Planning and Zoning for Animal Agriculture in Michigan:
A Handbook for Local Governments

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Foreword

Many local governments in Michigan are currently attempting to address issues related to the siting and expansion of new and existing large-scale, intensive animal production facilities. This handbook is designed to provide assistance to those units of government as they plan for animal agriculture in their jurisdictions. This handbook pulls together in one document information on planning, zoning, sources of data and detailed information important to the planning process, and examples of planning and zoning approaches.

A theme running throughout this handbook is that land use issues regarding animal agriculture are best addressed through comprehensive planning, followed by land use regulation aimed at implementing that planning. Without a background of careful planning, land use standards for large animal operations may provide only partial solutions to identified problems and may result in unintended adverse consequences for the local agricultural economy or land use trends in the community. Considering animal agriculture comprehensively, in the context of other land uses in the county or township, holds the promise of providing a more complete range of options to address these difficult and controversial issues.

In some communities, conflicts over feedlots have been particularly divisive. Local officials have the difficult and serious responsibility of striving to balance competing interests, heal divisions within their communities, and act for the common good. We hope this handbook and the assistance of Michigan State University Extension will be helpful in this important work.

NOTE: The Michigan Right to Farm Act was amended in December 1999. Sections of this handbook have been revised to reflect legal changes resulting from the amendment and subsequent case law.

Acknowledgments

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Executive Summary

Animal agriculture land use issues are being debated hotly throughout the state of Michigan and other livestock producing states. These debates are largely being played out at the local government level where long time and recent residents are joining together and asking local government to protect their lifestyles from change. On the other side, of course, are operators of animal production facilities. They provide a key element in food production in the United States. They cannot operate in cities because of land costs and other concerns. The only place that they can operate is in the rural areas. Although they might welcome the opportunity to move to a location that is far from the nearest neighbor, that is hard to do in an area settled on quarter-section tracts, with a house every half-mile or so along roads at one-mile intervals.

Local governments have an extremely difficult job to do in this situation. Rational officials recognize the value of the animal agriculture industry to the entire state, and to their own communities. On the other hand, local officials recognize their duty to the citizens who want to preserve a good quality of life. Although the day-to-day business of government may have more to do with road maintenance than with disputes over land uses, the most fundamental role of government in our society is to balance competing interests and to provide a reasonable set of rules to protect all interests.

Finding balance here means planning for animal agriculture as a viable and acceptable part of the rural community. That involves addressing the reasonable expectation of residents that the location of animal operations will be considered with the same care as the location of other business enterprises, while protecting the ability of animal producers to continue to be an important part of the business of Michigan.

The purpose of this handbook is to help local governments in Michigan to do exactly that – to create an environment in which their citizens are comfortable living with animal agriculture and in which responsible agricultural operators are comfortable doing business.

Chapter 1: Introduction

Chapter 1 describes the key factors that have contributed to the current political and policy debate over the location of animal production facilities: changes in rural populations, changes in the animal agriculture industry, and changes in how property rights are understood. It also provides an overview of the important role that agriculture plays within the state economy.

Executive Summary

Changes in the Rural Population

Many residents of rural areas now have little connection to production agriculture and are, in fact, several generations away from any prior familial connection to farming. The sense of disconnection from farm life and the farm economy tends to make residents less tolerant of the realities of living near farming operations.

Continuing a trend that began in earnest after World War II, non-farming populations have moved even further from the city centers into rural Michigan. Some of these new commuters have purchased farm houses on former homesteads. Others have moved onto large lots divided from farmland. Their expectations of peace and quiet are those of city dwellers, not those of traditional rural people.

Changes in Agricultural Production

From 1954 to 1997, the number of farms in Michigan decreased from 138,922 to 46,027. During the same period, average farm size increased from 119 acres to 215 acres. There have been similar shifts in the animal sector of Michigan's agricultural economy, with a trend toward larger, intensive animal operations. In general, changes in the animal agriculture industry are characterized by three types of changes: growth in farm size, increase in vertical coordination, and changes in production locations.

Much of the debate around animal agriculture and issues of land use has been characterized as a conflict between farm and non-farm rural residents, caused largely by the constant movement of urban residents who “don’t understand agriculture” into rural areas. This characterization significantly oversimplifies reality. In fact, in many areas, existing farmers are vocal opponents of new and expanding animal operations. These farmers voice many of the same concerns expressed by their non-farm neighbors: water quality, odor, quality of life, and changes in the character of their community.

Changes in Property Rights Perspectives

The changing demographics and changing structure of animal agriculture are linked to a shift in property rights related to environmental quality. With more and more non-agricultural, rural residents, the previously understood and accepted negative impacts of agricultural production (i.e. dust, odors, etc.) have become less acceptable. In addition, the distinction between large, industrial-type farms and smaller, more diverse farms and their roles in environmental protection is increasingly scrutinized. Agricultural and non-agricultural residents, alike, are more critical of the environmental impacts associated with large, non-traditional agricultural operations.

Michigan’s Agricultural Economy

Agriculture remains a key component of Michigan's economy and a dominant economic force in the state's many rural counties. Chapter 1 argues that in planning for the future of townships and counties, public officials and citizens should not overlook the vital economic role played by

animal production and other forms of agriculture.

The Role of Government

Thrust into the middle of debates surrounding animal agriculture are local governments – in Michigan, the counties and townships that have land use jurisdiction in rural areas. Long-time and recent residents are joining together and asking local governments to protect their lifestyle from change.

Chapter 2: Planning for Animal Agriculture

Through long-range planning, Michigan's counties and townships can avoid some land use controversies and prepare for ones that cannot be avoided. At their best, plans can help prevent future land use conflicts from developing and help address present conflicts by providing self-implementing guidance for what otherwise might be difficult planning decisions. When that does not work, plans at least provide a method for weighing competing interests.

Recognizing the Need

Planning provides a vital foundation for dealing with tough land use issues like siting animal production operations. It provides a forum for stepping back, taking a look at the forest as well as the trees, and charting a course based on long-term goals. Whatever the motivation, however, one of the most important steps in the process of planning is the first one: recognizing the need and setting out to get it done.

After explaining the importance of long-range planning as a foundation for effectively dealing with the animal agriculture issue, Chapter 2 goes on to provide guidance to those Michigan counties and townships interested in preparing a plan. It begins by describing types of plans that may be useful for addressing agricultural land use issues. It goes on to describe a common-sense strategy for preparing a plan.

Types of Plans

Comprehensive plans and land use plans are two types of plans of primary interest to counties and townships developing or revising a plan to more carefully address agricultural issues.

Organizing the Process

Before setting out to work on the plan there are a few organizational matters to consider; namely who oversees the process and who does the work?

Oversight
Someone or a group will need to assume an oversight role. Their responsibility will be to convene meetings, review information, provide policy direction and coordinate the process.

Legwork
The legwork of planning will likely fall to a combination of groups and individuals.

Volunteers
Local volunteers can have a key role to play in preparing rural area plans In fact, including as many people as possible in the planning process is advisable.

Consultant
Even with the involvement of local officials and citizens, some counties or townships may need the services of outside consultants. The role of consultants can take several forms.

Developing the Plan

Assessing Existing Conditions
Most good plans start with an assessment of existing conditions. The availability of Geographic Information Systems can simplify the compilation and evaluation of the information collected. An existing conditions analysis generally includes at least the following elements:

Natural Environment. This assessment consists of an inventory and analysis of natural environmental features found within the county or township and the surrounding area with a particular emphasis on the opportunities and constraints suggested by those features.
Human-Made Environment (Public Infrastructure). The presence of major roadways and the availability of public sewer and water service greatly influence an area's development potential.
Human-Made Environment - Private. Existing land use and development patterns are an extremely important determinant of future land use patterns. Moreover, the availability of private facilities such as railroad lines, truck terminals, grain elevators, sale barns, industrial parks, and even vacant industrial buildings also offer significant opportunities, while lack of such facilities may be a significant constraint on attracting or keeping some types of development in an area.
Population Characteristics. A region's overall population and its characteristics – age, education, employment – are critical influences on its future.
Economic Base. A county or township's current economic base has a profound influence on its future. The industries and businesses now located in a county or township are likely to provide a large percentage of future employment. To the extent that new businesses come into an area, they are likely to be similar to or related to existing businesses.
Other Resources. There may be other unique factors that influence a region's future. The reputation of an area's public schools or the existence of nearby recreational opportunities, for example, can provide a spring board for growth or tourism-related development. These and other types of unique community resources should be included in the inventory of existing conditions.

Arriving at a Vision of the Future
This step of the planning process can be used as an opportunity to establish local residents' long-term vision of the future or to set general long-term goals for the township or county. It can also serve as the first opportunity to define a list of critical issues and concerns to be addressed in the plan

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Citizen participation and broad-based community involvement are critical features of any successful planning effort, especially at this point in the process.

Although some vision or goal-setting work can occur prior to or simultaneously with data-gathering and analysis, it will usually be helpful to have collected information before working to develop a vision for the future. Information on existing land use, environmental features, and economic factors can be used to educate and inform decision-makers, interest groups, and the public on the opportunities and constraints that will affect the future.

Developing Alternatives (Scenarios)
After completing the assessment of existing conditions, and garnering consensus about the county or township's long-range, shared vision, the next step is to develop different alternatives for getting there. These alternatives, sometimes referred to as scenarios, are really just a series of options or paths to the future.

Consolidating Alternatives into a Plan
Ideally, the preferred plan will be consistent with and move the county or township closer to the vision established earlier in the process. Moreover, the selected plan should be consistent with other plans and strategies in effect throughout the area. If it is not, action will need to be taken to remedy such inconsistencies.

Implementing the Plan

Once a plan has been adopted, no decisions related to growth, development, land use or public facility planning and budgeting issues should be made without examining whether such decisions would be consistent with the plan. Additionally, implementation tools should be developed and adopted to help ensure that the plan's goals are carried out in day-to-day activities. The most common plan implementation tools are the zoning ordinance, subdivision regulations and capital improvements programs.

Monitoring and Updating the Plan

Monitoring a plan's effectiveness is an important follow-up activity to the process of preparing it. Ideally, the plan will include a number of measurable objectives that will allow the county or town to track how much progress is being made toward its goals.

Chapter 3: Legal Issues Involved in Rural Planning and Zoning Regulation

Chapter 3 discusses the legal issues involved in the regulation of animal agriculture.

Planning and Implementation Authority of Local Governments

The chapter begins with a general discussion of the legal principles that underlie any regulation of land use and then discusses some unique issues that arise in the regulation of agriculture.

This chapter provides general information on the state of the law only. Anyone proposing to act in this field should do so only with appropriate advice of counsel.

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Although the authors are confident that the principles used by counsel in advising clients who act in this area will be similar to those set out in this chapter, two areas of related law are changing particularly rapidly. Anyone dealing with the *takings* issue or with the issue of *preemption* of local authority by the state is likely to find that the law will have evolved further or even changed direction shortly after publication of this handbook.

Police Power

Local governments regulate the use and development of land under the police power, which is the right and duty to regulate private activity for the protection of the public health, safety and welfare. Most valid local government regulations fall under the police power. Among those is zoning. Courts in Michigan have broadly construed the notion of the police power to uphold local zoning and land use controls.

The apparent conflicts between the police power and property rights are discussed later in this chapter, but it is important to understand that "property is held subject to the right of government to regulate its use in the exercise of the police power so that it shall not be injurious to the rights of the community or so that it may promote public health, morals, safety, and welfare." *Patchak v. Township of Lansing*, 361 Mich. 489, 105 N.W.2d 406 (1960).

Planning and Zoning in Michigan

The Michigan legislature has separately authorized planning and zoning authority for counties, townships and cities and villages in Michigan. In addition, there are separate provisions for regional planning. The scope of authority granted to counties, townships and cities and villages differs somewhat. Nonetheless, there are similarities among the provisions, such as the requirement that all zoning should be based on a comprehensive plan.

The basic nature of zoning for all three forms of local government is similar. All contemplate the division of the jurisdiction into districts and the regulation of the uses to which land and buildings may be put in each of those districts. In addition, the local governments can regulate within those districts the location, height, bulk, number of stories, size of buildings and other structures, the percentage of lot which may be occupied, the size of yards and other open spaces and the density and distribution of land uses. This handbook focuses on county and township planning and zoning, since those units will deal with most rural land use issues.

Constitutional and Statutory Limitations of Planning and Zoning Authority

Local governments exercise police power only in accordance with the terms of various constitutional provisions and enabling acts. Local governments' exercise of police power is also explicitly limited by the U.S. and Michigan constitutions and by laws passed at the state and federal levels.

Protection from Takings

Owners of land and other property are protected from illegal seizure of that property by the U.S. and Michigan

Constitutions. In particular, the Fifth Amendment to the U.S. constitution provides that "nor shall private property be taken for public use without just compensation." The Michigan Constitution states that "private property shall not be taken for public use without just compensation therefore being first made or secured in a manner prescribed by law. " Mich. Const. 1963, art 10, §2. Farmers and other landowners have responded to increased government regulation of land by arguing that some land use regulations amount to an unconstitutional taking. Both Federal and Michigan courts have provided guidelines for judging when a regulation "goes too far" and amounts to a taking.

Other Protections

Other protections afforded land owners through limitations on exercise of police power include:

- protection of rights through process. Typical use of the phrase "due process" refers to the inherent fairness of a legal or administrative process itself.
- limitations by preemption. When a higher level of government, such as the state, has, within its constitutional and statutory authority, regulated a matter, it is said that the higher government level *preempts* lower levels of government from regulating the same matter.
- equal protection limitations. This doctrine, found in the Fourteenth Amendment to the U.S. Constitution, requires that similarly situated people must receive the same treatment under the law.
- limitations on exclusionary zoning. Michigan law prohibits zoning ordinances or zoning decisions that totally prohibit the establishment of a land use in the presence of a demonstrated need for that land use, unless there is no location where the use may be appropriately located, or unless the use is unlawful.

Enforcement

Enforcement is a critical element in the success of any government regulation. An unenforced, or unenforceable, land use regulation is so useless to a community that it may amount to a misrepresentation of the intent of the local government adopting it. Enforceability is often a problem with tailor-made conditions that arise during the regulatory permitting process. Restrictions included in adopted ordinances and other regulations have usually received the sort of review necessary to ensure that they are reasonably enforceable. A condition developed in the heat of public protests at a particular meeting is much less likely to be enforceable.

Unique Aspects of Planning for and Regulating Agriculture

Historic Perspective

Zoning originally evolved primarily in urban and suburban areas, providing a management tool to separate sometimes incompatible uses from one another. Zoning in rural areas was authorized by Michigan with the passage of the County and Township Zoning Acts in the 1930s.

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Part of the difficulty of addressing the issue of animal agriculture through planning and zoning is that many people still think of rural zoning as something that allows or even encourages the development of a variety of agricultural and residential uses in comfortable proximity to one another. In most cases, that is not a realistic scenario today.

The Takings Issue and the Regulation of Agriculture

Property owners in rural areas often have great concerns about the interference of government regulation with their property rights. In that context, they often cite the taking issue as a basis for objecting to local regulation. Where the takings issue may arise in rural areas is under regulations limiting the use of land strictly to agricultural purposes. Farm owners on the fringes of urban areas sometimes challenge exclusive agricultural zoning on the grounds that it interferes with their right to sell their land for development. In general, courts have concluded that agriculture itself is a reasonable use of land and that the limitation of land to an agricultural use thus is not arbitrary, unreasonable, unconstitutional or otherwise proscribed by legal principles.

Preemption and the Regulation of Animal Agriculture

The issue of preemptions seems like quite an abstract one, until it is applied to a particular set of facts and circumstances. Such a set of facts and circumstances can arise in the regulation of feedlots and other animal agriculture. Although zoning addresses land uses, some of the issues relevant to regulating land uses may relate to concerns also addressed by the state. Legitimate concerns about the quality of runoff from animal agriculture operations may influence local government land use regulations, but they are matters also addressed by the Michigan Department of Environmental Quality and the U.S. Environmental Protection Agency through their responsibility for environmental regulation in the state. The legal issue that arises is whether the state's direct regulation of water quality and other environmental matters and the federal government's direct regulation of Concentrated Animal Feeding Operations preempt local efforts to regulate such matters. There has been no consideration of this issue by a Michigan court.

Preemption and Michigan's Right to Farm Act

The Right to Farm Act (RTFA) was passed to protect agricultural uses of land from nuisance suits brought by people or businesses moving into agricultural areas. However, the law was also intended to provide for protection of environmental quality and minimize negative impacts on surrounding land users. Specifically, a farm that is operated using generally accepted agricultural and management practices, according to policy determined by the Michigan Commission of Agriculture, will not be found to be a public or private nuisance.

The RTFA was amended in December 1999 and expressly preempts the enforcement of local zoning ordinances that conflict with the Generally Accepted Agricultural and Management Practices (GAAMPs) developed under the Act.

Water Quality Regulations and Animal Agriculture

While state and federal water pollution control laws prohibit discharges to surface water, in general, there are specific references made to animal agriculture in the federal Clean Water Act. In particular, Concentrated Animal Feeding Operations (CAFOs) are regulated as point sources of discharge under the Clean Water Act and, as such, are required to attain a discharge permit. Michigan requires that CAFOs have a discharge permit, a policy consistent with federal regulations under the Clean Water Act.

Enforcement Issues

Enforceability of zoning provisions in rural areas is a particular concern. Townships and counties typically have limited personnel for any function and may have no one assigned full-time to enforcement duties. A county or township considering the adoption of any complex or sophisticated form of regulation of animal agriculture (or any other complex use) ought to study carefully the issue of enforcement before acting.

Chapter 4: Implementation Options

Chapter 4, the final chapter, addresses regulatory strategies for implementing animal agriculture and land use planning objectives.

Separation vs. Mitigation

The chapter begins by describing the differences between separation-based land use control strategies and mitigation-based approaches.

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. Traditional zoning districts and use-specific separation standards are presented as examples of separation-based approaches. Use-specific separation standards are those that require minimum distances between specified uses – between feedlots and residences, for example. A box on page 4-2 discusses the role of *intensity* in planning for and regulating land uses.

Mitigation-based strategies, on the other hand, are based on the idea that it is not the type of use or its location that matters, but rather how well it handles its impacts on surrounding areas. The earliest mitigation-based regulations came in the form of industrial performance standards, aimed at controlling dust, smoke and other emissions of industry. Performance zoning takes this concept and applies it to land uses in general. Advocates claim that such an approach offers communities a very flexible, effective and fair tool for addressing land use compatibility issues. For a variety of reasons, however, pure performance-based land use control systems remain rare, although it is not uncommon to find individual performance-based provisions within the local zoning ordinances. It is also

common to find industrial performance standards in local ordinances.

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. Zoning districts, with their focus on the grouping together of uses with similar characteristics, continue to form the backbone of most ordinances. Increasingly though, separation-based regulations are being supplemented, if not supplanted, by flexible regulatory strategies focusing on how a use operates in its setting, not necessarily what the use is called.

Regulatory Options

After presenting the theoretical underpinnings of potential control strategies, the chapter goes on to present specific regulatory options.

Zoning Districts

Agricultural zoning districts, although commonly used for addressing farmland preservation, are not widely used to address animal agriculture because they do not focus on the potential differences among different types of agricultural land uses. Chapter 4 suggests that creating two or more zoning districts aimed at different types of agriculture – something local governments have long done with business and manufacturing uses – is an idea that should receive greater attention.

The idea behind the multi-level agricultural zoning is that, through sound land use planning, it may be possible to identify areas 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's economy and the substantial investment that agricultural activities represent for their owners.

Special Land Uses

Some jurisdictions use special land use requirements as a means of regulating animal agriculture and other types of use. Although this approach offers the opportunity to review the particular issues involved with a particular proposal, it has the unfortunate side effect of forcing a public hearing on every controversial land use proposal. Further, the public hearing approach to facility siting issues can become an excuse for not facing up to the complex issues involved in planning for agriculture and setting reasonable standards.

Use-Specific Standards

Regardless of whether uses are permitted by-right or as special land uses, townships and counties may want to impose special conditions on some types of development. By devising objective standards, the number of uses classified as special land uses can be kept to a minimum. Clear standards are also easier to enforce.

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. Although the concept is sound in theory, there are a number of technical problems in developing workable performance standards for a use like animal agriculture.

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. Regulations governing nonconformities are a vital component of zoning ordinances.

Definitions
Precise definitions are essential in crafting regulations that can be understood, administered and enforced. The sample ordinance language includes definitions.

Sample Regulations

Pages SZL-l to SZL-14 set out sample ordinance language for regulating and protecting all forms of agriculture, with an emphasis on animal agriculture. Provisions include:

Section 505: Definitions
Article 31: Limited Agriculture District
Article 32: Conditional Agriculture District
Article 33: Exclusive Agriculture District
Article 16: Special Use Standards

The sample language provided includes more regulation than might be adopted in any given municipality. This is done to provide examples of several different approaches that a municipality might consider.

Appendix A: Planning Approaches

Appendix A provides detail about several planning approaches that local governments can use in planning for agriculture or for other purposes.

Appendix B: Information and Technical Support

Appendix B provides an annotated list of sources of additional information and technical support, including regional, state, federal and private agencies. All listings include addresses and phone numbers. Most include fax numbers, e-mail addresses and/or World Wide Web addresses. Each listing includes a brief description of available resources, and several tables provide cross-references from types of information needed to the resource agencies that provide it.

Bibliography

An extensive bibliography is provided of reference materials on planning, agricultural land preservation, animal agriculture issues and trends, capital improvements, economic importance of agriculture and general materials related to the handbook.

Chapter 1:

Introduction

Animal agriculture has always been part of rural America, from the earliest New England farms to the mammoth Western ranches that marked the settlement of the frontier. A classic early battle over animal agriculture in the West was waged over sheep and cattle on the open range. The question then was not whether livestock ought to be there, but rather which livestock were acceptable. Now we find more often that residents of an area are questioning where animal production ought to occur.

Many people in the United States today envision farming like a Grandma Moses painting - a quarter section of land with a small truck, garden, a field of corn, a field of beans and a pasture with Holsteins grazing peacefully. Combine that picture with a small town in the background and it creates what may be the most common conception of life in the United States outside of cities.

This vision of farm life was never entirely accurate. Like many artistic representations, Grandma Moses' idyllic view was also idealized. Missing from the paintings were the long hours of hard work, the years of failed crops, the odors of animals, and other realities of farm life.

Factors Shaping the Debate over Livestock

Three changes in rural Michigan (and in other states) have contributed to the current political and policy debate over the location of animal agriculture operations. These include changes in rural populations, changes in the animal agriculture industry, and changes in how property rights are understood.

Changes in the Rural Population

Movement of large numbers of people to the suburbs and rural areas began in earnest after World War II. It was stimulated in part by the search for this idealized American lifestyle, but there were other forces behind it as well. Among those were the pent-up demand for housing after the war, the sudden availability of a new federal mortgage insurance program to help first-time homebuyers, and the construction of the predecessors of the interstate highway system to provide rapid access to outlying areas. With this dispersed growth came the beginnings of land use conflicts in suburban and rural areas.

When the people in rural towns were mostly farmers or merchants who made a living serving farmers, the differences between rural activities and more urban ones rarely

turned into serious conflicts. Everyone recognized that the business of farming was really the business of the town. They typically viewed the activities on the farm as being no more a problem than the inconvenience created by a large truck temporarily blocking a street while it unloaded goods at a local store. Both were clearly serving the community, and the inconveniences of both were simply a factor of community life.

As urban dwellers fled to the suburbs and rural areas, however, the political nature of the relationship changed. The person living in the house on the edge or outside of town now might be a shift worker in an electronics plant or a teacher in an urban school or a clerk in a local boutique. Although all of those people depend on the farm economy for food, and the fortunes of farmers affect the economic well-being of entire communities, the practical and emotional connections are less direct. The sense of disconnection from farm life and the farm economy tends to make residents less tolerant of the realities of living near farming operations. Non-farming populations have moved even further from the city centers into rural Michigan. Some of these new commuters have purchased farm houses on former homesteads. Others have moved onto large lots divided from farmland. Their expectations of peace and quiet are those of city dwellers, not those of traditional rural people.

In addition, a continual increase in the affluence of the American population has changed expectations of the public with respect to environmental quality. A wealthier, more educated population is focusing more and more attention on how their quality of life is affected by their physical environment. As a result, reductions in environmental quality that might once have been acceptable or overlooked are now subject to much greater scrutiny.

When this attention to environmental quality is combined with shifts in where people are living, the implications for agriculture are particularly evident. Many residents of rural areas now have little connection to production agriculture and are, in fact, several generations away from any prior familial connection to farming. In addition, the movement of urban dwellers into suburban and rural areas continues and is being accelerated by internet connections that literally free some workers from having to locate near their jobs. Rural populations are now composed of significant numbers of residents who have no links to, and little knowledge of, agriculture.

Changes in Agricultural Production

Despite a general shift in population away from farms, total farm production has remained at high levels. Further, in most areas, the total acreage in production has remained relatively stable. In Michigan the number of farms has dwindled, but average farm sizes have increased. From 1954 to 1997, the number of farms in Michigan decreased from 138,922 to 46,027. The land area in farms also decreased from 16.5 million acres to 9.9 million acres. During

the same period, average farm size increased from 119 acres to 215 acres.

There have been similar shifts in the animal sector of Michigan's agricultural economy. Although there are still a significant number of smaller livestock operations, there has been a general increase in the number of larger operations in most livestock categories. For example, in 1993, there were 1100 pork operations with inventories of 100-499 head. By 1998, there were only 500 operations in this size category. During the same time period, the number of operations with more than 2000 head increased from 130 to 150. Similar changes in the dairy and cattle industries show a trend toward fewer but larger, more intensive animal operations.

In general, changes in the animal agriculture industry are characterized by three types of changes: growth in farm size, increase in vertical coordination, and changes in production locations. The greatest factor driving the movement toward larger farm size has been the introduction and adoption of new technologies that are more cost-effectively used on a large scale. Improved disease control and feed programs, coupled with the movement toward confined production operations and greater fixed investments, has led producers to increase output, lower per unit costs of production, and adjust to new sources of risk.

The movement toward larger farms with higher animal densities has been combined with changes in the type of coordinating mechanism used by input suppliers, farmers, and packers and processors. More emphasis on production contracting (where farmers own the facilities but contract to raise animals owned by other segments of the agribusiness sector - for example, processors) in the animal agriculture industry has been shown to reduce transaction costs, increase responsiveness to consumer demand, improve quality control (e.g., food safety, consistency, and uniformity), reduce risk for producers and afford production efficiencies from specialization. In addition, for many young farmers, production contracts (for example, in pork production) represent an easier way to get started in farming and obtain access to operating capital.

Along with changes in farm size and business structure have come changes in location of animal production. Locational changes in animal agriculture are characterized by two different types of adjustments: shifts of animal production between regions and clustering of production within a region. The shift of a considerable amount of pork production out of midwestern states and into the southeast is an example of a shift between regions. As another example, during the 1960s, traditional dairy states like Michigan and Wisconsin saw much of their dairy production move to western states; that trend has reversed in recent years.

Clustering in animal agriculture arises when production facilities locate in close proximity to one another within a given region. Often, a cluster of production operations may develop in close proximity to some other component of the industry, for example a new processing plant for the

commodity or an expanded market (e.g. new population center) for the product.

It is the clustering phenomenon that has, more often than not, triggered reactions from neighbors of new and expanding animal production operations and policy responses from local governments charged with guiding land use change. Most often, opponents of the observed industry changes voice concerns about water quality, odor, and associated changes in quality of life. However, this is not exclusively so. In many rural areas, local residents object to how the changes in animal agriculture change the character of agriculture in the area, and proponents of more traditional farming operations object to how those operations may be affected by animal industry growth.

One final note about sources of conflict. Much of the debate around animal agriculture and issues of land use has been characterized as a conflict between farm and non-farm rural residents, caused largely by the constant movement of urban residents who "don't understand agriculture" into rural areas. This characterization significantly oversimplifies reality. In fact, in many areas, existing farmers are vocal opponents of new and expanding animal operations. These farmers voice many of the same concerns expressed by their non-farm neighbors: water quality, odor, quality of life, and changes in the character of their community.

Changes in Property Rights Perspectives

The changing demographics and changing structure of animal agriculture are linked to a shift in property rights related to environmental quality. With more and more non-agricultural, rural residents, the previously understood and accepted negative impacts of agricultural production (i.e. dust, odors, etc.) have become less acceptable. In addition, the distinction between large, industrial-type farms and smaller, more diverse farms and their roles in environmental protection is increasingly scrutinized. Agricultural and non-agricultural residents, alike, are more critical of the environmental impacts associated with large, non-traditional agricultural operations.

The movement of a more affluent population into rural areas means that these residents bring with them certain assumed rights to environmental quality. Many of these new residents bring with them a political savvy and a willingness to become involved in local policy that has not traditionally characterized the rural, agricultural population. Clearly, then, both rights and responsibilities related to environmental quality in agricultural areas are being redefined.

Michigan's Agricultural Economy

Like the rest of the United States, Michigan is an increasingly urban state. The agriculture and food industry, however, remains a key component of the state's

economy and a dominant economic force in the state's many rural counties.

As public officials and citizens work together to plan for their regions, it is important to recognize the vital role of livestock and other forms of agriculture in the state's economy. By all measures, agriculture and its directly related industries fuel a large percentage of the state's economic engine. According to Michigan's Department of Agriculture, the food and agriculture industry is Michigan's second leading industry and contributes $40 billion to Michigan's economy each year. Michigan produces over 120 commercial agriculture products, and one out of every 15 Michigan citizens is employed in the food and agriculture industry. Each year, Michigan exports agricultural commodities valued at nearly $2 billion, ranking Michigan sixth in the nation for agricultural exports. Animal agriculture produces half of Michigan's agricultural income, with dairy the leading animal industry. Corn, hay and soybeans are the most valuable crops produced in the state, accounting for nearly 62 percent of the value of Michigan's crops.

The Role of Government

Thrust into the middle of debates surrounding animal agriculture are local governments - in Michigan, the counties and townships that have land use jurisdiction over rural areas. Long-time and recent residents are joining together and asking local government to protect their lifestyles from change. In doing so, they are little different from their neighbors in town who band together to oppose a new convenience store on the corner or a discount store on the entrance road to their neighborhood. In asking for protection, they cite entirely rational concerns about odor, noise, traffic and possible water problems from runoff.

On the other side, of course, are operators of livestock farms. They provide a key element in food production in the United States. They cannot operate in cities, because of land costs and other concerns. The only place that they can operate is in rural areas. Although they might welcome the opportunity to move to a location that is far from the nearest neighbor, that is hard to do in an area that was settled on quarter-section tracts, with a house every half-mile or so along roads at one-mile intervals. There is no doubt that part of the reason that some livestock operators are relocating their operations to states such as Kansas and Oklahoma is that those areas were settled on larger tracts, leaving larger clearances between neighbors and fewer neighbors within a given distance of a proposed operation. Fewer neighbors means less potential opposition.

Local government has a difficult job to do in this situation. Rational county and township officials recognize the value of the livestock industry to the entire state, as well as to their own communities. On the other hand, rational county and township officials recognize their duty to the citizens who want to preserve a good quality of life. Although the day-to-day business of government may have more to do with road maintenance than with disputes over land uses, the most fundamental role of government in our

society is to balance competing interests and to provide a reasonable set of rules to protect all interests.

Finding balance in this case means **planning** for animal agriculture as a viable and acceptable part of the rural community. That involves addressing the reasonable expectation of residents that the location of livestock operations will be considered with the same care as the location of other business enterprises, while protecting the ability of livestock operators to continue to be an important part of the business of Michigan.

The purpose of this handbook is to help local governments in Michigan to do exactly that - to create an environment in which their citizens are comfortable living with livestock and in which responsible agricultural operators are comfortable doing business. The following chapter, Chapter 2, lays the groundwork by explaining the need for long-range planning as a means of effectively dealing with the animal agriculture issue. Besides arguing for the importance of planning, the chapter presents a common-sense guide to preparing a plan. Chapter 3 describes the legal framework in Michigan for dealing with agriculture, rural land uses, and livestock issues. In Chapter 4, the handbook goes on to describe zoning techniques that can be and have been used to implement animal agriculture planning strategies.

Chapter 2:

Planning for Animal Agriculture

Land use conflicts can create enormous amounts of controversy. Historically, the definitive breeding ground for such conflicts has been the single-family residential neighborhood. Imagine, for example, the developer of an apartment complex in such an area or the nonprofit group that is attempting to renovate an old residence as a halfway house for substance abusers. The actors involved in the debate over feedlots and animal production facilities may be different and the physical landscape that provides the context may look different, but the issue is still one of land use. Any approach to seeking balance among different land uses and different activities should be based on planning. So it is with agriculture in general and animal agriculture in particular.

Recognizing the Need

Recognizing the need for a plan is the critical first step of any planning process. Planning is an orderly, thoughtful, proactive way of preparing for the future. Prominent planner Bruce McClendon has referred to planning and the ways that plans are put into effect as methods of mastering change. Regions and communities do change over time, and planning offers them an opportunity to manage that change.

Planning also underlies rational public policy-making. As anyone who has held an elected or appointed position within government knows, it is extremely difficult to make a calm and rational decision in an emotionally-charged situation. Emotions can run particularly high when local economic needs clash with a citizen group's or neighborhood's apparent desires.

When a new facility, such as a truck terminal, manufacturing plant, or animal production operation, is proposed, there are likely to be positive economic benefits for the county or township, but there may also be concerns about the impacts of the project on the neighborhood or area in which it is to be located. If decision-makers try to weigh these types of competing interests in the absence of established policy, they are unlikely to reach a rational decision.

Through planning, local governments can establish long-range policies to direct their day-to-day actions and to provide guidance in dealing with difficult decisions. Counties and townships in Michigan and elsewhere have long used planning to accomplish just such purposes. Through planning and zoning policies they have decided that some businesses – banks and retail stores, for example – belong in the downtown area while others, like auto body shops, do not. They have reached a decision that some

types of businesses – offices, perhaps – are acceptable home occupations within residential areas, while most other businesses are not compatible with the residential character of such settings. And they have decided they want to encourage uses that are important to the region's economic well-being: the industrial park, the grain elevator, and the animal production operation.

Those types of plans and the community values they reflect become law through the zoning map and zoning ordinances, and they guide public officials and private citizens in making decisions. The zoning map and ordinance tell the prospective body shop operator that the business cannot be located downtown and the hair stylist that such a business cannot be conducted at home. The map and ordinance also tell neighbors in the residential area that the only businesses that will be allowed in their areas are professional offices. Finally, they show downtown merchants that retailers, rather than manufacturers, will be allowed downtown. All of this adds up to predictability for existing residents and for those interested in developing a new use in the area. In essence, the plan provides early notification of the county or township's desires regarding land use relationships.

The predictability of the zoning map and ordinance can help to ward off land use conflicts before they become controversies. In those cases where a decision regarding a land use comes before a planning commission or governing body, the zoning map and ordinance provide policy guidance in reaching a decision.

Through long-range planning, Michigan's counties and townships can avoid some land use controversies and prepare for ones that cannot be avoided. At their best, plans can help prevent future land use controversies from developing and help address present conflicts by providing self-implementing guidance for what otherwise might be difficult planning decisions. When that does not work, plans at least provide a method for weighing competing interests.

Planning provides a vital foundation for dealing with tough land use issues like feedlot siting. It provides a forum for stepping back, taking a look at the forest as well as the trees and charting a course based on long-term goals. Regardless of the motivation, however, one of the most important steps in the process of planning is the first one: recognizing the need and setting out to get it done.

This chapter is intended to provide guidance to those Michigan counties and townships interested in preparing a plan or updating an existing plan to reflect agricultural land use goals. It begins by describing how agriculture, in general, and animal agriculture, in particular, might be incorporated into a county or township comprehensive or land use plan. The chapter goes on to describe a general strategy for preparing a plan, focusing on the types of information that are needed and possible sources for that information. (Appendix A provides a detailed discussion of several alternative planning approaches.) It is hoped that this chapter can be used by those who are about to embark on their first planning effort as well as by those counties and townships that simply need to update and

amend an existing plan to better meet their long-range needs.

Types of Plans

There are many types of plans. Two types are of primary interest to those counties and townships developing or revising a plan to more carefully address agricultural issues. These are the comprehensive plan and the land use plan.

Comprehensive Plan. Planners learn in professional school that such plans should be comprehensive geographically (covering the whole geographic area of the jurisdiction) and substantively (addressing all matters of interest to the community, from schools to solid waste), and that they should be relatively long-range, usually with a planning horizon of twenty years. A comprehensive plan often consists of multiple elements, dealing with things such as land use, parks and recreation, and capital improvements programming. Comprehensive plans almost always include a thorough Trends Analysis and at least some Opportunities and Constraints Analysis to provide context for the planning effort.

In counties and townships that need to plan for animal agriculture, that planning must be done in the context of all the other objectives and issues that the local governments face. Planning for animal agriculture, therefore, must be integrated with the local comprehensive plan. Agricultural land uses may be important to a community because of its desire to retain a rural environment. It may also be viewed as an important component of the local economy. An expanding animal agriculture may offer new employment opportunities in the community. In addition, the role that agricultural land uses play in the overall financial health of the community, in such areas as tax revenue generation and costs of public services, are important considerations. It is in the comprehensive plan that a community reflects upon and articulates the role that it expects agriculture to play in its future.

Land Use Plan. A land use plan focuses on physical land use issues in the community. This is the element of a Comprehensive Plan that is most relevant to issues like preserving agricultural lands and finding appropriate locations for animal production operations. An assessment of existing conditions, especially in the natural and human-made environments, is especially critical to guiding agricultural land uses into those areas to which they are best suited. (A detailed discussion of assessing existing conditions begins on page 2-4.) The best land use plans have a Comprehensive Plan for context.

Organizing the Process

Before actually setting out to work on the plan there are a few organizational matters to consider; namely who oversees the process and who does the work?

Oversight

Typically, the planning commission, which serves in an advisory capacity to the governing body (the county board of

commissioners or township board) will assume an oversight role in the plan preparation process. Sometimes a joint planning committee comprised of citizens and elected officials (county commissioners or township board members) will be set up for this purpose. Occasionally, special planning advisory groups, comprised exclusively or primarily of citizen members, are formed to oversee the planning process.

Whomever the board appoints to serve as the advisory group, their responsibility will be to convene meetings, review information, provide policy direction and coordinate the process. This group's role is advisory only. Ultimately, they will be recommending a plan to the board for adoption.

Legwork

The legwork of planning will likely fall to a combination of groups and individuals. Certainly, county or township staff can play a vital role in the planning effort. Staff members will likely have knowledge of and ready access to key information sources. Moreover, they are often well-equipped to deal with logistical and organization details, as well as technical questions that may arise.

Volunteers

Local volunteers also have a key role to play in preparing rural area plans. In fact, it is advisable to include as many people as possible in the planning process. Involving a broad cross-section of the county or township helps ensure that the plan presents a balanced approach, and therefore that it can be adopted. With volunteer citizen involvement, the work of preparing the plan can be spread out, which will be particularly important in those counties or townships that are not in a position to devote substantial staff time to the process.

Consultant

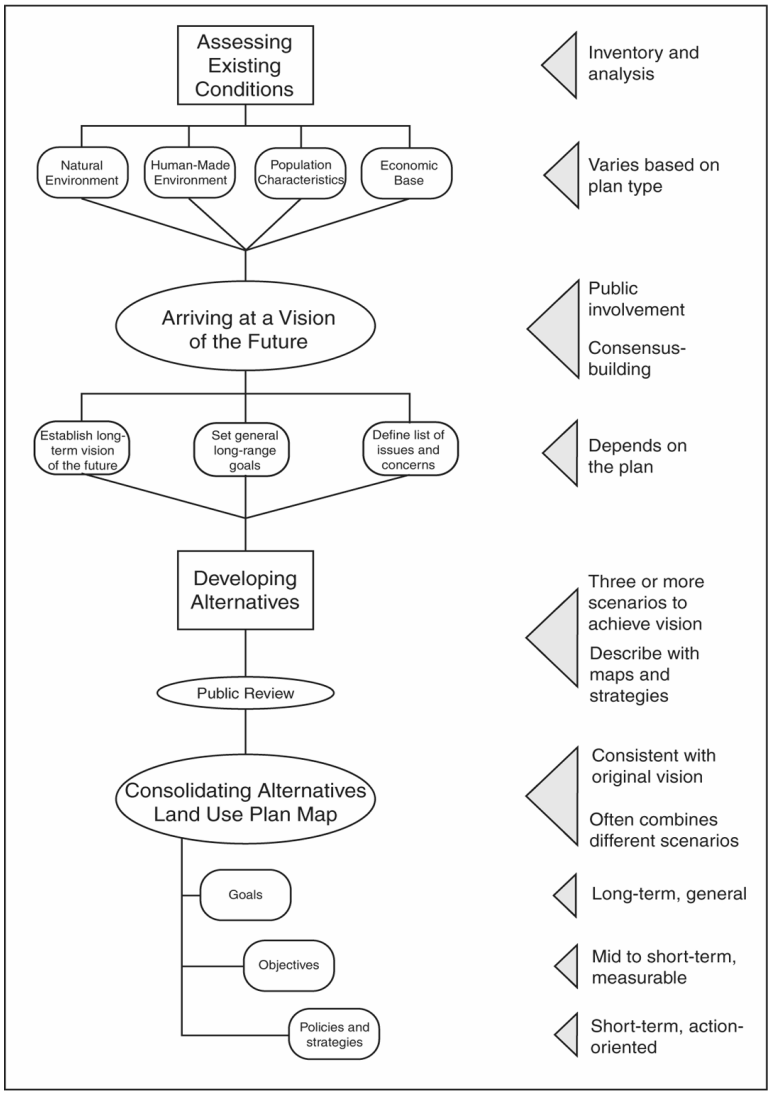
Even with the involvement of local officials and citizens, some counties or townships, particularly those unable to devote at least part-time staff support, may need the services of outside consultants. The role of consultants in the planning process can take several forms. Some jurisdictions have hired consultants to do nearly all of the technical work, while some get outside help only to perform discrete tasks like data collection and technical analysis. Others have solicited assistance in facilitating meetings and in helping to ensure open and productive dialogues among various interest groups and citizens. In Michigan, regional planning commissions exist around the state, offering planning assistance to jurisdictions within their service regions.

Developing the Plan

Assessing Existing Conditions

Most approaches to community planning start from the present. It is essential to know the current status of a county or township before trying to plan for its future. Knowing what and where the community is now is as important as the little star with the "you are here" note on a directory map – without knowing where one is starting, it is impossible to figure out how to get anywhere, even with a map.

Developing a Plan



In that respect, planning for a county or township is quite different from planning for a new business, for a wedding, or for a new military campaign. In planning for something entirely new, one starts with a clean slate. In contrast, much of the future of a community is created by the reality of its present. A college town will consider the future of the college in planning the future of the town. A community with high unemployment due to the closure of a manufacturing plant will plan differently than will a community that has a shortage of workers. Rural counties and townships in Michigan will undoubtedly want to develop plans around a future that includes agriculture. And in many parts of the state, that will include animal agriculture.

Thus, most good plans start with an assessment of existing conditions. An existing conditions analysis includes at least the following elements:

- Natural Environment
- Human-made Environment
- Population Characteristics
- Economic Base

These elements are described below, with suggestions for the types of information to collect, how the information should be presented, and where it can be obtained.

Natural Environment. This assessment consists of an inventory and analysis of natural environmental features found within the county or township and the surrounding area with a particular emphasis on the opportunities and constraints suggested by those features. Flood-plains, for example, are generally considered a development constraint. Other environmental resources may represent a constraint and an opportunity. Sandy soils, for instance, may be excellent for growing potatoes but too permeable for on-site sewage disposal. However, soils that are very productive for agricultural purposes may also be found in areas that are attractive for residential development. The very simplest form of opportunities and constraints assessment can, in fact, be based on a careful interpretation of the soil surveys that are available for most counties in Michigan.

SOILS CHARACTERISTICS			LAND USE SUITABILITY				
Association (% County)	Drainage Character	Slope	Building Development	Septic Systems	Trench Sanitary Landfills	Area Sanitary Landfills	Sewage Lagoons
Spinks Wasepi (3.9%)	well poor	0-8%	Slight/Severe Moderate/Severe	Slight Severe	Severe Severe	Severe Severe	Severe Severe
Marlette Capac Metea (2.3%) Oakville Selfridge	well poor well well poor	1-5%	Slight/Severe Moderate/Severe Slight/Severe Slight/Severe Moderate/Severe	Severe Severe Severe Severe Severe	Severe Severe Severe Severe Severe	Severe Severe Severe Severe Severe	Severe Severe Severe Severe Severe
Perrinton Capac (1.9%) Ithaca	well poor poor	0-8%	Slight/Severe Moderate/Severe Moderate/Severe	Severe Severe Severe	Moderate Severe Severe	Slight Severe Severe	Moderate Severe Severe
Tekenink Marlette Plainfield (1.9%) Spinks Teasdale	well well well well poor	2-6%	Slight/Severe Slight/Severe Slight/Severe Slight/Severe Moderate/Severe	Slight Severe Severe Slight Severe	Severe Severe Severe Severe Severe	Slight Severe Severe Severe Severe	Severe Severe Severe Severe Severe
Boyer Wasepi Plainfield	well poor well	0-6%	Slight/Severe Moderate/Severe Slight/Severe	Severe Severe Severe	Severe Severe Severe	Severe Severe Severe	Severe Severe Severe
Metea Chelsea (1.1%) Marlette Selfridge	well well well poor	2-6%	Slight/Severe Slight/Severe Slight/Severe Moderate/Severe	Severe Severe Severe Severe	Severe Severe Severe Severe	Severe Severe Severe Severe	Severe Severe Severe Severe
Houghton muck Cohoctah (0.9%)	poor poor	little	Severe Severe	Severe Severe	Severe Severe	Severe Severe	Severe Severe

Soil maps – particularly when used in conjunction with tables of soil suitability found in soil surveys – yield a great deal of useful information on agricultural land productivity and on opportunities and constraints for other types of development. One good way to convey soils information is to create a table with soil characteristics converted to suitability classifications (agricultural productivity, on-site sewage disposal, construction, etc.). This table is an example using data from the Kent County Soil Survey published by the USDA Natural Resources Conservation Service.

Information to Collect. An assessment of the natural environment should be based on an inventory of environmental features. As is true of nearly all of the existing conditions assessments, the kinds of information that should be included in the inventory depend on (1) the type of plan being prepared and (2) the nature of the community for whom the plan is being prepared. Environmental inventories typically include information on several of the following features:

- Floodplains
- Wetlands
- Surface Water and Watersheds
- Ground Water Supplies
- Soils
- Vegetation

How to Present the Information. The information collected as part of the environmental assessment should be presented on maps and explained in accompanying tables and text. Many counties and townships are investing in computerized Geographic Information Systems (GIS), which enable users to compile, manipulate, analyze and display spatially oriented data. The types of natural environment information listed above can be compiled and displayed with relative ease using GIS.

Where to Get the Information.
- USGS Maps
- Soil Surveys
- Natural Resource Conservation Service Offices
- County Extension Offices
- Michigan Department of Natural Resources
- Michigan Department of Environmental Quality
- Field Surveys

Human-Made Environment – Public (Infrastructure). The presence of major roadways and the availability of public sewer and water service greatly influence an area's development potential. Undeveloped portions of a region served, or proposed to be served, by major roadways, public water, and sewer are likely areas of future non-farm growth. Knowing where future non-farm growth is likely to occur is helpful in planning where future animal agriculture should and should not be located.

Information to Collect. An assessment of the human-made environment should be based on an inventory of existing and planned public facilities. Again, the type of information that should be collected depends on the type of plan and the nature of the county or township. Assessments of public facilities nearly always include information on transportation, water, and sewer facilities. The following types of public facilities and services might also be assessed:
- Drainage
- Fire and Public Safety
- Emergency Medical
- Schools
- Parks and Recreation
- Libraries and Public Buildings
- Solid Waste

How to Present the Information. The information collected as part of the infrastructure assessment should be presented on maps and explained in accompanying tables and text. In the case of water and sewer service, for example, a map showing existing and proposed service areas could be prepared to visually depict potential growth opportunities. This map data could be accompanied by tables and text discussing capacity issues and estimates of when planned improvements are likely to become available. As with the natural environment information, the infrastructure information can also be compiled, analyzed and displayed using GIS.

Where to Get the Information.
- Comprehensive Plans
- Utility Master Plans
- Department of Transportation
- Capital Improvement Programs
- Local Public Works Departments
- Field Surveys

Human-made Environment – Private. Existing land-use and development patterns are an extremely important determinant of future land use patterns. Moreover, the availability of private facilities such as railroad lines, truck terminals, grain elevators, sale barns, industrial parks, and even vacant industrial buildings also offer significant opportunities, while lack of such facilities may be a significant constraint to attracting or keeping some types of development in an area.

Information to Collect. An assessment of land use patterns and other features in the human-made private environment should be based on a visual inventory of the community. For the purposes of preparing a county or township plan it is not necessary to collect detailed land use data for cities or villages. It would be a good idea, however, to collect at least general land use and development trend information for areas just inside the corporate limits of cities and villages. This type of information will yield valuable insights into future geographic growth trends. While conducting the land use inventory, land development and construction activity should be noted; it will come in handy later on as you think about where growth seems to be moving.
The following list of land use types should provide an ample level of detail for the land use inventory:

- Residential, Single-Family
- Residential, Duplex
- Residential, Multi-Family (3+ units in the same building)
- Commercial (retail, wholesale, service, and office)
- Warehouse (warehouse and storage)
- Industrial (manufacturing, processing, fabrication, etc.,)
- Civic/Institutional (school, hospital, church, etc.)
- Agricultural, Crop Production (note type of crop)
- Agricultural, Animal Production (note feedlots, livestock, dairy and poultry)
- Agricultural Support (commercial and industrial)
- Forested Land
- Vacant/Undeveloped

How to Present the Information. The information collected as part of the land use and human-made environment assessment should be presented on maps and explained in accompanying tables and text. A table showing existing acreage devoted to different land uses is an excellent supplement to the map. As well, this information can be compiled, analyzed and displayed using GIS. If historical information on land use and other resources in the human-made environment is available, comparing that data with the existing inventory can provide a keen illustration of local trends.

Where to Get the Information.

- Aerial Photography
- Field Surveys
- Assessor's Office

Population Characteristics. A region's overall population and its characteristics – age, education, employment – are critical influences on its future. A county or township with a well-trained labor force and relatively high unemployment has many opportunities that are simply not available to areas with a poorly-educated labor force or

with one that is fully employed. Similarly, historical population trends offer at least some insight into the likely pace of future growth. In addition to an analysis of existing conditions and past trends, many plans need to include projections of future growth trends.

Information to Collect. An assessment of population characteristics and trends should be based on the most up-to-date and reliable data available, typically the last U.S. census. The following basic types of demographic data are usually collected during this sort of assessment:

- Number of People (by age, sex, and race)
- Number of Housing Units
- Number of Households
- Average Number of People
- Population Projections (20 years)

How to Present the Information. Most types of population-related information can be analyzed and compared in tables and charts. However, GIS offers the opportunity to display population density data in a thematic fashion using census geography levels finer than the county or township level (such as the census tract, block group, block number area or block). Geographic growth trends can be depicted on a map showing the general location of past, present and future projected development activity in the county or township.

Where to Get the Information.

- U.S. Census Bureau Publications (City and County Data Book, Census of Population and Housing, http://www.census.gov)
- Michigan Information Center, Michigan Department of Management and Budget
- Public Utilities

Economic base. A county or township's current economic base has a profound influence on its future. The industries and businesses now located in a county or township are likely to provide a large percentage of future employment. To the extent that new businesses come into an area, they are likely to be similar to or related to existing businesses.

Information to Collect. As is the case with population and demographics, a county or township's economic base can best be analyzed by examining up-to-date and reliable data widely available from other sources, notably the U.S. Bureau of the Census and the Michigan Information Center. The following basic types of economic data will provide useful insights into the local economy.

- Employment by "Industry" Type (Standard Industrial Classification)
- Unemployment Rates (Existing and Historical)
- Labor Force Estimates by Occupation Group
- Tax Base Data
- Land and Improvements by Land Use Type (Residential, Commercial, Industrial, Agricultural)

How to Present the Information. Economic data can best be presented in tables and charts. A geographic (map) portrayal of data on economic investment in animal operations would be a very useful way of identifying areas where protection of

existing operations (i.e., investments) may be necessary, or where new facilities and expansions of existing ones may be desirable.

Where to Get the Information.

- Assessor's Office
- County Business Patterns, U.S. Census Bureau (Existing and Historical Data)
- Michigan Information Center, Michigan Department of Management and Budget
- Public Utilities

Other Resources. There may be other unique factors that influence a region's future. The reputation of an area's public schools or the existence of nearby recreational opportunities, for example, can provide a springboard for growth or tourism-related development. These and other types of unique community resources should be included in the inventory of existing conditions.

Arriving at a Vision of the Future

The specific purpose of this step of the planning process depends on the precise nature of the plan being prepared. It can be used as an opportunity to establish local residents' long-term vision of the future or to set general long-range goals for the county or township. It can also serve as the first opportunity to define a list of critical issues and concerns to be addressed in the plan.

Citizen participation and broad-based community involvement are critical features of any successful planning effort, especially at this point in the process. The purpose of setting goals and of developing a shared vision, after all, is to achieve consensus about the "big picture" from individuals and groups with different views (sometimes referred to as stakeholders, because they have a stake in the outcome). Even when used as an issue identification exercise, the desired outcome is broad-based consensus. Although some vision or goal-setting work can occur prior to or simultaneously with data-gathering and analysis, it will usually be helpful to have collected information before working to develop a vision for the future. Information on existing land use, environmental features, and economic factors can be used to educate and inform decision-makers, interest groups, and the public on the opportunities and constraints that will affect the future.

Developing Alternatives (Scenarios)

After completing the assessment of existing conditions and garnering consensus about the county or township's long-range, shared vision (or, in the case of an Issue-Driven process, the issues that need to be addressed), the next step is to develop different alternatives for getting there. These alternatives, sometimes referred to as scenarios, are really just a series of options or paths to the future. Typically, three or more such scenarios are presented in the form of maps and general descriptions of the types of strategies that can be used to ensure that they can be carried out.

Once the alternatives have been developed, they should become the focus of public review and discussion. Again, using a process that is broad and inclusive, the

scenarios should be scrutinized and reviewed by the public with an eye toward identifying which alternative is likely to do the best job of helping the community realize its previously stated vision. In weighing the alternatives, citizens are likely to encounter just the sorts of balancing issues described in the introduction to this chapter.

Consolidating Alternatives

Very often, no single scenario will offer such clear advantages that it can be selected as the preferred plan. Ultimately, some combination of alternative scenarios may best reflect the desires of the community as a whole.

Ideally, the preferred plan will be consistent with and move the county or township closer to the vision established earlier in the process. Moreover, the selected plan should be consistent with other plans and strategies in effect throughout the county or township. If it is not, action will need to be taken to remedy such inconsistencies.

The preferred plan should include statements regarding the long-term goal toward which the plan is aimed, as well as a series of mid-range and short-term objectives that can be used to evaluate progress toward the overall goals. As with the scenarios developed in the preceding task, it should include a description of the types of policies and strategies that will be used to ensure the plan's implementation. The preferred plan will ultimately be the subject of review at public hearings before the planning commission and board of county commissioners or township supervisors. These sessions will provide still additional opportunity for public comment and input. The board has authority to adopt the plan, reject it or refer it back to the planning commission (or other advisory group) for revisions.

Statements of Policy

A comprehensive or land use plan should contain explicit guidance about how the plan will be implemented. Most often this guidance takes the form of policy statements. They may consist of text and maps, particularly the land use map. A plan that addresses agriculture may include statements of policy on land use, including agriculture, non-farm development, and other matters of local importance. These statements should provide rationale for more specific parts of the plan, such as why one alternative growth scenario was chosen over another (as reflected in the land use map), or why certain implementation steps are favored.

Types of maps that might be included in the plan include:

- maps identifying areas suitable for long-term agricultural uses and animal agricultural uses. These might be divided into two or more types of agricultural use, reflecting intensity of the encouraged agricultural uses and their potential for issues of compatibility with other uses; and
- maps identifying areas adequate to meet projected housing and other non-farm development needs. An urban growth boundary could be used to define the outer edge of these areas.

Implementing the Plan

Once the plan has been adopted, no decisions related to growth, development, land use or public facility planning and budgeting issues should be made without examining whether such decisions would be consistent with the plan. Additionally, implementation tools should be developed and adopted to help ensure that the plan's goals are carried out in day-to-day activities. The most common plan implementation tools are the zoning ordinance, subdivision regulations and capital improvements programs.

Monitoring and Updating the Plan

Monitoring a plan's effectiveness is an important follow-up activity to the process of preparing it. Ideally, the plan will include a number of measurable objectives that will allow the county or township to track how much progress is being made toward its goals.

No matter how thoughtfully and carefully prepared, all plans need to be updated and revised every few years, usually at least every five years. And no matter what its age, any plan that is not working as a guide to decision-making should be revised or redone.

Conclusion

Planning provides a guide to the future. Perhaps more importantly, it provides a context of making decisions about the future. A county or township can best make decisions about the agricultural activities and agricultural operations in and around it if it has a plan to provide that context.

Chapter 3:

Legal Issues Involved in Rural Planning and Zoning

This chapter discusses the legal issues involved in the regulation of land use in general, with a particular emphasis on issues arising in rural areas. It begins with a general discussion of the legal principles that underlie the regulation of land use and then applies those principles to some of the unique issues that arise in the regulation of agriculture, including animal agriculture.

Please note that this chapter provides general information on the state of the law only. Anyone contemplating or seeking specific action involving a particular local government, a particular piece of property or a particular facility involved in animal agriculture should do so only with appropriate legal advice. While the authors have made every effort to provide accurate information, every case is different and requires considered review of the circumstances and available options. Many of the legal issues addressed in this chapter are relatively clear. In two important areas, however, the law is still evolving and thus is not clear:

1) The takings issue continues to evolve both nationally and in Michigan. Although it is unlikely that there will be a significant change in the basic principles outlined here in the near future, additional state and federal cases will almost certainly provide additional definition and precision to those principles.

2) Regulation of animal agriculture for protection of water quality continues to be debated. The U.S. Environmental Protection Agency (EPA), in combination with states that have been delegated authority for administering and enforcing the Clean Water Act, now has a permitting program for concentrated animal feeding operations (CAFOs). In Michigan, the Department of Environmental Quality (DEQ) is responsible for writing and enforcing permits that address CAFO effluent discharges. In recent years a broader approach for addressing agricultural water quality issues in the state has also emerged. The Michigan Agriculture Environmental Assurance Program (MAEAP) educates producers about how to protect against discharges and allows producers to earn a certificate of environmental assurance. Further, recent court cases have challenged the DEQ's process of permitting CAFOs and the law continues to evolve.

This chapter provides citations to relevant cases and statutes in Michigan[1] for the

[1]Internal citations and references have been omitted for clarity and brevity.

convenience of attorneys who may be familiar with land use or real estate law but who may not be familiar with all of the specific principles involved in the regulation of animal agriculture. Users seeking the advice of counsel on these issues may wish to provide their attorneys with a copy of this chapter as a starting point for their own analysis.

Although current discussion of issues involved in the regulation of animal agriculture often focuses on perceived limitations of the ability of government to regulate this particular type of activity, it is important to understand the broad powers of local governments in the land use field before considering specific limitations on them.

Planning and Implementation Authority of Local Governments

Police Power

Local governments regulate the use and development of land under the *police power*. Although law enforcement officers also act under the police power, the legal notion of police power is much broader than the term might suggest. Stated simply, the police power is the right and duty to regulate private activity for the protection of the public health, safety and welfare. Police power is inherent in the state and is delegated to local governments through specific enabling acts that also specify the scope of the delegation.

The authority of government to regulate private activity, including the use of private land, for the protection of the public health and safety is one that is fundamental to the notion of democratic government in a civilized society. Through the police power, government peacefully resolves and often avoids conflicts over private activity ranging from the discharge of firearms in an urbanized area to smoking in confined quarters.

Most valid local government regulations fall under the police power. Among those is zoning. Courts in Michigan have broadly construed the concept of police power to uphold local zoning and land use controls. "Property is held subject to the right of government to regulate its use in the exercise of the police power so that it shall not be injurious to the rights of the community or so that it may promote public health, morals, safety, and welfare." *Patchak v. Township of Lansing*, 361 Mich. 489, 105 N.W.2d 406 (1960). In this case, land owners argued that township zoning prohibited them from using their land for what they considered its best use and therefore the zoning was unreasonable. The Michigan Supreme Court concluded that all property is held subject to the right of government to regulate its use. Valid land use regulations are not deemed confiscatory or unreasonable.

Property owners sometimes view zoning and other police power regulations as attempts to interfere with their property rights. In fact, property owners were among those who lobbied for the creation of the earliest zoning ordinances, primarily to *protect* property rights. Zoning and other land use

regulations do protect property rights, by keeping factories out of residential neighborhoods, by keeping dangerous activities (such as the manufacturing of explosives) far from most other human activities, and by protecting agricultural areas from the unnecessary intrusion of incompatible uses.

The apparent conflicts between the police power and property rights are discussed later in this chapter, but it is important to understand that land owners' rights to use land are subject to regulation and restriction. As those early property owners who lobbied for zoning recognized, it may be necessary to limit individual action to protect the rights of all. Through the exercise of police power, responsible local governments attempt to balance the interests of individual liberty with the interests of the larger community in preserving order. Thus, for example, most local governments prohibit junkyards in residential areas, choosing to protect the interests of the residents even at the expense of limiting the freedom of action of a property owner in the area who might prefer to enjoy the profits of a junkyard on his or her property.

To understand the scope of authority of Michigan's local governments to engage in planning and zoning, it is important to look at the enabling acts that set forth both the authority to plan and zone and a number of limitations on that authority. That is the subject of the next section of this chapter. While Michigan's enabling acts apply to counties, townships, cities and villages, only county and township planning and zoning will be discussed since those governments have jurisdiction over rural areas likely to face questions related to agricultural land uses.

Planning and Zoning in Michigan

In Michigan, the authority for local units of government to undertake planning and zoning is codified in two separate statutes. Those statutes can be found in the following sections of the state code:

- Michigan Planning Enabling Act, MCL §125.3801 *et seq.*
- Michigan Zoning Enabling Act, MCL §125.3101 *et seq.*

In addition, there are two statutes that pertain to regional planning:

- Regional Planning Act (MCL §125.11 *et seq.*).
- Joint Municipal Planning Act (MCL §125.131 *et seq.*).

Within the planning and zoning statutes the scope of authority granted to counties and townships differs somewhat. It is not the purpose of this report to describe all of the differences. It is important, however, for any local government considering the adoption or amendment of such controls to review carefully the specific zoning provisions applicable to it.

There are more similarities than differences, however. For example, **local zoning in all jurisdictions should be based on a comprehensive plan**, which is defined under the Michigan Zoning Enabling Act:

> "The zoning ordinance shall be based upon a plan designed to promote the public health, safety, and general

> welfare, to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, to conserve natural resources and energy, to meet the needs of the state's residents for food, fiber, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to insure that uses of the land shall be situated in appropriate locations and relationships, to avoid the overcrowding of population, to provide adequate light and air, to lessen congestion on the public roads and streets; to reduce hazards to life and property, to facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation, and other public requirements, and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous uses of land, resources, and properties. The zoning ordinance shall be made with reasonable consideration to the character of each district, its peculiar suitability for particular uses, the conservation of property values and natural resources, and the general and appropriate trend and character of land, building, and population development." MCL §125.3203(1).

Early judicial interpretation of what constitutes a plan may be found in *Sabo v. Township of Monroe* 394 Mich. 531, 232 N.W.2d 584 (1975), and *Lanphear v. Antwerp Township, Van Buren County* 50 Mich. App. 641, 214 N.W.2d 66 (1973). The courts have held that they [the courts] should make every effort to preserve master zoning plans where they are developed in good faith and are reasonable as a whole with regard to the needs of the local and the general community. *Binkowski v. Shelby Township* 46 Mich. App. 451, 208 N.W.2d 243 (1973).

The basic nature of zoning for both forms of local governments is similar. Both contemplate the division of the jurisdiction into districts and the regulation of the uses to which land and buildings may be put in each of those districts. In addition, the local governments can regulate within those districts the location, height, number of stories, and size of dwellings, buildings and structures that may be erected or altered, the specific uses for which buildings can be erected, the size of yards and open spaces, and the number of families which may be housed in buildings, dwellings, and structures. However, there are land uses and activities for which neither counties nor townships are authorized to regulate; for instance, regulation of the drilling, completion, or operation of an oil or gas well is preempted by the state.

There is one other aspect of the enabling legislation that is important to understand in rural areas, and that is the relationship between planning and zoning activities of a township and the planning and zoning of the county of which it is a part. Regarding the preparation of a proposed master plan, the Michigan Planning Enabling Act addresses this explicitly:

> " If the legislative body approves the distribution of the proposed master plan, it shall…submit…a copy of the proposed master plan, for review and comment,

> to…the county planning commission, or if there is no county planning commission, the county board of commissioners, for the county in which that municipality is located [and] …the regional planning commission for the region in which the municipality is located, if there is no county planning commission for the county in which that local unit of government is located." MCL §125.3841(2)

Regarding the adoption of a zoning ordinance or zoning ordinance amendment, the Michigan Zoning Enabling Act states:

> "...a township shall submit for review and recommendation the proposed zoning ordinance, including any zoning maps, to the zoning commission of the county in which the township is situated if a county zoning commission has been appointed as provided under this act…If there is not a county zoning commission or county planning commission, the proposed zoning ordinance shall be submitted to the coordinating zoning committee...The county will have waived its right for review and recommendation of an ordinance if the recommendation of the county zoning commission, planning commission, or coordinating zoning committee has not been received by the township within 30 days from the date the proposed ordinance is received by the county...The legislative body of a county by resolution may waive its right to review township ordinances and amendments under this section." MCL §125.3307

Constitutional and Statutory Limitations of Planning and Zoning Authority

Local governments exercise police power only in accordance with the terms of various constitutional provisions and enabling acts. Local governments' exercise of police power is also explicitly limited by the U.S. and Michigan constitutions and by laws passed at the state and federal levels.

Protection From Takings

Owners of land and other property are protected from illegal seizure of that property by the U.S. and Michigan Constitutions. In particular, the Fifth Amendment to the U.S. constitution provides that "nor shall private property be taken for public use without just compensation." The Michigan Constitution states that "private property shall not be taken for public use without just compensation therefore being first made or secured in a manner prescribed by law. " Mich. Const. 1963, art 10, §2.

Early efforts to implement zoning were met by arguments that zoning amounted to an unconstitutional taking – that is, a taking of land for public use without just compensation. However, federal and state courts have consistently concluded that zoning is a legitimate exercise of the police power, so long as zoning is implemented and enforced according to enabling statutes and constitutional limitations. A brief review of how U.S. and Michigan courts have responded to arguments of illegal takings follows.

Evolution of Takings Law in the U.S. Supreme Court

The U.S. Supreme Court initiated the current period of takings legislation in 1922, when it held squarely that excessive regulation might amount to a taking. *Pennsylvania Coal Co. v. Mahon*, 43 S.Ct. 158 (1922). Although it largely left the question of "how much regulation is excessive?" unanswered for six decades, it is important to note that only four years after handing down that decision, the Supreme Court upheld zoning as a valid form of regulation, explicitly finding that residential zoning as applied to land that an owner wished to use for industrial purposes did *not* amount to an unconstitutional taking. *Village of Euclid v. Ambler Realty Co.*, 47 S.Ct. 114 (1926).

The Supreme court reconsidered this issue beginning in the 1970s. The court clearly recognized two competing public policy interests involved in this issue. On the one hand, the notion of private property and its protection is a fundamental one in this society, as the takings provision in the Bill of Rights acknowledged. On the other hand, living in a civilized society requires some reasonable regulation to avoid land use disputes among neighbors and to provide for a peaceful resolution of those that arise. Clearly if a local government must pay compensation every time it decides that a particular piece of property ought only to be used for agricultural or residential use rather than for industrial or commercial purposes, it would be prohibitively expensive for local government to regulate land.

The Supreme Court finally found a middle ground between the competing interests by giving local government a choice. It concluded that, if a local regulation is found to be a taking, a local government ought to be able to choose between keeping the regulation in effect and buying the land, as though it had actually been condemned, or repealing the invalidated regulation and compensating the owner simply for the lost use of the property from the date of adoption of the regulation to the date of its repeal. See, *San Diego Gas and Electric v. City of San Diego*, 101 S.Ct. 1287 (1981). Although there was no majority opinion in that case, the notion of a "temporary taking" established there underlies all of the subsequent takings litigation. The court subsequently adopted that position more clearly in *First English Evangelical Lutheran Church v. City of Los Angeles*, 482 U.S. 304 (1987).

Since that time, the Court has established several clear principles governing takings law. First, it has held that in determining whether there is a taking, one must consider the impact of the regulation on the entire property held by the owner, not on a small part of it. *Penn Central Transportation Company v. New York City*, 98 S.Ct. 2646 (1978), and *Keystone Bituminous Coal Association v. DeBenedictis*, 107 S.Ct. 1232 (1987). That is an important principle for zoning law. Most zoning ordinances establish yard area and setback requirements prohibiting most uses in those yard and setback areas but allowing a reasonable use of the entire property.

The Court has also established some categorical rules for determining when an unconstitutional taking has occurred:

- Where a local ordinance purports to permit others to invade the physical

space of the landowner, there is an unconstitutional taking. *Loretto v. Teleprompter Manhattan CATV Corp.*, 102 S.Ct. 3164 (1982). This case involved stringing television cable across buildings, but the same principles would apply to a law that permitted utility or canal companies to cross rural lands without easements.

- Where an ordinance deprives a landowner of "all economically viable use" of his or her land, there is an unconstitutional taking. *Lucas v. South Carolina Coastal Council*, 112 S.Ct. 2886 (1992). In that case, state law designed to limit the exposure of people and property to hurricanes prohibited the owner from building residences on two residential building lots that appeared to have little other use.
- There must be a "rational nexus" between the purpose of a regulation and its effect; otherwise there may be an unconstitutional taking. *Nollan v. California Coastal Commission*, 107 S.Ct. 3141 (1987). In that case, the Court found insufficient nexus between the owner's proposal to replace one house with a larger house on the same lot and the state's demand that the owner dedicate land for a beachfront trail.
- Where there is a rational nexus between the purpose of the regulation and its effect, there must also be a "rough proportionality" between the burden imposed on the property owner and the impact of the owner's proposed use or development. *Dolan v. City of Tigard*, 114 S.Ct. 2309 (1994). In that case, the Court found insufficient evidence of proportionality where the city demanded dedication of land for a trail and installation of a variety of improvements as conditions of approving the expansion of an existing business.

It is quite clear, however, that where the purpose of the regulation is to prevent a clear nuisance or otherwise to protect essential public health and safety values, a local government has greater authority to impose significant restrictions on property. For example, in *Dolan*, the Court saw no constitutional bar to the city's adoption of a very restrictive floodplain ordinance; it simply objected to the city's requiring that the owner transfer title to the floodplain to the city.

Takings Law in the Michigan Courts

The Michigan Supreme Court recently handed down a landmark takings decision involving the regulation of wetlands on private property. In *K&K Construction v. Department of Natural Resources*, 456 Mich. 570, 575 N.W.2d 531 (1998), the Michigan Supreme Court set forth a taxonomy of takings law and procedures that provide a rational framework for Michigan governments and landowners to plan and resolve land use regulation conflicts.

Following the U.S. Supreme Court's guidance, the Court in *K&K* divided all takings cases into two general types:

> "(1) where the regulation does not substantially advance a legitimate state interest, or (2) where the regulation denies an owner

economically viable use of his land". *K&K*, 576.

The *K&K* court went on to point out that those regulatory takings cases, of the second type, where a regulation denies a property owner of an economically viable use of land, can be further subdivided into two situations:

> "(a) a 'categorical' taking, where the owner is deprived of 'all economically beneficial or productive use of land' [citing *Lucas*, 505 U.S. 1003]; or (b) a taking recognized on the basis of the application of the traditional 'balancing test' [citing *Penn Central*, 438 U.S. 104]."

In other words, the extent of the alleged economic loss, complete or partial, determines the type of analysis to be used by the courts. For categorical takings, a reviewing court need not apply a case-specific analysis, and the owner should automatically recover for a taking of his property. This is the case where there has been a physical invasion of the property or where a regulation forces an owner to lose all economically beneficial uses of his land in the name of the common good.

The *K&K* court did point out that regulations and restrictions that reduce the commercial value of land do not necessarily render it worthless or economically idle. Accordingly, in those taking situations where there has been no physical invasion and all economically beneficial uses have not been impaired by governmental activity, a balancing test is called for. Such a test considers (1) the character of the government's action, (2) the economic effect of the regulation on the property, and (3) the extent by which the regulation has interfered with distinct, investment-backed expectations.

The *K&K* court also established a preliminary but crucial matter for takings cases in the state. The court set forth the parameters for determining what parcel or parcels owned by the plaintiff should be used in evaluating a claimed taking. This determination is referred to as determination of the "denominator parcel." This is critically important because it often affects the analysis of what economically viable uses remain for a person's property after the regulations are imposed.

The factors to be used to determine the size and composition of the denominator parcel include;

- the degree of contiguity of the parcels
- the dates of acquisition
- the extent to which the parcel has been treated as a single unit, and
- the extent to which the protected lands enhance the value of remaining lands.

The *K&K* court went on to instruct that the "failure to include a parcel of land in a development plan should not, by itself, exclude that parcel from consideration as part of the denominator. To do so would encourage piecemeal development."

Protection of Rights through Process

Typical use of the phrase "due process" refers to the inherent fairness of a legal or administrative process itself. **The basic notion of due process is that someone**

whose rights are affected by proposed government action ought to have: (1) **notice** of that proposed action; (2) the opportunity for a **fair hearing** on the matter (3) before an **unbiased tribunal**.

Substantive Due Process

The underlying purpose of substantive due process is to protect the individual from the arbitrary exercise of governmental power. *Michigan v. Sierb* 456 Mich. 519, 523 (1998). Land use controls must satisfy the substantive limits of federal and state due process clauses. That means that land use regulations must advance a legitimate state interest that serves the public health, safety, morals, and general welfare. The major substantive due process question regarding land use controls concerns whether the regulations serve the general welfare.

Objections to land use controls and regulations based on alleged violations of substantive due process do not usually succeed. Approved governmental purposes included serving the public's health, safety, moral, and general welfare. Examples of some land use control purposes that have been approved include: landmark preservation, preservation of open space, and retention of residential zoning. It should be noted that successful application of a plaintiff's substantive due process claim has not been forthcoming in federal or Michigan courts.

Procedural Due Process

Procedural due process protections apply to administrative or quasi-judicial proceedings. Acceptable procedures must be followed in administrative decision making. The minimum requirements are usually procedures that provide for notice and a hearing.

Federal courts usually treat zoning and re-zoning matters as legislative acts and therefore do not apply procedural due process analysis to such matters unless such a matter "inherently treats a particular class of persons inequitably." Procedural due process requirements are applied in federal court land use control cases only if a landowner has a claimed entitlement, not an expectancy, to a property interest protected by state law.

The Michigan Supreme Court in *Mudge* recently addressed and affirmed Michigan's requirements of procedural due process in light of recent federal Court of Appeals and Supreme Court rulings.

> "The touchstone of procedural due process is the fundamental requirement that an individual be given the opportunity to be heard 'in a meaningful manner.' Many procedural due process claims are grounded on violations of state-created rights, as is the case here; rights that do not enjoy constitutional standing. However, the right to a hearing prior to the deprivation is of constitutional stature and does not depend upon the nature of the right violated." *Mudge v. Macomb County* 458 Mich. 87, 580 N.W. 2d 845 (1998).

Notice issues usually are not complex. State statutes and local ordinances typically specify what notices (date, time and location of proposed meeting hearing or other action) must be given. Statutes and administrative

rules specify how much time before a meeting, hearing or action that notice must be given, as well as to whom and in what manner (e.g. public posting, newspapers, U.S. Mail). Most courts require at least substantial compliance with such requirements, although they may not always require absolute adherence to the requirements. For specific requirements regarding hearings, local governments should refer to the applicable enabling acts and legislation for the specific action being taken, as well as to the state open meeting law.

Issues related to a **fair** hearing are equally important. For example, counting the number of persons attending a hearing who 'oppose this application' or allowing opponents to dominate a hearing may deprive an applicant of a fair hearing. In *Certain-teed Products Corporation v. Paris Township.* 351 Mich. 434, 88 N.W. 2d 705 (1958), the Court concluded,

> "...it is apparent to us from this record that plaintiff-appellant never had other than a cursory (even though formally courteous) hearing before the township board. It appears to us that the fact issues were largely determined by the board under the impact of a completely-committed audience reaction, and that plaintiff was denied its right under the zoning ordinance for a review of this decision by the zoning board of appeals."

In this case, an industrial use was refused a special use permit by the township board. The court concluded that the board made its decision wholely on the basis of public pressure at a public hearing and did not give sufficient weight to facts and materials presented by the plaintiff in its permit application.

Although public officials often enter a hearing with opinions on matters before them, any expression of those opinions before the hearing (whether in public or in private) raises questions about whether the decision-making tribunal is in fact unbiased.

Limitations by Preemption

Local governments have only the authority expressly granted them through state enabling legislation. **When a higher level of government, such as the state, has, within its constitutional and statutory authority, regulated a matter, it is said that the higher government level *preempts* lower levels of government from regulating the same matter.** For example, once the state has set age limits for those buying or consuming alcoholic beverages, local governments cannot set lower or higher age limits for the same activity.

The preemption doctrine is an accepted part of the legal system in the United State. There are a number of good reasons for the doctrine's existence. The principal policy reason is that it limits the number of conflicts arising between laws and regulations of different levels of government. To use the previous example, if the state prohibited the sale of alcohol to anyone under 21 years of age, but one township in Michigan decided that the legal drinking age should be 22, genuine confusion would exist about which law must be obeyed. Preemption prevents local

governments from enforcing laws that conflict with state laws.

The issue becomes somewhat more complex, however, when federal or state regulations do not fully cover a subject. What if, for example, the state prohibited the operation of hazardous waste facilities in agricultural zones? Could a local government then prohibit such facilities in other zones? Could a local government prohibit other types of industry in agricultural zones? The Courts resolve such questions by trying to determine whether the state intended to "occupy the field" or whether it simply intended to pass a very narrow law addressing a very specific issue. **When state (federal) laws are intended to cover all aspects of a particular subject area and exclude local regulation, the state (federal) regulations are said to occupy the field.**

The Michigan Supreme Court's decision in *Rental Property Owners Association of Kent County v. City of Grand Rapids*, 455 Mich. 246; 566 N.W.2d 514 (1997) restated the criteria of the state's preemption doctrine as it relates to land use regulation.

> "The Michigan Supreme Court has long held that the existence of statewide statutes does not prohibit local municipalities from passing or enforcing their own ordinances. However, municipal ordinances are preempted by state law if 1) the statute completely occupies the field that ordinance attempts to regulate, or 2) the ordinance directly conflicts with a state statute."

The Michigan Supreme Court went on to reiterate the guidelines for determining whether a statute has preempted municipal ordinances by completely occupying the field of regulation:

> "First, where the state law expressly provides that the state's authority to regulate in a specified area of the law is to be exclusive, there is no doubt that municipal regulation is pre-empted...Second, preemption of a field of regulation may be implied upon an examination of legislative history...Third, the pervasiveness of the state regulatory scheme may support a finding of preemption...Fourth, the nature of the regulated subject matter may demand exclusive state regulation to achieve the uniformity necessary to serve the state's purpose or interest." *Rental Property Owners Association of Kent County v. City of Grand Rapids*, 455 Mich. 246; 566 N.W.2d 514 (1997).

Municipalities may enact ordinances that have requirements in addition to those of state law. The key for municipalities is that there is no conflict between the two sets of regulations, that the municipal ordinance is not unreasonable or discriminatory, and that the municipal ordinance does not run counter to the state statute.

> "Where both an ordinance and a statute are prohibitory, and the only difference between them is that the ordinance goes further in its prohibition but not counter to the prohibition under the statute, and the municipality does not attempt to authorize by the ordinance what the legislature has forbidden or forbid

> what the legislature has expressly licensed, authorized, or required, there is nothing contradictory between the provisions of the statute and the ordinance because of which they cannot coexist and be effective." *Rental Property Owners Association of Kent County v. City of Grand Rapids*, 455 Mich. 246; 566 N.W.2d 514 (1997).

The question of preemption is important to the issue of regulating animal agriculture when local governments attempt to address environmental aspects of animal agriculture through performance standards and other means of controlling management and production practices. In Michigan this question has been addressed to some degree by the 1999 amendment of the Right to Farm Act (MCL §286.471 *et seq.*).

Equal Protection Limitations

Because zoning and land use controls classify land uses, they may give rise to claims based on the constitutional guarantee of equal protection of the law. This protection, found in the Fourteenth Amendment to the U.S. Constitution, prohibits a state from denying a person or class of persons the same protection of the laws, the enjoyment of rights, and the prevention and redress of wrongs enjoyed by other persons. The doctrine requires that similarly situated people must receive the same treatment under the law. Landowners can base their objection to classifications between land uses in zoning ordinances and their objection to classifications made by a zoning map on an equal protection claim. The former equal protection claim is a facial attack of the ordinance. The latter is an attack on the ordinance as applied; the ordinance may look fine on its face but its application violates equal protection.

Equal protection claims often overlap with takings cases and substantive due process claims. While the courts often do not make clear whether they are considering a takings claim together with an equal protection claim, the courts do apply similar standards of review when examining due process and equal protection claims. The judicial standard of review applied to legislative classifications such as zoning classifications usually requires a rational relationship between a legitimate state interest and the classification.

While the rational relationship standard has most often been applied by courts to equal protection claims, the majority and dissenting opinions in *Village of Belle Terre v. Boraas*, 416 U.S. 1 (1974) demonstrate the range of tests that may apply in equal protection cases. The Court upheld an ordinance that allowed no more than two unrelated persons to qualify as a family in a single-family zoning district. The majority of the U.S. Supreme Court used a rational relationship test to uphold the legislative classification because there was some rational basis for its application. The dissenting opinion called for the application of the more rigorous strict scrutiny because of its belief that claimed fundamental interests (privacy and association) were affected.

The Supreme Court in *Euclid*, 272 U.S. 365 (1926) applied the rational relationship test to uphold the usual zoning classification, exclusion of industrial and multi-family uses

from a single family residential district. The rational relationship, in that case, was the protection of the community's health and safety.

The use of the strict scrutiny standard in equal protection cases has been applied by the Supreme Court when the classification is suspect or burdens a fundamental interest. Examples of suspect classifications include race, sex, and national origin. Fundamental rights include First Amendment rights of free speech and religion, as well as privacy and interstate travel.

The application of the rational relationship standard to equal protection claims has not been crucial in most land use regulation disputes. Where no suspect classification is claimed or no fundamental right has been violated, the rational relationship standard, a relatively low standard, applies. Zoning classification challenges may depend more on the adoption of comprehensive zoning than on constitutional arguments per se. The adoption and mapping of districts in a comprehensive zoning ordinance which relies upon independent uses of adjoining zones seems to be persuasive to courts. Courts may tend to be less inclined to apply the presumption of constitutionality when municipalities do not have comprehensive mapping. D. R. Mandelker, Land Use Law (4th ed. 1997).

Limitations on Exclusionary Zoning

Zoning ordinances and land use controls separate land uses and differentiate within use classifications. Therefore, zoning and land use controls exclude some uses from some areas. This general restriction does not trigger inquiry into impermissible "exclusionary zoning." Rather, it is the notorious use of zoning as a form of economic segregation, with sometimes racial overtones, that triggers constitutional review of zoning and land use controls.

The Michigan Zoning Enabling Act specifically addresses the exclusion of land uses.

> "A zoning ordinance or zoning decision shall not have the effect of totally prohibiting the establishment of a land use within a local unit of government in the presence of a demonstrated need for that land use within either that local unit of government or surrounding area within the state, unless a location within the local unit of government does not exist where the use may be appropriately located or the use is unlawful." MCL §125.3207.

To date, most of the cases involving the exclusion of a particular use from a community involve the exclusion of industrial and commercial uses. Further, most of the cases addressing these issues involve relatively small communities with limited geographical areas. To hold that a small town consisting of only a few hundred acres in an area can exclude a steel mill or a waste disposal site is quite different from holding that an entire county or township can exclude a viable agricultural use. Although the ultimate question of whether a local government may entirely exclude certain agricultural uses remains subject to speculation in Michigan, it is an important issue to consider. Any rational consideration of it must take place in the

context of the vast geographic areas of most counties and townships.

Enforcement

Enforcement is a critical element in the success of any government regulation. Shoppers in a downtown area take only a few days to discover that a community does not issue parking tickets for meter violations. After that, the meters become meaningless. Similarly, an unenforced, or unenforceable, land use regulation is so useless to a community that it may amount to a misrepresentation of the intent of the local government adopting it.

To take an urban example, it is fairly common for a local government approving a retail use (such as a convenience store) on the edge of a residential area to impose on it conditions related to the operating hours and the delivery of goods. Such conditions might require that deliveries be made "only between 7 a.m. and 7 p.m." and that the store operates "only between the hours of 7 a.m. and 11 p.m." Some restrictions even go farther and restrict particular activities (such as the sale of gasoline or alcohol) during particular hours. The difficulty with all of these restrictions is that enforcement must take place during the hours when certain activities are prohibited – in other words, between 11 p.m. and 7 a.m. (for operating hours) or between 7 p.m. and 7 a.m. Few communities have zoning enforcement officers on duty overnight. Most must pay over-time and endure a good deal of employee grousing to bring enforcement officers in during those hours. Although a community might decide to do so to halt a pattern of continuing and obvious violations (such as operating hours that regularly continued to 1 or 2 a.m.), enforcing something like delivery times is even more troublesome. Not only must an inspector work odd hours to enforce the restriction on delivery times, she or he must wait at the location, perhaps for hours, to catch the one or two trucks that may be violating the condition.

Local governments imposing such conditions often seek "win-win" solutions, permitting the development to proceed while offering some protection to the neighborhood. The problem is that the unenforceable conditions offer essentially no protection to the neighborhood. If the proposed use would be acceptable only with such conditions in place, then the local government should not have approved the use – because the conditions are unenforceable and thus meaningless. If the use was acceptable with or without the conditions, then the local government should have been honest with the neighbors and approved the use with or without the conditions. Of course, in some cases there may be voluntary, good-faith compliance with the conditions, but a local government cannot count on that as it adopts regulations, just as states do not count on voluntary compliance with speed limits.

Enforceability is often a problem with tailor-made conditions that arise during the regulatory permitting process. Restrictions included in adopted ordinances and other regulations have usually received the sort of review necessary to ensure that they are reasonably enforceable. A condition developed in the heat of public protests at a

particular meeting is much less likely to be enforceable.

Unique Aspects of Planning for and Regulating Agriculture

Historic Perspective

Zoning originally evolved primarily in urban and suburban areas, providing a management tool to separate relatively intense but sometimes incompatible uses from one another. Land use conflicts were less significant in rural areas, largely because the level of activity was less intense. The combination of large spaces between rural land uses and a relatively low intensity of those uses that existed tended to mitigate the sorts of problems that led to early demands for zoning in cities and suburbs.

Zoning expanded to counties and townships for several reasons. First, a proliferation of special districts and other service providers in many states permitted suburban-type development to take place outside of municipalities. The intensity and character of that development often required suburban-type regulations to manage it and mitigate land use conflicts. Second, as suburbanites fled the suburbs for rural areas, they often sought the protection of suburban-type zoning in their new, exurban environments. Third, as family farmers expanded their scope of activities, the nature of land use conflicts in rural areas increased. Although a corn farmer might have lived in relative peace next to a soybean farmer or even a dairy farmer, when one of the farmers built a machine shop or a trailer court on the family farm, neighbors sometimes became concerned about conflicts between the different land use types. Finally, local governments began to use zoning to ensure that development in rural areas occurred on lots large enough for septic tanks and wells where those provided the only form of services.

Thus, beginning in the 1950s, zoning in rural areas became increasingly common. Now all states except Texas provide zoning authority to the counties and/or townships that have general jurisdiction over rural areas, and a significant number of counties and townships in most of those states have used that authority to implement their own zoning controls.

As zoning has evolved and spread, it has also changed. Early zoning ordinances in urban areas allowed single-family homes everywhere in the community. Similarly, early rural zoning permitted all agricultural activities in every zone. The assumption underlying such regulations was that the fundamental purpose of zoning was to protect residential and agricultural uses from incompatible uses. Although that remains one of the valid purposes of zoning today, many communities have begun to recognize that some uses besides agriculture and residences need protection. For example, major industries now prefer to be located in industrial parks where residences are prohibited, thus eliminating a possible source of citizen complaints and/or suits.

Communities have also begun to recognize that residences and agriculture may need protection from one another. The location of new subdivisions near

agricultural lands may limit the practical ability or willingness of farmers to use pesticides and other farm chemicals, and that proximity may lead to conflicts between the children and dogs who live in subdivisions and the animals and plants that live on farms.

Furthermore, many people have an idyllic view of rural life and believe that they might welcome the opportunity to live in a subdivision next to a cornfield or meadow with a few cows. When faced with a large animal production facility, some may not be as comfortable with the odor, noise or hours of operation of such a facility. Thus, contemporary zoning involves distinctions and protections that did not seem necessary and that thus typically did not exist under early zoning regulations.

Part of the difficulty of addressing the issue of animal agriculture through planning and zoning is that many people still think of rural zoning as something that allows or even encourages the development of a variety of agricultural and residential uses in comfortable proximity to one another. In most cases, that is not a realistic scenario today.

The Takings Issue and the Regulation of Agriculture

Property owners in rural areas often have great concerns about the interference of government regulation with their property rights. In that context, they often cite the taking issue as a basis for objecting to local regulation.

Where the takings issue may arise in rural areas is under regulations limiting the use of land strictly to agricultural purposes. Farm owners on the fringes of urban areas sometimes challenge exclusive agricultural zoning on the grounds that it interferes with their right to sell their land for development. Although such cases are often resolved when a local government simply rezones the farm to allow its development, some local governments have refused to do that leading landowners to sue. In his treatise, *American Land Planning Law*, Norman Williams has discussed the result of those cases, finding broad support for exclusive agricultural zoning. The common theme among those cases, from a variety of jurisdictions, is that agriculture itself is a reasonable use of land and that the limitation of land to an agricultural use thus is not arbitrary, unreasonable, unconstitutional or otherwise proscribed by legal principles.

Preemption and the Regulation of Animal Agriculture

The issue of preemptions seems like quite an abstract one, until it is applied to a particular set of facts and circumstances. Such a set of facts and circumstances can arise in the regulation of feedlots and other animal agriculture. Although zoning addresses land uses, some of the issues relevant to regulating land uses may relate to concerns also addressed by the state. For example, industrial performance standards related to smoke emissions that were long used in zoning have now largely been preempted and effectively superseded by a comprehensive system of state and federal regulation of air pollution.

Legitimate concerns about the quality of runoff from animal production facilities may influence local government land use regulations, but they are matters also addressed by the Michigan Department of Environmental Quality and the U.S. Environmental Protection Agency through their responsibility for environmental regulation in the state. Although it is unlikely that a local government will attempt to regulate water quality directly (a matter which would seem to fall squarely within the scope of state preemption), local governments may wish to establish special setback requirements for such facilities from streams, prohibit holding ponds as uses in floodplains, and require special runoff management plans, much as a city might impose on an urban development. The legal issue that arises from such approaches is the question of whether the state's direct regulation of water quality and other environmental matters and the federal government's direct regulation of Concentrated Animal Feeding Operations preempt local efforts to regulate such matters. There has been no consideration of this issue by a Michigan court.

In 1998, the Michigan Court of Appeals addressed the question of whether local zoning ordinances which limited development in wetland areas were preempted by state wetland protection regulations. *Frericks v. Highland Township*, 228 Mich. App. 575, 579 N.W.2d 441 (1998). Highland Township implemented a "natural hazard areas" regulation as part of its zoning ordinance to "protect environmentally sensitive natural resources...from unnecessary developmental encroachment." The definition of "natural hazard areas" includes lake margins, stream valley flood plain areas, permanent marsh and swamp areas, high water table areas, and steep land areas. The ordinance provides that "natural hazard areas" shall not be counted toward meeting the minimum buildable area requirements of the ordinance.

The ordinance was challenged on the grounds that the ordinance is preempted by state law. The Court of Appeals noted that the Township Rural Zoning Act, MCL § 125.271 (since replaced by the Michigan Zoning Enabling Act, MCL §125.3101), provides for the establishment of zoning districts within which the proper use of land and natural resources may be encouraged or regulated by ordinance. Thus, it concluded that Highland Township's exclusion of environmentally sensitive areas from buildable areas falls within the broad powers afforded by the zoning enabling statute and constitutes a proper subject of zoning.

Preemption and Michigan's Right to Farm Act

Preemption is explicitly addressed by Michigan's Right to Farm Act (RTFA) which was amended in 1999 expressly to preempt certain types of zoning ordinances that affect agriculture.

The RTFA was passed originally to protect agricultural uses of land from nuisance suits brought by people or businesses moving into agricultural areas. However, the law was also intended to provide for protection of environmental quality and minimize negative impacts on surrounding land users. Specifically, the statute states:

> "A farm or farm operation shall not be found to be a public or private nuisance if the farm or farm operation alleged to be a nuisance conforms to generally accepted agricultural and management practices according to policy determined by the Michigan commission of agriculture." MCL 286.472 § 3(1)

Also,

> "A farm or farm operation shall not be found to be a public or private nuisance if the farm or farm operation existed before a change in the land use or occupancy of land within 1 mile of the boundaries of the farm land, and if before that change in land use or occupancy of land, the farm or farm operation would not have been a nuisance." MCL 286.472 § 3(2)

Eight sets of *Generally Accepted Agricultural and Management Practices* (GAAMPs) have been adopted by the Michigan Agriculture Commission. The GAAMPs are developed by committees appointed by the Agriculture Commission as required by the RTFA. The GAAMPs are updated annually to reflect new information and developments in technology. The GAAMPs that have been developed include:

- Manure Management and Utilization
- Pesticide Utilization and Pest Control
- Nutrient Utilization
- Care of Farm Animals
- Cranberry Production
- Site Selection and Odor Control for New and Expanding Livestock Production Facilities, and
- Irrigation Water Use
- Farm Markets

The MDA is required to investigate when a complaint is lodged against an operation alleging that it is not using GAAMPs. If, as a result of the investigation, the MDA determines:

> "...that the person responsible for a farm or farm operation is using generally accepted agricultural and management practices, the director shall notify, in writing, that person, the complainant, and the city, village, or township and the county in which the farm or farm operation is located of this finding. If the director identifies that the source or potential sources of the problem were caused by the use of other than generally accepted agricultural and management practices, the director shall advise the person responsible for the farm or farm operation that necessary changes should be made to resolve or abate the problem and to conform with generally accepted agricultural and management practices and that if those changes cannot be implemented within 30 days, the person responsible for the farm or farm operation shall submit to the director an implementation plan including a schedule for completion of the necessary changes." MCL 286.474 §4(3)

The Site Selection and Odor Control GAAMPs were required by statute with the 1999 amendment of the RTFA. The Site Selection and Odor Control GAAMPs are quite different from the other seven

GAAMPs. The other seven are management guidelines and, as described above, the MDA does not have oversight of whether farms are conforming with the guidelines unless it receives a complaint. However, the Site Selection and Odor Control GAAMPs require certain new or expanding operations to seek from the Michigan Department of Agriculture (MDA) a formal verification that the proposed new or expanded facility conforms with the GAAMPs before construction of the facility begins. If a new or expanding farm operation does not receive this verification, it does not know, with certainty, that it is in conformance with the site selection and odor control guidelines. Selection of a poor site or construction of a facility without explicit attention to odor control can prevent the farm operation from being protected against nuisance complaints.

The Site Selection and Odor Control GAAMPs were required by the 1999 amendment of the RTFA partly in response to criticism of the RTFA preemption of local zoning authority as it relates to agriculture. Specifically, the amended law states:

> "...it is the express legislative intent that this act preempt any local ordinance, regulation, or resolution that purports to extend or revise in any manner the provisions of this act or generally accepted agricultural and management practices developed under this act. Except as otherwise provided in this section, a local unit of government shall not enact, maintain, or enforce an ordinance, regulation, or resolution that conflicts in any manner with this act or generally accepted agricultural and management practices developed under this act." MCL 286.474 §4(6)

The exception referred to in the language above provides that:

> "A local unit of government may submit to the director a proposed ordinance prescribing standards different from those contained in generally accepted agricultural and management practices if adverse effects on the environment or public health will exist within the local unit of government. A proposed ordinance under this subsection shall not conflict with existing state laws or federal laws. At least 45 days prior to enactment of the proposed ordinance, the local unit of government shall submit a copy of the proposed ordinance to the director. Upon receipt of the proposed ordinance, the director shall hold a public meeting in that local unit of government to review the proposed ordinance. In conducting its review, the director shall consult with the departments of environmental quality and community health and shall consider any recommendations of the county health department of the county where the adverse effects on the environment or public health will allegedly exist. Within 30 days after the public meeting, the director shall make a recommendation to the commission on whether the ordinance should be approved. An ordinance enacted under this section shall not be enforced by a local unit of government until approved by the

commission of agriculture." MCL 286.474 §4(7)

The preemption of local zoning ordinances that conflict with the RTFA and GAAMPs limits local governments from using zoning ordinances that address management practices that are addressed in the GAAMPs. Local governments may still establish agricultural zones, but where, in the agricultural zone, a livestock production facility may be constructed or expanded is addressed in the site selection and odor control GAAMPs.

Additionally, the Farm Markets GAAMPs specify that a 'farm market' is considered part of a 'farm operation' and therefore must be allowed where zoning allows for agriculture and its related activities. Also, the GAAMPs detail considerations related to the physical characteristics of a farm market, including parking and lighting, for which local zoning must not conflict. However, there is not outright preemption of local zoning with respect to farm markets. The Farm Markets GAAMPs detail that the placement of any building or structure used for transactions between a farm market operator and customers shall comply with local zoning (in addition to the State Construction Code). Further, services to attract and entertain customers, such as farm tours, hay rides, and petting farms, are subject to local zoning.

There has been some debate about what kinds of agricultural operations are protected under the RTFA or, more specifically, what kinds of operations are defined as farms.

Under the statute definitions:

"(a) 'Farm' means the land, plants, animals, buildings, structures, including ponds used for agricultural or aquacultural activities, machinery, equipment, and other appurtenances used in the commercial production of farm products.

(b) 'Farm operation' means the operation and management of a farm or a condition or activity that occurs at any time as necessary on a farm in connection with the commercial production, harvesting, and storage of farm products, and includes, but is not limited to:

(i) Marketing produce at roadside stands or farm markets.

(ii) The generation of noise, odors, dust, fumes, and other associated conditions.

(iii) The operation of machinery and equipment necessary for a farm including, but not limited to, irrigation and drainage systems and pumps and on-farm grain dryers, and the movement of vehicles, machinery, equipment, and farm products and associated inputs necessary for farm operations on the roadway...

(iv) Field preparation and ground and aerial seeding and spraying.

(v) The application of chemical fertilizers or organic materials, conditioners, liming materials, or pesticides.

(vi) Use of alternative pest management techniques.

(vii) The fencing, feeding, watering, sheltering, transportation, treatment, use, handling and care of farm animals.

(viii) The management, storage, transport, utilization, and application of

> farm by-products, including manure or agricultural wastes.
>
> (ix) The conversion from a farm operation activity to other farm operation activities.
>
> (x) The employment and use of labor." MCL 286.472 §2(a-b)

There has been some litigation addressing the definition of a farm or farm operation. In *Jerome Tp. v. Melchi* 184 Mich.App. 228, 457 N.W.2d 52(1990), the maintenance of an apiary (beekeeping) was found to constitute a "farm" or "farm operation" for purposes of the RTFA. Additionally, in *Milan Tp. v. Jaworski and Sexy Pheasant* (2003) unpublished, an operation where game birds were bred, raised, and hunted was found to be a "farm operation". In *Richmond Tp. v. Erbes* 195 Mich.App. 210, 489 N.W.2d 504(1992), pallet construction of wood and nails were not "farm products" within the meaning of the RTFA where the majority of wood used for the pallets originated from outside the owners' property.

Water Quality Regulations and Animal Agriculture

While state and federal water pollution control laws prohibit discharges to surface water, in general, there are specific references made to animal agriculture in the federal Clean Water Act. In particular, Concentrated Animal Feeding Operations (CAFOs) are regulated as point sources of discharge under the Clean Water Act and, as such, are required to attain a discharge permit. As currently written, federal rules require that all concentrated animal operations of 1,000 animal units or greater attain a discharge permit. Operations with 300 animal units or more may be required to obtain a permit, depending upon how water drains from the operation. In fact, a facility with fewer than 300 animal units may be required to obtain a permit if it is found to be improperly discharging wastes.

According to federal regulations,

> "The term animal unit means a unit of measurement for any animal feeding operation calculated by adding the following numbers: the number of slaughter and feeder cattle multiplied by 1.0, plus the number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 25 kilograms (approximately 55 pounds), multiplied by 0.4, plus the number of sheep multiplied by 0.1, plus the number of horses multiplied by 2.0. 40 CFR 122, Appendix B.

Equivalencies are also provided in the regulation for poultry species.

In Michigan, the Department of Environmental Quality presently administers a discharge permit for CAFOs. The permitting process is consistent with the EPA's regulation of CAFOs as point sources of discharge under the Clean Water Act .

Under debate is whether compliance with the RTFA GAAMPs will insure that an operation is managed so that environmental risks are minimized. However, use of GAAMPs is not required; it merely affords an operation protection from nuisance complaints. Nevertheless, some localities in Michigan have included a requirement that animal operations comply with GAAMPs.

Including such a requirement is likely to place a significant enforcement burden on the local government. Also, if the local enforcement authority finds that a farm is not using GAAMPs but MDA concludes that the farm **is** using GAAMPs, the local unit cannot bring a nuisance complaint against the farm.

Enforcement Issues

Enforceability of zoning provisions in rural areas is a particular concern. Rural townships and counties typically have limited personnel for any function and may have no one assigned full-time to enforcement duties. Building inspectors and health officers often draw enforcement duty in rural areas. Although some become well-versed in land use issues from participation in professional seminars, others have so many demands on their time that they never have the time to master the complexities of zoning. Thus, zoning enforcement in general is often lacking in rural areas.

To complicate that through the adoption of complex performance standards or other seemingly-innovative techniques may ultimately be a disservice to the community. **A county or township considering the adoption of any complex or sophisticated form of regulation of animal agriculture (or any other complex use) ought to study carefully the issue of enforcement before acting.** Only if local officials are satisfied that their staff can enforce what they adopt should they approve such regulatory programs.

This warning need not act as a bar to appropriate regulation. Persons currently responsible for enforcement of other zoning regulations can easily manage the administration and enforcement of basic regulations affecting agriculture. It is only with the more complex controls or those requiring constant vigilance (such as whether a farm's management of manure or fertilizers conforms with RTFA GAAMPs) that the enforcement issues become uniquely difficult. Although the more sophisticated regulations may appear to offer unique solutions to complex problems, they only make sense if they are simple enough to be enforced or if staff are able and willing to enforce them.

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.

Chapter 4 - Implementation Options

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 broader notion of intensity can be thought of as qualitative intensity.

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

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

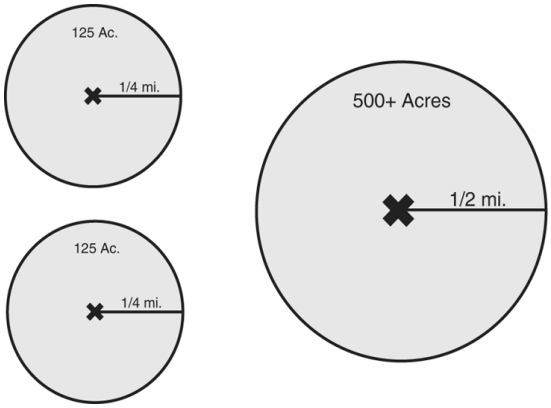
Use-specific standards differ from zoning district regulations by focusing on individual use types rather than groupings of uses. Regulations that establish required separation distances between different types of uses are examples of use specific standards, in this case use-specific *separation* standards. 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

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 that 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.

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

(Based on the current state of case law related to the preemption of local zoning by the RTFA, a zoning ordinance that uses a multi-tiered agricultural zoning approach is likely to conflict with the RTFA and is therefore unenforceable.)

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 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.

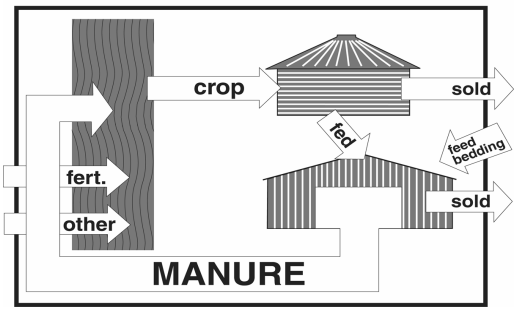
New zoning districts should not be viewed as a device for zoning controversial uses out of an area. It should also be noted that the zoning district approach is likely to have the most significant and noticeable effect in jurisdictions that have not yet experienced much development pressure for new animal 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. In addition, the Generally Accepted Agricultural and Management Practices (GAAMPs) for Site Selection and Odor Control specifically address size of operation. This means that local units are preempted from enforcing ordinances that include size restrictions.

The impact of number of animal units on the ability of the operator to manage nutrients in the manure in a safe and effective manner is one reason why some local units would

[1]The 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.

like to regulate size. However, both the Site Selection and Odor Control and the Manure Management and Utilization GAAMPs address the size issue from the perspective of nutrient balancing. 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.) Both the



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.

site selection and manure management GAAMPs require 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.

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 Association of Planning 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)."

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 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. Finally, standards should not conflict with guidelines included in the Right to Farm GAAMPs.

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 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?

No sample odor-related provisions have been included in the sample zoning language that follows this chapter. Because the Site Selection and Odor Control GAAMPs address odor reduction on animal operations, local odor performance standards likely would not be enforceable against an agricultural operation.

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.

A number of nonconforming situations 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 statute:

> *"If the use of a dwelling, building, or structure or of the land is lawful at the time of enactment of a zoning ordinance or an amendment to a zoning ordinance, then that use may be continued although the use does not conform to the zoning ordinance or amendment." §125.3208(1)*
>
> *"The legislative body may provide in a zoning ordinance for the completion, resumption, restoration, reconstruction, extension, or substitution of nonconforming uses or structures upon terms and conditions provided in the zoning ordinance. In establishing terms for the completion, resumption, restoration, reconstruction, extension, or substitution of nonconforming uses or structures, different classes of nonconforming uses may be established in the zoning ordinance with different requirements applicable to each class." §125.3208(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.*

Sample Zoning Language For Animal Feeding Operations in Michigan

What is presented here is sample zoning language for intensive animal agriculture operations. The zoning amendment adopted by a municipality will be modified to fit the codification of that particular zoning ordinance. A municipality will want to modify it further to fit their local needs. This sample is presented as a starting point, not a finished product. Prior to adoption, the ordinance should be reviewed by the municipal attorney. The ordinance should also be reviewed to insure that it does not conflict with guidelines in the Right to Farm Generally Accepted Agricultural and Management Practices.

The sample language is provided here with the following assumptions:

- The municipality already has site plan review requirements in its ordinance, which includes pre-review of the site plan by other agencies for their respective permit approval.
- The municipality already has non-conforming use provisions in its ordinance.
- The municipality already has special use procedures in its ordinance.
- The municipality already has conditional use procedures in its ordinance.
- The section numbering system follows a standard system of codification.

The language provided here includes more regulation than might be adopted in any given municipality. This is done to provide examples of several different approaches that a municipality might consider. Whether a municipality can legally adopt a multi-tier approach to agricultural zoning, given the 1999 amendments to Michigan's Right to Farm Act, is unclear. **Based on the current state of case law related to the preemption of local zoning by the RTFA, a zoning ordinance that uses a multi-tiered agricultural zoning approach is likely to conflict with the RTFA and is therefore unenforceable**.

Before it is adopted, modifications should be made so the zoning text fits with the municipality's zoning ordinance. The draft should then be reviewed by a planner (consultant, county or regional planning staff, Michigan State University Extension Land Use Area of Expertise team member). Last (and most important) the draft should be reviewed by the municipality's attorney. A zoning amendment should never be adopted without review by the municipality's attorney.

1. Add definition of uses by adding to Section 505, as follows:

LIVESTOCK PRODUCTION FACILITY means a facility where farm animals, as defined in the Right to Farm Act, such as dairy cattle, poultry, beef cattle, sheep, swine, horses, etc. are confined with a capacity of 50 animal units or greater and the associated manure storage facilities. Pasture systems are excluded.

ANIMAL UNIT means a unit of measurement for any livestock production facility calculated by adding the following numbers: the number of slaughter and feeder cattle multiplied by 1.0, plus the number of mature dairy cattle multiplied by 1.4, plus the number of swine weighing over 25 kilograms (approximately 55 pounds) multiplied by 0.4, plus the number of sheep multiplied by 0.1, plus the number of horses multiplied by 2.0, plus all other animals on site multiplied by 1.0 per 1000 pounds of body weight.

Comment:	*These definitions of livestock production facility and animal unit are the definitions used in the Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities adopted under Michigan's Right to Farm Act.*

AGRICULTURE, ANIMAL means the use of land for the maintenance or production of animals or animal products but does not include livestock production facilities.

AGRICULTURE, CROP means the use of land for the production of row crops, field crops, tree crops, timber, bees, apiary products, and fur-bearing animals.

AGRICULTURAL SALES AND SERVICE means an establishment primarily engaged in the sale or rental of farm tools and small implements, feed and grain, tack, animal care products, farm supplies and the like, excluding large implements, and including accessory food sales and machinery repair services.

AGRICULTURAL STORAGE means facilities for the warehousing of agricultural products. Typical uses include grain elevators.

MANURE STORAGE AREA means a holding area or lagoon used or intended to be used for the storage or treatment of animal manure and other waste products associated with a livestock production facility.

2. Add or replace in its entirety Article 31, as follows:

ARTICLE 31: LIMITED AGRICULTURE DISTRICT

3101. Purpose:

The Limited Agriculture District is intended to help preserve existing agricultural land resources with provisions for some single family dwelling development and prevent the premature conversion of rural lands to urban use. The district's use and development regulations are designed to implement the *Comprehensive Plan* goals by discouraging urban and suburban development in areas that have prime agricultural soils and that are not well served by public facilities and services. This district can also be used as a transitional zoning designation to buffer residential uses from more intensive, general agriculture districts.

Comment:	*Purpose statements should tie zoning district provisions back to the Comprehensive Plan and explain the intent of the district. Then property owners and public officials will be given an indication of what a district is intended to do and where it is intended to be applied (mapped).*

3102. Permitted Uses:

Only the following uses shall be permitted, by permit as specified in Section 8401 of this Ordinance:

A. Agriculture (animal and crop), Forestry and Fishing & Hunting [11] (EXCEPT Livestock Production Facilities) including, but not limited to the following accessory uses:
   1. Dwellings, Duplexes, and Apartment Buildings for owners, operators and employees of a farm.
   2. Home Occupation.
   3. Parking for currently licensed automobiles.
   4. On lakefront lots, one boat dock for private use.
   5. Wholesale Fresh Fruits and Vegetables Wholesalers [42248].
   6. Fruit and Vegetable Markets [44523].
   7. Farm Product Warehousing and Storage [49313].
   8. Refrigerated Warehousing and Storage [49312].

3103. Conditional Uses:

Only the following uses shall be permitted, by conditional use permit as specified in Section 8501 of this Ordinance:

A. Dwellings, Duplexes if on a parcel which is larger than _____square feet and smaller than _____ square feet and the parcel has _____ feet of road frontage, other parcel size standards of this zoning district not withstanding, not located within ____ feet of an Animal Feeding Operation or its animal waste area, and no more than four parcels are split from the original parcel of record which exists on

the effective date of this amendment and including but not limited to the following accessory uses:

1. Home Occupation.
2. Parking for currently licensed automobiles.
3. On lakefront lots, one boat dock for private use.

Comment:	*A minimum parcel size of 20,000 square feet would satisfy, for sandy soils, all setback and isolation distances required for on-site well and septic systems. A maximum parcel size of 43,560 square feet (1 acre) should be small enough to avoid excessive removal of land from agricultural production.*

Comment:	*The sample Limited Agriculture District presented here does not allow livestock production facilities. However, livestock production facilities might be included as a special use. The Conditional Agriculture District presented below follows this convention.*

Comment:	*In this example, non-farm dwellings are permitted as a conditional use. Not all jurisdictions will want to follow this approach. Some will want to prohibit all non-farm residential development within agricultural zoning districts. (This example is modeled in the Exclusive Agriculture District presented below.) Others may decide to permit such uses by right.*

3104. Use Regulations and Standards

The following regulations shall apply to all Permitted, Conditional and Special Uses in this District:

A. Minimum Parcel Area - No building, structure or use shall be established on any parcel less than _____ square feet. No apartment building shall be established on any parcel less than _____ square feet per each housing unit, which ever parcel is greater.

Comment:	*The minimum parcel area provision is suggested as a way of establishing some minimum requirement for allowed nonresidential uses within the district. It is recognized that minimum lot size requirements that apply to non-farm uses are an ineffective and sometimes counterproductive technique for preserving prime farmland. In fact, large-lot zoning can do more harm than good when it comes to farmland protection. By spreading development throughout the countryside, large-lot zoning can result in a waste of land and an increase in environmental problems. In this example the parcel area applies only to the permitted uses in section 3102. Small parcels are required for the non-farm conditional uses in section 3103.*

B. Buildable Area - Each parcel shall have a minimum of _____ square foot buildable area per principle unit, which shall not include:
   1. sand dune with slopes greater than 18 percent,
   2. beach contiguous to a lake or stream,
   3. wetland,
   4. area which is not accepted by the Health Department of jurisdiction for on-site sewage disposal unless an alternate system of sewage disposal is approved by the Health Department of jurisdiction,
   5. high risk erosion area,
   6. that part of a flood plain where flood waters are expected to have a destructive current,
   7. existing public utility easements,
   8. existing public rights-of-way,
   9. waterfront setback areas, and
   10. slopes over 25 percent.

C. Minimum Parcel Width - Parcel width shall be no less than _____ feet and it shall front on a public road.

D. Minimum Setback Requirements:
   1. The following requirements shall apply to every parcel, building, structure or use:
      a. Front Yard - The minimum front setback shall not be less than _____ feet from the front property line, or _____ feet from the centerline of the road, whichever is greater.

Comment:	*The setback distance is based on measurements of the distance snow is thrown back from the edge of a county-plowed road by snow plows; an average of fourteen (14) meters (46 feet) and a mean maximum twenty five (25) meters (82 feet) from the centerline of the road.*

      b. Rear Yard - The minimum rear setback shall not be less than _____ feet.
      c. Waterfront Yard: See section 1011 of this Ordinance.
      d. When a proposed non-residential or non-park use is contiguous to any dwelling, the parcel owner of the proposed use shall establish one of the following buffers on his/her parcel adjacent to, and along the contiguous boundary of the parcel on which the dwelling is located:
         1) a buffer area (setback) of fifty (50) feet, or
         2) a berm four (4) feet, or more high, or
         3) a solid wall four (4) feet, or more, in height, or
         4) a proportionately adjusted combination of the above.

Comment:	*Zoning district setback requirements should not be confused with use-specific separation standards. Setbacks are primarily useful as a means of protecting adjacent rights-of-way and lots from encroachment by buildings and structures. Although many agricultural zoning districts require that buildings be set back 50 to 100 feet from lot lines, there is no magic setback distance.*

2. No dwelling shall be constructed in this District which contains less than _____ square feet of floor area, or is less than _____ feet wide.
3. No accessory building shall be constructed in this District which contains more than _____ square feet of building area, or is more than _____ feet high.

3. Add or replace in its entirety Article 32, as follows:

ARTICLE 32: CONDITIONAL AGRICULTURE DISTRICT

3201. Purpose:

The Conditional Agriculture District is intended to help preserve existing agricultural land resources and prevent the premature conversion of rural lands to urban use. The district's use and development regulations are designed to implement the *Comprehensive Plan* goals by discouraging urban and suburban development in areas that have prime agricultural soils and that are not well served by public facilities and services while at the same time permitting dwellings and animal feeding operations to exist under certain conditions.

3202. Permitted Uses:

Only the following uses shall be permitted, by permit as specified in Section 8401 of this Ordinance:

A. Agriculture (animal and crop), Forestry and Fishing & Hunting [11] (EXCEPT Livestock Production Facilities) including, but not limited to the following accessory uses:
   1. Dwellings, Duplexes, and Apartment Buildings for owners, operators and employees of a farm.
   2. Home Occupation.
   3. Parking for currently licensed automobiles.
   4. On lakefront lots, one boat dock for private use.
   5. Wholesale Fresh Fruits and Vegetables Wholesalers [42248].
   6. Fruit and Vegetable Markets [44523].
   7. Farm Product Warehousing and Storage [49313].
   8. Refrigerated Warehousing and Storage [49312].

3203. Conditional Uses:

Only the following uses shall be permitted, by Conditional use permit as specified in Section 8501 of this Ordinance:

A. Dwellings, Duplexes if on a parcel which is larger than _____ square feet and smaller than _____ square feet and the parcel has _____ feet of road frontage, other parcel size standards of this zoning district not withstanding, not located within ____ feet of an Animal Feeding Operation or its animal waste area, and no more than four parcels are split from the original parcel of record which exists on the effective date of this amendment and including but not limited to the following accessory uses:

1. Home Occupation.
2. Parking for currently licensed automobiles.
3. On lakefront lots, one boat dock for private use.

Comment:	*A minimum parcel size of 20,000 square feet would satisfy, for sandy soils, all setback and isolation distances required for on-site well and septic systems. A maximum parcel size of 43,560 square feet (1 acre) should be small enough to avoid excessive removal of land from agricultural production.*

Comment:	*In this example, non-farm dwellings are permitted as a conditional use. Not all jurisdictions will want to follow this approach. Some will want to prohibit all non-farm residential development within agricultural zoning districts. (This example is modeled in the Exclusive Agriculture District presented below.) Others may decide to permit such uses by right.*

Comment:	*Livestock production facilities are included as special land uses (below), but they might, alternatively, be included as conditional uses.*

3204. Special Uses:

Only the following uses shall be permitted, by Special Use Permit as specified in 8601 of this Ordinance:

A. Livestock Production Facility.
B. Preserved Fruits and Vegetables Manufacturing [203].
C. Mining [212].
D. Utilities [22].
E. Wholesale Fresh Fruits and Vegetables Wholesalers [42248].
F. Fruit and Vegetable Markets [44523].
G. Farm Product Warehousing and Storage [49313].
H. Refrigerated Warehousing and Storage [49312].
I. Telecommunications [5133] including antenna towers.
J. Accessory uses to the above.

3205. Use Regulations and Standards

The following regulations shall apply to all Permitted, Conditional and Special Uses in this District:

A. Minimum Parcel Area - No building, structure or use shall be established on any parcel less than _____ square feet. No apartment building shall be established on any parcel less than _____ square feet per each housing unit, which ever parcel is greater.

Comment:	*The minimum parcel area provision is suggested as a way of establishing some minimum requirement for allowed nonresidential uses within the district. It is recognized that minimum lot size requirements that apply to non-farm uses are an ineffective and sometimes counterproductive technique for preserving prime farmland. In fact, large-lot zoning can do more harm than good when it comes to farmland protection. By spreading development throughout the countryside, large-lot zoning can result in a waste of land and an increase in environmental problems. In this example the parcel area applies only to the permitted uses in section 3102. Small parcels are required for the non-farm conditional uses in section 3103.*

B. Buildable Area - Each parcel shall have a minimum of _____ square foot buildable area per principle unit, which shall not include:
   1. sand dune with slopes greater than 18 percent,
   2. beach contiguous to a lake or stream,
   3. wetland,
   4. area which is not accepted by the Health Department of jurisdiction for on-site sewage disposal unless an alternate system of sewage disposal is approved by the Health Department of jurisdiction,
   5. high risk erosion area,
   6. that part of a flood plain where flood waters are expected to have a destructive current,
   7. existing public utility easements,
   8. existing public rights-of-way,
   9. waterfront setback areas, and
   10. slopes over 25 percent.

C. Minimum Parcel Width - Parcel width shall be no less than _____ feet and it shall front on a public road.

D. Minimum Setback Requirements:
   1. The following requirements shall apply to every parcel, building, structure or use:
      a. Front Yard - The minimum front setback shall not be less than _____ feet from the front property line, or _____ feet from the centerline of the road, whichever is greater.

Comment:	*The setback distance is based on measurements of the distance snow is thrown back from the edge of a county-plowed road by snow plows; an average of fourteen (14) meters (46 feet) and a mean maximum twenty five (25) meters (82 feet) from the centerline of the road.*

b. Rear Yard - The minimum rear setback shall not be less than _____ feet.

c. Waterfront Yard: See section 1011 of this Ordinance.

d. When a proposed non-residential or non-park use is contiguous to any dwelling, the parcel owner of the proposed use shall establish one of the following buffers on his parcel adjacent to, and along the contiguous boundary of the parcel on which the dwelling is located:

1) buffer area (setback) of fifty (50) feet, or
2) a berm four (4) feet, or more high, or
3) a solid wall four (4) feet, or more, in height, or
4) a proportionately adjusted combination of the above.

Comment:	*Zoning district setback requirements should not be confused with use-specific separation standards. Setbacks are primarily useful as a means of protecting adjacent rights-of-way and lots from encroachment by buildings and structures. Although many agricultural zoning districts require that buildings be set back 50 to 100 feet from lot lines, there is no magic setback distance.*

2. No dwelling shall be constructed in this District which contains less than _____ square feet of floor area, or is less than _____ feet wide.

3. No accessory building shall be constructed in this District which contains more than _____ square feet of building area, or is more than _____ feet high.

5. Add or replace in its entirety Article 33, as follows:

ARTICLE 33: EXCLUSIVE AGRICULTURE DISTRICT

3301. Purpose:

The Exclusive Agriculture District is intended to help preserve existing agricultural land resources and prevent the premature conversion of rural lands to urban use by emphasizing large-scale, intensive agricultural operations and not permitting non-farm dwellings in the district. The district's use and development regulations are designed to implement the *Comprehensive Plan* goals by discouraging urban and suburban development in areas that have prime agricultural soils and that are not well served by public facilities and services.

Comment:	*Exclusive agricultural zoning is not widely used in Michigan. While exclusive agricultural zoning will not prevent conflicts between agricultural land uses and existing non-agricultural uses, it is the most effective method of preventing encroachment of new non-agricultural land uses, and the associated potential for additional conflict, into agricultural areas.*

3302. Permitted Uses:

Only the following uses shall be permitted, by permit as specified in Section 8401 of this Ordinance:

A. Agriculture (animal, crop) Forestry and Fishing & Hunting [11]
   1. Dwellings, Duplexes, and Apartment Buildings for owners, operators and employees of a farm.
   2. Home Occupation.
   3. Parking for currently licensed automobiles.
   4. On lakefront lots, one boat dock for private use.
   5. Wholesale Fresh Fruits and Vegetables Wholesalers [42248].
   6. Fruit and Vegetable Markets [44523].
   7. Farm Product Warehousing and Storage [49313].
   8. Refrigerated Warehousing and Storage [49312].

B. Livestock Production Facility.

C. Preserved Fruits and Vegetables Manufacturing [203].

D. Wholesale Fresh Fruits and Vegetables Wholesalers [42248].

E. Fruit and Vegetable Markets [44523].

F. Farm Product Warehousing and Storage [49313].

G. Refrigerated Warehousing and Storage [49312].

H. Accessory uses to the above.

3303. Use Regulations and Standards

The following regulations shall apply to all Permitted, Conditional and Special Uses in this District:

A. Minimum Parcel Area - No building, structure or use shall be established on any parcel less than _____ square feet.

Comment:	*The minimum parcel area provision is suggested as a way of establishing some minimum requirement for allowed nonresidential uses within the district. It is recognized that minimum lot size requirements that apply to non-farm uses are an ineffective and sometimes counterproductive technique for preserving prime farmland. In fact, large-lot zoning can do more harm than good when it comes to farmland protection. By spreading development throughout the countryside, large-lot zoning can result in a waste of land and an increase in environmental problems. In this example the parcel area applies only to the permitted uses in section 3102. Small parcels are required for the non-farm conditional uses in section 3103.*

B. Buildable Area - Each parcel shall have a minimum of _____ square foot buildable area per principle unit, which shall not include:
   1. sand dune with slopes greater than 18 percent,
   2. beach contiguous to a lake or stream,
   3. wetland,
   4. area which is not accepted by the Health Department of jurisdiction for on-site sewage disposal unless an alternate system of sewage disposal is approved by the Health Department of jurisdiction,
   5. high risk erosion area,
   6. that part of a flood plain where flood waters are expected to have a destructive current,
   7. existing public utility easements,
   8. existing public rights-of-way,
   9. waterfront setback areas, and
   10. slopes over 25 percent.

C. Minimum Parcel Width - Parcel width shall be no less than _____ feet and it shall front on a public road.

D. Minimum Setback Requirements:
   1. The following requirements shall apply to every parcel, building, structure or use:
      a. Front Yard - The minimum front setback shall not be less than _____ feet from the front property line, or _____ feet from the centerline of the road, whichever is greater.

Comment:	*The setback distance is based on measurements of the distance snow is thrown back from the edge of a county-plowed road by snow plows; an average of fourteen (14) meters (46 feet) and a mean maximum twenty five (25) meters (82 feet) from the centerline of the road.*

      b. Rear Yard - The minimum rear setback shall not be less than _____ feet.
      c. Waterfront Yard: See section 1011 of this Ordinance.
      d. When a proposed non-residential or non-park use is contiguous to any dwelling, the parcel owner of the proposed use shall establish one of the following buffers on his parcel adjacent to, and along the contiguous boundary of the parcel on which the dwelling is located:
         1. a buffer area (setback) of fifty (50) feet, or
         2. a berm four (4) feet, or more high, or
         3. solid wall four (4) feet, or more, in height, or
         4. a proportionately adjusted combination of the above.

Comment:	*Zoning district setback requirements should not be confused with use-specific separation standards. Setbacks are primarily useful as a means of protecting adjacent rights-of-way and lots from encroachment by buildings and structures. Although many agricultural zoning districts require that buildings be set back 50 to 100 feet from lot lines, there is no magic setback distance.*

2. No dwelling shall be constructed in this District which contains less than _____ square feet of floor area, or is less than_____ feet wide.
3. No accessory building shall be constructed in this District which contains more than _____ square feet of building area, or is more than _____ feet high.

6. Add specific special use standards by adding a section 16 _ _ to Article 16, as follows:

16_ _. Animal Agriculture and Livestock Production Facilities

Animal Agriculture and Livestock Production Facility uses shall be subject to the following standards:

A. Shall comply with all applicable local, state and federal standards including, for example, the Federal Clean Water Act (being P.L. 92-500 of 1972, as amended, 33 USCS 1251 *et seq*), point source pollution control parts of the Michigan Natural Resources and Environmental Protection Act (being parts 31-53 of P.A. 451 of 1994, as amended, M.C.L. 324.3101-324.5399), and the most recent Generally Accepted Agricultural and Management Practices, published and adopted by the Michigan Commission of Agriculture pursuant to the Michigan Right to Farm Act (being P.A. 93 of 1981, as amended, M.C.L. 286.471 *et seq*). Where required by the Right to Farm Act for nuisance protection, New and Expanding Livestock Production Facilities (as defined in the Generally Accepted Agricultural and Management Practices) shall have proposed sites verified by the Michigan Department of Agriculture.

Comment:	*The sample zoning provisions presented here would supplement, not replace, other state or federal regulations and standards that apply to animal agriculture. This provision attempts to make that clear. When these requirements are included in the zoning ordinance, enforcement is the responsibility of the township.*

B. Livestock production facilities and manure storage areas shall comply with the following minimum setback standards:

	Setback from	**Minimum Distance (ft)**
1.	Front yard (road) ROW line	_____
2.	Waterfront yard	_____

Comment: *Any setback distances included in zoning ordinances should not conflict with setbacks included in the Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities.*

Comment: *Use-specific separation distances are not included in this sample language since the Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities address most kinds of separation distances.*

Appendix A:

Planning Approaches

Trends-Driven Approach

Description: The simplest form of planning is also in many ways the most misleading – that is simply to project today's trends into the future and to plan around those. The trends typically used as the basis of such future planning are population and employment trends. As many investors have learned the hard way, the most certain thing about a trend line is that it will change. Thus, simply to project current growth (or non-growth) rates will not produce a realistic view of the future. On the other hand, it is useful information. Russell Ackoff has referred to such projections as reference projections. It is useful to consider those trends in the context of understanding what created them and what may change them. For example, if a community's past growth was tied to increasing employment at an auto parts manufacturer, it becomes important to examine the continued growth potential of that industry. Reference projections may also show undesirable trends – like a continued youth drain or brain drain. By understanding those trends and recognizing which ones it might like to change, a community can make its future better than a simple trend projection. Thus, a series of trends scenarios can provide the basis for developing an excellent issue-driven plan – from the trends come many of the issues to be resolved.

Process: Like all other plans, this begins with an analysis of existing conditions. In this planning process, however, it is important that the existing conditions analysis include historic information, also. Future trends are generally based on past trends, so it is important to gather population, employment, economic and other data from several past periods (usually decennial census dates) as well as from the most recent period. Professional planners or consultants hired by the local government analyze and project those trends, indicating one or more possible future scenarios. A sophisticated trends analysis includes *what if* alternatives, indicating how the trends might be changed if particular variables change.

Personnel Requirements: Trends analysis is a relatively sophisticated technical process. Projecting trends involves analysis of those trends rather than just extending a line from past dots on a graph to future ones. Thus, use of this process often requires outside assistance. Simple trends can be analyzed by county or township staff using Census data and information from the Michigan Department of History, Arts and Libraries.

Citizen Participation: There is little opportunity or need for citizen participation in a trends analysis. The work is largely technical. Communities typically present the trends analysis to the public for

comment, but it is often difficult for citizens to comment usefully on such a technical process.

Best Use: A trends analysis provides an ideal reference projection or context for other types of planning.

Opportunity-Driven Approach

Description: In an opportunity-driven approach, a community examines its opportunities and constraints – or, stated differently, its strengths and weaknesses. Those planning the community assess its future based on these opportunities and constraints, rather than on simple projections of trends. In land-use planning, the opportunities and constraints generally fall into two categories: natural environment and human-made environment or infrastructure. The environmental opportunities and constraints (features like good agricultural soils, floodplains, unstable soils) are long-term factors in planning. Human-made features like roads, sewage treatment plants, and water supply systems are medium-term factors that will significantly influence development over several years but that are almost certain to change over the long run. Planning may involve the simple projection of what can or is likely to happen in the context of these opportunities and constraints, or it may involve the development of alternative scenarios, based on these opportunities and constraints, leaving to policy makers the choice among scenarios.

Process: The process begins with an assessment of opportunities and constraints. That is typically a very technical process, particularly where it involves mapping environmental constraints and assessing the growth potential within current infrastructure systems. At the conclusion of the technical analysis, the planners conducting that analysis present it to policy makers to consider its implications. If they develop alternative scenarios, the policy makers, usually with public comment, then choose among those scenarios.

Personnel Requirements: This process requires highly-trained technical staff. Not all professional planners are able to conduct a complete opportunities and constraints analysis, so even a community that has a professional planning staff may need to hire a consultant to implement this approach. It is also extremely time-consuming and thus can be an unreasonable burden on a busy professional staff.

Citizen Participation: This is not a particularly participatory process, although it is both appropriate and useful to solicit citizen comments in selecting a preferred scenario at the end of the process.

Best use: This process is best used in areas where opportunities or constraints – natural or human-made – represent the key determinant of future growth and development potential.

Issue-Driven Approach

Description: This process begins by identifying major community issues. The focus of the planning effort is then on what to do about those issues. In most communities, the list of major issues can be narrowed down to about a dozen, although the number may vary between half a dozen and twenty. Issues that arise through the issue identification process are likely to include issues like these: revitalize downtown, expand employment base, improve traffic flow, and expand housing opportunities. The first stage of this process, issue identification, can and should have broad-based citizen participation, although the resolution of the issues is typically best accomplished by a small group, such as the governing body. The result of this process is typically a policy plan with a series of policy statements intended to resolve the issues.

Process: This process starts with issue-identification, which can and should involve broad community participation. If the community plans to do a **Trends Analysis** as a starting point for the plan, it is useful to do that before the issue identification process begins. The public participation can be in the form of mailed surveys, public town meetings, television town meetings, neighborhood meetings, focus groups, meetings with interest groups, or special workshops. When information from the **Trends Analysis** is available, it should be presented to people participating in the issue identification process as useful background information that can be communicated in a report or in an oral presentation at the beginning of a public or small group meeting. The form of the participation is simple – asking people to list the five most important issues facing the community as it plans for the future or to list the community's three greatest strengths and the two things that it ought to work to improve. Staff or a small committee then compiles the lists of issues or lists of strengths and weaknesses. That is not simply a clerical task; someone needs to compile the lists thoughtfully, recognizing that economic development and more jobs are part of the same issue. Once there is a list of issues to consider, policy makers (ideally the governing body, with advice from staff and the planning commission) develop recommendations for those issues. Alternatively, an advisory group composed of community representatives may develop a set of recommendations. For some issues, there may be one recommendation that seems most appropriate. For others, there may be alternative recommendations. Those recommendations, including alternatives, then become the subject of a public review process. That can be as formal as a public hearing or as informal as having members of the policy-making body take the draft recommendations and alternatives back out to the original groups who contributed to the issues list. With the benefit of the public comments and suggestions, the policy makers then revise the recommendations and compile them into a policy plan to guide the community.

Personnel Requirements: This is the planning process that can most easily and most successfully be conducted by volunteers. A skilled staff member or outsider who can serve as facilitator of the process and help to compile the results can

improve the process and help to keep it objective but this is a process that a community can manage itself.

Citizen Participation: This is in many ways the most satisfying process for citizens, because it asks them what they know best – what they think about their community. Other processes ask them to make technical and policy judgments for which they may be ill-equipped. This process simply asks them what concerns them. The rest of the process then focuses on addressing those concerns. The resulting plan is typically directly responsive to citizen concerns and consistent with their perceptions of the opportunities and challenges facing the community.

Best Use: This process can work in any context, but it is particularly useful in three sets of circumstances: 1) where there is little or no professional assistance available to facilitate the process; 2) where the primary reason for the planning process is because of public concern over one or more critical issues; and 3) where the community wants and needs relatively quick and strategic results.

Goal-Driven Approach

Description: This approach to planning begins with goal-setting. An effective goal-setting process almost always requires a professional planner or other facilitator. One of the interesting challenges in such a process is identifying the list of topics to be addressed by goals. Communities that use this process generally attempt to develop an all-encompassing list of topics and then to develop a list of goals under each. General topics on such a list may include: natural environment, infrastructure, economic base, taxes and fiscal issues, downtown, neighborhoods, and open space.

Process: Someone has to develop the goals – elected officials, a planning commission, professional staff, or one or more advisory committees. Some communities use separate advisory committees to address separate topics, but that approach can lead to conflicting goal statements from different committees; even if some central committee, like a government body, resolves those conflicts, there can be hard feelings among participants if their committee's goals are given short shrift. If it will be a governing body or other small group, that makes for a fairly simple process. If the process is to involve a diversity of citizens and interest groups in goal-setting, the process becomes more complex. Probably the most typical form of goal-driven planning process involves the creation of several subcommittees, each focused on one topic area. Such topic areas might include: agriculture, manufacturing, downtown, natural environment, open space, infrastructure. Each committee then develops its own set of goals for that particular topic area. A central body, usually the planning commission or governing body (but possibly an advisory committee composed of community representatives), then assembles all of those goals into a plan. Ideally, that central body reconciles conflicting goals and sets priorities among different goals; for example, one committee may want a new airport for the community and another may want a new convention center. Both may be desirable goals, but

both cost money and it is thus essential to set relative priorities. Unfortunately, this step is sometimes omitted and the result is then a collection of different goals rather than a plan. At its best, this kind of process results in a comprehensive set of goals and priorities to guide the community into its future. Late in the process, the assembled goals and policies are typically presented to the larger community for consideration and comment. The central policy-making body then makes revisions and additions to the goals before formally adopting them.

Personnel Requirements: Of the policy-oriented processes, this requires the most intensive staff support. Committees working with goals often need technical support to facilitate their discussions. The very task of coordinating the efforts of a variety of committees can take a great deal of time. Assisting the central body in compiling and reconciling the goals from all of the committees is a process that requires considerable organizational abilities and a good deal of political acumen. It is very difficult to accomplish this sort of planning effort without considerable professional staff support.

Citizen Participation: Citizen participation in this sort of process can be difficult to balance. If too many citizens become too involved in the initial goal-setting, the process becomes too complex and too many goals result. On the other hand, if citizen participation is deferred to the end of the process, the entire effort may be preemptive or may appear so. That is, the effort may have focused on the wrong issues – for example, emphasizing the expansion of open space in the community when most citizens are concerned about expanding the job base. Even where the goal-setting process has been responsive to current community needs, that fact may not be obvious if there has not been significant community participation in the effort. In its purest form, this sort of process is very frustrating to citizens. Note, however, that the **Issue-Driven Approach** ultimately results in goals and provides for significant citizen participation in the early stages of the plan.

Best use: This is the classic process for developing a comprehensive plan for a community. It works best when the community can afford to devote significant professional staff time to it or can afford to hire a consultant to manage the process.

Vision-Driven Approach

Description: A vision is typically an over-arching goal that drives an entire planning process. A vision like that of San Antonio's River Walk or the lakeshore plan in Chicago that arose from planning for the Columbian Exhibition can truly change the face of a community. Such visionary planning ideas, however, are relatively rare. Some, like Robert Moses' vision of a New York dominated by highways, are not widely accepted as desirable. A true vision generally arises on its own rather than from an orchestrated planning process; in most cases, a single individual or a small group develops and promotes the vision, although the strongest visions find their roots in the larger community. The challenge for community leaders and planners is to recognize when a vision is so strong and so

good that it should become the focus of the community's entire planning efforts. Visioning efforts led by consultants for communities can range from goal-setting processes under a different name to unfocused exercises in imagining impossible futures. Communities that recognize a vision that can drive their future should generally follow a goal-setting planning process to develop that vision into a workable plan.

Process: For reasons suggested in the description of this approach, there is no process that a community can use to create a vision where none has arisen naturally. The emphasis of a vision-driven planning process should be on fleshing out the goals suggested by the Vision. An **Opportunities-Driven Approach** is particularly useful to supplement this approach, identifying opportunities and constraints as they relate to the adopted vision.

Citizen Participation: Typically, a vision-driven plan is not broadly participatory in development, although it is very important to solicit citizen comments on the vision and its implementation. Although the best visions are drawn broadly from a community and its character, the vision itself is usually driven and carried by a small group or a single individual. The visionary group is not always in a position of elected leadership. In fact, many commentators would argue that most visionaries are not public officials. In that sense, this process is potentially quite egalitarian, but it is not particularly participatory.

Best use: This process works well when there is a vision that finds wide community acceptance or interest. To try to use it in other circumstances may be futile.

Appendix B:

Information and Technical Support

This guide is intended to assist local governments with information and data collection for comprehensive planning. It offers suggestions on what information may be needed and where it might be found.

Typical information necessary to conduct an analysis of a county's or township's existing conditions can be obtained from many sources, although the availability of information and resources may vary by county or township.

Many of the information sources, such as floodplain maps, utilities maps, or budget documents may be available in a local government office (administration, planning, public works, assessor, etc.) or a public library. Alternative local providers of information are soil and water conservation districts (SWCDs), Consolidated Farm Service Agency (CFSA) offices, county offices of Michigan State University Extension (MSUE), regional development commissions, school districts, public utilities and service providers (for example, school districts and public utilities often collect demographic information to develop demand projections), and chambers of commerce. Additionally, sporting goods or outdoor equipment stores often carry United States Geological Survey (USGS) maps.

Where local sources are unavailable, regional or state offices of agencies may be able to supply the information. Following the tables of information sources by subject area is a directory of statewide resources (information/data providers, information and technical assistance, and research tools).

Appendix B - Information and Technical Support

NATURAL ENVIRONMENT

Type of Information to Collect	Potential Information Sources	Providers
Floodplains	Federal Emergency Management Administration (FEMA) Floodplain or Flood Insurance Rate Maps	Local administrative offices, Libraries, FEMA, NRCS
Climate	Climatological records	County extension offices, radio and television stations, Michigan State University Agricultural Weather Office, NOAA
Topography	USGS maps	Local administrative offices, Libraries, retail stores, DEQ Office of Geological Survey, USGS, MUCC, NRCS
Surface water and watersheds	Watershed maps	Local administrative offices, Libraries, MUCC, USGS, NRCS
Wetlands and Protected Waters	National Wetland Inventory (NWI) maps Protected Water Inventory (PWI) maps Local inventories	Local administrative offices, Libraries, USGS, NWI, NRCS
Groundwater	Groundwater maps	DEQ Water Bureau, USGS, IWR
Geology	Geologic maps	DNR Land and Facilities Division, USGS, DEQ Office of Geological Survey
Soils	Soils survey and other soil maps	Local administrative offices, Libraries, NRCS
Vegetation	Land use/land cover maps	Local administrative offices, MUCC, NRCS

Appendix B - Information and Technical Support

HUMAN-MADE ENVIRONMENT: PUBLIC

Type of Information to Collect	Potential Information Sources	Providers
Transportation	Road classification maps State highway maps Regional transportation plans	Local public works and planning offices, Libraries, railroad companies, MDOT
Sewer Water Drainage Solid Waste	Utility maps Utility master plans Capital improvement programs Drainage maps USGS maps Field surveys, inventories Interviews with service providers	Local public works and planning offices, Libraries, USGS, IWR
Emergency and Public Safety Schools Parks and Recreation Libraries and Public Buildings	Local government budget documents Master plans Field surveys, inventories Interviews with service providers Tourism maps and guides	Local administrative, public works and planning offices, Libraries, Chambers of Commerce
Historical/Archeological Resources	Publications, maps, inventories, historical documents	Local historical societies, MHS

HUMAN-MADE ENVIRONMENT: PRIVATE

Type of Information to Collect	Potential Information Sources	Providers
Land Use Inventory: Residential: single family Residential: duplex Residential: multiple family Commercial Warehouse Industrial Civic/Institutional Forested land Vacant/ undeveloped Agricultural: crop production Agricultural: animal production Agricultural support	CFSA/SWCD aerial photography DNR aerial photography LMIC land cover/land use maps (digitized and non-digitized) Assessors maps/records Field surveys, inventories Topographical maps Satellite imagery	Local administrative and planning offices, USGS, DEQ Office of Geological Survey, NRCS
Historical/Archeological Resources	Publications, maps, inventories, historical documents	Local historical societies, MHS

Appendix B - Information and Technical Support

POPULATION CHARACTERISTICS

Type of Information to Collect	Potential Information Sources	Providers
Population Size • Number of People • Number of Housing Units • Number of Households Population Composition • Age • Race • Income • Education Population Distribution (density analysis) Housing trends, tenure and distribution Population Projections (20 years)	U.S. Census Bureau Publications (City and County Data Book, Census of Population and Housing) Michigan annual population estimates (cities and townships) State Demographer • Population • Households Michigan population projections (county level, every ten years) State Demographer	Local administrative offices, Libraries, School districts, Public utilities, U.S. Census Bureau,

ECONOMIC/EMPLOYMENT

Type of Information to Collect	Potential Information Sources	Providers
Existing economic conditions Employment by industry type (Standard Industrial Classification) Unemployment Rates (Existing and Historical) Labor Force Estimates by Occupation Group Econometric and Employment Projections	U.S. Census Bureau data County Business Patterns Census of Manufacturing, Business, Wholesale Trade, and Selected Services Economic Report to the Governor (Economic Resource Group)	Local administrative offices, Libraries, Department of Energy, Labor and Economic Growth, U.S. Census Bureau
Tax Base Data	Assessors records	Local assessors' offices
Land and Improvements by Land-Use Type (Residential, Commercial, Industrial, Agricultural)	Land use survey (see Human-Made Environment: Private, above)	see Human-Made Environment: Private, above

Appendix B - Information and Technical Support

DIRECTORY OF RESOURCES
State or Regional Information Sources

Michigan Department of Environmental Quality (DEQ)
Constitution Hall
525 West Allegan Street
Lansing, MI 48913
Mailing Address:
PO Box 30473
Lansing, MI 48909-7973
http://www.michigan.gov/deq

Executive Division: 517-373-7917
Office of Administrative Hearings: 517-335-4226
Special Assistant to Southeast Michigan: 313-953-0241
Environmental Assistance Center: 1-800-662-9278
Pollution Emergencies: 1-800-292-4706

The DEQ's mission is to drive improvements in environmental quality for the protection of public health and natural resources. Within the DEQ, there are nine divisions each specializing in a particular resource or land issue. DEQ field offices should be contacted for local and regional assistance.

- Air Quality Division (AQD)
  The AQD works to help maintain compliance with statutes that minimize adverse impacts on human health and the environment through air emission control programs, air monitoring, control strategy planning, permit issuance and inspection of air emission sources.
  Contact: Air Quality Division, 525 West Allegan St., (Constitution Hall, 3rd Floor, North Tower), Lansing, MI 48913 phone: 517-373-7023

- Environmental Science and Services Division (ESSD)
  The ESSD focuses on pollution prevention through seven main service areas: compliance assistance, environmental assistance, financial assistance, incentive programs, laboratory services, pollution prevention, and training.
  Contact: Environmental Science and Services Division, 525 West Allegan St., (Constitution Hall, 1st Floor, North Tower), Lansing, MI 48913, phone: (517) 335-2419

- Land and Water Management Division (LWMD)
  The LWMD administers a variety of programs that help protect sensitive natural resources, including inland lakes and streams, wetlands, floodplains, sand dunes, and the Great Lakes. The LWMD provides technical assistance and regulatory oversight over activities such as dredging or filling wetlands, streams, inland lakes, and the Great Lakes; constructing or dismantling dams; constructing marinas, seawalls, or docks; building in a designated critical sand dune, wetland, or floodplain; and protecting underwater shipwreck resources.
  Contact: Land and Water Management Division, 525 West Allegan St., (Constitution Hall, 1st Floor, South Tower), Lansing, MI 48913, phone: (517) 373-1170

- Office of Geological Survey (OGS)
  The OGS oversees the locating, drilling, operating, and plugging of wells used for exploration and production

of oil, gas, brine, and other minerals, including wells for underground storage and waste disposal. The OGS regulates the operation and reclamation of mines for rock products, metallic minerals, industrial sand, and coal. The OGS also develops and distributes a variety of maps, publications, and data on fossil fuels, minerals, and groundwater for industry and public use.
Contact: Office of Geological Survey, 525 West Allegan St. (Constitution Hall, 1st Floor, South Tower) Lansing, MI 48913, phone: (517) 241-1515

- Office of the Great Lakes (OGL)
  The OGL is the lead agency within state government to develop policies and programs to protect, enhance, and manage the Great Lakes ecosystem. The OGL focuses on toxic and nonpoint source pollution, aquatic invasive species, reviewing diversions of water under the Great Lakes Charter, and habitat protection and restoration.
  Contact: Office of the Great Lakes, 525 West Allegan St., (Constitution Hall, 6th Floor, South Tower), Lansing, MI 48913, phone: (517) 335-4056

- Remediation and Redevelopment Division (RRD)
  The RRD oversees regulated party cleanups, addresses public health and environmental threats at sites of environmental contamination, and facilitates brownfield redevelopment.
  Contact: Remediation and Redevelopment Division, 525 West Allegan St., (Constitution Hall, 3rd & 4th Floors, South Tower), Lansing, MI 48913, phone: (517) 373-9837

- Waste and Hazardous Materials Division (WHMD)
  The WHMD administers prevention programs to protect the environment and the public's health through proper management of hazardous products; solid, liquid, medical, and hazardous waste; and radioactive materials.
  Contact: Waste and Hazardous Materials Division, 525 West Allegan St., (Constitution Hall, Atrium Level, North Tower), Lansing, MI 48913, phone: (517) 335-2690

- Water Bureau
  The DEQ water programs establish water quality standards; assess water quality; provide regulatory oversight for all public water supplies; issue permits to regulate the discharge of industrial and municipal wastewaters; and monitor state water resources for water quality, the quantity and quality of aquatic habitat, the health of aquatic communities, and compliance with state laws. The Water Bureau maintains a database (Wellogic) of water well records for the state that includes GPS location, pump data and geological information for each record.
  Contact: Water Bureau, 525 West Allegan St. (Constitution Hall, 2nd Floor, South Tower), Lansing, MI 48913, phone: (517) 241-1300

- District and Field Offices:

  Upper Peninsula District Office

420 5th Street
Gwinn, MI 49841
Phone: (906) 346-8300

Cadillac District Office
120 W. Chapin St.
Cadillac, MI 49601-2158
Phone: (231) 775-3960

Gaylord Field Office
2100 West M-32
Gaylord, MI 49735-9282
Phone: (989)731-4920

Saginaw Bay District Office
401 Ketchum Street, Suite B
Bay City, MI 48708
Phone: (989) 894-6200

Grand Rapids District Office
State Office Building, 5th Floor
350 Ottawa Avenue NW, Unit 10
Grand Rapids, MI 49503-2341
Phone: (616) 356-0500

Kalamazoo District Office
7953 Adobe Rd.
Kalamazoo, MI 49009-50226
Phone: (269) 567-3500

Lansing District Office
525 West Allegan St.
Lansing, MI 48909-7742
Phone: (517) 335-6010

Lansing Equipment/Support Facility
815 Filley Street
Lansing, MI 48906
Phone: (517) 327-2630

Jackson District Office
301 E. Louis Glick Highway
Jackson, MI 49201-1556
Phone: (517) 780-7690

SE Michigan District Office
27700 Donald Court
Warren, MI 48092-2793
Phone: (586) 753-3700

Detroit Field Office
Cadillac Place
3058 West Grand Blvd, Suite 2-300
Detroit, MI 48202-6058
Phone: (313) 456-4700

Michigan Department of Natural Resources (DNR)
Mason Building
P.O. Box 30028
Lansing, MI 48909
http://www.michigan.gov/dnr

Environmental Assistance Center Help Line: 517-373-9400 or 1-800-662-9278
PEAS Hotline (Pollution Emergency Alerting System): 1-800-292-4706
Wildlife Information: 517-373-WILD

The DNR is responsible for the stewardship and management of natural resources and for the provision of recreational opportunities. The Land and Facilities Division maintains state land ownership records and resolves title and boundary issues. DNR Operations Service Centers should be contacted for local and regional assistance.

Division phone numbers:
Fisheries: (517) 373-1280
Forest, Mineral and Fire Management: (517) 373-1275
Land and Facilities: (517) 241-4370
Law Enforcement: (517) 373-1230
Parks & Recreation: (517) 373-9900
Wildlife: (517) 373-1263

- Operations Service Centers (OSC)

Baraga OSC
427 US-41 North

Baraga, MI 49908
Phone: (906) 353-6651

Bay City OSC
3580 State Park Drive
Bay City, MI 48706
Phone: (989) 684-9141

Cadillac OSC
8015 Mackinaw Trail
Cadillac, MI 49601
Phone: (231) 775-9727

Gaylord OSC
1732 West M-32
Gaylord, MI 49735
Phone: (989) 732-3541

Southfield OSC
26000 W. Eight Mile Rd.
Southfield, MI 48034
Phone: (248) 359-9040

Marquette OSC
1990 US-41 South
Marquette, MI
Phone: (906) 228-6561

Newberry OSC
5100 State Highway M-123
Newberry, MI 49868
Phone: (906) 293-5131

Plainwell OSC
621 North 10th Street
Plainwell, MI 49080
Phone: (269) 685-6851

Roscommon OSC
I-75 & M-18 South
8717 North Roscommon Rd.
Roscommon, MI 48653
Phone: (989) 275-5151

Michigan Department of Agriculture (MDA)

PO Box 30017
Lansing, MI 48909
Phone: (517) 373-1104
http://www.michigan.gov/mda

The Michigan Department of Agriculture is the official state agency charged with serving, promoting and protecting food, agriculture and economic interests of the people of the State of Michigan. MDA programs serve all sectors of agriculture, which is Michigan's second-largest industry.

General Information:
Phone: (800) 292-3939
The General Information line may be used in non-emergencies to reach any of the department's offices. Callers who know the division/ person they wish to contact may call that division directly.

Agriculture Pollution Emergency Hot Line:
Phone: (800) 405-0101
This 24-hour hot line should be used for reporting accidental agricultural pesticide, fertilizer and manure spills. It is designed to improve response time and provide appropriate technical assistance, reducing the environmental risk associated with an agricultural chemical spill. (All other spills should be referred to the Michigan Department of Environmental Quality Pollution Emergency Alerting System (PEAS) at 1-800-292-4706.)

Environmental Stewardship Division (ESD):
Phone: (517) 241-0236
The ESD provides assistance to soil and water conservation districts, drain commissioners and land users in the conservation and development of our soil and water resources. Programs administered by the division encourage the installation and management of

sustainable resource protection practices at the local level.

- Right to Farm Program:
  1-877-MDA-1-RTF
  (1-877-632-1783)
  The Right to Farm program is established to protect farmers who are farming according to Generally Accepted Agricultural and Management Practices (GAAMPs) from nuisance lawsuits. Both citizens and farmers can request an evaluation of a farming operation to determine if the GAAMPs are being followed. Sites are scientifically evaluated based on environmental protection, social considerations (neighbor relations), and economic viability. Copies of all GAAMPs can be obtained at the MDA website or by calling the RTF toll free number.

- Michigan Groundwater Stewardship Program (MGSP):
  Phone: (517) 335-6529
  MGSP provides information, cost-share, and technical assistance tools to identify risks to groundwater associated with pesticide and nitrogen fertilizer use. The MGSP addresses the financial and technical constraints that drive management decisions and coordinates local, state, and federal agency resources to help protect groundwater.

MDA Regional offices:

Region 1
2401 12th Ave. N
Escanaba, MI 49829
Phone: (906) 786-5462
Toll Free: (888) 684-1158
Fax: (906) 786-4196

Region 2
701 S. Elmwood, Ste. 9
Traverse City, MI 49684-3185
Phone: (231) 922-5210
Fax: (231) 922-5236

Region 3
350 Ottawa NW – Unit #1
Grand Rapids, MI 49503-2348
Phone: (616) 356-0600
Fax: (616) 356-0622

Region 4
1585 Concentric Blvd.
Saginaw, MI 48604
Phone: (989) 757-7501
Fax: (989) 757-7505

Region 5
4032 M-139, Bldg. 116
St. Joseph, MI 49085-9647
Phone: (269) 428-2575
Fax: (269) 429-1007

Region 6
525 W. Allegan Street
Lansing, MI 48933
(P.O. Box 30017, Lansing, MI 48909)
Food and Dairy Division:
Phone: (517) 373-1060
Fax: (517) 373-3333
Pesticide and Plant Pest Management Division:
Phone: (517) 373-1087
Fax: (517) 335-4540

Region 7
Cadillac Place
3066 W Grand Blvd, 3rd Floor, Suite 300
Detroit, MI 48202
Food and Dairy Division:
Phone: (313) 456-1300
Fax: (313) 456-3388
Pesticide and Plant Pest Management Division:

Phone: (313) 456-1360
Fax: (313) 456-3388

Michigan Historical Center
702 West Kalamazoo Street
P.O. Box 30740
Lansing, MI 48915
Phone: (517) 373-3559
TDD: (517) 373-1592
http://www.michiganhistory.org

- State Archives of Michigan
  With documents dating back to 1792, the State Archives of Michigan houses much of Michigan's recorded heritage. More than 80 million state and local government records and private papers, 300,000 photographs, 500,000 maps and materials on other media, such as film and audio tapes, are available for public research. The archives' holdings are particularly valuable in tracing genealogy, legislation, land surveys, military service and governmental policy on mental health, public health, education, labor, welfare and corrections.

- Office of the State Archaeologist (OSA)
  OSA records, investigates, interprets and protects more than 18,000 land-based archaeological sites in Michigan. The office maintains the state archaeological site file and artifacts collected from state lands. It also reviews diverse state and federal projects to determine their potential impact on Michigan's archaeological resources.

- State Historic Preservation Office (SHPO)
  Established in response to the National Historic Preservation Act of 1966, the SHPO identifies, evaluates, registers, interprets and protects Michigan's wealth of historic properties, from significant buildings to shipwrecked vessels. The SHPO provides communities and preservation organizations with a variety of services, training and funding opportunities. It also reviews nominations to the National Register of Historic Places and oversees the State Register of Historic Sites, the Michigan Historical Marker Program, the Centennial Farm Program, the Certified Local Government Program and the Historic Preservation Tax Incentives Program. Under Section 106 of the National Historic Preservation Act, the SHPO reviews all federal undertakings for impacts on historic properties.

Center for Shared Solutions and Technology Partnerships (CSSTP)
Romney Building, 10th Floor
111 S. Capitol Ave.
Lansing, MI 48933
Phone: (517) 373-7910
Fax: (517) 373-2939
http://www.michigan.gov/cgi

The Center for Geographic Information and Office of Technology Partnerships combined efforts in 2009 to form the Center for Shared Solutions and Technology Partnerships (CSSTP). CSSTP provides leadership, technical expertise and policy for the development, use, dissemination, promotion and sharing of geographic information in Michigan.

Department of Energy, Labor & Economic Growth (DELEG)
P.O. Box 30004
Lansing, MI 48909

Phone: (517) 373-1820
Fax: (517) 373-2129
http://www.michigan.gov/dleg

DELEG houses the Bureau of Construction Codes (BCC), the Bureau of Fire Services, the Land Bank Fast Track Authority, and the Michigan State Housing Development Authority (MSHDA).

Michigan Department of Transportation (MDOT)
State Transportation Building
425 West Ottawa St.
P.O. Box 30050
Lansing, MI 48909
Phone: (517) 373-2090
http://www.michigan.gov/mdot

The Michigan Department of Transportation is divided into six Bureaus: Aeronautics and Freight, Bureau of Transportation Planning, Highway Delivery, Highway Development and Passenger Transportation Bureau. Each Bureau takes an active role in the planning, construction and maintenance of Michigan's transportation system.

MDOT Regional Offices:

Superior Region Office
1818 Third Avenue North
Escanaba, MI 49829
Phone: (906) 786-1800
Fax: (906) 789-9775
Toll Free: (888) 414-MDOT

North Region Office
1088 M-32 East
Gaylord, MI 49735
Phone: (989) 731-5090
Fax: (989) 731-0536
Toll Free: (888) 304-MDOT

Grand Region Office
1420 Front Avenue, N.W.
Grand Rapids, MI 49504
Phone: (616) 451-3091
Fax: (616) 451-0707
Toll Free: (866) 815-MDOT (6368)

Bay Region Office
55 E. Morley Dr.
Saginaw, MI 48601
Phone: (989) 754-7443
Fax: (989) 754-8122

Southwest Region Office
1501 Kilgore Road
Kalamazoo, MI 49001
Phone: (269) 337-3900
Fax: (269) 337-4071

University Region Office
4701 W. Michigan Ave.
Jackson, MI 49201
Phone: (517) 750-0401
Fax: (517) 750-4397

Metro Region Office
18101 W. Nine Mile Rd.
Southfield, MI 48075
Phone: (248) 483-5100
Fax: (248) 569-3103

Michigan United Conservation Clubs (MUCC)
2101 Wood St.
Lansing, MI 48912-3785
Phone: (517) 371-1041
Fax: (517) 371-1505
http://www.mucc.org

MUCC has hydrographic charts for 2,500 of Michigan's lakes. Additionally, they can provide topographical and county maps.

Michigan State University (MSU)

- **MSU Extension**
  108 Agriculture Hall
  East Lansing, MI 48824-1039

Phone: (517) 355-2308
Fax: (517) 355-6473
Toll Free: 1 (888) MSUE-4MI
(1 (888) 678-3464)
E-mail: msue@msue.msu.edu
http://www.msue.msu.edu

Since its beginning nearly 80 years ago, Extension in Michigan has focused on bringing knowledge-based educational programs to the people of the state to improve their lives and communities. Today, field agents supported by on-campus faculty members are serving every county, providing base programs focusing on agriculture and natural resources; children, youth and families; and community and economic development.

- **Department of Agricultural, Food and Resource Economics**
  Agriculture Hall
  Michigan State University
  East Lansing, MI 48824-1039
  Phone: (517) 355-4563
  Fax: (517) 432-1800
  Email: aec@msu.edu
  http://www.aec.msu.edu/

- **Department of Community, Agriculture, Recreation and Resource Studies (CARRS)**
  131 Natural Resources Building
  Michigan State University
  East Lansing, Michigan 48824-1222
  Phone: (517) 353-5190
  Fax: (517) 353-8994
  http://www.carrs.msu.edu

- **Department of Biosystems and Agricultural Engineering (BAE)**
  216 Farrall Hall
  Michigan State University
  East Lansing, MI 48824-1323
  Phone: (517) 355-4720
  Fax: (517) 432-2892
  http://www.egr.msu.edu/AgE/

- **Department of Animal Science (ANS)**
  Anthony Hall
  Michigan State University
  East Lansing, MI 48824-1225
  Phone: (517) 355-8383
  Fax: (517) 353-1699
  Email: ans@msu.edu
  http://www.canr.msu.edu/dept/ans/

- **Department of Crop and Soil Sciences**
  Plant and Soil Sciences Building
  Michigan State University
  East Lansing, Michigan 48824
  Phone: (517) 355-0271
  http://www.css.msu.edu

- **Department of Geography**
  116 Geography Building
  East Lansing, MI 48824
  Phone: (517) 355-4649
  Fax: (517) 432-1671
  Email: geo@msu.edu
  http://www.geo.msu.edu

- **School of Planning, Design and Construction (SPDC)**
  Michigan State University
  101 Human Ecology
  East Lansing, MI 48824
  Phone: (517) 432-0704
  Fax: (517) 432-8108
  Email: spdc@msu.edu
  http://spdc.msu.edu

- **Michigan State University Agricultural Weather Office**
  Michigan Climatological Resources Program
  236 Geography Building
  Michigan State University
  East Lansing, MI 48824-1115
  Phone: (517) 432-4755
  Email: agwxinfo@www.agweather.geo.msu.edu

http://www.agweather.geo.msu.edu

The MSU Agricultural Weather Office (MSUAWO) is jointly sponsored by MSU Extension, Michigan Agricultural Experiment Station, MSU's Department of Geography, and with the cooperation of the Michigan Department of Agriculture/Climatology Program. MSUAWO provides real-time up-to-the-hour weather information for the Michigan area and beyond.

- **The Institute of Water Research (IWR) at MSU**
  Michigan State University
  101A Manly Miles Building
  1405 South Harrison Road
  East Lansing, MI 48823-5243
  Phone: (517) 353-3742
  Fax: (517) 353-1812
  http://www.iwr.msu.edu

  The Institute of Water Research (IWR) at MSU provides timely information for addressing contemporary land and water resource issues through coordinated multidisciplinary efforts using advanced information and networking systems. The IWR endeavors to strengthen MSU's efforts in nontraditional education, outreach, and interdisciplinary studies utilizing available advanced technology, and partnerships with local, state, regional, and federal organizations and individuals. Activities include coordinating education and training programs on surface and ground water protection, land use and watershed management, and many others. IWR can provide aquiferial, pesticide leaching, and other types of water-related maps.

- **Land Policy Institute (LPI)**
  Michigan State University
  Manly Miles Building, 3rd Floor
  1405 South Harrison Road
  East Lansing, MI 48823
  Phone: (517) 432-8800
  Fax: (517) 432-8769
  Email: mail@landpolicy.msu.edu
  http://www.landpolicy.msu.edu

  LPI provides science based information to inform state and local level policy-making in the areas of land use and strategic growth. Information is available on their website in the form of reports, policy briefs, case studies, brochures and fact sheets. Webcasts, podcasts, tool kits, and other resources to assist in land use and land policy decision-making can also be found on their website. LPI also offers educational training through the Michigan Citizen Planner program and assists local planning bodies through the Planning & Zoning Center at MSU. (See below)

- **Michigan Citizen Planner**
  Michigan State University
  308 Manly Miles Building
  1405 S. Harrison Road
  East Lansing, MI 48823
  Phone: (517) 432-7600
  Fax: (517) 432-7107
  Email: cplanner@msu.edu
  http://citizenplanner.msu.edu

  The Michigan Citizen Planner Program, an MSU Extension program within the MSU Land Policy Institute, offers land use education and training to locally appointed and elected planning officials throughout Michigan. The program is a non-credit course series offered in a classroom setting and online.

- **Planning & Zoning Center at MSU (PZC)**

Michigan State University
318 Manly Miles Building
1405 S. Harrison Road
East Lansing, MI 48823-5245
Phone: (517) 432-2222
Fax: (517) 432-3222
http://pzcenter.msu.edu

PZC focuses research and engages in outreach designed to improve land use decisions by and coordination between governmental entities. PZC also maintains online information resources, develops decision support systems and serves as an information/data clearinghouse to enhance city, village, township, county, regional and state planning efforts. Helping planning bodies understand their options, and arrive at optimal solutions within the policy context they operate in, is a key component of the research and outreach work of PZC.

- **Remote Sensing and Geographic Information Science (RS&GIS) Research and Outreach Services**
  Geography Building – 2nd Floor
  Michigan State University
  East Lansing, MI 48824
  Phone: (517) 353-7195
  Fax: (517) 353-1821
  Email: info@rsgis.msu.edu
  http://www.rsgis.msu.edu

Michigan Association of Planning (MAP)
219 South Main Street
Suite 300
Ann Arbor, MI 48104
Phone: (734) 913-2000
Fax: (734) 913-2061
Email: info@planningmi.org
http://www.planningmi.org

MAP is dedicated to promoting sound community planning that benefits the residents of the state. The society was established in 1945 to achieve a desired quality of life through comprehensive community planning that includes opportunities for a variety of lifestyles and housing, employment, commercial activities, and cultural and recreational amenities. MAP holds regular training workshops around the state.

Michigan Townships Association
512 Westshire Dr.
Lansing, MI 48917
Phone: (517) 321-6467
Fax: (517) 321-8908
http://www.michigantownships.org

The MTA is a non-profit organization formed in 1953 to provide a unified voice for Michigan's township governments. MTA keeps members informed of current township issues through seminars, publications, county chapters, written communication, telephone calls, and legislative Faxes. The MTA provides information on township operations and responds to requests for information from township officials. The MTA also has numerous sample ordinances available. Some of the information offered is for member townships only.

The Michigan Association of Regions
913 W. Holmes, Suite 201
Lansing, MI 48910
Phone: (517) 393-0342
Fax: (517) 393-4424
http://www.miregions.org

The Michigan Association of Regions is an association of the 14 regional planning and development agencies across Michigan. The organization's purpose is fostering multi-jurisdictional problem solving and intergovernmental cooperation to enhance the quality of life in Michigan.

Appendix B - Information and Technical Support

The Southeast Michigan Council of Governments (SEMCOG)
535 Griswold St., Suite 300
Detroit, Michigan 48226
Phone: (313) 961-4266
Toll Free: (800) 961-3334
Email: infocenter@semcog.org
http://www.semcog.org

Region 2 Planning Commission
Jackson County Tower Building, 9th Floor
120 W. Michigan Avenue
Jackson, MI 49201
Phone: (517) 788-4426
Fax: (517) 788-4635
http://www.Region2Planning.com

South Central Michigan Planning Council
PO Box 2137
Portage, MI 49081
Phone: (616) 323-0045
Fax: (269) 323-1544

Southwest Michigan Planning Commission
185 E. Main Street, Suite 701
Benton Harbor, MI 49022
Phone: (269) 925-1137
Fax: (269) 925-0288
Email: swmpc@swmpc.org
http://www.swmpc.org

Genesee County Metro Planning Commission
1101 Beach Street, Room 223
Flint, MI 48502
Phone: (810) 257-3010
Fax: (810) 257-3185

Tri-County Regional Planning Commission
913 W. Holmes Road, Suite 201
Lansing, MI 48910
Phone: (517) 393-0342
Fax: (517) 393-4424
http://www.tri-co.org

East Central Michigan Planning and Development Region
3144 Davenport Avenue, Suite 200
Saginaw, MI 48602
Phone: (989) 797-0800
Fax: (989) 797-0896
http://www.ecmpdr.org

West Michigan Regional Planning Commission
820 Monroe NW, Suite 214
Grand Rapids, MI 49503-1478
Phone: (616) 774-8400
Fax: (616) 774-0808
Email: info@wmrpc.org
http://www.wmrpc.org

Northeast Michigan Council of Governments
121 E. Mitchell St.
PO Box 457
Gaylord, MI 49734
Phone: (989) 732-3551
Fax: (989) 732-5578
http://www.nemcog.org

Northwest Michigan Council of Governments
2194 Dendrinos Drive
Traverse City, MI 49684
Mailing Address:
PO Box 506
Traverse City, MI 49685-0506
Phone: (231) 929-5000
Toll Free: 1 (800) 692-7774
Fax: (231) 929-5012
http://www.nwm.org

Eastern Upper Peninsula Regional Planning and Development Commission
524 Ashmun Street
Sault Ste. Marie, MI 49783
Mailing Address:

PO Box 520
Sault Ste. Marie, MI 49783
Phone: (906) 635-1581
Fax: (906) 632-4255
Email: eupregion@lighthouse.net
http://www.eup-planning.org

Central Upper Peninsula Planning and Development Regional Commission (CUPPAD)
2415 14th Avenue South
Escanaba, MI 49829
Phone: (906) 786-9234
Toll Free: (800) 562-9828
Fax: (906) 786-4442
Email: cuppad@chartermi.net
http://www.cuppad.org

Western Upper Peninsula Planning and Development Region
PO Box 365
Houghton, MI 49931
Phone: (906) 482-7205
Fax: (906) 482-9032
http://www.wuppdr.org

West Michigan Shoreline Regional Development Commission
316 Morris Avenue, Suite 340
Muskegon, MI 49440
Mailing Address:
PO Box 387
Muskegon, MI 49443-0387
Phone: (231) 722-7878
Fax: (231) 722-9362
Email: wmsrdc@wmsrdc.org
http://www.wmsrdc.org

The Planning Commissioners Journal
PO Box 4295
Burlington, VT 05406
Phone: (802) 864-9083
Fax: (802) 862-1882
Email: pcjoffice@gmail.com
http://pcj.typepad.com

The PCJ is a quarterly publication designed for citizen planners, including (but certainly not limited to) members of local planning commissions and zoning boards. We make every effort to ensure that what we run is clear and understandable to nonprofessionals. We have also put considerable effort into ensuring that the PCJ is attractively designed and easy-to-read.

Michigan Farm Bureau
7373 West Saginaw Highway
Lansing, MI 48917
Mailing Address:
P.O. Box 30960
Lansing, MI 48909-8460
Phone: (517) 323-7000
Toll Free: (800) 292-2680
http://www.michfb.com/

The Michigan Farm Bureau can aid in securing legislation to assist in the expansion of animal agriculture. The Farm Bureau organization can assist county and townships to develop ordinances to protect non-agriculture residents' concerns while providing an opportunity for livestock expansion.

Michigan Cattlemen's Association
2145 University Park, Suite 300
Okemos, MI 48864
Phone: (517) 347-8117
Fax: (517) 347-0919
Email: micattlemen@aol.com
http://www.micattlemen.org

The Michigan Cattlemen's Association (MCA) is an organization of beef producers and is an affiliate of the National Cattlemen's Association. MCA works to represent the Michigan cattle industry in legislative matters at the local, state and national levels. The association also coordinates and arranges meetings, tours,

and other activities in an effort to promote good-will and understanding in and for the cattle industry.

Michigan Allied Poultry Industries, Inc.
George House
Executive Director
P.O. Box 242
Ada, MI 49301
Phone: (616) 676-5593
Fax: (616) 676-1494
http://web1.msue.msu.edu/poultry/MAPI.htm

The purpose of Michigan Allied Poultry Industries, Inc. (MAPI) is to promote the Michigan poultry industry. MAPI serves as the main industry communicator to government, the university (MSU), national poultry organizations, allied agricultural organizations and consumers. It provides general communications with its members about its activities with a particular focus on environmental and disease issues.

Michigan Pork Producers
4801 Willoughby, Suite 5
Holt, MI 48842
Phone: (517) 699-2145
Fax: (517) 699-2233
http://www.mipork.org

The Michigan Pork Producers Association is a state affiliate of the National Pork Producers Council and administers programs in pork promotion, research and consumer information supported by Michigan's pork producers and importers. The organization promotes an active Environmental Assurance Program that provides pork producers practical, proactive educational information which enables them to identify and economically address the key management issues affecting the environmental quality of their operations and communities.

Michigan Milk Producers Association
41310 Bridge Street
Novi, MI 48375
Mailing Address:
P.O. Box 8002
Novi, MI 48376-8002
Phone: (248) 474-6672
Fax: (248) 474-0924
http://www.mimilk.com/

Michigan Milk Producers Association is a member owned and operated dairy cooperative serving over 2,300 dairy farmers in Michigan, Ohio, Indiana and Wisconsin. Established in 1916, MMPA is the largest dairy cooperative in Michigan.

Federal Information Sources

Natural Resources Conservation Service (NRCS)
14th Street & Independence Avenue, SW
Washington, D.C. 20250
Mailing address:
Natural Resources Conservation Service
Attn: Public Affairs Division
P.O. Box 2890
Washington, DC 20013
http://www.nrcs.usda.gov

Michigan NRCS Office
3001 Coolidge Road, Suite 250
East Lansing, MI 48823
Phone: (517) 324-5270
Fax: (517) 324-5171
http://www.mi.nrcs.usda.gov

The NRCS has a wide variety of information available regarding natural resources. The NRCS provides base map coverage, status maps, the National Resources Inventory (NRI) database, and data bases on soil, water and climate, plants for conservation, and information on many other subjects. For more information contact the appropriate

division listed below. For local assistance, contact the Michigan NRCS Office to locate a service center in your county.

Divisions:

Conservation, Planning and Technology Assistance Division
Phone: (202) 720-8851
Fax: (202) 720-2998

Conservation Engineering Division
Phone: (202) 720-2520
Fax: (202) 720-0428

Easement Programs Division
Phone: (202) 720-1854
Fax: (202) 720-9689

Ecological Sciences Division
Phone: (202) 720-2587
Fax: (202) 720-2646 or 720-1814

Financial Assistance Programs Division
Phone: (202) 720-1845
Fax: (202) 720-4265

International Programs Division
Phone: (301) 504-2271
Fax: (301) 504-0382

National Cartography and Geospatial Center
Phone: (817) 509-3400
Fax: (817) 509-3469

Resource Conservation, Development and Outreach Division
Phone: (202) 720-2847 or 720-2241
Fax: (202) 690-0639

Resources Inventory and Assessment Division
Phone: (301) 504-2300
Fax: (301) 504-3788

Soil Survey Division
Phone: (202) 720-1820
Fax: (202) 720-4593

National Wetlands Inventory

U.S. Fish and Wildlife Service (BRMS)
4401 N. Fairfax Drive, Room 830
Arlington, VA 22203
Phone: (703) 358-2161
Fax: (703) 358-1869
http://www.fws.gov/wetlands

The National Wetlands Inventory plans, directs, coordinates, and monitors the gathering, analysis, dissemination, and evaluation of information relating to the location, quantity, and ecological importance of the Nation's wetlands.

Federal Emergency Management Agency (FEMA)
500 C. Street S.W., Room 820
Washington, D.C. 20472-0001
Disaster Assistance: (800) 621-FEMA
TTY: (800) 462-7585
http://www.fema.gov

FEMA's activities include advising on building codes and flood plain management, teaching people how to get through a disaster, helping equip local and state emergency preparedness, coordinating the federal response to a disaster, making disaster assistance available to states, communities, businesses and individuals, training emergency managers, supporting the nation's fire service, and administering the national flood and crime insurance programs. Floodplains maps are available.

- Map Service Center (MSC)
  PO Box 1038
  Jessup, MD 20794-1038
  Phone: (800) 358-9616
  Fax: (800) 358-9620
  Email: FEMA-MSCservice@dhs.gov
  http://msc.fema.gov

MSC is just one of a suite of services planned to expedite the dissemination of FEMA's flood map and insurance products

that support FEMA, its customers, and the user community. MSC is a customer-based service designed to provide the latest information and support services to users as part of FEMA's contribution to the National Information Infrastructure.

United States Census Bureau
Census Bureau Customer Services
Bureau of the Census
Washington, DC 20233
Phone: (800) 923-8282
TDD: (301) 457-4611
http://www.census.gov

The U.S. Census Bureau collects and provides timely, relevant, and quality data about the people and economy of the United States. Census data is available through publications, CD-ROM disks, other computer media, and on-line through the Internet.

United States Geological Survey (USGS)
National Center
12201 Sunrise Valley Drive
Reston, VA 20192
Phone: (703) 648-4000
http://www.usgs.gov/aboutusgs/

The U.S. Geological Survey provides the Nation with reliable, impartial information to describe and understand the Earth. This information is used to minimize loss of life and property from natural disasters, manage water, biological, energy, and mineral resources, enhance and protect the quality of life, and contribute to wise economic and physical development.

- Science Information and Library Service Centers (ESIC)
  Phone: (888) ASK-USGS
  (888) 275-8747

ESIC offers nationwide information and sales service for USGS map products and earth science publications. ESIC provides information about geologic, hydrologic, topographic, and land use maps, books, and reports; aerial, satellite, and radar images and related products; earth science and map data in digital format and related applications software; and geodetic data. ESIC can also provide information about earth science materials from many public and private producers in the United States using automated catalog systems for information retrieval and research services.

- Earth Resources Observation and Science (EROS) Data Center
  Customer Services
  U.S. Geological Survey
  Earth Resources Observation and Science (EROS)
  47914 252nd Street
  Sioux Falls, SD 57198-0001
  Phone: (605) 594-6151 (M-F, 8:00 am- 4:00 pm CT)
  TDD: (605) 594-6933 (7:30 am- 4:00 pm CT)
  Fax: (605) 594-6589 (24 hours)
  Email: custserv@usgs.gov (24 hours)
  http://eros.usgs.gov

Data collection and distribution are the business of the USGS's Earth Resources Observation Systems (EROS) Data Center, or the EDC. Besides handling data from several series of satellites, the EDC archives more than 8 million photographs taken from airplanes. The EDC is home to the National Satellite Land Remote Sensing Data Archive, an immense storehouse of information on land-surface phenomena, now dating back three decades. In recent years the EDC also has become the distributed active archive center, or DAAC, for land processes on behalf of NASA's Mission to Planet Earth.

- USGS Water Science Centers
  Michigan Director's Office
  6520 Mercantile Way, Suite 5
  Lansing, MI 48911-5991
  Phone: (517) 887-8903
  Fax: (517) 887-8937
  http://water.usgs.gov

The USGS Water Science Centers are designed to serve as a focus for the dissemination of water-resources information to all levels of government, academia, the private sector, and the general public. Services include referrals to appropriate sources of hydrologic information, as well as providing single copies of Fact Sheets on various water resources topics.

National Oceanic and Atmospheric Administration (NOAA)
National Climatic Data Center
Federal Building
151 Patton Ave.
Asheville, NC 28801-5001
Phone: (828) 271-4800
Fax: (828) 271-4876
http://www.ncdc.noaa.gov

The National Climatic Data Center is a source for weather and climate information.

MAPS/DATA

1. AERIAL PHOTOS - Available from the DNR, Forest, Mineral and Fire Management Division, Box 30452, Lansing, MI 48909 (5th Floor, Mason Building), phone: (517) 373-1275 or (517) 373-9123.

2. COUNTY MAPS - Available from the DNR, Land and Facilities Division, Box 30033, Lansing, MI 48909 (8th Floor, Mason Building), phone: (517) 241-4370.

3. GEOLOGICAL MAPS - Bedrock Geological Maps, Surface Geological Maps, River Basin and Drainage Maps, Base Maps, Oil and Gas Maps are available from the DEQ, Office of Geological Survey, 525 West Allegan Street, Lansing, MI 48913, (Constitution Hall, 1st Floor, South Tower), phone: (517) 241-1515.

4. INLAND LAKE MAPS - Scale and detail vary. Approximate size: 18"x24". Shows lake outline, depth contour, weed beds and shoreline features. Available from the DNR Fisheries Division, Box 30446, Lansing, MI 48909 (8th Floor, Mason Building), phone: (517) 373-1280. Maps can be found online at http://www.michigan.gov/dnr.

5. RECREATIONAL TRAIL MAPS - Maps of Michigan's multi-use trails and greenways available from Michigan Trails & Greenways Alliance (MTGA), 1213 Center St., Lansing, MI 48906, phone: (517) 485-6022, online at http://www.michigantrails.org.

6. ORIGINAL GOVERNMENT LAND OFFICE MAPS AND FIELD NOTES - Approximate size: 18" x 24". Available from the Michigan Historical Center, 702 West Kalamazoo Street (Box 30740), Lansing, MI 48915, phone: (517) 373-3559.

7. SNOWMOBILE, HIKING & CROSS-COUNTRY SKIING MAPS - Books containing such maps are available at varying prices from the DNR Forest, Mineral and Fire Management Division, Box 30452, Lansing, MI 48909 (5th

Floor Mason Building), phone: (517) 373-1275.

8. STREAM MAPS OF MICHGAN – Available from the DNR Fisheries Division, Box 30446, Lansing, MI 48909 (8th Floor, Mason Building), phone: (517) 373-1280. Maps can be found online at http://www.michigan.gov/dnr.

9. TOPOGRAPHIC MAPS – 7 ½ minute maps l: 24,000, 1: 100,000 and l: 250,000 maps of Michigan. Available from United States Geological Survey (USGS). Phone: (888) ASK-USGS. Maps can be purchased online at http://store.usgs.gov.

10. WILDLIFE MAPS - Maps of individual game areas: 8 ½" x 11". Michigan's Public Lands: Shows all state parks, forests, fish hatcheries, game areas, etc. 8 ½" x 11". Public lands in Zone 3: Shows state game and wildlife areas and state recreational areas in southern part of the lower peninsula. Local area maps are available from the DNR Field Offices or from the DNR Wildlife Division, Box 30444, Lansing, MI, 48909 (4th Floor, Mason Building), phone: (517) 373-1263. Maps can be found online at http://www.michigan.gov/dnr.

Bibliography

Basic Planning Literature

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