reverse setbacks.
- ③ New animal feeding operations with more than 300 animal units would need a conditional use permit and would be subject to the odor and source-water setbacks. These animal feeding operations then would be protected from encroachment through reverse setbacks.

- ④ The lower threshold increases the likelihood that reverse setbacks to control encroachment will diminish neighbor complaints about odor, as well as flies, dust and noise.
- ⑤ The lower threshold increases by about 50 the number of existing animal feeding operations that could become regulated by the model zoning ordinance, IF each operator of these operations decides to implement a “major” expansion.

Threshold of 1,000 animal units relative to a threshold of 300 animal units

- ① A threshold of 1,000 animal units is consistent with the threshold at which the federal EPA NPDES regulations apply.
- ② If the operator of an existing animal feeding operation implements a “major” expansion so as to exceed 1,000 animal units, this operator would have to apply for a conditional use permit and would then be protected from subsequent encroachment via the reverse setbacks.
- ③ New animal feeding operations with more than 1,000 animal units would need a zoning conditional use permit and would be subject to the odor and source water setbacks. These animal feeding operations then would be protected from encroachment through reverse setbacks.
- ④ The higher threshold decreases the likelihood that reverse setbacks to control encroachment will diminish neighbor complaints about odor, as well as flies, dust and noise.
- ⑤ The higher threshold decreases by about 50 the number of existing animal feeding operations which could become regulated by the model zoning ordinance, IF each operator of these operations decides to implement a “major” expansion.

The following matrix summarizes the concepts for application of zoning as presented by the work group’s subcommittee.

CONDITIONAL USE (aka SPECIAL USE) PERMIT REQUIREMENTS		
	Size of Animal Feeding Operation (animal units, a.u.)	
AFO	< 301 a.u.	more than 300 a.u.
Existing	no	yes, but only if operator plans a “major” expansion as administered by the local unit of government
New	no	yes

Animal feeding operations that exist at the time a local unit of government adopts the provisions of the model ordinance, regardless of size, do not have to apply for zoning conditional-use permits. Thus, the existing animal feeding operations are not protected from encroachment until the operator receives a conditional-use permit, which would be required only when the operator implements a "major" expansion. Local units of government would decide whether an expansion was "major" based upon factors, - including but not limited to, location conditions, environmental conditions, or public safety, health or welfare - that could reasonably be affected.