

Chapter 4:

Implementation Options

Strategies designed to address animal agriculture land use issues should not be developed in a vacuum. This handbook stresses the importance of laying a solid planning and legal foundation before attempting to construct a regulatory response to what is often a very controversial and sometimes emotional issue. It also recognizes that plans become meaningful only when they are carried out. The "rubber meets the road" in terms of the specific measures used by counties and townships to implement a plan's adopted goals and policies.

Despite a long history of rural zoning in Michigan, zoning specifically for agricultural purposes has been limited. That is, agriculture has been the residual claimant of lands not zoned for other uses. Commonly, agricultural land uses are lumped into an agricultural-residential zone and, in other cases, the construction of single family residences in areas zoned *agricultural* is rarely limited. Planning and zoning for animal agriculture requires a more careful, considered approach than has traditionally been the case in Michigan.

This chapter begins with a discussion of the theoretical foundation for land use implementation strategies affecting animal agriculture. From there, it goes on to provide an overview of specific types of

regulations that are now being used or could be used to implement animal agriculture planning policies. It concludes by presenting sample ordinance language to further illustrate the concepts discussed throughout the chapter.

The Foundation for Regulations: Separation vs. Mitigation

Townships and counties face many choices about how to put their land use plans, including those geared toward addressing animal agriculture, into action. Ideally the most fundamental question – whether special land use regulations should be imposed on animal agriculture uses – will have been answered during the planning process. If that question is answered affirmatively, the next questions will undoubtedly revolve around where and under what circumstances animal agriculture will be allowed. It is at this point that townships and counties will be deciding whether to use a "separation-based" strategy or to use an approach that emphasizes "mitigation" of animal agriculture's potential impacts. In most cases, a hybrid approach, combining the best features of both strategies, will constitute the most effective, fair and workable approach for Michigan's rural townships and counties.

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Separation-Based Strategies

Separation-based land use control strategies are based on the notion that spatial segregation is the best method of ensuring that different land uses do not have an adverse effect on one another. Nearly all early zoning ordinances were built around the separation-based model, and most continue to rely on that model today.

Intensity

The term intensity is often used in land use and zoning discussions, but what does it really mean? Strictly speaking, land use intensity is a measure of the degree to which land is used, usually expressed as a ratio of land use to land area. Residential density – the number of dwelling units per acre of land – is the most common intensity measure. For nonresidential uses, intensity is tracked on the basis of the amount of building floor area per square foot of lot area. Although uncommon, livestock density – quantifying the number of animal units per acre of land – represents another way to express intensity.

Defined in these strict terms, intensity can be an excellent measure of public facility demands. When it comes to measuring a land use's full range of impacts, however, intensity tells only part of the story. The number of dwelling units or the amount of nonresidential floor space on a site provides basic and vital information that can be used to project future traffic volumes, water and wastewater needs, and other service demands. Quantitative expressions of intensity do not offer a clue, however, about the hours that a facility might operate, where its outdoor lighting will be located, what type of pollution control measures it will employ or other operational matters. In short, intensity, when defined as a quantitative measure of use, is not always a reliable gauge of whether uses will be good neighbors.

Strict definitions aside, it is common for the term intensity to be used in a broader sense than merely "how much of a use exists on a site." When people talk of one land use being more intensive than another use, it is generally safe to say that they are not confining their thoughts to a comparison of residential densities or nonresidential floor area ratios. They are, instead, referring to a wide range of factors that influence the relationship among land uses, factors that influence whether one use is compatible with another. This

Land uses can have a variety of effects on their surroundings. Those impacts can affect natural systems, the visual environment, local economic conditions and nearby property values. Zoning regulations are intended to address land use impacts (or qualitative intensity) by imposing controls aimed at 1) **use** (such as agricultural, residential, commercial or industrial); 2) **site development** (such as lot size, width, building height, or setbacks); 3) **quantitative intensity** (e.g. number of animals per acre); and 4) **operating characteristics** (such as hours of operations, lighting, pollution control, and other management practices such as, in the case of animal agriculture, the number of acres available for land application of manure). Frequently, the most dependable way to address qualitative intensity will come about through consideration of all these factors, particularly, the operating characteristics of a given use.

Zoning

Zoning is a classic and time-tested example of a separation-based land use control strategy. Through zoning, a community is divided into different zones or zoning districts, each of which allows different types of uses and different levels of development intensity. (See the **Intensity** sidebar). The boundaries shown on the zoning map and the regulations that apply within zoning districts are based on land use goals and policies developed during a planning process.

Interestingly, the earliest forms of zoning in the U.S. did not actually ensure the separation of potentially incompatible uses. Most early zoning ordinances relied on

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cumulative use zoning schemes (sometimes referred to as pyramidal zoning). Under the cumulative use approach, commercial and industrial uses were prohibited in residential zoning districts, but residential uses were not necessarily prohibited in higher intensity commercial and industrial districts. The theory was that a person's residence constituted a substantial investment and that investment needed to be protected from nonresidential encroachment. On the other hand, policy makers did not necessarily see the need for protecting industry from residences.

Over time, the cumulative use approach was supplanted by the exclusive use approach, which is now the most common zoning approach. In its purest form, exclusive use zoning ensures separation and isolation of incompatible land uses by simply prohibiting different types of uses from locating in the same zoning district. Under exclusive use zoning, commercial and industrial uses are prohibited in residential districts and vice-versa.

Use-Specific Standards

Use-specific standards differ from zoning district regulations by focusing on individual use types rather than groupings of uses. Regulations that establish required separation distances between different types of uses are examples of use specific standards, in this case use-specific *separation* standards. Requiring alcohol sales establishments and adult entertainment businesses to be located some minimum distance from schools is an example of a use-specific separation standard. Also common are billboard separation

requirements that call for new billboards to be placed some distance from existing ones.

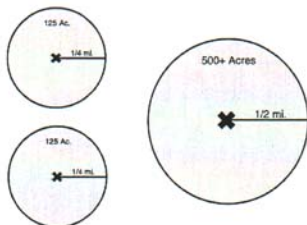
Separation requirements are increasingly common in the animal agriculture arena. Some townships in Michigan have adopted requirements that animal agriculture activities be separated from other land uses and development types. Jurisdictions using the use-specific separation approach have established minimum separation distances from public parks, city limit lines, residential subdivisions and low-density residential zoning districts. Others have imposed minimum separation distances between intensive animal production and urban expansion zones around a municipality.

Critics of separation requirements argue that use-specific separation standards may have the effect – planned or not – of all but prohibiting animal agriculture from relatively large areas. In fact, each time a one-quarter mile separation radius is imposed, over 125 acres of land are rendered off-limits for the regulated use. With a separation radius of one-half mile, over 500 acres become ineligible. Critics of separation standards also question the fairness of an approach that allows individual landowners to control the vast amounts of land that they do not own.

Other critics argue that if separation requirements are going to be used as a regulatory response, they should be evenhanded – designed to keep residences and other urban uses away from agriculture (animal and crop) as well as vice-versa. In response, some local ordinances are

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beginning to view separation as a two-way street, requiring that new nonfarm development be located some distance from animal agriculture uses.



If a use is required to be located at least one-quarter mile from each residence, 125 acres will be off limits for each residence in the area.

Mitigation-Based Strategies

By the early 1950s, some planners were beginning to question the static and rigid nature of conventional zoning and other separation-based land use control strategies. They argued that land uses should be evaluated on the basis of their impacts on surrounding areas (and how well they mitigate those impacts). Proponents of the mitigation-based approach to land use control argue that it is unfair and illogical to assume that an entire class of uses will have the same impact on surrounding areas.

Performance Standards

The earliest mitigation-based regulations came in the form of industrial performance standards which were aimed at controlling

the dust, odor, vibration, noise, light and smoke associated with heavy manufacturing uses. Although one of the benefits of industrial performance standards was they could be written in very objective, precise terms, many communities found themselves without the personnel or equipment to measure whether compliance was being achieved.

Due to the growing involvement of state and federal governments in environmental protection during the 1960s and 1970s, industrial performance standards fell from favor among local governments for a period. Recently, however, interest in mitigation-based strategies has been increasing, as local governments have been moving back into regulating environmental impacts.

Over the past three decades, performance-based standards have been championed as a means of dealing with industrial and nonindustrial land use issues. Performance zoning advocates claim that such an approach offers communities a very flexible, effective and fair tool for addressing land use compatibility issues. Administration of a performance-based system of land use controls is widely regarded as more complex and time-consuming than administration of traditional zoning strategies. As a result, true performance-based land use controls are rare, although it is not uncommon to find individual performance-based provisions, such as those aimed at ensuring adequate landscape buffers and visual screens between different land use types. It is also common to find industrial performance standards in local ordinances.

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The Hybrid Approach

As a result of the shortcomings of pure separation and pure mitigation-based approaches, most modern land development ordinances are comprised of a combination of separation and mitigation-based controls. Such a hybrid approach – combining zoning district regulations, use-specific standards and performance-based land use controls in one package – will likely represent the most effective, fair and workable approach for Michigan's rural counties and townships. The following section discusses a number of options for dealing with the land use and regulatory issues taken up in this handbook.

Regulatory Options

Zoning Districts

Zoning has long been championed as a means of implementing land use planning objectives, including those that address agricultural issues. One of the most effective means of advancing agricultural land preservation objectives, for example, is to establish exclusive use zoning districts in which only agriculture and directly related uses are allowed. Exclusive use agricultural zoning districts help preserve land for long-term agricultural use. By separating farm and nonfarm uses, they also prevent the types of land use conflicts that can arise when modern agricultural practices are carried out near nonfarm development.

Despite the fact that exclusive use agricultural zoning is an increasingly common tool for addressing farmland

preservation objectives, it is rarely found in use in Michigan. Also, zoning district regulations have not been used extensively as a means of carrying out animal agriculture planning objectives. Because traditional agricultural zoning districts tend to lump all types of agriculture together in a single district, they do little to address the different impacts associated with crop and animal-based agricultural operations.

One method of implementing a county's long-term goals for all types of agriculture might be to create two or more agricultural zoning districts, each geared toward specific types of agricultural activities. A two-tiered agricultural zoning scheme, for instance, might include one district geared toward crop-based uses and another that allows crop *and* animal agriculture uses. Another variation on the multi-tiered theme might involve the creation of a rural residential or hobby farm district in addition to full-scale agricultural districts.

Precedence for a multi-tiered agricultural zoning scheme can be found in most zoning ordinances. It is quite common, for example, for jurisdictions to use light and heavy industrial zoning districts to differentiate among locations that are appropriate for different levels of manufacturing activity. Most ordinances also include different types of residential districts (single-family, duplexes, multi-family, etc.) and more than one kind of commercial district.

The idea behind the multi-level agricultural zoning is that through sound land use planning it may be possible to identify areas

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that are appropriate for different types of agricultural activities. Analysis of residential development patterns, soil conditions, environmental features, drainage patterns, prevailing winds, aesthetic and other pertinent considerations may enable jurisdictions to develop a long-term land use plan that specifically addresses crop and animal agriculture. Of course, such a plan should also analyze and take into account the role of all forms of agriculture within the area economy and the substantial investment that agricultural activities represent for their owners.

A multi-tiered scheme recognizes that not all agricultural uses are the same when it comes to impacts on surrounding uses, including surrounding agricultural uses. It acknowledges that, while any use is capable of generating adverse land use impacts, some have a stronger likelihood of doing so than others. A multi-tiered strategy allows jurisdictions to distinguish among the types of agricultural uses that will be allowed in different areas. The result offers residents in and near agricultural areas greater predictability about the types of agriculture likely to occur nearby. It also offers counties and townships the ability to clearly indicate to farm operations exactly where their activities are welcome.

New zoning districts should not be viewed as a device for zoning controversial uses out of an area. It should also be noted that the zoning district approach is likely to have the most significant and noticeable effect in jurisdictions that have not yet experienced much development pressure for new animal agriculture uses. In short, the sooner a multi-tiered zoning district strategy is put into

effect, the more likely it is to achieve its purpose.

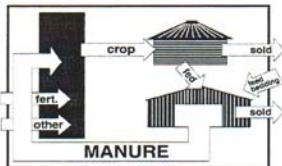
The sample zoning district provisions at the end of this chapter provide the starting point for crafting multi-tiered agricultural districts. The three sample agricultural zoning districts presented on pages SZL-3 through SZL-12 rely on a very simple distinction. One does not permit animal feeding operations; one permits them as special land uses; and one permits them by right.¹ This simple use-specific approach avoids the sometimes arbitrary distinction made between sizes of animal agriculture operations. The sample provisions avoid the use of size as the primary criterion for regulation under the assumption that a poorly-managed small operation may cause as many if not more problems than a well-managed large facility. Those who wish to craft multi-tiered district schemes on the basis of other measures, such as animal units, should do so only after careful consideration of the land use basis for such distinctions.²

¹The multi-tiered approach for designating different agricultural districts may offer the opportunity to use less intensive agricultural districts as buffers between more intensive agricultural districts and other uses.

²Some zoning ordinances have used animal units as a unit of measure to compare "relative differences in the odor producing characteristics of animal wastes." However, animal units, in waste management, are intended as a unit of measure of manure generation (both volume of manure and nutrient content) rather than as an odor measurement. Attempts to measure and regulate odor from different animal species is subject to problems like those highlighted below in the discussion of ordinances addressing odor.

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The impact of number of animal units on the ability of the operator to manage nutrients in manure in a safe and effective manner could be one basis for a size-related criterion. However, as noted above, number of animal units alone is not a sufficient criterion. Based on the agronomic tool of nutrient balancing, effective management of nutrients in manure implies that sufficient land acreage is available for land application of manure at agronomic rates. (An agronomic rate of application is that rate at which nutrients are used by the plants growing on the land and, thus, do not pose a threat to ground water or surface water quality.) Thus, rather than a regulation which focuses on number of animal units, a regulation might be drafted that requires evidence that sufficient acreage (owned and/or leased by the operation) is available for land application at agronomic rates of the manure that will be generated.



Nutrient balancing is a tool that accounts for the movement of nutrients to, from and within farms. Balancing means that nutrients, such as those found in manures, can be accounted for in their use by growing crops and the ultimate removal of the crops to be sold off the farm or fed to animals on the farm.

Special Land Uses

Some jurisdictions use special land use requirements as a means of regulating animal agriculture and other types of uses. The advantage of such an approach is that it allows an opportunity to review specific issues related to a particular combination of site and use. There is, however, a major disadvantage to the conditional use approach: requiring a special public hearing on every controversial development proposal – be it a feedlot, a car wash or a convenience store – tends to politicize every land use siting issue. The result can be a large and contentious public hearing and the very understandable temptation to base land use procedures on responses to political pressures in lieu of dealing rationally with an issue through up-front planning. Through planning and citizen participation, land use decisions can be made early before investments have been made and expectations set. Very often, public officials have no more objective information to make land use siting decisions after special land use public hearings than they did before such hearings. Delaying the decision will not make it easier. In many ways, it will make it harder.

The Michigan Society of Planning Officials defines special land uses as follows:

"Special land uses are those uses which could be appropriate in the district where they are listed, but have certain characteristics which must be managed to protect the integrity of uses permitted by right in the district. A use listed as a special land use in one district may be permitted by right in another. However, some special land uses have characteristics which make them inappropriate without special review in almost any district (e.g. junkyards or amusement parks)."

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For the reasons stated above, classifying controversial uses as special land uses is not a recommended approach. Some townships and counties will, nevertheless, wish to classify animal agriculture and other activities as special land uses. It is hoped that the sample special land use language procedures presented on pages SZL-1 to SZL-14 will help lay the framework for rational special land use review and approval procedures.

Use-specific Standards

Regardless of whether uses are classified as permitted or as special land uses, townships and counties may want to impose special conditions on some types of uses. By devising objectives standards – ones that can be fairly and consistently administered – the number of uses classified as special land uses can be kept to a minimum, since objective standards can be administered by staff. Moreover, clear standards are easier to understand, administer and enforce, and if challenged, they will be easier to defend in court.

Performance Standards

Performance standards are a form of regulation based upon objective measurements of a use's impacts on the environment and on nearby uses of land. They differ from zoning district and use-specific standards in many ways. They are not necessarily tied to particular zoning districts or land uses. They usually apply to all uses in all districts. Since performance standards seek to address end-state objectives, they are thought to be more

flexible than prescriptive standards that mandate where uses can locate and how buildings must be situated on the land.

Although the theory behind performance standards may be sound, there are also several difficulties with the approach. It is, for example, difficult and expensive to establish measurable impact criteria. And even when such criteria can be established they are sometimes incomprehensible to all but a few highly trained personnel, a fact that makes adoption of the standards difficult. Finally, administering technical performance standards is beyond the capability of many local jurisdictions. As discussed in the "Enforcement Issues" section of Chapter 3 (page 3-21), jurisdictions should carefully consider how a regulation will be enforced before adopting any complex or sophisticated form of regulation.

When it comes to the land use aspects of animal agriculture, the impact of greatest concern to local residents is odor. Unfortunately, odor-based standards have received less attention in the environmental land use arena than have other impacts, such as noise, vibration and air pollution. As a result, local ordinances that do address odor generally tend to lapse into the trap of using subjective language, such as the following:

No malodorous gas or matter shall be permitted to produce a public nuisance or hazard on any adjoining lot or property.

Even odor-related performance control provisions that do establish real standards

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tend to leave questions of administration and enforcement unanswered, as in this example:

No emissions of noxious gases or particles shall be permitted in any zoning district so as to exceed the odor threshold as measured beyond the lot lines. The odor threshold is defined as the concentration in the air of a gas or vapor that will evoke a response in the average human olfactory system.

Questions raised include: What kind and how strong of a response must be evoked before the regulation applies? Who will be the "average human" asked to judge whether the odor exceeds the threshold? What if other residents disagree with that judgement? Can the same threshold be applied uniformly in all locations?

Because of the difficulty in establishing fair and workable odor-based performance standards, no sample odor-related provisions have been included in this chapter. Despite the difficulties of establishing standards, some local governments may choose to develop a regulatory response. Those who attempt to use a performance standards approach should keep in mind that true performance standards should apply equally to all uses.

Nonconforming Uses

The adoption of new zoning standards governing animal agriculture may result in the creation of nonconformities. In zoning parlance, nonconformities are lots, buildings or uses that were legal when established but that violate one or more subsequently adopted zoning standards. These kinds of

nonconformities are not illegal and should not be confused with illegal uses. Nonconformities were perfectly legal when established, but, due to the imposition of new or revised standards, they no longer comply with the regulatory requirements set forth in the zoning ordinance.

There are a number of nonconforming situations that might arise due to the adoption of new or revised agricultural zoning regulations. If, for example, animal feeding operations were removed from the list of allowed uses in a particular zoning district, existing operations in that district would become nonconforming uses. If new or revised zoning district setback or separation requirements were enacted, and existing buildings did not comply with those new standards, those existing buildings would be considered nonconforming structures.

According to the State Statutes:

"The lawful use of a dwelling, building or structure and of land or a premise as existing and lawful at the time of enactment of a zoning ordinance, or, in the case of an amendment of an ordinance, then at the time of the amendment, may be continued although the use does not conform with the ordinance or amendment." §125.286 Sec. 16(1)

"The county [township] board shall provide in a zoning ordinance for the completion, restoration, reconstruction, extension, or substitution of nonconforming uses upon reasonable terms set forth in the zoning ordinance. In establishing terms for the completion,

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restoration, reconstruction, extension, or substitution of nonconforming uses different classes of nonconforming uses may be established in the ordinance with different requirements applicable to each class." §125.286 Sec. 16(2)

Definitions

If zoning districts provide the foundation for a zoning ordinance, definitions provide the mortar. Precise zoning definitions are essential in crafting zoning regulations that can be understood, administered and enforced. Definitions for terms used in the sample ordinance language are presented on page SZL-2.

Sample Regulations

The following sample ordinance language provides an illustration of many of the concepts described in this chapter. Choice of the term **sample language** was deliberate. These provisions are not intended as a model that will fill every jurisdiction's needs. Those interested in drafting local land use regulations should consult legal counsel.