

**Ohio Agricultural Zoning:  
Conditions and Recommendations**

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## **Introduction**

A story of growth and change in traditionally rural areas is occurring throughout the United States. Ohio illustrates the story well, with unincorporated townships growing at a faster rate in 2000 than incorporated areas and more people residing in townships than in either cities or villages (Clark, Sharp et al. 2003). This trend in “exurbanization ” brings changes to the rural landscape, as non-farmers move further and further from population centers and convert rural farmland to non-farm land uses. In a state like Ohio, it is local, rural/unincorporated governments that must make urban-type decisions for areas where farming is typically the primary land use. Governments desiring to mediate urban influences on farmland commonly look to “agricultural zoning” or “agricultural protection zoning” as a solution. Agricultural zoning designates districts for agricultural land uses and aims to protect farmland from incompatible land uses through a variety of techniques (Coughlin 1991; American Farmland Trust 1998).

While we know that agricultural zoning techniques are available to rural governments, we know little about whether and how these governments utilize such techniques. How do rural zoning ordinances address agriculture and agricultural land? What agricultural zoning techniques are rural governments implementing? Do rapidly urbanizing areas have different agricultural zoning approaches than slower growing areas? Are there new, innovative techniques in practice? Our study proposes to answer these questions by examining current rural zoning ordinances in a variety of rural and exurban communities. The resulting descriptive analysis of zoning ordinances should yield a better understanding of the current agricultural zoning landscape, and a basis for recommendations to communities grappling with growth and change in traditionally rural areas.

We begin this paper with a literature review on the effects of urbanization on agriculture and the agricultural zoning techniques developed to mediate these effects. Previous studies on agricultural zoning are presented, followed by a description of our project and study methods. Next we address our findings and conclusions. Finally, we offer recommendations on agricultural zoning and suggest future research needs.

### **Effects of Urbanization on Agriculture**

It is well established that urbanization has direct and indirect effects on agriculture. Many studies have evaluated urbanization's negative impacts on agricultural land and the practice of agriculture (Berry 1978; Coughlin 1980; Lockeretz 1989; Bradshaw and Muller 1998; Heimlich and Anderson 2001). A direct negative effect is land conversion, while indirect effects include competition for land, increased production costs, farm fragmentation, increasing taxes and creation of hostile farming climates. Producers in urbanizing areas may have to deal with crop theft, litter, vandalism, domestic pets, and all-terrain vehicles on their farms, in addition to complaints from new neighbors. New residents unaccustomed to farm practices may encounter dust, smells, and chemical sprays (Daniels and Bowers 1997). The struggle for the "highest and best use" has always been a part of the intersection between rural and urban and rural/urban uses of land.

Up until the mid-1970s, most researchers characterized the urban-agriculture relationship as uni-dimensional, that urbanization assuredly was detrimental to agriculture and this was a conflict over which urbanization always prevailed (Bryant and Johnston 1992). However, urbanization is "present" for those engaged in agriculture, but may not halt the operation and otherwise influence the farmer's environment. Farmers can capitalize on urbanization to cope with or avoid the negative influences (Bryant and Johnston 1992). For example, farmers can

adapt to new opportunities by intensifying crop production, changing crops or inputs. The introduction of more non-farm neighbors in an agricultural area can open up new markets and create additional customers for these markets (Heimlich and Anderson, 2001). Farmers can capitalize off face-to-face interactions at an on-farm market or U-pick operation. Or, farmers can offer on-farm experiences via agritainment or agri-tourism (McGehee and Kim 2004). Finally, the effects of urbanization can vary by commodity as the commodity chain also varies (Thomas and Howell 2003). Regardless of whether urbanization positively or negatively influences (or neither) agriculture in an area, urbanization brings change to once agricultural areas.

### **Rural and Agricultural Zoning**

As exurbanization occurs in traditionally agricultural areas, communities initiate local planning and zoning to manage urbanization's impacts (Garkovich 1982). Local zoning may be in response to desires to protect land values, promote orderly growth, or prevent a locally unwanted land use. Furthermore, adoption of local land use regulations may coincide with the changing demographics of a community as urbanization occurs. A study by Pratt and Rogers (1986) conducted across 79 communities examined rates of community growth and average socioeconomic status and found that the higher the population growth and average economic status of community residents, the more likely that land use controls would be adopted by the community. The use of zoning as a land use control in rural areas originated in Wisconsin in the 1930s, but did not become popular until several decades later (Jacobs, Jordahl et al. no date). Agricultural zoning and agricultural protective zoning, specifically, did not develop until mid-1970s, when suburbanization gained speed.

### *Purposes of Agricultural Zoning*

The purposes of agricultural zoning vary greatly. An agricultural district might not have a clear purpose, arising simply as the remainder of the landscape after identification of residential, commercial and industrial districts. Alternatively, agricultural districts may strive to limit non-agricultural development in the area. When the purpose is farmland protection, agricultural zoning is most often the first technique used to protect farmland from incompatible development. In the 1970s, when interest in farmland protection was revived, agricultural zoning sought to protect the valuable land resource and legitimacy for agricultural zoning was tied to the quality of the soil (Coughlin 1991). As more and more people moved to agricultural areas, agricultural zoning became a tool for addressing additional issues such as promoting orderly growth, safeguarding resources like ground water recharge areas and wildlife habitat, supporting local agricultural business infrastructure and opportunities for local foods, preserving agricultural heritage, protecting aesthetic values, and separating farm and non-farm activities (Daniels and Bowers 1997; Hellerstein, Nickerson et al. 2002).

Daniels (1999) asserts that the purpose of agricultural zoning must be to protect agriculture as a working landscape. Otherwise, when communities use agricultural zoning to provide open space but disregard the needs of agriculture, “sprawl” can result in the form of overly large residential lots or too much residential development. An agricultural district meant to preserve agriculture must recognize that farm operations rely on the local landscape and are often part of the local economic base. A working farm should be near other working farms so that support businesses can survive and a critical mass of farms and farmland must be included in the agricultural district (Daniels 1999).

### *Types of Agricultural Zoning*

Many experts describe agricultural zoning in terms of a continuum based upon exclusivity of non-agricultural land uses (Coughlin 1991; Daniels and Bowers 1997; Olsen 1999; Cordes 2002). Coughlin's (1991) typology separates zoning ordinances into exclusive or non-exclusive zoning. Exclusive zoning, which its name implies, allows only agricultural uses on the land, with a farm residence typically allowed. Non-exclusive zoning, which is much more common, permits non-agricultural uses and can take one of two forms: large minimum lot sizes or area-based zoning. Large minimum lot zoning typically allows residential use on a lot that is considered large relative to local land settlement. In the 1970s, this philosophy translated into a five acre minimum lot, as in Ohio. In other places, this philosophy translated into an 80 acre minimum lot, as in Oregon. Area-based zoning can be "fixed" or "sliding scale". Fixed area-based zoning establishes the allowable number of dwelling units according to the total area of the parcel; for instance, one dwelling per forty acres. Typically the dwellings are to be built on small lots. In sliding scale area-based zoning, the number of dwelling units decreases as the total parcel acreage increases (Coughlin 1991).

Daniels and Bowers (1997) present a similar typology but add agricultural buffer zoning. Agricultural buffers can consist of large minimum lots of five to ten acres for zoning of farmland, or cluster developments next to a farm to protect open space. Olsen (1999) also offers a comparable typology, and includes clustering of dwelling units in area-based agricultural zoning. In addition, he includes conditional use districts that permit farming activities as the primary uses; other activities may be permitted as conditional uses upon showing that they will not conflict with agricultural uses.

### *Analysis of Agricultural Zoning Types*

For the purposes of farmland protection, some authors have criticized the zoning types discussed above (Olsen 1999; Bowers 2001; Paster 2004). Perhaps the most cited criticism relates to large minimum lot size zoning. The purpose of large minimum lot zoning is to make the lot too large for residential use (Bowers 2001). Conversely, the minimum lot size should reflect the minimum amount of farmland needed to successfully conduct the business of agriculture. Unfortunately, many large lot zoning ordinances create lots larger than needed for residential use but too small to sustain a farm. For instance, the Rural Zoning Handbook for Ohio suggests that any minimum lot over five acres would be difficult to develop because of subdivision regulations and therefore would be a deterrent to developers (Community Development Division 1973). Nelson argues that any minimum lot zoning under forty acres encourages rural sprawl because people are willing to purchase and develop lots under forty acres (1992).

In agricultural districts designed to support agriculture, agricultural activities are the preferred land use, and Olsen explains that uses that conflict with agricultural activities are to be limited, prohibited or regulated (1999). A typical non-exclusive agricultural district, more appropriately named a “rural-residential” district, that allows both agricultural uses and non-agricultural housing does not provide favorable conditions for either.

Basic Euclidean zoning creates a hierarchy of land uses that places agriculture on the bottom of the hierarchy. A residential district, on the top of the hierarchy, is relatively an exclusive use district. An agricultural district, at the bottom of the hierarchy, is a non-exclusive “catch all” for all land uses, including those that would not fit in any other district. For this

reason, residential landowners have greater certainty of future uses in their respective districts than agricultural landowners in agricultural districts (Fischel 2004).

The literature presents specific recommendations for approaching agricultural zoning for the purpose of farmland protection. Coughlin (1991) suggests that sliding scale area-based agricultural zoning has the most desirable characteristics. The area-based approach can protect the land base and permit flexibility in site planning at the same time (Coughlin 1991). The recommended model ordinance found in Daniels and Bowers (1997) is an area-based model. Cordes (2002) offers several future directions for how agricultural zoning should interact with the local comprehensive plan. Foremost, agricultural districts should restrict permitted uses to farming activities. Next, the district should target a critical mass of farmland in order to maintain a healthy agricultural economy. Agricultural zoning should be proactive, identifying lands for agriculture in a comprehensive plan before the community experiences growth pressure. In addition, the comprehensive plan must demonstrate where future growth can occur and agricultural zoning should combine with other land protection efforts to provide the necessary level of protection agricultural operations need to stay in business (Cordes 2002).

### **Previous National and Ohio Agricultural Zoning Studies**

To date, the only studies of actual agricultural zoning have examined whether or not a community has an agricultural district, according either to the title of a district or the permitted uses in a district. Under such parameters, the most recent nationwide survey conducted by American Farmland Trust in 1995 showed that 700 jurisdictions had “agricultural zoning”. In Ohio, a similar census was conducted in 1998 which identified townships or counties with agricultural zoning, based upon the existence of an area zoned and titled as an “agricultural district” (Prichard and Stamm 1998). An unpublished study in 2003 shows that about 40% of



zoning resolutions analyzed had an “agricultural district” (Evans-Cowley and Gough 2006). The study states that a little over half of those townships, or 26% of Ohio’s zoned townships, have some form of agricultural zoning that aims to preserve agricultural land, according to survey respondents.

## **Our Study**

While previous research documents the prevalence of zoning districts that include agriculture or are named “agricultural districts”, the studies do not examine the content of the zoning ordinances themselves in relation to agriculture. Scholars and practitioners offer agricultural zoning types, but we have not systematically studied specific language in zoning ordinances to identify how and if local governments utilize agricultural zoning types. We proposed to examine enacted zoning ordinances from unincorporated, township governments and describe how the ordinances address agriculture. For example, does the zoning district have a specific agricultural purpose, and if so, what does the purpose state? How do the techniques in the zoning ordinance function and do they implement the agricultural purpose? What agricultural zoning types exist in the ordinances? Does the type of agricultural zoning vary as urbanization varies? The purpose of our study was to describe and analyze how actual zoning ordinances in varied rural settings address agriculture.

## **Study Area and Ordinance Selection**

Wanting to capture a variety of rural government experiences that encompass an assortment of agricultural regions *and* variable rates of population growth, we chose the State of Ohio for our study area. Ohio has the most metropolitan areas of any state in the nation, with a high rate of exurbanization and a vibrant agricultural sector. Agriculture varies across the state, as the landscape varies, with row crops dominating the Till Plains, livestock in the unglaciated

region, fruits, vegetables and nursery along the Lake Erie coastline. Ohio maintains a township form of government, and a township has permissive statutory authority to adopt a zoning ordinance for its unincorporated areas. The latest census in 2003 of Ohio townships indicated that approximately 59% of the state’s townships had enacted zoning ordinances (Evans-Cowley and Gough 2006).

For this study, any of the 1,309 townships having a township zoning ordinance was eligible for selection. We used two additional selection criteria -- exurbanization and geographic location. Assuming that township zoning ordinances will vary according to population and growth pressures, we randomly selected ordinances from communities in different stages of exurbanization. Using Irwin and Sharp’s exurban typology (2002), we categorized townships according to their stage of exurbanization, as shown in Table 1. The final selection criterion was geographic location. Because agriculture varies throughout the state given different biophysical conditions, we selected geographically diverse townships by parsing Ohio into five sections of similar geographic characteristics: Northeast, Northwest, Southwest, Southeast and Central.

<b>Exurban Stage</b>	<b>Relative Amount of Urban Land to Other Townships</b>	<b>Amount of Population Growth, 1990-2000</b>
Stage 0 – Rural	rural, not exurban	rural, not exurban
Stage 1	low	slow
Stage 2	low	above average
Stage 3	low	fast
Stage 4	medium	above average
Stage 5	medium	below average
Stage 6 – Urban	high	average

*Table 1: Stages of Exurbanization [adapted from Irwin and Sharp (2002)]*

Seven stages of urbanization combined with five geographic regions yielded a total of thirty-five selection categories. We attempted to secure ordinances from at least two townships in each category. However, no townships fit within the Urban-Southeast category and three

categories contained only one eligible township. We were able to obtain more than two ordinances in several categories. In total, we collected 80 zoning ordinances in 2004 and 2005 for the study (Table 2).

Region	Urbanization Type/Stage						Urban	Total
	Rural	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5		
Central	2	3	3	2	4	2	1	17
Northeast	1	2	2	3	2	5	2	17
Northwest	3	2	2	2	2	4	2	17
Southeast	2	2	2	1	2	2	N/A	11
Southwest	2	2	2	3	2	2	5	18
Grand Total	10	11	11	11	12	15	10	80

Table 2. Zoning Ordinances Selected for Study

## Methodology

We developed a typology for classifying the zoning ordinances according to purpose and function. *Purpose* refers to the zoning district’s stated purpose in regards to agriculture and includes three types on a continuum from least to most inclusive of agriculture: “No Agricultural Purpose,” “Agricultural and Other Purposes,” or “Solely Agricultural Purpose.” *Function* refers to how the techniques in the zoning ordinance address agriculture, with four types ranging from least to most protective of agriculture: “Ignores Agriculture,” “Recognizes Agriculture,” “Provides Protections for Agriculture,” and “Preserves Agriculture.”

Figure 1 is a pictorial representation of our Agricultural Zoning Purpose-Function Typology. This typology does not attempt to negate previous zoning typologies examined in the literature review. Our intent is to add a layer of understanding by describing intended purposes of rural ordinances in regards to agriculture, techniques utilized to address agriculture, and the relationship between ordinance purpose and function.

1. What is the stated district purpose?	2. How do techniques in the resolution address agriculture?			
	<i>Ignores</i>	<i>Recognizes</i>	<i>Provides Protection(s)</i>	<i>Preserves</i>
<i>no ag purpose</i>				
<i>includes ag &amp; other purposes</i>				
<i>agriculture is sole purpose</i>				

Figure 1: Agricultural Zoning Purpose-Function Typology

Combining purpose and function results in twelve possible types of ordinances, represented by each box. Expectations are that as the purpose of the district is more inclusive of agriculture, the function will be more protective of agriculture. For example, we expect a district with no stated agricultural purpose to ignore agriculture in its use of zoning techniques, so that all “No Agricultural Purpose” ordinances would have “Ignores” as a function. A district that has agriculture as its sole purpose would utilize techniques that preserve agricultural land. Districts having agriculture as one of several purposes would fall between these two opposite ends of the function continuum. This expectation is demonstrated by the arrow in Figure 1.

For each of the 80 zoning ordinances we reviewed, we first identified whether the ordinance contained an agricultural district or included agriculture as a land use in other zoning districts. We then asked the question “what is the stated purpose of the district that includes agricultural uses?” If the ordinance did not have a district that listed agriculture within its purpose language, we typed the ordinance in the “No Agricultural Purpose” category. If the purpose or intent of the district stated agriculture among other purposes, such as low-density residential development, we placed the ordinance in the “Agriculture and Other Purposes” category. We categorized an ordinance whose purpose focused only on agriculture, including agricultural related housing and businesses, as “Agriculture is Sole Purpose”.

The second step of the typology was to determine the function of the zoning ordinance by asking how techniques in the resolution address agriculture. We reviewed permitted and conditional uses, lot sizes, lot split restrictions, and other techniques. If the zoning ordinance did not contain any techniques concerning agriculture, then we assigned it to the “Ignores” category. Where the techniques merely recognized agriculture as a use, but did not provide any protections or support for agricultural uses, we typed the ordinance in the “Recognizes” category. We placed an ordinance with techniques that provide some protections for agriculture, but not exclusive to agriculture, in the “Provides Protections” category, and an ordinance with techniques creating exclusive agricultural use in the “Preserves” category. Finally, we examined the remainder of the ordinance for any other references to agriculture.

## **Findings**

We quickly learned that agriculture appeared under a variety of zoning district titles. The most common was the “Agricultural District”; examples of other zoning designations that included agriculture were Estate Rural Residential, Rural, Prime Agricultural, Exclusive Agricultural, Farm Residential and General Farm. While district titles vary, however, we observed that the title often does not clearly indicate the purpose or the function of the district itself. A closer reading of ordinance language was necessary to verify whether an ordinance contained an agricultural district, and if so, its purpose and function.

### *Purpose of the District*

The majority of township ordinances, thirty-four of eighty, are ordinances that include agriculture as one of the districts’ stated purposes, along with other purposes. An example of this type of language would be Thorn Township in Perry County, whose purpose in the Rural Residential District is “...to promote the continuance of agriculture and farm-based uses and to

provide areas for a variety of low-density single family residential environmental reflecting a rural life-style” (Thorn Township 2005, pg 2-5). Twenty-eight ordinances have no agricultural purpose language in any district. We found eighteen ordinances that identified agriculture as the sole purpose of the district. For example, Green Township, Ashland County (2005) falls into this category. The purpose of one of their agricultural districts is, “. . .to protect and preserve the prime agricultural lands in the township for agricultural use. To prevent or minimize conflicts between common farm practices and non-farm use” (Green Township 2005, pg 16).

### *Function of the District*

In our examination of how techniques in the ordinance address agriculture, we found that the overwhelming majority of ordinances function to “recognize” agriculture as a land use. As explained earlier, this category merely listed agriculture as a permitted use and did not provide any other techniques to ensure this use would be a priority in the district. Fifty-one ordinances have techniques that recognize agriculture as one of many permissible land uses in the district, but give no additional attention to long-term protection or continuance of agriculture in the district. The second highest number of ordinances, eighteen, “ignore agriculture”, or in other words, do not recognize agriculture as a use in any of the districts in the ordinance. These ordinances do not employ any agricultural zoning techniques or have any agricultural function in the district. Nine of the ordinances we reviewed “provide protections for agriculture” by listing agriculture as a permitted use and utilizing techniques that provide additional protections for agricultural land uses. These techniques included limitations on lot splits, classifying non-agricultural uses (such as housing) as conditional uses, assigning large lots for agriculture but smaller lots for non-agricultural uses, and requiring clustering of any new housing in the agricultural district. We identified six ordinances that function to “preserve “agricultural land.

These ordinances include a variety of techniques aimed at sustaining long-lasting viability of agricultural activities in the district and only allow for agriculture and related uses in the district.

*Purpose versus Function*

Table 3 presents the results of our Purpose-Function Typology. The table illustrates a disparity between our expectations (see Figure 1) and the findings (Table 3). We expected to find a strong interaction between purpose and function, which would create the diagonal arrow we predicted in our typology chart in Figure 1. To the contrary, the relationships between purpose and function were not direct. We found “No Agricultural Purpose” ordinances with no agricultural purpose language that nevertheless function to recognize agriculture; “Agricultural and Other Purposes” ordinances with some references to agricultural purposes that function merely to recognize agriculture; and “Agriculture is Sole Purpose” ordinances with strong agricultural purpose language that recognize but fail to protect agriculture.

Purpose	Function			Total
	ignore	recognizes	provides protections preserves	
no ag purpose	14	14		28
includes ag & other purposes		31	3	34
agriculture is sole purpose		6	6	18
Total	14	51	9	80

Table 3. Purpose versus Function

*Differences by Region*

In developing the methodology for this study, we wanted to control for regional differences in Ohio’s biophysical conditions, given the state’s geographic diversity. Our results did illustrate the regional differences we expected, but we will not provide detailed descriptions

of these differences because they were used merely for control. The regional variation represented in Tables 4 and 5 is likely attributable to variations in biophysical conditions (especially soil quality), and differing levels of development pressure. We will discuss development pressure in the next section.

<b>Purpose</b>	<b>Region</b>					<b>Total</b>
	Central	Northeast	Northwest	Southeast	Southwest	
no ag purpose	4	11	2	6	5	28
includes ag & other purposes	8	4	13	4	5	34
agriculture is sole purpose	5	2	2	1	8	18
<b>Total</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>11</b>	<b>18</b>	<b>80</b>

*Table 4. Region and Purpose*

<b>Function</b>	<b>Region</b>					<b>Total</b>
	Central	Northeast	Northwest	Southeast	Southwest	
ignore	2	8	1	3		14
recognizes	13	7	12	6	13	51
provides protections	1		2	1	5	9
preserves	1	2	2	1		6
<b>Total</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>11</b>	<b>18</b>	<b>80</b>

*Table 5. Region and Function*

### *Differences by Urbanization Stage*

As expected, the purpose and function of a township’s agricultural zoning district varied with its stage of urbanization (Tables 6 and 7). Purpose results generally follow a continuum, with the more rural townships having higher numbers of ordinances containing agricultural purposes than the more urbanized townships. The same is true for function—agricultural protection techniques are more common in the more rural townships, while urban townships more frequently had zoning purposes that ignore or only recognize agriculture. An anomaly exists in the more urbanized Stage 5 townships, where a fair amount of ordinances have agricultural purposes and provide protections for or preserve agricultural land.



Purpose	Urbanization Type/Stage							Total
	Rural	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Urban	
no ag purpose	2	2	1	4	8	6	5	28
includes ag & other purposes	5	4	9	4	3	5	4	34
agriculture is sole purpose	3	5	1	3	1	4	1	18
Total	10	11	11	11	12	15	10	80

Table 6. Urbanization Stage and Purpose

Function	Urbanization Type/Stage						Urban	Total
	Rural	type1	type2	type3	type4	type5		
ignores	1	1	1	3	3	3	2	14
recognizes	5	5	10	7	9	8	7	51
provides protections	3	3	0	0	0	2	1	9
preserves	1	2	0	1	0	2	0	6
Total	10	11	11	11	12	15	10	80

Table 7. Urbanization Stage and Function

## Discussion

### *The Purpose-Function Gap*

We expected to find a connection between the purpose and function of an agricultural district (Figure 1). However, our study indicates that the purpose of a zoning district does not always correspond with its actual function. Particularly striking about these results is that many ordinances function the same in regards to agriculture, but have very different purposes. We tracked three very different purposes for agricultural zoning ordinances, yet most fell into the same function category of “recognizing” agriculture. While many ordinances purport to protect agriculture, they do not function to do so. This inconsistency was evident in the names of the districts. For instance, we found districts with titles such as Agricultural, Estate Rural

Residential, Rural, Prime Agricultural, Exclusive Agricultural, and Agricultural Preservation; all with differing agricultural purposes but with a similar function—to merely recognize agriculture as one of an assortment of land uses.

We propose several explanations for this mismatch between purpose and function. The most simple explanation is that purpose language is merely philosophical, written with no real intention of closely-tailored implementation. Second, the disparity may be due to misunderstandings about how to accurately execute purpose language with appropriate zoning techniques. Perhaps the discord is a result of differing definitions of “agriculture”—is it a bucolic, small-scale landscape or a production-oriented land use that requires a critical mass of land and separation from other land uses? Last, the ordinance could be using the agricultural district as a tool for attaining open space rather than agriculture itself. The language we reviewed suggests that the “agricultural district” may have varied meanings to local officials and ordinance drafters, from both the purpose and the function perspectives.

Our findings required that we revise the Purpose-Function Typology presented in Figure 1. We can better describe the relationships between purpose and function with an expanding rather than discrete range of function types. For example, we found that ordinances with purpose language declaring agriculture as the sole purpose of a district, did not automatically warrant classification for functioning as Type 4 “preserves agriculture” ordinances. Rather, the “agriculture is sole purpose” ordinances could fall into a range of function types, from recognizing agriculture to preserving agricultural land. Additionally, the three function categories vary internally—particularly the “provides protection” and “preserves” functions—depending upon the type and quantity of techniques incorporated in the ordinance. A continuum of the level of protection afforded by the techniques ranged from “some protection” to “most

protective”. Figure 2 portrays the ranges realized in the ordinances. The figure demonstrates how districts with vastly different purposes can function similarly to one another in application.

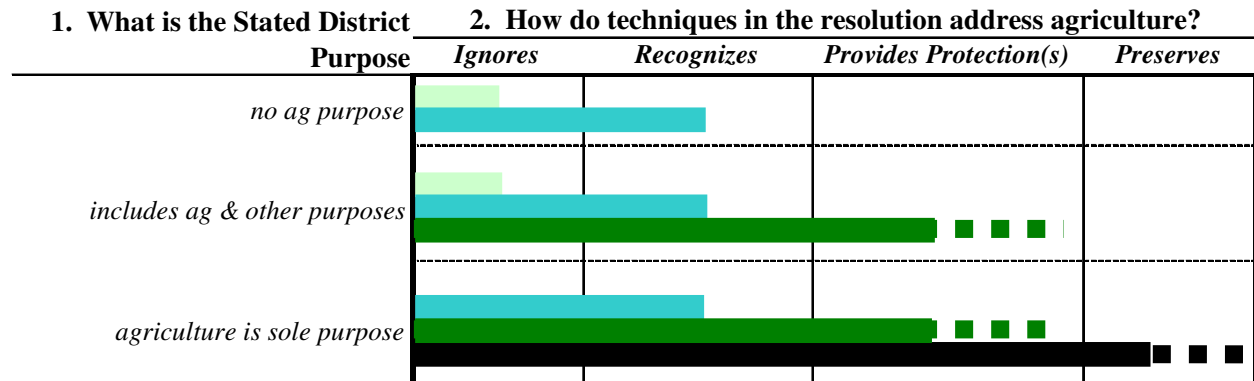


Figure 2: Revised Agricultural Purpose-Function Zoning Typology

*Protecting Agriculture: What’s Incompatible?*

One type of agricultural district that exemplifies the purpose-function incongruity is the “agriculture is sole purpose” district. We found many examples of this type of district, with strong agricultural purpose language focused on preventing the “infiltration of urban uses” or “uses incompatible with agriculture.” However, we identified provisions in the same districts that function in direct conflict with the purpose language. For example, this type of district often had no restrictions on or planning for non-farm single family housing, had housing densities of up to one home per acre, or allowed many permitted uses and conditional uses in addition to agriculture. These actions beg a host of questions. Did the drafters think that the chosen techniques would actually prevent the infiltration of urban and incompatible land uses? What urban uses are “incompatible” with agriculture, if not housing, home businesses, retail? Does the type of agriculture matter in regard to defining incompatible uses and unacceptable urban infiltration? At what point do allowed uses become an “infiltration”?

Historic land use patterns may play a role in this problem of defining incompatibility. In rural areas in times past, the occurrence of land uses other than agricultural was likely not significant enough to interfere with agriculture, i.e., was not an “infiltration” of the agricultural area. The number of non-agricultural land uses can become significant in today’s faster growing, urbanizing areas, however. Today, an “agriculture is sole purpose” district under growth pressure that allows many land uses in the district could experience rapid changes to the landscape. Without institution of protective techniques, agriculture would be forced to operate in the midst of non-agricultural or “incompatible” uses.

At what point, then, do other land uses create difficulties in an agricultural district? This is a question that must be examined by those who are trying to maintain predominantly agricultural uses in a zoning district. If the stated purpose of an agricultural district is to prevent urban and incompatible land uses, it is essential to consider the needs of the different types of agriculture taking place and to carefully define the types and quantities of other land uses that could interfere with agriculture. Trends in growth and land conversion in the area – an assessment typically made in planning – should be examined when determining zoning techniques and the quantity and types of non-agricultural uses that the district can sustain. An assumption that incompatible or urban uses won’t rise to the level of “infiltration” may be a dangerous assumption to make in many exurbanizing communities.

### *Zoning Techniques in Practice*

For as long as zoning has existed as the premier local land use control technique, one might expect zoning ordinances to uniquely reflect the experiences and goals of local communities. To the contrary, our observation is that the majority of local ordinances are not modeling growth and creativity in agricultural zoning techniques. The ordinances often do not

even employ traditional techniques to implement a stated desire to preserve the agricultural land base.

Those ordinances that do offer protections use some of the techniques outlined in previous studies of agricultural zoning, such as zoning exclusively for agricultural and agriculturally-related uses; controlling the location of subdivided parcels and new development to minimize interference with agriculture and prime agricultural soils; listing non-farm residences as conditional uses in areas slated for agricultural production;

Additional simple techniques that are not traditionally covered in agricultural zoning typologies, but used in our study cases, include offering voluntary exclusive agricultural districts; utilizing small maximum lot sizes (ex. 1 acre) in exclusive agricultural districts; prescribing different lot sizes for different uses within the same district; limiting the number of lots splits from an original parcel; providing for local conditions, such as general type of agriculture, average size of farms, or unique or locally important soils to determine such factors as locally relevant lot sizes or location of new development; and, planned unit development standards for agriculture that allow for flexibility in incorporating agriculture-related development and/or other types of development and agricultural uses.

The scarcity of agricultural zoning techniques in practice might be explained by the fact that zoning has always been geared towards the urban setting. Lefaver (1978) recognized that urban zoning concepts are often applied to rural areas, and are not only outdated and inefficient, but do not acknowledge rural dynamics. The experience in Ohio supports Lefaver's theory. A community relying on the Ohio model zoning code from 1989 would find an urban-oriented code that mentions "agriculture" only in the definition section and not as a proposed distinct district or a permitted or conditional use (Jacobs 1989). Kartez (1984) makes a similar observation about

the inapplicability of urban zoning to rural areas, pointing out that urban zoning controls density through homogenous minimum lot sizes, whereas in more rural areas, it may be acceptable to have small housing lots for non-farmers and large lots for farmsteads. In sum, urban zoning models may require adaptation in order to address the challenges and opportunities of a rural landscape.

Disparities between zoning purpose and function and the lack of specialized and creative techniques in many ordinances should not be surprising, given the high rate of growth and change occurring in rural areas. These communities may be experiencing capacity issues and demands for updated planning and zoning. At the same time, local officials could be forced to make land use decisions with little training or education, outdated zoning codes and without the assistance of professional planning and zoning staff. Capacity and expertise are two additional factors that may be hindering desires to put agricultural zoning techniques into practice.

## **Conclusion**

This study demonstrates how the Agricultural Zoning Purpose-Function Typology provides insight concerning both the purpose and function of agricultural zoning and how they relate with one another. Our new typology serves as an extension of previous typologies that focus on types of zoning techniques that could be utilized for agricultural protection. While knowing whether a community has an agricultural zoning district that might employ such techniques is useful, classifying actual zoning language according to its purpose and function provides additional insight into how the zoning and its techniques relate to farming and farmland. The Purpose-Function Typology allows us to describe and evaluate the relationship between zoning ordinance language and agriculture, which can include but is not limited to recommended agricultural zoning techniques.

Using our Purpose-Function Typology, we can conclude that a minority of zoning ordinances in rural areas propose agriculture as the district's sole purpose. Even so, good intentions are not realized through techniques, as even fewer include zoning techniques that function to protect or preserve agriculture. The majority of zoning ordinances recognize agriculture as one of an assortment of land uses. Few ordinances utilize traditional agricultural zoning approaches such as sliding-scale zoning or exclusive agriculture districts. New and creative approaches to agricultural zoning are not evolving. A surprising handful of communities with progressed "exurbanization" are focusing on agriculture and attempting to institute protective measures for agricultural land uses.

## **Recommendations**

As a result of our research, we can offer a number of recommendations on agricultural zoning ordinances. A community that wants to protect agriculture must first envision the type of agricultural landscape that is acceptable, recognizing the differences between a district established for agricultural production and one established as a pastoral landscape for development. Does the community want to ensure the business of agriculture, protect pretty views, or both? Define the size, scale and intensity of the desired agriculture, and assess its land use needs. This step may require a paradigm shift—instead of defining an agricultural district in terms of density of development, why not define it in terms of *agricultural capacity*? What is the area's agricultural capacity, and how can zoning ensure attainment of that capacity?

The district's purpose language should reflect the type and capacity of agriculture desired, and must be implemented with appropriate techniques. Good intentions are not sufficient; purpose language should parlay into zoning measures that will function to advance or protect the type of agriculture desired.

One technique requiring careful scrutiny is the limitation of permitted and conditional uses for the district. Decision makers must ask the question: Are the uses permitted in the district compatible with the agriculture we envision? For instance, low density residential development may be more compatible with small-scale, low input farming than with high-production farming. Whether the goal of the district is to ensure high capacity, high production farming or urban-oriented agricultural activities, the list of permitted and conditional uses should be tailored accordingly.

Consider achieving a region's agricultural goals in different contexts. Agricultural zoning does not have to be limited to one zoning district, but could range from a smaller scale agricultural district that allows many other uses to a district that aims to attain a critical mass of working farmland. Likewise, agricultural zoning does not need to be limited to just one technique, such as adjusting the density of homes per acre. Combine some of the simple techniques mentioned in the discussion section, such as limiting the number of lots splits from an original parcel and controlling the location of subdivided parcels and new development to minimize interference with agriculture and prime agricultural soils, or, listing non-farm residences as conditional uses in areas slated for agricultural production and prescribing differing lot sizes for different uses (residences on small lots and agriculture on larger lots) to reduce the impacts of urbanization.

In accordance with a long-term comprehensive plan, the zoning ordinance for the entire region must contain districts designed to accommodate both growth and agriculture. Without identified growth areas, conversion pressure will be exerted on agricultural land (Cordes 2002). Be proactive by identifying established uses, areas suited for growth, and lands best used for agriculture. In today's era of exurbanization, the zoning process must involve more than



designating residential, commercial and industrial areas on a zoning map before identifying the remaining agricultural district as “AG”—anything goes.

### *Further Study*

Additional studies could further clarify agricultural zoning. For instance, our research does not take into account whether and how zoning ordinances are implemented and enforced, how the ordinance relates to local or regional planning, and other land use techniques that could affect agriculture. We did not examine the spatial arrangements of agricultural districts and existing agriculture; a logical next step would be to follow our data analysis with field verification to determine what is actually happening on the ground. We are particularly excited by the prospect of addressing these two questions: does the zoning technique matter in terms of actual land conversion, and do certain techniques result in better protection for agriculture?

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