

A GUIDE FOR LOCAL LAND USE PLANNING FOR AGRICULTURAL OPERATIONS



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AGRICULTURE



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Introduction and Overview

The Indiana Land Resources Council (ILRC) has, after considerable discussion, three public listening sessions, and further discussion within the Council, voted to recommend three sets of model regulations included in this document for consideration by Indiana counties (models are summarized on page 4 and detailed in the attached). The ILRC is a nine member council appointed by the Governor to assist local and state decision-makers with land use tools and policies. The council is composed of the following members:

Business	Bruce Everhart	Wells Fargo Bank
County Government	RJ McConnell	Johnson County Commissioner
Environment	Mary McConnell	The Nature Conservancy
Farm Owners	Matt Gibson	Gibson Family Farms
Forestry	John Brown	Pike Lumber Company
Land Development	David Compton	Indiana Builders Association
Land Use Issues	Eric Kelly	Ball State University
Municipal Government	Joe Klump	Mayor of Bedford
Soil and Water Conservation	Gene Schmidt	National Association of Conservation Districts

In developing the model ordinances, the ILRC researched how certain Indiana counties as well as counties in other states have developed their zoning ordinances to minimize conflicting uses and ensure that agriculture remains a strong component of the county's economy. An analysis of university research on agricultural production practices and odor assessment tools was also conducted.

Once the model ordinances were drafted, the ILRC and the Indiana State Department of Agriculture (ISDA) hosted three Listening Sessions across the state. Over 200 interested citizens attended the listening sessions and approximately 100 comments were received. After reflecting on the public's input, the Council revised their recommendations, posted the ordinances for a second round of public comment, and made further revisions prior to final approval of the ordinances.

The Council recommends these models with the following comments, conditions and limitations:

1. The three models represent three different approaches to regulation. They are not specifically "alternatives," because it may make sense to use a combination of two of them; on the other hand, it is unlikely that any county would find it useful to adopt all of them.
2. The models contain specific standards, including distances and dimensions. The Council believes that these standards are reasonable, based on the planning, scientific, regulatory and other information available to the Council. A county considering the

- adoption of the model ordinances, however, may certainly use the models and change the numbers. The regulatory approach set forth in each model is far more important than the details included in the model.
3. These models are intended to address LAND USE issues that arise because of the variety of residential and agricultural uses found in rural Indiana today. They are not intended to address other issues and are based in part on the following assumptions:
 - a. That the Indiana Department of Environmental Management (IDEM) regulates the water quality impacts of Confined Feeding Operations (CFOs) and Concentrated Animal Feeding Operations (CAFOs) and that it will do so in a way that fully protects the people of the state of Indiana.
 - b. That the Indiana General Assembly is addressing the issue of large-scale application of fertilizer by persons who are not currently subject to permitting or licensing by the state. [Note: In 2012, the Office of the Indiana State Chemist adopted the Fertilizer Material Use, Distribution, and Record Keeping Rule to address this issue. See 355 IAC 8-1 et al.]
 - c. That IDEM and the Indiana Department of Health regulate rural septic and wastewater systems and that they will do so in ways that fully protect the people of the state of Indiana.
 - d. That the measurement and regulation of odors is a developing science, and that the issues of odor mitigation can best be addressed with a combination of reasonable setbacks and the use of modern management practices.
 4. In recommending these models, the Council believes that all stakeholders in Indiana's rural areas are better off with a system that provides certainty about what is and is not allowed than with a system in which land use and the extent of regulation of that use evolves from case-by-case negotiations.
 5. Land use control in Indiana is a local function. In recommending these models, the Council intends to offer a resource to assist Indiana counties, not to preempt the local power and duty to set land use policy.

Model Ordinance Concepts

Counties are seeking guidance on how to update their zoning ordinances to provide for strategic growth of agricultural production while minimizing conflicting land uses. Therefore, one of the first initiatives of the ILRC has been to develop model agricultural zoning ordinances. The ILRC considered seven potential models to develop in depth. After consideration of the pros and cons of each model, the ILRC decided to focus on developing three of the agricultural zoning concepts.

These ordinances are based on the following set of principles that are fundamental to effective agricultural zoning regulation:

Focus on traditional zoning functions and coordination with state regulation. Traditional zoning functions include considerations such as odor dispersion, traffic impact, water usage, and aesthetics. These considerations complement existing state and federal environmental regulations. The ordinances developed by the ILRC are focused on considerations that are within the parameters of local zoning authority.

Lay a solid planning foundation. Many counties throughout the state have comprehensive plans that are 20-30 years old. These plans are outdated and no longer serve as a roadmap for the future of a community. It is critical that counties have laid a solid planning foundation before attempting to construct regulatory responses through zoning regulation. The comprehensive plan provides a context and basis for difficult zoning decisions.

Emphasis on Public Input. The public hearing process is integral to local zoning regulation. State law reflects this importance by requiring public hearings for certain official actions of a plan commission. These actions include the following:

IC § 36-7-4-507	Adoption or amendment of Comprehensive Plan
IC § 36-7-4-602	Adoption or amendment of Zoning Ordinance

When a plan commission is revising their comprehensive plan or zoning ordinance, it is critical that all available measures are taken to notify and engage the public. The public should take an active role in developing clear ordinance requirements for permit applicants. The model ordinances follow this approach by setting forth objective standards that facilitate administrative review of each permit application.

Some counties elect to take a case-by-case approach to permitting, which entails a public hearing for every building application. With this approach, the plan commission or board of zoning appeals (BZA) often develop standards retroactively for each individual permit. It is the ILRC's position that this approach is usually less efficient and provides little guidance to the decision-makers regarding what standards should guide their decision. In addition, the absence of clear standards upfront lends itself to subjectivity in permitting decisions and uncertainty on the part of the applicant of what is expected. The ILRC firmly supports public involvement. However, this involvement should be sought at the development stage versus the administrative stage of the zoning process.

Imposing objective, science based standards. Development and performance standards for new or expanding agricultural operations should be objective and science based. Objective standards provide for efficiency in the decision making process, which is important to county plan commissions and ensures an applicant is successful in capitalizing on a business opportunity. Requirements for agricultural operations should also be science based, such as separation distances based on scientific measurements of odor dispersion.

Being proactive rather than reactive. Implementation of new agricultural regulations should take place prior to a new or expanded operation being proposed. This proactive approach provides a better environment for developing a county's policy on agricultural growth.

Utilization of density measures to minimize conflicting uses. A fundamental principal of zoning is separation of conflicting uses. The model ordinances exemplify several approaches to address the land use needs of agriculture while also accommodating rural residential development. Some of these approaches include rural estate districts, a special exception process for residential development in agricultural zones, and utilizing a maximum lot size in conjunction with cluster development to manage subdividing of large tracts of land.

Notification as a component of rural residential development. It is critical that individuals who are moving to an agricultural zone are notified of the types of agricultural activities that occur in these areas. An effective tool to ensure this notification is the use of an agricultural clause with an accompanying deed restriction to notify successive owners. An agricultural clause notifies individuals who seek to build a home in a rural area that they may experience noise, dust, and odor associated with generally accepted farming practices.

Requirements for non-conforming uses. Addressing pre-existing non-conforming uses is an essential consideration when a county is revising its zoning ordinance. Non-conforming agricultural uses need to have the ability to expand in order to remain competitive. In addition, there must be requirements to minimize conflicts between non-conforming residential uses and new or expanded agricultural activities.

Allow for sufficient flexibility to be adapted to regional and county needs. Indiana's counties are diverse with regard to population density, types of agriculture, and the extent of agricultural industry that takes place in their county. It is important to note that any requirements contained in these ordinances need to be evaluated for their suitability for a specific county.

Summary of Model Ordinances

The ILRC has approved the following models as guidance tools for counties during the process of revising their zoning ordinance:

Multiple Agricultural Districts. The multiple tiered agricultural zone structure is a division of land currently zoned agricultural to reflect different types of modern agriculture. When there are proactive determinations made regarding where certain types of agriculture will occur, it offers residents moving into an agricultural zone greater predictability of the types of agriculture that will occur nearby. It also clearly indicates to producers where their type of agricultural business is welcome and supported by local planning policies.

Limited Use with Development Standards. In a limited use approach, objective development standards are set forth within the zoning ordinance as conditions to a permitted use rather than having a special exception process for new agricultural operations. This approach provides an applicant with clear guidance on what is expected from the plan commission to receive local approval. These standards should be science based, such as using proven odor abatement measures as an option to reduce a maximum separation distance.

Site Scoring System. The site scoring system is a mechanism to approve local application for a new livestock facility through achievement of a predetermined score based on a series of objective criteria. The score requirement is used in conjunction with minimal setbacks. This approach recognizes the difference in farms by providing many options to meet the minimum score.

Land use is a firmly rooted local control issue, and the ILRC is merely an advisory body to provide resources to local government. There are many different strategies to accommodate the land use needs of a community. The best approach for each county will be tailored to its unique characteristics.

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Model Ordinances

MULTIPLE AGRICULTURAL DISTRICTS

In a multiple tier agricultural zone structure, land currently zoned agricultural is divided to reflect different types of modern agriculture. The primary advantage of this model is that counties have proactively made determinations of the growth patterns of the county and established the best sites for agricultural uses. In addition, it minimizes conflicting uses by delineating certain areas for agriculture and areas for rural residential development. However, this requires a comprehensive assessment of the entire county, which entails substantial time and resources.

For multiple agricultural zones to be effective, the concept cannot be merely set forth in the ordinance. The zones must be designated and implemented. Large areas must be proactively carved out for certain uses, not just isolated quarter-quarter areas through repeated rezones. The zones can be implemented in increasing intensity of use to create a buffer.

In determining livestock production zones, a Geographic Information System (GIS) assessment of areas currently zoned agricultural should be conducted. Factors to be identified in this assessment include prime farmland areas, existing livestock facilities, location of cities and towns, current housing and density, parks and other public areas, floodplains and wetlands, and designated growth areas where infrastructure has been extended or planned. Agriculturally zoned land adjacent to certain areas should be designated rural estate or general agricultural. A preliminary economic analysis should also be conducted when delineating agricultural zones. This analysis provides a county with information on the current economic impact of agriculture to the community and opportunities for growth in certain sectors.

The term CFO refers to the definition of a Confined Feeding Operation found at 327 IAC 16-2-5 and CAFO refers to the definition of a Concentrated Animal Feeding Operation found at 327 IAC 5-4-3.

5.40 A-1 GENERAL AGRICULTURAL DISTRICT

5.401 Intent of District

The intent of this district is to provide for and protect substantial areas for a broad variety of agricultural uses where little or no urbanization has occurred or is planned to occur. Residential development is permitted by special exception, which provides the opportunity to consider whether the dwelling is related to the operation and maintenance of agricultural uses in

this district. It is the intent of this district to limit all non farm residential uses to provide for large areas of contiguous farm land.

5.402 Uses

A. Permitted Uses

See Table A, Official Schedule of Uses

B. Special Exceptions

See Table A, Official Schedule of Uses

5.403 Development Standards

A. Maximum Lot Size [one (1) acre to two (2) acres]

B. Density

One (1) dwelling unit per twenty (20) acres

Note: To preserve large contiguous lots of agricultural land, there should be a requirement for cluster development. For example, if an 80 acre tract can have 4 splits, with a maximum lot size of 1½ acres, there should be a requirement that those dwellings be clustered on one portion of the tract. It is important to note that requiring cluster development for rural subdivisions may entail revisiting the county's subdivision control ordinance. In addition, the ordinance can set forth how many splits are allowed before a tract must be divided according to the subdivision control ordinance. There should also be a provision allowing larger subdivision of tracts if the land is going to be used for an agricultural use.¹

C. Yard Setbacks

A minimum yard setback shall be measured from the property line and shall be provided as follows:

Minimum Front Yard [fifty (50) feet to sixty (60) feet]

D. Maximum Structure Height

No structure shall be more than [thirty (30) to fifty (50) feet] from the ground in height, except grain elevators, grain storage or other agricultural handling or processing equipment, unless otherwise authorized by the Board of Zoning Appeals.

E. Additional Standards

1. Any new residential dwelling or subdivision development is permitted in this zone only by special exception.

¹ Bowers, D. and T. Daniels, *Holding Our Ground*, 121 (1997).

Note: In determining whether to grant a special exception for residential development, the Board of Zoning Appeals (BZA) should give consideration to whether the dwelling is related to a farm operation. For example, this would include owners, family members employed in the agricultural operation on the premises, or tenants involved in the agricultural operation on the premises. If the dwelling is not related to a farm operation, consideration should be given to the impact of the proposed development on the surrounding agricultural community. If the application for rural subdivision development is approved by the Board of Zoning Appeals, it must be developed according to the subdivision control ordinance.

2. All applicants, developers, or landowners who develop any use in this district shall be required as part of the special exception process to sign the following agricultural clause and record it as a deed restriction to bind successive owners:

“Grantee and their successors in title are on notice and understand that this residence is being built in a predominately agricultural area and that farming operations will be practiced in the area of this residence. With this understanding, the grantee and successors in title forego their right to bring claim against any farmer in the area who has not been negligent.”²

3. A CFO or CAFO permitted by special exception shall have Indiana Department of Environmental Management (IDEM) approval and be in compliance with IDEM regulations.

4. Reciprocal Separation Distance Provision

- A single family dwelling or subdivision permitted by special exception must not locate within [seven hundred (700) feet to eight hundred (800) feet] of an existing livestock facility, except for a dwelling related to the farm operation.
- A CFO or CAFO permitted by special exception may not locate within [seven hundred (700) feet to eight hundred (800) feet] of an existing residence, except for a dwelling related to the farm operation.³

Note: Separation distances are measured from structure to structure. The "structure" for purposes of livestock facilities can be either the animal housing area or waste

² The Center for Rural Pennsylvania, *Zoning for Farming: A Guidebook for Pennsylvania Municipalities on how to Protect Valuable Agricultural Lands*, 43 (1995).

³ Bowers, D. and T. Daniels, *Holding Our Ground*, 113 (1997).

management area. The distance is not measured from the fields on which manure is applied.

5. Pre-Existing Non-Conforming Uses

An existing CFO or CAFO in this zone that is a non-conforming use may expand their operation.

6. All applicants, developers, landowners who develop any residential use within one-half (1/2) mile of this district shall be required to enter into an agricultural clause with an accompanying deed restriction to bind successive owners. In addition, residential subdivision of property in a general agricultural zone or within three hundred (300) feet of such zone must address the following as part of the Primary Approval:

- a. Off site surface drainage impacts;
- b. Subsurface tiling systems impacts;
- c. Security of ag zoned property from residential uses

5.50 A-2 INTENSIVE AGRICULTURAL DISTRICT

5.501 Intent of District

The Intensive Agricultural District is intended to provide areas within the County for agricultural related industries and confined feeding operations. Due to the intensive nature of the agricultural uses in this district, it is critical that residential development permitted by special exception is limited to dwellings related to a farm operation. Intensive agricultural districts should be buffered from residential uses through graduated use of less intensive agricultural districts.

5.502 Uses

A. Permitted Uses

See Table A, Official Schedule of Uses

B. Special Exceptions

See Table A, Official Schedule of Uses

5.503 Development Standards

A. Minimum Lot Size [ten (10) acres to twenty (20) acres]

Note: A smaller minimum lot size is used in this approach to provide for intensive agriculture uses that do not require a large tract of land. Low density residential development is controlled through the special exception procedure for residences in this zone. In the absence of such procedure, a minimum lot size of [forty (40) acres to fifty (50) acres] is recommended.

B. Minimum Setbacks

1. A CFO or CAFO shall have a setback of:
 - a. Minimum setback requirement is [seven hundred fifty (750) feet to eight hundred fifty (850) feet] from a residentially zoned area.
 - b. This setback shall not apply to fences for areas where animals graze on pastures.

Note: The separation distance from a residentially zoned area is measured from the edge of the zoning district to the livestock housing structure.

2. A minimum yard setback for a CFO or CAFO shall be measured from the property line and shall be provided as follows:

Minimum Front Yard [two hundred (200) feet to three hundred (300) feet]

C. Maximum Structure Height

No structure shall be more than [thirty (30) to fifty (50) feet] from the ground in height, except grain elevators, grain storage or other agricultural handling or processing equipment, unless otherwise authorized by the Board of Zoning Appeals.

D. Additional Standards that apply

1. Any residential use in this zone is permitted only by special exception.

Note: In determining whether to grant the special exception, it is strongly encouraged that the Board of Zoning Appeals (BZA) only permit residences related to a farm operation. For example, this would include owners, family members employed in agricultural operation on the premises, or tenants involved in the agricultural operation on the premises.

2. All applicants, developers, landowners who develop a residential use within this district or one-half (1/2) mile of this district shall be required to enter into an agricultural clause with an accompanying deed restriction to bind successive owners. In addition, residential subdivision of property within three hundred (300) feet of an intensive agricultural zone must address the following as part of the Primary Approval:

- a. Off site surface drainage impacts;
- b. Subsurface tiling systems impacts;
- c. Security of ag zoned property from residential uses

3. A CFO or CAFO shall have IDEM approval and be in compliance with IDEM regulations.

4. Pre-Existing Non-Conforming Uses

A new CFO or CAFO may not be sited within [seven hundred (700) feet to eight hundred (800) feet] of an existing single family residence or subdivision, except for a residence related to the farm operation.⁴

⁴ Iowa Department of Natural Resources, *Results of Animal Feeding Operations Odor Study*, 6 (2006).

5.60 RE RURAL ESTATE DISTRICT

5.601 Intent of District

The Rural Estate (RE) District provides for a variety of less intensive agricultural uses, while accommodating some low density single family dwellings and subdivisions in appropriate locations in the County. This district should be located within incorporated towns and areas adjacent to the incorporated boundary. If the county has an advisory plan commission, this would be within the extraterritorial jurisdiction area, which can be up to two miles. However, subdivisions are encouraged to be located closer to or adjacent to established municipalities where public utilities can be provided to the subdivision. This district was created to accommodate and provide opportunities for rural development while excluding residential uses from the agricultural districts to promote and protect the agricultural economy. Subdivisions are preferred over single lot dwellings to encourage more compact and contiguous development.

5.602 Uses

A. Permitted Uses

See Table A, Official Schedule of Uses

B. Special Exceptions

See Table A, Official Schedule of Uses

5.603 Development Standards

A. Maximum Lot Size [one (1) acre to two (2) acres]

Note: Maximum lot sizes encourage more contiguous, compact growth in rural areas. A larger maximum lot size may be used for rural estates than for subdivisions in a rural estate district. A minimum lot size should be used in conjunction to establish the minimum building lot necessary for a septic system and second leach field.

B. Minimum Lot Width [one hundred fifty (150) feet to two hundred fifty (250) feet]

C. Yard Setbacks

A minimum yard setback shall be measured from the property line and shall be provided as follows:

1. Minimum Front Yard [fifty (50) feet to sixty (60) feet]
2. Minimum Rear Yard [twenty (20) feet to thirty (30) feet]
3. Minimum Side Yard [twenty (20) feet to thirty (30) feet]

D. Maximum Structure Height [twenty (20) feet to thirty (30) feet]

E. Parking [refer to ordinance section on parking and loading standards]

F. Landscaping [refer to ordinance section on landscaping]

G. Signage [refer to ordinance section on sign standards]

H. Additional Standards that apply

1. All driveways shall be located off the subdivision road. No driveways shall be located off a county or municipal road.
2. For subdivisions of parcels to create new parcels, lots or tracts see the subdivision control ordinance for standards.
3. All single family residential uses and subdivision development in this district shall sign an agricultural clause with an accompanying deed restriction to bind successive owners.
4. Reciprocal Separation Distance Provision - Any single family dwelling or subdivision must not locate within [six hundred (600) feet to seven hundred (700) feet] of an existing livestock facility.
5. Nonconforming Uses - Any livestock facility in a rural estate district that is a pre existing non-conforming use may expand their operation.

Note: A non-conforming use can be required to comply with requirements to which conforming agricultural uses are subject (see IC § 36-7-4-616).

TABLE A: OFFICIAL SCHEDULE OF USES

Use	General Ag	Intensive Ag	Rural Estate	Forestry (see note)
Farm Residence	S	S	P	S
Farm Worker Housing	S	S	P	S
Non-farm Residence	S	S	P	S
Residential Subdivision	S	X	P	X
Agricultural Buildings	P	P	S	P
Accessory Structures	P	P	P	P
Row Crop	P	P	P	P
Livestock Production not Requiring an IDEM Permit	P	P	S	S
Confined Feeding Operations (CFO)	S	P	X	X
Concentrated Animal Feeding Operations (CAFO)	S	P	X	X
Meat Processing	S	P	X	X
Grain Elevator	P	P	X	X
Farm Supply Store	P	P	S	X
Farm Chemical Supply Dealer	P	P	X	X
Farm Equipment Dealer	P	P	X	X
Farm Equipment Repair (Accessory)	P	P	X	P
Farm Equipment Repair (Commercial)	P	P	X	X
Operation of any machinery, vehicles, and other uses customarily incidental to agricultural uses being pursued on the premises.	P	P	P	P
Sawmill	S	P	X	P
Timber Processing	S	P	X	P

P Permitted Use
S Special Exception
X Excluded Use

Note: Counties in the state with a large forestry industry may want to include a forestry district.

SITE SCORING SYSTEM

The site scoring system is a mechanism to approve local application for a new livestock facility through achievement of a predetermined score based on a series of science-based criteria. In determining these criteria, consideration was given to traditional zoning and land use considerations, university research on manure management and application practices, and Indiana's regulatory structure. It is important to note that better scientific data is needed to tailor the points awarded for additional setback distances from structures.

The site scoring system contains several operational conditions to approval. For example, the system awards points for odor abatement practices utilized in the animal housing facility and when conducting manure application. A community that is considering this approach needs to assess whether they have the resources to monitor continued adherence to these conditions.

The primary advantages of this approach are:

- Clear, objective criteria that provide for efficient decision making for local plan departments.
- Provides an applicant with a clear sense of what is expected to receive a local permit.
- Recognizes the difference in farms by providing many options to meet the minimum score.

A disadvantage of this approach is the case-by-case analysis versus a proactive designation of certain zones for livestock production.

Process: With this approach, a county implements the following minimal setbacks:

- [600 - 650] feet from an existing residence or subdivision development
- [900 - 1000] feet from a public use area
- [900 - 1000] feet from a religious or educational institution

Note: Additional minimal setbacks for other structures may be added if a county determines they are necessary.

The applicant must meet these setbacks and achieve a minimum overall score to be approved. The scoring system application is reviewed administratively by the plan director. Because the requirements are clear and objective, it is not necessary for the plan commission to review each application to determine whether it meets the minimum overall score for local approval.⁵

Example: 8000 head swine finishing facility assuming minimum setbacks of 600 feet from residences, 900 feet from a public use area, and 900 feet from a religious or educational institution.

⁵ Minnesota Department of Agriculture, *Livestock, Local Governments, and Land Use*, 23 (2006).
Hutcheson, Scott, Purdue University Cooperative Extension Service Communities on Course Land Use, *Plan Commission Public Hearings: A Citizen's Guide*, 4 (1999).

Site and Facility Characteristics -

- 1000 feet from nearest non-farm residence = 45 points
- 2640 feet from nearest public use area = 25 points
- 2640 feet from nearest school = 35 points
- Odor abatement measures (covered manure storage / shelterbelt) = 50 points
- Inject manure = 30 points
- Adequate truck turnaround = 25 points
- Feeding and watering system to reduce water use = 20 points
- Additional property taxes = 15 points

Total Possible Points = 400

Total for Proposed Facility = 245 points

Proposed Site and Facility Characteristics

The following scoring criteria apply to the site of a proposed CFO or CAFO. The term CFO refers to the definition of a Confined Feeding Operation found at 327 IAC 16-2-5 and CAFO refers to the definition of a Concentrated Animal Feeding Operation found at 327 IAC 5-4-3.

The proposed site must obtain a minimum overall score of 240 - 260 to be approved.

1. Additional separation distance, above minimum setbacks, from proposed confinement structure to the closest residence not owned by the owner of the confinement feeding operation.

	Score
0 feet to 250 feet	25
251 feet to 500 feet	45
501 feet to 750 feet	65
751 feet to 1,000 feet	85
1001 feet or more	100

2. Additional separation distance, above minimum setbacks, from proposed confinement structure to the closest public use area.

	Score
0 feet to 250 feet	5
251 feet to 500 feet	10
501 feet to 750 feet	15
751 feet to 1,000 feet	20
1,001 feet or more	25

"Public use area"- *a portion of land owned by the United States, the state, or a political subdivision with facilities which attract the public to congregate and remain in the area for significant periods of time. Facilities include, but are not limited to, picnic grounds, campgrounds, cemeteries, lodges, shelter houses, playground equipment, lakes, and swimming beaches. It does not include a highway, road right-of-way, parking areas, woodlands, recreational trails or other areas where the public passes through, but does not congregate or remain in the area for significant periods of time.*

3. Additional separation distance, above minimum setbacks, from proposed confinement structure to the closest educational institution; or religious institution

	Score
0 feet to 250 feet	5
251 feet to 500 feet	10
501 feet to 750 feet	15
751 feet to 1,000 feet	20
1,001 feet to 1,250 feet	25
1,251 feet to 1,500 feet	30
1,501 feet or more	35

"Educational institution" - a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area educational agencies, community colleges, land grant institutions of higher education, and accredited independent colleges and universities. It is important to note that home schools do not fall within this definition.

"Religious institution" - a building in which an active congregation is devoted to worship.

4. Proposed confinement structure has implemented one or more of the following odor abatement measures: ⁶

Tier 1 (> 25% effectiveness)

- Air quality modeling results from the Purdue Agricultural Air Quality Laboratory (PAAQL) Odor Setback Guideline are less than or equal to facility setbacks.
- Oil sprinkling
- Filtration (biofilters or biomass filters installed on appropriate ventilation and pit fans)
- Anaerobic Digester
- Permeable cover or impermeable cover for manure storage and lagoon
- Liquid manure storage structure is covered
- Composting
- Surface of lagoon is aerated

⁶ University of Nebraska - Lincoln, National Center for Manure and Animal Waste Management, *Lesson 25 Manure Treatment Options*, <http://www.lpe.unl.edu> (2007).

Lorimor, Jeff, National Center for Manure and Animal Waste Management Model Certification Project, *Module 4: Air Quality around Production Facilities and Land Application Sites* (2003).

Tier 2 (up to 25% effectiveness)

- Utilization of landscaping around confinement structure (shelterbelts)
- Windbreak walls
- Diet formulation (use of feeds that reduce odor and nutrient excretion)
- Manure additives
- Solids separation
- Other strategies approved by the Purdue Agricultural Air Quality Laboratory (PAAQL).⁷

	Score
Two Tier 1 odor abatement measures implemented; or an anaerobic digester will be utilized at the facility.	60
Tier 1 and Tier 2 odor abatement measure implemented	50
Two Tier 2 odor abatement measures implemented; or One Tier 1 odor abatement measure implemented.	40
Tier 2 odor abatement measure implemented.	30

"Aerobic structure" – a animal feeding operation structure which relies on aerobic bacterial action which is maintained by the utilization of air or oxygen and which includes aeration equipment to digest organic matter. Aeration equipment shall be used and shall be capable of providing oxygen at a rate sufficient to maintain an average of 2 milligrams per liter dissolved oxygen concentration in the upper 30 percent of the depth of manure in the structure at all times.

"Covered" - organic or inorganic material, placed upon an animal feeding operation structure used to store manure, which significantly reduces the exchange of gases between the stored manure and the outside air. Organic materials include, but are not limited to, a layer of chopped straw, other crop residue, or a naturally occurring crust on the surface of the stored manure. Inorganic materials include, but are not limited to, wood, steel, aluminum, rubber, plastic, or Styrofoam. The materials shall shield at least 90 percent of the surface area of the stored manure from the outside air. Cover shall include an organic or inorganic material which current scientific research shows reduces detectable odor by at least 75 percent. A formed manure storage structure directly beneath a floor where animals are housed in a confinement feeding operation is deemed to be covered.

"Shelterbelt" - Trees, shrubs, and earthen berm must reach a cumulative minimum height of six (6) feet prior to startup of operation. Minimum of two rows of trees and shrubs, of fast and/or slow-growing species.

Note: Grouping of abatement measures is based on Iowa State University Extension *Practices to Reduce Odor from Livestock Operations*. A chart is attached as Appendix A of this document. A procedure should be in place to allow a livestock producer to change an odor abatement measure in the future if the new measure is proven to have equal or improved effectiveness.⁸

⁷ Purdue Agriculture Air Quality Laboratory, <http://pasture.ecn.purdue.edu/~odor/index.html>

⁸ Iowa State University Extension, *Practices to Reduce Odor from Livestock Facilities Flowchart* (2005).

5. Adoption and implementation of one of the following manure application practices to reduce odor dispersion:

	Score
Liquid Manure - Injected	30
Incorporated within 24 hours of application.	20
Dry Manure - Land applied and incorporated within 24 hours.	30

Note: There should be an exception stating that injection of manure is not required in conditions or situations when injection is not possible. For example, if abnormally adverse field conditions do not allow for timely manure injection or incorporation in the Fall or if a water line would break causing the need for an emergency manure application. It is important to note that a county may want to award points for producers that sell their livestock manure according to IDEM regulations (see 327 IAC 15-16-9(g) and 327 IAC 19-14-7).

6. Proposed confinement site has a suitable truck turnaround area so that semi-trailers do not have to back into the facility from the road.

	Score
Truck turnaround	25

- The turnaround area should be all-truck turnaround without backing into the public road, through T-turns or a turning area with a radius of at least 120 feet. The entire drive and turn-around area must have an all-weather surface to minimize dust and to avoid caking of mud on truck wheels.
- If there will be trucks parked or stored on the site overnight or long-term, there should be one additional truck parking space for each such truck; the parking space(s) must not reduce or impede the turn-around area.

7. Construction permit application includes livestock feeding and watering systems that significantly reduce water use.

	Score
Wet/dry feeders or other feeding and watering systems that significantly reduce water use.	20

8. Construction permit applicant's animal feeding operation environmental violation history for the last five years at all facilities in which the applicant has an interest.

	Score
Permit applicant has held an interest in a livestock facility for 5 years or more. The applicant does not have an environmental violation in the last five years that resulted in a discharge.	20
Permit applicant has an interest in a newly constructed livestock facility that has been in operation for 2 - 5 years. The applicant does not have an environmental violation over this period that resulted in a discharge.	15

"Interest" - Ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

"Violation" - An environmental violation is an order from the Indiana Department of Environmental Management or comparable state or federal agency, or final court ruling against the construction permit applicant for environmental violations related to an animal feeding operation that resulted in a discharge.

Note: This criterion only applies to permit holders. If an applicant has never held an interest in a facility with a confined feeding permit, no points are awarded.

9. Construction permit applicant can lawfully claim a Homestead Tax Exemption on the site where the proposed confinement structure is to be constructed

-OR -

The construction permit applicant is the closest resident to the proposed confinement structure.

	Score
Site qualifies for Homestead Tax Exemption or permit applicant is closest resident to proposed structure	20

"Applicant" includes persons who have ownership interests. "Interest" means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

10. Demonstrated community support.

	Score
Letter of support from fifty one (51) percent of property owners within a two mile radius, and a local official or state legislator.	20

11. Adoption and implementation of an environmental management system (EMS) recognized by the Indiana Department of Environmental Management;
-OR-
the applicant has a Natural Resources Conservation Service (NRCS) approved soil conservation plan for all acreage on which manure is applied.

	Score
EMS or NRCS conservation plan	20

12. Added economic value based on quality job development (salary equal to or above department of workforce development median);
-OR -
the proposed structure increases property tax base in the county.⁹

	Score
Economic value to local community	15

13. Construction permit application contains a closure plan.

	Score
Closure plan	10

Note: The closure plan must be kept on site with the manure management plan records. The closure plan should address the following issues: emptying of manure storage structure, application of stored manure, teardown of building(s), disposal of building materials at an approved site, and removal of lagoon solids and fill (if applicable).

⁹ Chase, Rick, Purdue University Cooperative Extension Service Communities on Course Land Use, *Agricultural Land Protection in Indiana*, 2 (1999).

LIMITED USE WITH DEVELOPMENT STANDARDS

This is an objective approach through setting forth clear development standards within the ordinance itself versus having an applicant go through a special exception process. With a special exception process, the decision is usually based on subjective factors that provide an applicant little certainty as to whether they will receive their local permit. In determining the limited use standards, consideration was given to traditional zoning functions, university research on manure management and application practices, and the parameters of state regulation of livestock operations.

With this approach, a development plan can be reviewed either by a plan commission or plan staff for conformance with the ordinance standards. This review does not require a public hearing.¹⁰ However, if a plan commission delegates development plan approval, the delegation must be clearly stated in the zoning ordinance and include the duties granted, the procedures for review, and procedures for an appeal (see IC 36-7-4-1402). A site plan decision made by plan staff can be made without a public hearing if the zoning ordinance provides for an appeal of the decision directly to the plan commission.

The term CFO refers to the definition of a Confined Feeding Operation found at 327 IAC 19-2-7 and CAFO refers to the definition of a Concentrated Animal Feeding Operation found at 327 IAC 15-16.

CFO and CAFO Development Standards

437.1 The application for Improvement Location Permit should include a site plan, which provides the following information:

- A scale drawing showing the dimensions and the shape of the lot to be built upon, the size and location of existing buildings, and the location and dimensions of the proposed building or alteration;
- The boundaries of the operation;
- The general topography of the area;
- The location of the manure storage and treatment facility;
- The location of streams, drainage ditches, highways, lakes, recreational areas;
- The location of all residential dwellings, businesses, public buildings, recreational areas within a one quarter (1/4) mile radius of the operation;
- The application must include any other information that is necessary for the administration and enforcement of this ordinance, including but not limited to existing or proposed uses of the buildings and land.

¹⁰ Hutcheson, Scott, Purdue University Cooperative Extension Service Communities on Course Land Use, *Plan Commission Public Hearings: A Citizen's Guide*, 4 (1999).
Minnesota Department of Agriculture, *Livestock, Local Governments, and Land Use*, 23 (2006).

437.2 Compliance with County Drainage Board requirements for stormwater and runoff (i.e. settling basins, stormwater or retention ponds).

437.3 A sewage permit for the building or structure has been issued by the county health department.

Note: Some septic permits are issued at the state level. This provision should be included only if it is required in that county.

437.4 A proposed CFO or CAFO must submit a route plan to the County Highway Department.

Note: A minimum driveway width for entrances into livestock operations may be set to prevent damage to the public road on which the entrance is situated.

437.5 A proposed CFO or CAFO must abide by the rule set forth in 312 IAC 12 Water Well Drilling and Ground Water and register all wells capable of withdrawing over 100,000 gal. per day or 70 gal per minute. See also IC 14-25-7-15.

437.6 A CFO or CAFO must meet the following setbacks:

- Waste management system shall not be within [two hundred (200) feet to three hundred (300) feet] from any county road right of way.
- Waste management system shall not be within [one hundred (100) feet to two hundred (200) feet] of any property boundary.

Maximum required separation distance for a CFO or CAFO will be [one thousand (1000) feet to one thousand one hundred (1100) feet] from a residential district and [nine hundred (900) feet to one thousand (1000) feet] from an existing residence, except for a residence related to the farm operation.

Tier 1 Separation Distance Reduction - The maximum required separation distance will be reduced to [seven hundred (700) feet to eight hundred (800) feet] from a residential district and [six hundred (600) feet to seven hundred (700) feet] from an existing residence as long as one of the following odor control technologies are employed:¹¹

- Air quality modeling results from Purdue Agricultural Air Quality Laboratory (PAAQL) Odor Setback Guideline are less than or equal to the Tier 1 separation distances.
- Filtration (Biomass filter, Biofilter, Wet Scrubbers)
- Anaerobic Digestion
- Permeable or Impermeable Cover for manure storage and lagoon

¹¹ University of Nebraska - Lincoln, National Center for Manure and Animal Waste Management, *Lesson 25 Manure Treatment Options*, <http://www.lpe.unl.edu> (2007).

Lorimor, Jeff, National Center for Manure and Animal Waste Management Model Certification Project, *Module 4: Air Quality around Production Facilities and Land Application Sites* (2003).

- Oil Sprinkling
- Composting
- Surface of lagoon Aerated

Tier 2 Separation Distance Reduction - The maximum required separation distance will be reduced to [eight hundred (800) feet to nine hundred (900) feet] from a residential district and [seven hundred (700) feet to eight hundred (800) feet] from an existing residence as long as one of the following odor control technologies are employed:

- Air quality modeling results from Purdue Agricultural Air Quality Laboratory (PAAQL) Odor Setback Guideline are less than or equal to the Tier 2 separation distances.
- Diet formulation (use of feeds that reduce odor and nutrient excretion)
- Shelterbelts (see Section 437.7)
- Windbreak walls
- Reducing manure loading rates for lagoon (solids separation)
- Manure additives
- Other strategies approved by the Purdue Agricultural Air Quality Laboratory (PAAQL).¹²

Note: The separation distance from a residentially zoned area is measured from the edge of the zoning district to the livestock housing structure. Grouping of abatement measures is based on Iowa State University Extension *Practices to Reduce Odor from Livestock Operations*. This chart is attached as Appendix A of this document.¹³

437.7 Shelterbelt requirements

- Trees, shrubs, and earthen berm must reach a minimum cumulative height of six (6) feet prior to startup of operation.
- Minimum of two rows of trees/shrubs.

437.8 No limited use permit shall be issued if the applicant has a current interest, or owned an interest at the time of violation, of a CFO or CAFO that incurred a final judgment in an administrative, civil, or criminal enforcement action if that violation:

- resulted in a discharge and released manure that crossed a property boundary;
- was not corrected immediately or within a reasonable time frame as specified in a written notification of the violation by an Indiana Department of Environmental Management (IDEM) representative or comparable local, state, or federal regulatory agency; and
- occurred within the five (5) years prior to application submittal.

¹² Purdue Agriculture Air Quality Laboratory, <http://pasture.ecn.purdue.edu/~odor/index.htm>.

¹³ Iowa State University Extension, *Practices to Reduce Odor from Livestock Facilities Flowchart* (2005).

"Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

437.9 A CFO or CAFO should not locate any portion of the waste management system within the 100 year floodplain unless a FEMA "Floodproofing Certificate" is provided and the waste management system access is at least 2 feet above the 100 year flood base elevation.

Note: A "waste management system" does not include the land application area.

437.10 Location of a CFO or CAFO within the extra-territorial zoning jurisdiction of an incorporated city or town.

Note: This limitation can be tied to population size and consideration should be made regarding what direction(s) a municipality has planned for growth.

Additional Standards for Agricultural Zones

437.11 Any new dwelling or new subdivision development in an agricultural zone is permitted only by special exception. As a condition to receiving a special exception, the grantee must sign an agricultural clause that must be accompanied by a deed restriction to bind successive owners:

*"Grantee / Owners of said lot(s) and their successors in title are on notice and understand that this residence / subdivision will be built in a predominately agricultural area and that farming operations, to include livestock operations, will be practiced in the area of this residence / subdivision. With this understanding, grantee / all owners of the lot(s) in this subdivision and their successors in title forego their right to bring claim against any farmer in the area who has not been negligent."*¹⁴

Note: In determining whether to grant a special exception for residential development, the Board of Zoning Appeals (BZA) should give consideration to whether the dwelling is related to a farm operation. If the dwelling is not farm related, consideration should be given to the impact of the proposed development on the surrounding agricultural community.

¹⁴ American Farmland Trust, *Saving American Farmland: What Works*, 62 - 63 (1997).

437.12 Reciprocal Separation Distance Provision - Any new dwelling not related to the farm operation or new subdivision development permitted by special exception must not locate within [seven hundred (700) feet to eight hundred (800) feet] of an existing CFO or CAFO. If a variance is granted from this standard, the party obtaining the variance shall be required to enter into the following covenant protecting the livestock facility's right to operate:

"In accepting this deed, grantees acknowledge that surrounding land is agricultural in usage; and grantees, and their successors in interest, are precluded from attempting to enjoin any farm operation within [seven hundred (700) feet to eight hundred (800) feet] because of nuisances which might result from said operation."

437.13 Non-Conforming Uses - An existing CFO or CAFO, which is a pre-existing non conforming use, may expand their operation.

Note: The right of existing livestock operations to expand is governed by the Agricultural Nonconforming Uses Clause (see IC § 36-7-4-616). Expansion requirements should be evaluated for conformance with this section.

OVERVIEW OF AGRICULTURAL ZONING TOOLS

To achieve effective agricultural zoning, several zoning tools must be used in conjunction. The following tools are used throughout the model zoning ordinance concepts:

1. Odor Setback Guideline

Odor control is a major concern of local government in regulating livestock facilities. The use of atmospheric air to dilute odors from livestock facilities by appropriate setback distances is still the most popular and cost-effective strategy to reduce odor nuisance. However, the determination of science-based odor setbacks for livestock facilities is a difficult and complex problem with only limited supporting data.

A simple-to-use, site-specific setback guideline was developed by Purdue University for swine production systems. This guideline considers facility size, orientation and shape, wind frequency, land use, topography, building design and management, manure handling characteristics, and odor abatement effectiveness. Odor emission factors were based in part on actual odor emission measurements from livestock buildings.

Growing IN Agriculture (GINA) is currently working with Purdue University to further develop the odor abatement variables and make the guideline applicable to all livestock species. GINA is an Indiana Soybean Alliance program with the mission of developing Indiana's livestock industry in a manner that is environmentally safe, socially responsible, and economically viable. Supporting organizations include Indiana Farm Bureau, Indiana Pork, Indiana Beef Cattle Association, and the Indiana State Department of Agriculture.

The Odor Setback Guideline can be accessed from the Purdue Agricultural Air Quality Laboratory (PAAQL) website:

<http://pasture.ecn.purdue.edu/~odor/setback.html>

2. Reciprocal Separation Distance

When a community is revising its agricultural zoning ordinance, provisions for non conforming agricultural and residential uses are critical. Traditionally, a separation distance has been established for proximity of a new livestock facility to an existing residence. This is important and has been utilized throughout the model ordinances. The reciprocal separation distance includes an additional requirement for the proximity of a new

residence to an existing livestock facility. This is an effective tool to protect non conforming, pre existing uses of land and to minimize the potential for conflicting land uses.

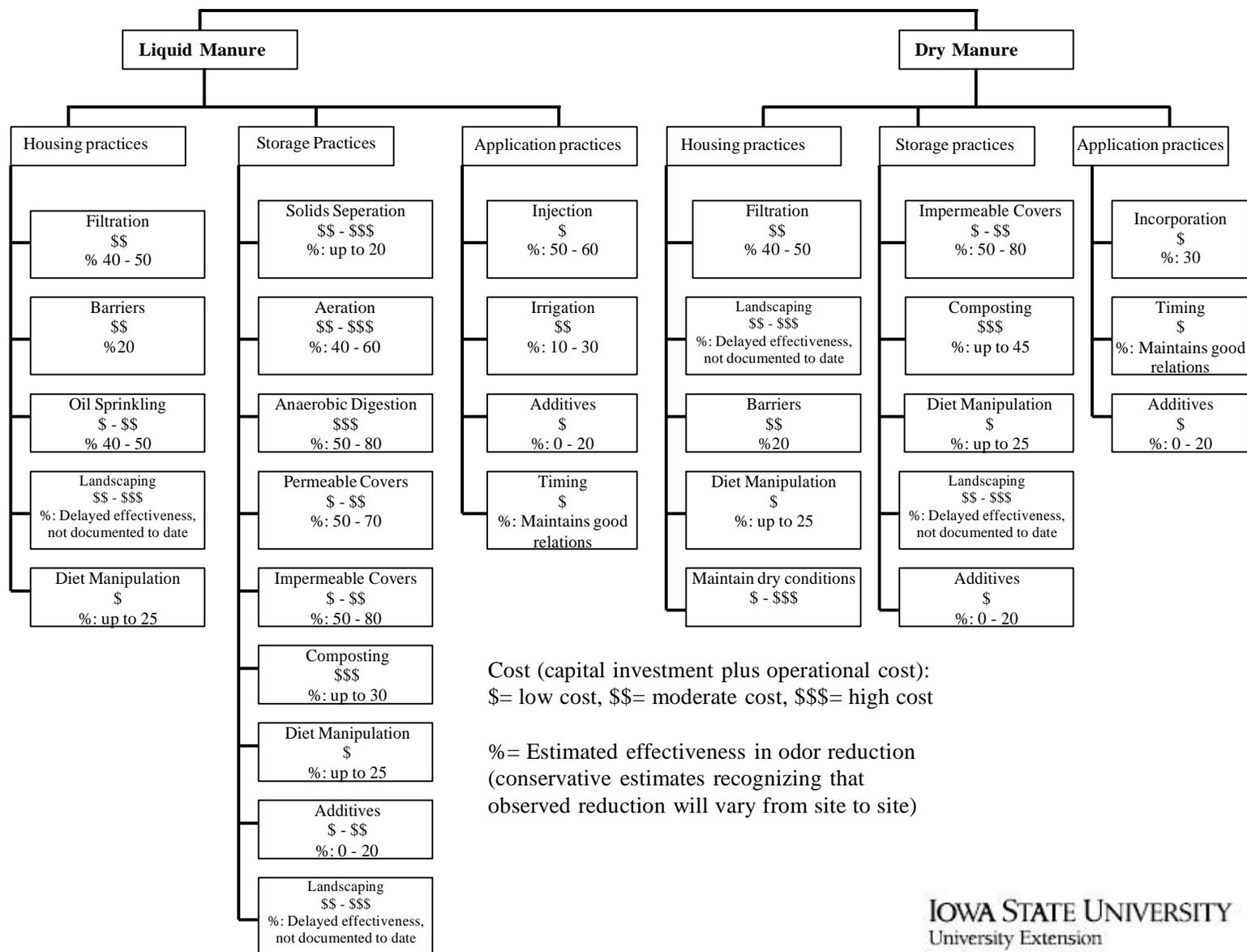
3. Agricultural Clause

A key principal of effective zoning regulation is promoting notification. An agricultural clause has the advantage of putting individuals who are moving to an agricultural zone on notice that they may experience noise, dust, and odor associated with generally accepted farming practices. This can be used as a condition to a permitted use, or in conjunction with a special exception for residential development in an ag zone. Appendix B contains a template agricultural clause developed by Indiana Farm Bureau.

It is important to note that use of an agricultural clause does not preclude the ability of a landowner to sue for nuisance. The landowner can still file a nuisance action and the presiding judge takes the agricultural clause under consideration. The judge will determine whether the farm operator has been negligent. In making this determination, the judge will consider whether that operator is engaging in generally accepted farming practices in compliance with applicable regulations. Several states have used the agricultural clause as an effective notification tool.

APPENDIX A

Practices to Reduce Odor from Livestock Operations Flowchart Practices to control odor emissions associated with livestock can be applied to animal housing areas, manure storage areas, and land where manure is applied. This fact sheet is designed to provide producers with information on relative costs and effectiveness of odor control practices. This fact sheet accompanies, *Practices to Reduce Odor from Livestock Operations*, (PM 1970a).



IOWA STATE UNIVERSITY
University Extension

January 2005 PM 1970b

APPENDIX B

NOTICE OF AGRICULTURAL ACTIVITY

TO: ALL APPLICANTS FOR LOCATION IMPROVEMENT PERMITS FOR HOMES IN AGRICULTURAL ZONED AREAS OF **XXXXXXXX** COUNTY, INDIANA

This notice is given to you because of your application for a Location Improvement Permit to build or move a home into an area of **XXXXXXXX** County that is zoned for Agriculture.

The purpose of this notice is to assure you are aware that all agricultural operations are allowed in this area.

Agricultural activity may include, but is not limited to, grazing of livestock, confined feeding of livestock, application of animal manure to land, application of pesticides to fields and growing crops, creation of dust from field operations and noise from livestock and machinery operations at all hours.

Single family dwellings are permitted uses of land in an Agricultural Zone, and this is not restricted to farm families. However, people who choose to live in these areas must understand that agricultural operations may be occurring nearby.

Indiana has a "RIGHT TO FARM" law that protects farm operations from unwarranted nuisance suits by neighbors who move next to an existing farm operation. Farm operations do not constitute a nuisance so long as they are not negligently maintained, do not endanger human health and do not cause bodily injury to third parties.

By signing this notice form you verify that you have received it, read it and understand it. You are not giving up the right to seek redress for negligence by individuals associated with a farm operation or by other residents of the area.

MY SIGNATURE CERTIFIES THAT I HAVE READ THIS NOTICE AND I UNDERSTAND IT.

Printed Name

Signature

Street Address

Date

City, State, Zip Code

Permit Number

A GUIDE TO LOCAL LAND USE PLANNING **FOR AGRICULTURE OPERATIONS**

Regulatory Guidance Document

This is not a complete listing of all the rules and regulations for CFOs and CAFOs, but only a highlight of the major components which seem to draw the most questions and concerns.

Livestock facilities in Indiana may be subject to one of two environmental regulatory programs administered by the Indiana Department of Environmental Management (IDEM). Some operations do not fall within the parameters of either permitting process.

CFOs (Confined Feeding Operations) 327 IAC 19

- 0 Applies to person who owns, designs, constructs, operates, or closes a CFO or who is responsible for application of manure in Indiana from a CFO
- 0 Confinement
 - A. Animals must be confined, fed and maintained for at least 45 days in any 12 month period
 - B. Ground cover or vegetation is not sustained in the normal growing season over at least 50% of the animal confinement area
- 0 Minimum number of animals
 - A. 300 Cattle
 - B. 600 swine or sheep
 - C. 30,000 fowl
- 0 Facilities with populations below the minimum number of animals that violate the water pollution control laws
- 0 It is a state program, authorized by state statute established by legislature
- 0 Approval is valid for 5 years and must be renewed
- 0 Performance standards
 - A. Designed and managed to avoid unpermitted discharges into waters of the state and minimize leaks and seepage
 - B. Manure must be staged or applied in such a manner
 - 1. Not to enter or threaten to enter waters of the state
 - 2. To prevent run-off, ponding for more than 24 hrs, and spills
 - 3. To minimize nutrient leaching beyond the root zone
- 0 Design and construction standards
 - A. Application requirements
 - 1. Waste management system drawing
 - 2. Soil and water table information from test holes
 - 3. Manure management plan
 - a) Procedure for soil testing-every 4 years
 - b) Procedure for manure testing-every year
 - 4. Plot maps
 - a) Soil survey maps

- b) Topographical map with public water supplies within 1000 feet
 - c) Location of waste management systems
 - d) Boundaries of CFO, production areas, and manure application areas
 - e) Available acreage for manure application after calculation of setbacks
5. Farmstead plans
- a) All existing and proposed structures
 - b) Waste management systems and all the following features that are within 500 feet: residences, surface waters of the state, roads, water wells, characteristics of karst terrain, drainage patterns, property boundary lines, outfalls of subsurface drainage structures, drainage inlets
 - c) Diversion of uncontaminated surface water
 - d) Number and type of animals per structure
 - e) Any part of the CFO that is in a 100 year flood plain must be noted
6. Public notice requirement
- a) Letter from applicant about the application's submittal to each person owning and residing on land within one-half mile or less from a livestock/poultry production structure or permanent manure storage facility
 - b) Notice from IDEM about the application's submittal to local officials, such as county commissioners
 - c) Public notice from IDEM about 33-day public comment period
 - d) IDEM notice to applicant, local officials, adjacent property owners and residents, and other known interested parties upon agency decision. B.

Waste management system

- 1. Must not be constructed
 - a) In karst terrain except with approval of IDEM commissioner based upon site-specific information
 - b) In a floodway
 - c) In a 100 year flood plain unless access is 2 feet above 100 year flood plain
 - d) In soil with seasonal high water table unless water table is lowered below waste management system
 - e) Above a mine
- 2. Setbacks
 - a) 400 feet from existing off-site residential and public buildings
 - b) 100 feet from on-site wells, property lines, and public roads
 - c) Solid manure storage structure that contains manure and prevents water from entering the structure must be maintained to have a minimum setback of 100 feet from surface waters of the state, drainage inlets, , sinkholes, and off-site water wells
- 3. Design Requirements

- a) Drainage system to lower seasonal water table must have access point for sampling
 - b) If determined by the Commissioner, with the basis of that determination proved in writing, to protect human health IDEM may require monitoring systems, alternate design standards, alternate operational requirements or use of a registered professional engineer
 - c) All waste management systems must be designed not to discharge to surface waters of the state
 - d) If a waste management system discharges or is designed to discharge, a NPDES CAFO permit under 40 CFR 122.23 is required
 - e) An alternate design may be approved by the commissioner if it is shown to provide an equivalent amount of environmental protection
4. Storage capacity
 - a) 180 days storage for manure, bedding, net average rainfall, and run-off from 25 year, 24 hour rainfall from drainage area around manure storage structure; a 24-inch freeboard is required to manage rainfall and run-off from a 25-year, 24-hour precipitation event
 5. Uncovered liquid manure storage structure a)
 - 2 feet of freeboard
 - b) All liquid manure storage facilities must be constructed according to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005. Construction of all liquid manure storage facilities approved after the effective date of this article must be certified upon completion by a registered professional engineer on a form provided by the department.
 6. Concrete storage structures
 - a) All concrete manure storage facilities must be constructed according to either of the following design standards, available from MidWest Plan Service, 122 Davidson Hall, Iowa State University, Ames, Iowa 50011-3080:
 - MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005.
 - TR-9: Circular Concrete Manure Tanks, March 1998.
 - b) All concrete structures must be constructed according to the Indiana NRCS Construction Specification, Concrete Construction, October 2005, available online at <http://www.in.nrcs.usda.gov/technical/engineering/ConsSpecifications/pdf/conconstr.pdf>.
 7. Earthen manure storage structures
 - a) All earthen manure storage lagoons utilized for treatment must be constructed according to the Indiana NRCS Conservation Practice Standard Code 359: Waste Treatment Lagoon, September 2005.
 8. Solid manure storage structures

- a) May not be constructed in sand or gravel soils, Unified Soil Classification of Pt, GW, GP, GM, GC, SW, SP, SM, as described in ASTM D2488-09a Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, unless specially designed with an approved liner
 - 9. Other manure storage structures
 - a) Must be designed and constructed in accordance with the requirements of IC 13-18-10-4(b). The design must be submitted to the department for approval before construction can commence.
 - b) Underground steel tanks prohibited
 - c) Plastic and fiberglass tanks and above ground steel tanks have design requirements
 - 10. Vegetative management systems
 - a) Must be constructed according to the Indiana NRCS Conservation Practice Standard Code 635: Vegetated Treatment Area; October 2008
 - 11. Constructed wetlands
 - a) Must be constructed according to the Indiana NRCS Conservation Practice Standard Code 656: Constructed Wetland; October 2006.
- 0 Operational Standards
 - A. Uncovered liquid manure storage minimum freeboard of two (2) feet
 - B. Documented inspection of waste management structures once per week
 - C. Earthen berms for manure storage structures must be stabilized with vegetation or alternative control measures and allow for visual inspection
 - D. Pumping, dumping, or leakage of manure from transfer vehicle on roads and into waters is prohibited
 - E. Emergency spill response plan must be created
- 0 Land application of manure
 - A. Acreage requirement is based upon manure application rates in 327 IAC 19-14-3
 - B. Manure and litter staged at application site for more than 72 hours must be covered or bermed to prevent run-on and runoff and applied within 90 days
 - C. Staging must be set back 100 feet from property lines and public roads and 400 feet from residential buildings
 - D. Staging prohibited within 300 feet of surface waters of state, drainage inlets, or wells unless there is a barrier or a surface gradient that contains or directs contaminated water away
 - E. Staging prohibited on area with slope greater than 6% or on standing water or waterway
 - F. Spray irrigation
 - 1. Conducted to prevent equipment leaks
 - 2. Not where less than 20 inches of soil above bedrock
 - 3. Limited application in flood plains
 - G. No application from road or to saturated ground
 - H. Application to highly erodible land in limited circumstances

I. Application to frozen ground

1. For large CAFOs, as defined in 40 CFR 122.23(b), and CAFOs with a NPDES permit, surface application of manure, litter, or process wastewater to frozen or snow covered ground is prohibited, unless allowed under a NPDES permit obtained by the CAFO.
2. Injection or incorporation of manure into the soil on the same day is not prohibited.
3. CFOs not described above may surface apply manure on frozen or snow covered ground in certain emergencies.
4. A CFO with 120 days or less of designed manure storage capacity may request approval from the Commissioner to apply to snow covered or frozen ground.

J. Setbacks

1. Land Application setbacks for manure and waste water land application are based on those within table 3 of the Indiana NRCS Conservation Practice Standard # 633: Waste Utilization, October 2007. See chart below:

Known Feature	Liquid Injection	Single Pass Incorporation (liquid or solid)	Liquid Incorporation (within 24 hours)	Surface Application to Pasture	Surface Application (solid or compost)	Liquid Surface <or = to 6% slope or residue cover	Liquid Surface > 6% slope
Public water supply & public water supply surface intake structure	500	500	500	500	500	500	500
Surface water	25	25	50	50	50	100	200
Sinkholes	25	25	50	50	50	100	200
Wells	50	50	50	50	50	100	200
Drainage inlets	5	5	50	50	50	100	200
Property lines and public roads	0	0	10	10	10	50	50

K. Setbacks may change if filter strips or barriers exist

- 0 Closure requirements

CAFOs (Concentrated Animal Feeding Operations) 327 IAC 5-4 and 327 IAC 15-16

- 0 Confinement
 - A. Animals must be stabled or confined and fed for at least 45 days in any 12 month period
 - B. Crops, vegetation, forage growth, or post-harvest residue not sustained in the normal growing season over at least 50% of the lot or facility
- 0 Minimum number of animals
 - A. 700 dairy cows
 - B. 1,000 veal calves or mature cattle other than dairy or veal
 - C. 2,500 swine over 55 lbs
 - D. 10,000 swine under 55 lbs
 - E. 500 horses
 - F. 10,000 sheep
 - G. 55,000 turkeys
 - H. 30,000 laying hens or broilers (liquid manure system)
 - I. 125,000 chickens (dry manure system)
 - J. 8,200 laying hens (dry manure system)
 - K. 30,000 ducks (dry manure handling)
 - L. 5,000 ducks (liquid manure handling)
- 0 Types of permits
 - A. CFOs and CAFO-sized CFOs that discharge manure or pollutant-bearing water to waters of the state must have a NPDES CAFO Individual Permit under 327 IAC 15-16. The CAFO rule incorporates by reference the federal NPDES CAFO. CFOs can elect to be subject to the CAFO rule regulations.
- 0 Federal Program under the Clean Water Act
 - A. Ultimate authority with EPA-Indiana has received approval to administer its own version of the rule
 - B. IDEM regulates in Indiana but EPA may still inspect farms
 - C. Odor is not regulated
 - D. Federal air study was done to see if regulations need to be developed in relation to the Clean Air Act. The data is still be analyzed.
- 0 Public Notice requirement
 - A. Same as CFO Rule
- 0 Permit valid for 5 years and must be renewed
- 0 Construction of facilities based upon CFO rule
- 0 Farmer inspection of facility
 - A. Documented weekly inspection of structures
 - B. Documented daily inspection of waterlines
- 0 Extensive record keeping
- 0 Adequate waste storage-180 days per CFO rule
- 0 Management of manure
 - A. Same as CFO Rule
 - B. Nutrient management requirements
 - 1. Soil testing every three years
 - 2. Test manure, litter, and process wastewater for nitrogen and phosphorus annually
 - 3. When developing the nutrient management plan required by 40 CFR 122.42(e), the owner or operator shall follow:

- a) the Indiana Comprehensive Nutrient Management Plan Statement of Work, April 9, 2004, available from the Natural Resources Conservation Service, Indiana Field Office, 6013 Lakeside Boulevard, Indianapolis, Indiana 46278-2933 or the department, or available online at <http://www.in.nrcs.usda.gov/>;
 - b) the Purdue University Manure Management Planner available for use online at <http://www.agry.purdue.edu/mmp/>; or
 - c) an equivalent program that meets all requirements of 40 CFR 122.42(e).
4. Setback requirements (in feet)
 - a) Same as CFO Rule
 5. Setbacks may change if filter strips or barriers exist
 6. No application from road or to saturated ground
 7. Application to highly erodible land in limited circumstances
 8. Weather forecasts must be observed 24 hours in advance and after planned land application in order to avoid applying manure when potential of rain causing run-off is predicted
 9. Field tiles must be inspected during and following application
 10. Spray irrigation
 - a) Same as CFO rule
 11. Application to frozen ground
 - a) For large CAFOs, as defined in 40 CFR 122.23(b), and CAFOs with a NPDES permit, surface application of manure, litter, or process wastewater to frozen or snow covered ground is prohibited, unless allowed under a NPDES permit obtained by the CAFO.
 - b) Injection or incorporation of manure into the soil on the same day is not prohibited.
- 0 Emergency spill response plan
 - 0 Storm water pollution prevention plan
 1. Description of clean water diversion.
 2. Practices to minimize pollutants in storm waste discharges.
 3. Monitoring plan.
 - 0 Closure requirements

IDEM CFO/CAFO REGULATION **Myths and Facts**

PERMITTING

Myth: IDEM does not take into consideration any surrounding water bodies, aquifers, etc. when either reviewing plans for a new building site or approving a manure application plan.

Fact:

Surface water bodies

- a. The CAFO/CFO facility design requirements include setbacks from surface water bodies, sinkholes and wells. These setbacks were established as pollution prevention setbacks by providing a buffer area between the waste storage and the water source.
- b. There are also setbacks within the land application requirements serving as pollution prevention methods. The setbacks increase as the slope of the site increases and liquid manure application setbacks are more stringent than solid or dry manure setbacks.

Aquifers

- a. The CAFO/CFO facility design requirements are intended to protect groundwater by specifying minimal leakage allowance from the storage. Concrete structures must be designed to be structurally sound and water tight and meet either the MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 or TR-9: Circular Concrete Manure Tanks, March 1998 standards. All concrete structures must be constructed according to the Indiana NRCS Construction Specification, Concrete Construction, October 2005. Earthen lagoons must be constructed according to the Indiana NRCS Conservation Practice Standard Code 359: Waste Treatment Lagoon, September 2005.
- b. Land application activities must be done in a manner that minimizes leaching beyond the root zone of the crop being grown or to be grown. Prior to the first land application event, the farm must obtain a manure analysis representing the manure being hauled and soil analyses for the fields being fertilized. *An existing soil test for the field is acceptable to use if it is no more than 4 years old.* Fields must be sampled in parcels no greater than 20 acres per soil test. This effectively minimizes the potential of excess nitrogen and phosphorus remaining in the soil after the crop.

Sensitive Surface Water Bodies and Aquifers

The CFO/CAFO rules allow for IDEM to identify “sensitive areas” near a proposed or existing farm and impose additional or different requirements in order to address the sensitive characteristic of the farm site. The review process for each application includes responding to any site characteristic that results in increased concern and consideration if additional protective measures should be imposed. This has occurred numerous times over the history of the program.

Myth: IDEM never denies a confined feeding permit application.

Fact: IDEM has historically provided three NODs (notice of deficiencies) to solicit responses from applicants regarding deficiencies in their applications. If an applicant fails to respond after the third NOD, IDEM will deny the permit request. In virtually all cases, the applicant responds to the NODs and supplements the application to comply with all requirements. Producers either meet IDEM's requirements, or if they cannot meet their requirements, they voluntarily withdraw their application. The voluntary withdrawal makes a formal denial unnecessary.

OPERATIONAL REQUIREMENTS

Myth: The Manure Management Plan (MMP) is not an enforceable part of the IDEM permit (i.e. don't know where manure being applied).

Fact: When a CFO / CAFO permit is submitted, it must identify a minimum amount of acreage available for land application. If other land is used for application, this must be documented in the operating record (i.e. land use agreement, map). The operating record must be available at the facility for inspection at all times. However, the CFO / CAFO approval does not need to be amended. IDEM permits are essentially non site specific regarding land application sites. According to IDEM, they do not require amendment because they do not want to make it a burdensome process for producers to apply to as much acreage as possible. MMPs also document procedures for soil and manure testing. If a farm does not test their soil or manure at the frequency reported in their MMP, enforcement can be initiated by IDEM.

Myth: Manure coming from other states is not regulated by IDEM.

Fact: IDEM's authority to regulate CFOs and CAFOs is limited to those operating in Indiana and deals primarily with water quality. Manure brought from out of state from a facility that is not part of a CFO or CAFO program and staged on land is regulated as any other substance brought into the state would be regulated. That is, it may not cause or contribute to a polluted condition. IDEM's general authority includes IC § 13-18-4-5 and IC § 13-30-2-1. Manure brought from out of state that is from a regulated CFO or CAFO and staged on land must be handled and applied in accordance with the requirements of Indiana's CFO or CAFO program, depending on the classification of the operation.

IC § 13-18-4-5

It is unlawful for any person to throw, run, drain, or otherwise dispose into any of the streams or waters of this state, or to cause, permit, or suffer to be thrown, run, drained, allowed to seep, or otherwise disposed into any waters, any organic or

inorganic matter that causes or contributes to a polluted condition of any waters, as determined by a rule of the board adopted under IC § 13-18-4-1 and IC §13-18-4-3.

IC § 13-30-2-1

Specific acts prohibited

Sec. 1. A person may not do any of the following:

(1) Discharge, emit, cause, allow, or threaten to discharge, emit, cause, or allow any contaminant or waste, including any noxious odor, either alone or in combination with contaminants from other sources, into:

(A) the environment; or

(B) any publicly owned treatment works;

in any form that causes or would cause pollution that violates or would violate rules, standards, or discharge or emission requirements adopted by the appropriate board under the environmental management laws.

Fact: The Office of the Indiana State Chemist has authority to regulate the use and distribution of fertilizer material to produce an agricultural crop under 355 IAC 8-1.

Myth: Producers are not currently required to have a Nutrient Management Plan (NMP).

Fact: Nutrient Management Plans for application of all nutrients must be developed and approved as part of the approval process for a CAFO NPDES permit. Substantial changes to the NMP must be provided to IDEM for review. See 327 IAC 15-16-9.

Myth: Producers smaller than a CFO are not regulated by IDEM.

Fact: 327 IAC 16-2-5 "Confined feeding operation" defined

"Confined feeding operation", as defined in IC § 13-11-2-40, means any:

(3) animal feeding operation that causes a violation of:

(A) water pollution control laws;

(B) any rules of the water pollution control board; or

(C) IC § 13-18-10.

Based on this definition, IDEM has the authority to require a producer smaller than that of a CFO to enter the CFO program if they have a spill. Even absent being required to obtain an IDEM permit, they would fall within the general prohibitions that prohibit any person from polluting waters of the state (see IC § 13-30-2-1 and IC § 13-18-4-5).

Myth: A recipient of manure from the CAFO operator who then applies the manure is not regulated by IDEM.

Fact: Under the marketing requirements at 327 IAC 15-16-9 and **327 IAC 19-14-7**, a CAFO or CFO operator must provide an information sheet to the first recipient that must contain a statement that it is unlawful to allow manure to enter any waters of the state and the application requirements in the CFO rule.

Myth: A recipient of manure who builds a storage structure near the application site does not need to comply with IDEM's manure storage structure design and construction regulations.

Fact: IDEM is not currently regulating these structures under IC § 13-18-10.5

EPA AIR AGREEMENT

EPA conducted a \$9 million dollar livestock air emissions study. On January 31, 2005, EPA published a notice in the Federal Register offering animal feeding operations (AFOs) an opportunity to sign a voluntary Consent Agreement, which established a monitoring study for emissions at such operations. In addition, livestock facilities that entered into this agreement paid a modest civil penalty and received a final order, liability release, and covenant not to sue resolving potential past violations of the Clear Air Act and the hazardous substance release notification provisions of Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and Emergency Planning and Community Right to Know Act (EPCRA).

The 2 year study, lead by Professor Al Heber, a Purdue University researcher, monitored emissions at AFOs that raise pigs and broiler chickens, at egg-laying operations, and at dairies, with a total of 24 monitoring sites in nine states. A separate industry study monitored emissions from a broiler chicken operation in Kentucky. The study quantified air emissions and compared them to existing thresholds for dust, ammonia, and hydrogen sulfide. Under the CAA, CERCLA, and EPCRA, a release of >100 lbs of ammonia or hydrogen sulfide within 24 hours is a reportable quantity (RQ). Climatic conditions, facility size, species, and type of waste system will be considered when evaluating emissions.

On Jan. 13, 2011, the U.S. Environmental Protection Agency made data available from the National Air Emissions Monitoring Study, a two-year examination of air emissions from poultry, swine and dairy animal feeding operations (AFOs). EPA will examine data from the study, along with additional data it receives as a result of a “Call for Information” to develop improved methods for estimating AFO emissions. Please see <http://www.epa.gov/agriculture/airmonitoringstudy.html#data> for more information.

ZONING REGULATION VERSUS STATE REGULATION

Local units of government are given the ability to exercise planning and zoning powers through the Indiana Planning and Zoning Law (*Indiana Code Title 36 Article 7 Planning and Development*). Plan commission responsibilities include preparing a comprehensive plan, preparing a zoning ordinance and a subdivision control ordinance, making recommendations to the legislative body on proposals to amend the text of the zoning ordinance or subdivision control ordinance, and approving or denying proposals to subdivide land and development plans.

Planning and zoning is essentially about separation of uses, or *where* an activity takes place. Local government plays a critical role in making such decisions, which complement state regulation of *how* that activity takes place. Plan commissions have many responsibilities, but their most important duty is to develop and recommend a plan for the future of the community. Focusing on this fundamental planning responsibility is critical to ensure it is effectively implemented

Plan commissions must observe the requirements of the state planning law when exercising the power to implement local zoning regulation. In addition, plan commissions must operate within limitations established by the state legislature and judiciary. With regard to livestock production, these limitations apply to state environmental programs administered by IDEM and the Office of the Indiana State Chemist. These agencies comprehensively regulate our states livestock producers to ensure environmental quality. The ILRC will continue to develop guidance materials that provide clarity regarding the role of local zoning regulation

