

FARMLAND

SUBDIVISION:

*A Catalogue of
Land Use Techniques to Preserve and Enhance
Agricultural Uses of Land*

-----by:
THE NEW JERSEY OFFICE OF STATE PLANNING

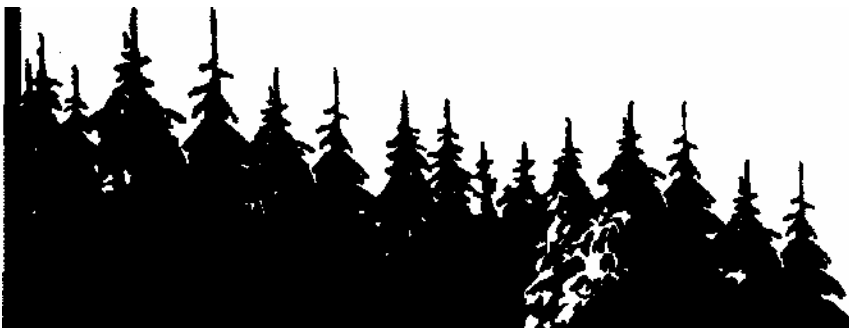
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Executive Summary	i
Scope of Study	
Highlights of Findings	
Conclusions	
Introduction	1
Overview of Study Process	
of Literature Search	
Survey of Alternative Techniques	3
Overview of Techniques	
Standards for Farm Related Residential Subdivision	
Standards for Non-Farm Related Subdivision Other	
Techniques	
Assessment of Alternative Techniques	19
Overview of Assessment	
Economic Issues	
Environmental Issues Fiscal	
Issues	
Intergovernmental Issues	
Legal Issues Social/Quality of	
Life Issues	
Conclusions	31
Applicable Techniques	
Table 1	1
Land Use Subdivision Techniques to Preserve	
Agricultural Uses of Land	
Bibliography	

SCOPE OF STUDY

The objective of this report is to catalogue land use techniques related to subdivision for preserving and enhancing agricultural uses of land. This report responds to the current concerns raised during discussions regarding potential revisions to the Pinelands Comprehensive Management Plan [CMP) related to farmland subdivision standards. A central concern identified for study is whether any subdivision, except for specific agricultural uses, should be permitted as it may fragment the farms and affect their future viability.

Overall, there are many more techniques in current use across the country than when the Pinelands Plan was adopted. Some of these may be applicable to the Pinelands Areas, and may be replicated or revised to meet the goals of the CMP. This report identifies those techniques, and documents the advantages and disadvantages of each. These standards apply to farm related residential, other farm related, and non-farm related subdivisions. Economic, environmental, fiscal, intergovernmental, legal, and/or social/quality of life issues related to each technique are detailed. The study summarizes these techniques, and recommends areas for further analysis. Because the ordinances cited here are complex, many of the details cannot be fully summarized in this report. However, the key aspects of each technique are included, and references provided for further investigation. At the conclusion of this report is a bibliography of relevant literature on farmland subdivision standards. While not exhaustive, it does reflect many of the key sources on this topic, and will provide the reader with a firm base for additional research.

HIGHLIGHTS OF FINDINGS

"The conversion of agricultural land is a complex process, often taking place over a period of fifteen or twenty years. It involves such factors as farm profitability, urban growth pressures, land values, personal decisions about work and retirement, community expectations, taxes and government programs, incentives, and regulations... At some point, the process becomes irreversible, and farm after farm is subdivided and developed" (Coughlin and Keene, 1981, p. 16).

Many states have responded to factors such as those listed above by developing programs to preserve or enhance agricultural uses of land. Coughlin

and Keene, 1981, categorize these programs under three purposes:

- (1) programs that reduce the relative attractiveness of a farming area for development,
- (2) programs that offset additional burdens placed on farmers by approaching urbanization, and
- (3) programs that prevent changes of use from agriculture to built-up uses.

Lapping, Daniels and Keller, 1989, cite three instruments for the regulation of land use in small towns and rural areas: private property agreements, zoning ordinances and subdivision control. This report will concentrate on programs that prevent land use changes, although the Pinelands Commission may desire to further investigate opportunities for private property agreements and other controls included here to achieve the goal of preserving and enhancing agricultural uses of land.

"Agricultural Zoning" is the most common method of preventing the development of agricultural land; and, according to Robert E. Coughlin, is the method that holds the most promise for protecting a major portion of the nation's farmland (Coughlin, 1991). Areas that possess good agricultural soils, a viable farming industry and moderate land prices are prime for agricultural zoning. In Pennsylvania, 35 municipalities in Lancaster County have 268,000 acres under effective agricultural zoning, while in York County, 17 municipalities have zoned 159,000 acres in a similar fashion (Coughlin, Denworth, Keene, Rogers and Brown, 1992).

Because agricultural zoning programs vary widely, many so-called agricultural zoning districts offer little protection to agricultural land (Coughlin, Keene, et al., 1981). The National Agricultural Lands Study. An Inventory of State and Local Programs to Protect Farmland (Coughlin, Esseks and Toner, 1981) includes agricultural zoning ordinances that met three tests:

- (1) Is the ordinance an exclusive agricultural zoning ordinance?
- (2) If not, does the ordinance require a minimum lot size or density standard of at least 20 acres?
- (3) If not, does the ordinance require a minimum lot size or a density standard of ten acres coupled with additional controls over site improvements?

According to William Toner, a former consultant to the National Agricultural Lands Study (NALS), serious agricultural zoning has two distinguishing features:

FARMLAND

SUBDIVISION

Executive Summary

first, the basic purpose of the ordinance is to protect and maintain farms and farm operations; second, non-farm uses, especially housing, are curtailed or excluded altogether (Toner, 1984).

There are two basic types of agricultural zoning ordinances: exclusive and nonexclusive (Coughlin and Keene, 1981). The least common and most extreme is exclusive agricultural zoning which prohibits the construction of any non-farm dwellings.

A variation on this is existing use zoning (Gottsegen for the Burlington County Freeholders, 1992; Humbach, 1989), which is a growth management tool intended to zone land according to its existing or current use (e.g., land currently used for agricultural production is zoned for agricultural use).

More prevalent is the nonexclusive agricultural zoning, which allows a limited amount of non-farm development. Two major types of nonexclusive agricultural zoning ordinances are large minimum-lot-size zoning and area-based allocation. As the term indicates, large minimum-lot-size zoning requires a substantial minimum lot size, often 40+ acres; however, ordinances from around the country have varied from as little as 10 acres to over 300 acres. The two main approaches to large-lot zoning involve non-farm residences as either a permitted use or a "special" or "conditional" use.

Area-based allocations allow the landowner to build a number of dwelling units as determined by the total acreage of the property; small building lots, often 1 acre, are utilized. The two types of area-based allocation ordinances are fixed and sliding scale. Owners are allowed to build one dwelling per 40 acres, or some other specified area of land, under the fixed area-based allocation ordinance. The number of dwellings allocated per unit area, under sliding scale, decreases as the size of the tract increases.

A variant of the sliding scale is "parcel-based" allocation, which allows a given number of new dwellings on any parcel, regardless of how large it is. This approach results in low overall densities unless the parcels are small.

Two zoning techniques that can be problematic, according to Toner, 1981 are rezonings and parcel splits. Rezonings are simply a change in zoning designations (e.g., from the agricultural zone to a residential zone). "Parcel splits" in which a single parcel may be split or divided into four or fewer lots with a minimum size are allowed in many states by statute.

"Subdivision regulations" are a comprehensive set of guidelines for physical development (Lapping, Daniels and Keller, 1989). As the term may indicate, these regulations set standards for dividing larger tracts of land into smaller lots. These

regulations directly influence infrastructure decisions and ensure conformity among standards within a community. These regulations also seek to avoid haphazard and inefficient development patterns. Subdivision controls assure that there is an adequate transition between uses at the boundaries of different zoning districts. In Pennsylvania, many municipalities that do not have zoning ordinances and classifications of land rely on subdivision ordinances to control tract size or site development. Without zoning, these regulations must include uniform requirements for "minimum setback lines and minimum lot sizes which are based upon the availability of water and sewage" (Coughlin, Denworth, Keene, Rogers and Brown, 1992).

Additional land use techniques included in this report are: variances, conditional uses, special exceptions or permits, private property agreements and compensable zoning. Other controls cited include: special overlay zones to protect agricultural or forest activities; special use permit procedures; strengthened goals or statements that address the need to protect agricultural land rather than agricultural clusters; limitations on public investments that would encourage non-farm development; modifications to state agency administration regulations and procedures to encourage maintenance of viable farming in agricultural districts; site planning standards that ensure the careful location of non-farm development on each tract; joint planning among owners of adjacent tracts; careful location of infrastructure; acquisition of development rights using revenues from the tax on land sales; and the donation of development rights (Coughlin and Keene, 1987). "Right-to-Farm" ordinances and differential assessment programs may also be used to reduce farmland subdivision and preserve and enhance agricultural uses of land (Lapping, Daniels and Keller, 1989).

Because of the high cost of acquiring development rights and the complexities of private agreements, agricultural zoning will probably continue to be the most common method of directly protecting agricultural lands from conversion (Coughlin, 1991). Indirect methods, such as agricultural districting and tax incentives, have made it easier for farmers to continue farming; however, in almost all cases cited, this does not prevent them from selling the land for development.

Maintaining the land in a form that allows the continuation of agriculture is a major objective of agricultural zoning. The first sub-objective, according to Coughlin, 1991 is to restrict the division (or parcellation) of farmland to avoid its breaking-up into small parcels. This situation has accelerated the shift of the land market from rural to suburban and urban. However, the critical question. "How do you define the acreage beneath which division of a tract should not be permitted?" remains without an easy answer, and there is little research on which

FARMLAND

SUBDIVISION

Executive Summary

to rely. The extensive literature on the economics of farm size is of little direct use, according to Coughlin and others, in determining the minimum acreage that should be permitted. A 1984 study of three townships in York County, Pennsylvania, attempted to determine how large individual farms were in the area of interest, and at the "farm core" to identify the minimum amount of contiguous land necessary to farm in an efficient manner. A general standard of 100 acres was chosen as the limit beneath which division should not be permitted outside of the subdivision process (Coughlin, Keene and Laarakker, 1984). A similar result was found in Clarke County, Virginia (Coughlin and Keene, 1987).

The second sub-objective of agricultural zoning, according to Coughlin, is to keep open enough land that agriculture remains functionally viable. Area-based allocation zoning provides flexibility in site planning to allow a large portion of land to remain open. The total amount of land depends upon the tract size-class schedule, the minimum allowable lot size and the size distribution of all the tracts existing at the date specified in the zoning ordinance. Clarke County, Virginia, and York County, Pennsylvania, used this technique.

Evaluating the effectiveness of agricultural zoning has not been easy, according to experts such as Thomas L. Daniels and Robert E. Coughlin. They note that this type of zoning cannot be proven effective solely because conversions to non-farm uses do not occur after the institution of agricultural zoning. A case study of land ownership and implied intention of use in Shrewsbury Township, Pennsylvania, (where agricultural zoning was adopted in 1976) demonstrates that the adoption of agricultural zoning significantly reduced the flow of land in the agricultural district from owners who generally intended to keep the land in rural use to owners with intentions of developing the land.

Although zoning is viewed as a suspect technique because it is easily changed when development pressures rise, agricultural zoning is less likely than other types of zoning to be changed to allow development. The public purpose, incentives and presence of supportive state legislation enhance the effectiveness of agricultural zoning. In addition, growth management programs that facilitate development in other areas where public facilities are provided, along with available development incentives and an expedited approval process were found to increase the long-term effectiveness of agricultural zoning.

Critics also complain that agricultural zoning is "exclusionary," "environmental zoning in disguise" and that it ignores agricultural interests (Toner, 1984). A survey by the American Planning Association of jurisdictions represented in the National Agricultural Lands Study asked local officials about five areas of interest. According to Toner, 1984, the initial results made clear that agricultural zoning activity had increased substantially since the NALS, that

officials seemed satisfied with agricultural zoning, and that the agricultural community had played a strong role in developing and implementing the ordinances.

Many of the techniques listed in this report attempt to protect the agricultural land base by limiting the division of agricultural land; this occurs primarily by preventing the division of land into small or medium parcels that are too small to comprise economically viable farms. An assessment of the alternative techniques in this report address the economic, environmental, fiscal, intergovernmental, legal and social/quality of life implications of such actions. Table 1 provides a listing of techniques cited in this report, along with the major advantages and disadvantages of each.

CONCLUSIONS

^MAs the land resource is broken up into smaller and smaller tracts, its value for agriculture is diminished. Two effects can be observed:

First, the assembly of enough land for a farm of minimum efficient size becomes more difficult, and farmers are forced to farm several scattered tracts. These are less efficient to farm than is one farm composed of contiguous tracts.

Second, as parcelization progresses, more and more non-farm owners are brought into the market because the supply of land contains more tracts of the size they can afford. They bid up the price of land beyond agricultural use value, making it unaffordable by farmers, especially beginning farmers attempting to acquire land for a core farm....

The change in the size distribution of tracts that constitute the agricultural land resource is invisible and often precedes more obvious changes in land use, but it is a real change in the land market that almost inevitably leads to changes in land use years later. This progression is difficult to reverse, but it can be stopped." (Coughlin and Keene, 1987, pp. 97-98)

FARMLAND

SUBDIVISION

Executive Summary

This report identifies over 25 techniques cited in the literature which may address how to preserve land and enhance agricultural uses of land in the face of subdivisions. Agricultural zoning techniques were found to be the most widely used, with varying intents and results. Exclusive agricultural zoning can eliminate subdivisions; however, this may be legally and politically contested. Existing use zoning follows the same direction and may provide similar opportunities and constraints.

Non-exclusive agricultural zoning will address preservation and development issues, yet may require additional administration. Large minimum lot size ordinances seek to reduce growth pressures and the need for urban services; they may also result in conflicts between residences and farming operations. Area-based allocations (i.e., fixed, sliding-scale and parcel-based) increase the opportunities for development — especially on poor soils — yet increase the administrative and infrastructure costs.

The other techniques listed provide additional avenues for study. Utilized in conjunction with a strong agricultural zoning ordinance, one or more of these techniques could strengthen the agricultural industry and the farmland base.

FARMLAND

SUBDIVISION

INTRODUCTION

OVERVIEW OF STUDY

How should the Pinelands Comprehensive Management Plan (CMP) encourage farm-related development and discourage non-farm related development in agricultural areas? This question was raised during discussions of potential revisions to the CMP.

More specifically, a concern was raised as to whether any subdivision, except for specific agricultural uses, should be permitted as it may fragment the farms and affect their future viability. The CMP originally limited the use of agriculturally zoned lands to farms or for non-farm related residential developments (or farmettes) often acre lots. The CMP was amended to allow non-farm related residential developments on clustered one acre lots at an overall density of 1 dwelling unit per forty acres (1 DU/40 AC) if the remainder of the farm was deed restricted to agricultural uses. Ten acre farm subdivision (40 acres in Special Agricultural Areas) continues to be permitted for residential-related development related to the particular farm.

Concern related to farmland subdivisions arise when smaller farms allow some type of short-term farming to continue that does not contribute to the long-term stability of the industry. However, conversely, there is a recognition that limitations on subdivisions may restrict the income or land use flexibility of farmers, and could do major harm to the farm's current economic viability.

The New Jersey Office of State Planning (OSP) was contracted by the Pinelands Commission to catalogue land use techniques related to subdivision for preserving and enhancing agricultural uses of land. OSP undertook a literature search, surveyed the alternatives, compiled and analyzed relevant techniques, and presents in this report findings and conclusions for use by the Pinelands Commission staff in reviewing the Pinelands Comprehensive Management Plan.

Under the direction of Herbert Simmens, this project was managed by Tom Dallessio, who also served as principal author. Technical assistance was provided by William Bauer, Carol Cavallo, Diane Chepega, Jill Edwards, Sandy Giambrone, Elizabeth Guididas, Denise Johnson, Robert Kull, Wendy Monk, Charles Newcomb, William Purdie, James Reilly, Ten Schick, Steve Karp, and Carol Schulz. For the Pinelands Commission staff, Larry Liggett was the project manager.

FARMLAND

S U B D I V I S I O N

PROCESS OF LITERATURE SEARCH

In preparing for the study, OSP staff conducted a literature search. This search examined existing publications referenced by farmland experts. References included those cited by Robert E. Coughlin in the Spring 1991 issue of the Journal of the American Planning Association. These citations provided the office with additional references and sources of information relating to farmland subdivision and preservation.

Other publications were obtained by OSP staff after conducting literature searches at the New Jersey State Library. Electronic catalogs enabled staff to gather lists of possible articles for examination and inclusion. Some publications were borrowed from the New Jersey State Library. Other books and journal articles were obtained through inter-library loan. When inter-library loan was not available, the office purchased copies of articles from cooperating libraries.

In some cases, the OSP directly purchased materials that were otherwise unavailable from libraries. In these cases, the office contacted universities, authors, and agencies to obtain materials that were difficult to obtain. Additional information was loaned by Dr. Mark Lapping, Dean of the Bloustein School of Planning and Public Policy at Rutgers University, who has undertaken extensive research of rural planning and farmland preservation efforts. Conversations with Don Applegate of the State Agriculture Development Committee, Donna Drewes of North Jersey Resource Conservation and Development, Tom Drewes of the Soil Conservation Service, George Horzempa of the New Jersey Department of Agriculture, and George Cargfagno of the Sterling Forrest Corporation provided valuable insights. Reports related to the topic of farmland subdivision standards and the materials reviewed are listed in the bibliography.

FARMLAND

SUBDIVISION

SURVEY OF ALTERNATIVE TECHNIQUES

OVERVIEW OF TECHNIQUES

"The conversion of agricultural land is a complex process, often taking place over a period of fifteen or twenty years. It involves such factors as farm profitability, urban growth pressures, land values, personal decisions about work and retirement, community expectations, taxes and government programs, incentives, and regulations.. .At some point, the process becomes irreversible, and farm after farm is subdivided and developed" (Coughlin and Keene, 1981, p. 16).

Many states have responded to factors such as those listed above by developing programs that preserve or enhance agricultural uses of land. Coughlin and Keene, 1981, categorize these programs under three purposes:

- (1) programs that reduce the relative attractiveness of a farming area for development,
- (2) programs that offset additional burdens placed on farmers by approaching urbanization, and
- (3) programs that prevent changes of use from agriculture to built-up uses.

Programs that reduce the attractiveness of the agricultural area for development will direct that growth out of farming areas and into or adjacent to existing urban areas. The basis for these programs is comprehensive land use planning and facility location, along with capital gains tax incentives. The second set of programs are those that offset the burdens of nearby or approaching urbanization. Tax incentive programs (i.e., preferential assessment for property tax, deferred property taxation, inheritance and estate tax benefits, and income tax credits, etc.) and land use programs (i.e., agricultural districting, prohibition of local nuisance ordinances and right-to-farm legislation) can keep farming economically viable. The third group of programs attempt to go beyond manipulating the conditions favoring development and inducing farmers to actually prevent the development of specific parcels of land. Those land use programs that seek to prevent changes in land use include restrictive agreements, agricultural zoning, development permit systems, purchase of development rights, purchase and resale with restrictions, and transfer of development rights.

Lapping, Daniels and Keller, 1989, cite three instruments for the regulation of land use in small towns and rural areas: private property agreements, zoning

FARMLAND S U B D I V I S I O N

ordinances and subdivision control. This report will concentrate on the latter two instruments, which are programs that prevent land use changes, although the Pinelands Commission may desire to further investigate opportunities for private property agreements and other controls included here to achieve the goal of preserving and enhancing agricultural uses of land. Table 1 provides a listing of the various techniques cited in this report, along with the major advantages and disadvantages of each.

Throughout the country, the primary means for implementing municipal or county plans is through local zoning and subdivision regulation (Lapping, Daniels and Keller, 1989). These techniques are enacted under the legitimate "police power" of government, for the protection of public health, safety and welfare. "Zoning" functions to divide land into various categories, such as residential, commercial and industrial, and within each zone are various districts that indicate the maximum intensity of particular types of activities. Certain restrictions or requirements establish the rules of property use. There are five main elements to a standard zoning ordinance:

- (1) a statement of purpose,
- (2) a list of permitted uses,
- (3) a list of special uses,
- (4) standards governing permitted or approved special uses, and
- (5) the zoning map (Coughlin and Keene, 1981).

"Agricultural Zoning" is the most common method of preventing the development of agricultural land; and, according to Robert E. Coughlin, is the method that holds the most promise for protecting a major portion of the nation's farmland (Coughlin, 1991). Areas that possess good agricultural soils, a viable farming industry and moderate land prices are prime for agricultural zoning. In Pennsylvania, 35 municipalities in Lancaster County have 268,000 acres under effective agricultural zoning, while in York County, 17 municipalities have zoned 159,000 acres in a similar fashion (Coughlin, Denworth, Keene, Rogers and Brown, 1992).

Because agricultural zoning programs vary widely, many so-called agricultural zoning districts offer little protection to agricultural land (Coughlin, Keene, et al., 1981). The National Agricultural Lands Study. An Inventory of State and Local Programs to Protect Farmland (Coughlin, Esseks and Toner, 1981) includes agricultural zoning ordinances that met three tests:

- (1) Is the ordinance an exclusive agricultural zoning ordinance?
- (2) If not, does the ordinance require a minimum lot size or density standard of at-least 20 acres?
- (3) If not, does the ordinance require a minimum lot size or a density standard of ten acres coupled with additional controls over site improvements?

FARMLAND S U B D I V I S I O N

According to William Toner, a former consultant to the National Agricultural Lands Study (NALS), serious agricultural zoning has two distinguishing features: first, the basic purpose of the ordinance is to protect and maintain farms and farm operations; second, non-farm uses, especially housing, are curtailed or excluded altogether. (Toner, 1984)

STANDARDS FOR FARM RELATED SUBDIVISION

There are two basic types of agricultural zoning ordinances: exclusive and nonexclusive (Coughlin, Keene, et al., 1981). The least common and most extreme is exclusive agricultural zoning, which prohibits the construction of any non-farm dwellings. This zoning helps reduce the potential conflicts between non-farm residents and farmers by encouraging large blocks of agricultural land in agricultural use through the prohibition of small, non-farm residences.

Exclusive agricultural zoning ordinances share three characteristics:

- (1) non-farm dwellings are prohibited,
- (2) communities use a performance definition of a farm or farm use rather than defining a farm by a large minimum lot size or other density standard, and
- (3) each proposed farm dwelling requires individualized evaluation (Coughlin and Keene, 1981).

Farm Related Residential

Exclusive agricultural zones usually require that: non-farm homes are prohibited in the protected area; the only residences permitted in the zone are farm homes (aside from residences existing before the exclusive zone was adopted); and, the petitioner must demonstrate to the zoning authority in order to build a farm home, that the home will be used for farmers or farm employees (Toner, 1981). Documents such as loan statements, farm management plans, tax assessor records or other evidence may be used to establish that the home will be used as a farm residence. While the cost of administration and enforcement is worth noting, it can be reduced by establishing time limits on parcel splits (e.g., 5-10 year prohibitions) or other criteria for evaluating these splits. Toner also recommends that communities ensure that the density standards in the agricultural zone conform to average parcel sizes, thus discouraging landowners from splitting their parcels down to the minimum lot size in order to sell the lots for non-farm uses.

In its 1961 State Land Use Plan (Haw. Rev. Stat. sec. 205), Hawaii pioneered the use of exclusive agricultural zoning; while Oregon, through its 1973 Land Use Act requires local comprehensive plans with "Exclusive Farm Use" (EFU) zones (Lapping, Daniels and Keller, 1989). Agricultural land in Hawaii may be converted

FARMLAND S U B D I V I S I O N

to non-farm use, but this land must be contiguous or adjacent to urban or rural residential districts. Oregon's EFU zones generally prohibit non-farm uses except where pockets of land use are "generally unsuitable" for growing crops, raising livestock, or where development would not force a major change or cost increase in the accepted farming practices on nearby farmlands (Hiemstra and Bushwick, 1989).

Wisconsin requires that exclusive zoning ordinances be reviewed and certified by the Land Conservation Board, and be consistent with county agricultural plans and be accepted by the towns affected; that the minimum parcel size to establish a farm residence or a farm operation is 35 acres; and that the residences allowed in agricultural zones are restricted to those that would be occupied by a farmer or by a member of his/her family (Hiemstra and Bushwick, 1989).

Other Farm Related

On the local level, other examples of exclusive agricultural zoning may be found in Santa Cruz County, California, Boone and De Kalb Counties, Illinois, Carbon County, Wyoming, Utah County, Utah, the City of Auburn, Maine, and Velva, North Dakota (Coughlin, Esseks and Toner, 1981). In Santa Cruz County, California, the county board of supervisors is committed by ordinance to rejecting rezoning petitions, opposing the extension of sewer or water district boundaries onto these lands, and rejecting land division applications unless they "will not hamper or discourage long-term commercial agricultural operations." The Boone County, Illinois, ordinance defines a minimum legal parcel in terms of production income (i.e., \$10,000 gross annual income from agricultural activities in 1979) rather than acreage; non-farm residences are not permitted, either by right or by special-use permit, other than farm dwellings that existed at the time of the ordinance, which may be severed from the farmland. De Kalb County, Illinois, utilizes acreage and economic criteria: a parcel of at least 40 acres or a parcel which yields a gross annual income of at least \$10,000.

These communities utilize a performance definition of farming, and require that applicants show that their operations are or will constitute a legitimate farm use. Each application for a dwelling must be reviewed by the zoning administrator or building inspector, who uses assessor's records, loan statements from banks, farm management plans, and in-house farming expertise to ensure that it qualifies for a farm dwelling.

The Utah County, Utah, revised zoning ordinance includes two categories: "primary farm dwellings" and "secondary farm dwellings". Primary farm dwellings may be located on livestock or poultry farm units where the minimum assessed value of the animals ranges from \$1500 to \$2150 or on farm units engaged in crop or fruit farming with assessed value of at least \$4,000; secondary farm dwellings may be located on those farm units which have livestock with minimum assessed

FARMLAND S U B D I V I S I O N

values ranging from \$3,000 to \$4,300 or which are at least \$8,000 in assessed value (Coughlin and Keene, et al., 1981). According to Coughlin, Esseks and Toner, 1981, the primary farm dwellings which are not located on the farm unit must: receive special approval from the planning commission, be not more than one mile from the farm unit, and be located on a lot of at least one acre and at least 200 feet wide. The authors indicated that in this ordinance, secondary farm dwellings must also be occupied by families whose major sources of income are derived from the agricultural pursuits of the farm units on which the dwellings are located.

As with all other agricultural zones, exclusive agricultural zones do permit or conditionally permit non-farm uses such as landfills, cemeteries, mining and utility lines and facilities (Coughlin and Keene, et al., 1981). The Auburn, Maine zoning ordinance as amended in 1975 permitted a municipal sanitary landfill, as well as agriculture or horticulture and accessory buildings; harvesting of forest products and establishment of sawmills incidental to such harvesting; raising of livestock and poultry on land ten acres or more; veterinary hospitals on 10 acres or more; and bona-fide residences required for farm labor or management (at least 50% of the occupant's income must be derived from agricultural activities or at least 10 acres of the proposed farm must be devoted to the production by the occupant of field crops or grazing of the occupant's livestock) (Coughlin, Esseks and Toner, 1981).

In addition to the permitted uses, the Carbon County, Wyoming ordinance includes "special permit uses" (e.g., airport and radio transmitting stations, institutions, rest homes, hospitals, clinics, public buildings and schools, etc.) and "accessory uses" (e.g., customary accessory structures and uses, signs, home professional office, home occupations, private swimming pools and boarding or lodging houses, etc.); while the Velva, North Dakota ordinance includes "conditionally permitted uses" (cemeteries, animal hospitals, grain elevators, incinerator sites, and tourist-trailer courts with a minimum of 2 acres of land and a maximum of 15 campsites per gross acre, etc.) (Coughlin, Esseks and Toner, 1981).

A variation on this is existing use zoning (Gottsegen, 1992 for the Burlington County Freeholders; Humbach, 1989), a growth management tool intended to zone land according to its existing or current use (e.g., land currently used for agricultural production is zoned for agricultural use). Existing use zoning does not permanently preserve land, for any proposed change of use that is proven by the developer to be "in the public interest" may be requested through a variance; however, it can reduce new sprawl development and guide it into compact centers.

Standards for Non-Farm Related Subdivision

More prevalent is the nonexclusive agricultural zoning, which allows a limited amount of non-farm development. According to Coughlin and Keene, 1981, the

FARMLAND S U B D I V I S I O N

most important characteristic of an agricultural ordinance is the extent to which it limits the intrusion of new, non-agricultural uses (usually non-farm dwellings) into established agricultural areas. Two major types of nonexclusive agricultural zoning ordinances are large minimum-lot-size zoning and area-based allocation.

As the term indicates, large minimum-lot-size zoning requires a substantial minimum lot size, often 40+ acres; however, ordinances from around the country have varied from as little as 10 acres (e.g., Marshan Township, Minnesota) to over 300 acres (e.g., Madera and San Luis Obispo Counties, California) (Coughlin, 1991; Toner, 1978). The two main approaches to large lot zoning involve non-farm residences as either a permitted use or a "special" or "conditional" use. Examples cited in Coughlin, Keene, et al., 1981, include Brookings County, South Dakota, and Sherman County, Oregon. Case studies cited in Toner, 1978 include Walworth and Columbia Counties, Wisconsin, Black Hawk County, Iowa, and Tulane County, California.

In Brookings County, South Dakota, an ordinance was adopted that established an agricultural district that permitted single-family homes (including mobile homes). The main standard governing these homes is that they must be located on at least 35 acre lots. Sherman County, Oregon has an exclusive Farm Zone (F-1) with a minimum lot size of 40 acres that lists non-farm single-family homes as a conditional use; such dwellings may be authorized by the planning commission "if the applicant can prove that the use:

- (1) is not detrimental to nor will substantially interfere with the effective use of surrounding lands for uses permitted within the zone,
- (2) is compatible with uses permitted within the zone;
- (3) will not materially alter the stability of the overall land use pattern of the area, and
- (4) will comply with such other conditions as the Planning Commission deems necessary to accomplish the intent of (1), (2), and (3)." (Coughlin, Keene, et al., 1981)

Walworth County, Wisconsin has a comprehensive zoning ordinance that features 6 major land use categories and 26 separate zoning classifications, covering agriculture, conservancy, industrial, business, residential, and parks (Toner, 1978). The agricultural classification covers approximately 50% of the county, with the A-1 class (Prime Agricultural Land District) intended to preserve prime land. A 35 acre minimum is set by the ordinance, which covers almost half of the county. The Agricultural Land District (A-2) provides for small farms on units of non-prime land (e.g., horse farming and truck farming on a five acre minimum). The A-3 (Agricultural Land-Holding) District is transitional, where urban expansion is planned, with a 35 acre minimum to prevent premature subdivision and to encourage communities to develop orderly expansion plans for the area.

FARMLAND

S U B D I V I S I O N

An A-4 district (Agricultural-Related Manufacturing, Warehousing, and Marketing District) is designed to provide a location for important agricultural businesses so that Walworth County could strengthen the wholesale aspects of farming; all uses are conditional in this district (e.g., contract sorting, grading and packaging services for fruits and vegetables; grist mill services; production of condensed and evaporated milk; meat packing; livestock sales facilities; sales of farm implements and related equipment; transportation-related activities primarily serving the basic agricultural industry; and living quarters for the watchman or caretaker; etc. See Toner, 1978, Appendix E). The A-5 District is designed to allow single family homes on odd lots in agricultural areas (i.e., these lots are unsuitable for agriculture because of their size, shape or location. The ordinance text and map are the principal administrative vehicles, with the map being a 1-400' ASCS photo with the district boundary lines following natural features.

While Walworth County has five agricultural zones, Columbia County has one (Toner, 1978). This "all-purpose" agricultural zone contains all classifications of soils, and includes woodlands, wetlands, and steep slopes. The minimum lot size is 40 acres, and the only avenue of appeal, other than housing for farmworkers, is to have the property re-zoned. A few basic policy statements, combined with the highly restrictive zoning and the rezoning criteria listed below ensure the environmental sensitivity and agricultural integrity of the process. The evaluation form for rezoning states that lands will not be removed from the agricultural district unless:

- a. The area is of such size or shape that it is impractical to cultivate.
- b. The area is needed for development, ... and there are no alternate areas available.
- c. The area is located adjacent to a municipality or an established residential district and can be served by a central water and sewer system.
- d. Existing or planned activities on adjacent properties are incompatible with the agricultural use of the area.
- e. The area is not economically viable for agricultural use.
- f. The change in land use would not cause conflicts with the existing agricultural use on adjacent properties.
- g. Areas with severe or very severe soil conditions, as defined in The Soil Conservation Service Survey of Columbia County, or lands subject to flooding (unless they can overcome these conditions, they) ... shall not be approved for development...
- h. The proposed development would not place an undue burden upon the local government and require services which said government would be unable to provide.

FARMLAND S U B D I V I S I O N

- i. The public investment in the highway system shall be protected and extreme caution shall be used in approving development adjacent to these highways.
- j. The development be designed to minimize the amount of land removed from cultivation.

In Black Hawk County, Iowa, agriculture is an exempt use and cannot be controlled under the zoning ordinance. However, because a "farm" is defined as being a minimum of 35 acres, any amount of land less than 35 acres is controlled under the zoning ordinance. With residential zoning allowing houses on 3 acre parcels in agricultural areas and 1/2 acre lots in residential zones, prime soils eroded into premature, residential subdivisions. The Soil Conservation Service developed a Corn Suitability Rating (CSR) assigned to each mapping unit in the soil survey to assist the county in ranking the soils in a more sophisticated manner than the previous Class I, II, III, IV, etc. method. The CSR reflected a number of factors, including predicted yields for commonly grown crops, natural fertility, natural drainage, and response of the soil unit to farm management practices; CSRs range from a low of 5 to a high of 100, with the higher rating indicating a more productive soil. According to Toner, 1978, the result of the Black Hawk County experience is that soil surveys and interpretations of the SCS make excellent planning and regulatory resources, producing for the county a fairly simple, flexible and reasonable approach to preserving farms and farmland.

Tulare County, California utilizes an approach, according to Toner 1978, that is a composite of state law and local initiative. The Williamson Act encourages the long-term production of agriculture through contracts. The local Rural Valley Lands Plan (Amendment 86-09) established minimum parcel sizes for areas zoned for agriculture, and developed a policy that is "fair, logical, legally supportable and which consistently utilizes resource information to determine the suitability of rural lands for non-agricultural uses." The policy statement acts as a guide to the Planning Commission and the Board of Supervisors in their determination of appropriate minimum parcel sizes and areas where non-agricultural use exceptions in the rural areas of the county may be allowed. All lands above 600' elevation, areas around cities, unincorporated places and suburban nodes, and the few places currently zoned and occupied by non-agricultural use were identified and removed from the proposed agricultural zone. The remaining land was evaluated in terms of: (a) soil classification, (b) existing land use or crop capability, and (c) size of parcel in contiguous use. Zoning designations from this information included 10, 20, 40, and 80 acre minimums, and were developed by an advisory committee that used a matrix and a rating scheme that is part of the regulatory process because it is tied into the General Plan. The rating scheme is also used to determine re-zoning applications by covering special considerations while protecting the integrity of the agricultural area.

FARMLAND

SUBDIVISION

Area-based allocations allow the landowner to build a number of dwelling units as determined by the total acreage of the property; small building lots, often 1 acre are utilized. The two types of area-based allocation ordinances are fixed and sliding scale. Owners are allowed to build one dwelling per 40 acres, or some other specified area of land, under the fixed area-based allocation ordinance. The number of dwellings allocated per unit area, under sliding scale, decreases as the size of the tract increases. Coughlin, Keene, et al., 1981, list 21 jurisdictions utilizing fixed area-based allocation zones, with most concentrated in Minnesota and Pennsylvania; they list 14 communities using sliding scale area-based allocation zones. Case studies included in Toner, 1978, include Carver and Blue Earth Counties, Minnesota for "quarter/quarter" fixed area ordinances; and York County, Pennsylvania, Baltimore County, Maryland, and Dakota County, Minnesota for sliding scale ordinances.

While the median area-based allocation is 1 dwelling unit (DU) per 40 acres, it has been found to range from 1 DU per 10 acres in Hartford County, Maryland, to 1 DU per 160 acres in Harvey County, Kansas (Coughlin, Keene, et al., 1981). Minimum lot sizes range from 20,000 square feet to 3 acres, while maximum lot sizes are specified and reviewed on a case-by-case basis in order to limit the amount of land which is subdivided and devoted to non-agricultural use. Rice County, Minnesota, added further restrictions to the typical fixed area-based allocation zone ordinance by setting the basic allocation at 1 non-farm DU per quarter/quarter section (i.e., 1/16 of a section of land or 1/16 of 640 acres ~ about 40 acres; Toner, 1978) and the additional restrictions:

1. No more than four non-farm dwellings per mile on one side of a public road,
2. No non-farm dwellings permitted on land which has been tilled in the last five years and has Class I, II or III soils,
3. No dwellings permitted in poorly drained areas,
4. No dwellings permitted on land with a slope of 12% or greater unless accompanied by proper engineering plans,
5. No dwellings permitted which would require a new public street, and,
6. No dwellings which do not meet the requisite health and sanitary standards.

Coughlin, Keene, et al., 1981, note that these additional standards retain environmentally sensitive lands while directing non-farm dwellings to the least productive land uses.

Toner 1978, finds quarter/quarter zoning to be one of the most "intriguing" zoning approaches to maintaining farms and farmland. Most ordinances set 1 acre minimums and other standards governing the location of septic tanks and

FARMLAND SUBDIVISION

access to public roads, etc. to be met by each building site. Standards governing access to public roads and set-backs lower the effective density far below the 1 DU /40 acre minimum as not all of the lots have the required access or requirement for urban services. Carver County, Minnesota was the first to develop the quarter/quarter concept. Some of the key provisions, according to Toner, 1978, include:

1. A farm is defined as: "A parcel of land having one quarter/quarter section containing approximately forty (40) acres or more, or two (2) or more abutting parcels under the same ownership having an area of approximately forty (40) acres, measured from the center line of abutting roads, for purposes of residential density."
2. The permitted use in the quarter/quarter district is: "One (1) single family dwelling per farm, except as provided below.... Each eighty (80) acre farm having one dwelling unit thereon may convey therefrom a parcel of land for the purposes of residential construction...."
3. Dwelling units that existed at the time of adoption were exempted from the provisions of this ordinance.

Individual lots in Carver County must still meet the following requirements:

1. the minimum size is one acre or more,
2. the soil and water conditions must permit a well and an on-site sewer system,
3. access is allowed from an existing driveway, a township frontage road, or a new driveway with spacing standards ranging from 1250 feet for a principal or minor arterial road, through 1000 feet for a collector, to 300 feet for a local road, and,
4. each additional 40 acres over the basic 80 acres will entitle the farm to an additional conveyance for residential construction, but the proposed lot must be situated on the 40 acre parcel that makes it eligible as a building site.

The quarter/quarter approach was modified in Blue Earth County, Minnesota, through five actions: by encouraging, not discouraging development in clusters; by allowing the transfer of development rights from one parcel to another; by establishing a bonus provision to guide development into sites with low agricultural potential; by creating a contiguous lot provision; and by tracting the acreage involved. In Toner, 1978, the system is described by Planning Director Phil Sieber as "density zoning with transferable development rights." A conditional use permit is utilized to grant bonuses for "parcels or tracts of land which have not been farmed (tilled) within the past five (5) years prior to the date

FARMLAND SUBDIVISION

of the application for a building permit...." Lands that have not been farmed in 5 years are eligible for a bonus of one additional dwelling unit that is subject to a set of performance standards governing access placement and operation of individual wells and septic tanks, as well as protecting natural and historical features of the site. Two or more contiguous property owners are encouraged to combine their permitted lots into one quarter/quarter section; and must file the agreement with the county zoning administrator and recorder. The planners "tract" the acreage involved with an approved building permit to indicate the number of buildable sites still available.

Sliding scale area-based zoning allows a higher density of dwellings on small tracts than on larger tracts; this reflects the fact that smaller tracts are not as well suited for farming, and have already largely passed out of the agricultural land market and into the urban land market (Coughlin, Denworth, Keene, Rogers, and Brown, 1992). Each landowner is entitled, under sliding scale zoning, to a certain number of buildable lots according to the size of the parcel, with an inverse relationship resulting in small landowners permitted to develop a higher percentage of their property than are large land owners (Toner, 1978). These ordinances use minimum and maximum lot sizes, with 1 acre the typical minimum and 1-1/2 to 2 acres the common maximum. In the 14 cases cited in The Protection of Farmland, lot sizes ranged from 20,000 square feet to two acres, with the median being 40,000 square feet. The minimum size provides landowners some flexibility to sell off less productive areas of the property, and the latter is to keep the majority of prime land in agricultural use and to avoid the development of ranchettes. Most sliding scale ordinances also set standards governing the selection of buildable lots and the placement of wells and septic systems.

The first application of sliding scale area-based zoning was in Hopewell Township, York County, Pennsylvania, in 1974. A simple ordinance entitled each landowner in the rural/agricultural zone to 6 or fewer single-family homes, excluding the main farmstead. This ordinance also was the first to set a 1 acre minimum and a 1-1/2 acre maximum lot size for these parcels. The original ordinance also permitted farm buildings, green houses, and all other agricultural uses; houses of worship; and public buildings (Coughlin, Esseks and Toner, 1981). Other municipalities in York Township began utilizing their own brand of sliding-scale zoning, including Chanceford, Codorus, Lower Chanceford, Peach Bottom, Shrewsbury, Springfield, Washington and Winterstown (Coughlin, Keene, et al., 1981). Instead of adopting the simple standard of 6 or fewer non-farm units, these municipalities refined the sliding scale by adjusting the densities permitted according to the parcel size.

According to Coughlin and Keene, et al., 1981, the sliding scale area-based ordinance in Shrewsbury Township, Pennsylvania, is characteristic of most

FARMLAND
S U B D I V I S I O N

ordinances. Single-family homes are permitted in the agricultural district subject to the following allocation:

<u>Parcel Size</u>	<u>Units Permitted</u>	<u>Resulting Density</u>
0-5 acres	1	0.2 to 1.0 +
5-15 "	2	0.133 to 0.4
15-30 "	3	0.1 to 0.2
30-60"	4	0.67 to 0.133
Over 60 acres	5 plus 1 DU for each additional 30 acres.	0.033 to 0.083

This ordinance generally prohibits building on prime agricultural soils; it does, however, allow one unit on tracts of less than 5 acres with such soils and 2 units on larger tracts of prime soils.

Many of the sliding scale ordinances also direct the placement of units on the least productive agricultural lands. Lower Chanceford Township, Pennsylvania, requires single-family units be located on lots with low soil capability or on lots which cannot be farmed due to size, shape, slope or rock; if these lands are not available, the unit must be placed on the least productive land available. Peach Bottom Township, Pennsylvania, permits additional lots on soil capability classes VI e-5 through VII s-2 or on other lots which cannot be farmed (Coughlin and Keene, et al., 1981).

Toner, 1978, indicates that sliding scale zoning has been adopted as both a permanent and a long-range transitional control device. Baltimore County, Maryland utilizes this technique to preserve agriculture, while Dakota County, Minnesota, adopted an ordinance to maintain agricultural uses for a period of 20-30 years. Small-scale residential development is allowed in the interim in the basic agricultural district. The Baltimore County ordinance contains a statement of public purpose that includes economic, environmental and public cost criteria. Here, the sliding scale is adopted to maintain the agricultural base, to channel the bulk of residential growth into existing developed areas, and to preserve wetlands along the Chesapeake Bay. This statement reminds the reader of the previous ordinances that failed to achieve the similar purpose. Ravenna Township, Dakota County, Minnesota has a different public purpose: namely, that premature subdivisions, poor soils, rough topography and insufficient irrigation make sections of the agricultural area uneconomical for farming purposes. Residential development is permitted at 5 non-farm homes per 40 acres until water and sewer lines are available. This is what makes the Dakota County ordinance a long-range development timing technique.

A variant of the sliding scale is "parcel-based" allocation, which allows a given number of new dwellings on any parcel, regardless of how large it is. This

FARMLAND S U B D I V I S I O N

approach results in low overall densities unless the parcels are small. Kendall County, Illinois allows one single-family unit in addition to those existing prior to March 1977 on each parcel over 60 acres. In the agricultural zone, parcels less than 60 acres are not permitted additional units, and landowners are not entitled to additional lots through parcel splits. Parcels in Frederick County, Maryland are entitled to three or fewer lot minor subdivisions.

OTHER TECHNIQUES

The following are techniques other than agricultural zoning that are being used throughout the country to preserve and enhance agricultural uses of land. Some are controls while others are incentives, and may be applied to farm related as well as non-farm related subdivisions.

Two zoning techniques that can be problematic, according to Toner, 1981, are rezonings and parcel splits. Re-zonings are simply a change in zoning designations (e.g., from the agricultural zone to a residential zone). A list of criteria for evaluating rezoning applications is critical, as is the even application of this technique. The main criteria cited include: parcel size, shape and suitability for agricultural or non-agricultural use; proximity to cities; plan conformance; compatibility with farming; public service cost and availability; and environmental impact.

"Parcel splits" in which a single parcel may be split or divided into four or fewer lots with a minimum size are allowed in many states by statute. Toner, 1981, notes that problems arise when the resulting lots do not meet zoning requirements and are exempt from the zoning requirements. These exemptions are necessary, according to local officials to assure equity that the zoning ordinance denies.

"Subdivision regulations" are a comprehensive set of guidelines for physical development (Lapping, Daniels and Keller, 1989). As the term may indicate, these regulations set standards for dividing larger tracts of land into smaller lots. And, these regulations directly influence infrastructure decisions and ensure conformity among standards within a community. These regulations also seek to avoid haphazard and inefficient development patterns. Subdivision controls assure that there is an adequate transition between uses at the boundaries of different zoning districts. In Pennsylvania, many municipalities that do not have zoning ordinances and classifications of land rely on subdivision ordinances to control tract size or site development. Without zoning, these regulations must include uniform requirements for "minimum setback lines and minimum lot sizes which are based upon the availability of water and sewage" (Coughlin, Denworth, Keene, Rogers and Brown, 1992).

FARMLAND S U B D I V I S I O N

In their 1987 study of Clarke County, Virginia, Coughlin and Keene recommended that the county address, through their subdivision ordinance, the issue of an allowable minimum size for the division of agricultural land. Restrictions are viewed as appropriate on the division of parcels below a certain size in order to avoid the destructive effects of excessive parcelization on the farming economy. Determining that "complete farms" consist of a core of contiguous tracts and 1 or more outlying tracts, the authors examined the size distribution of complete farms to indicate the minimum acreage that can be farmed economically. The report recommended that the minimum size beneath which a tract or a group of tracts should not be divided should be set at 100 acres. The authors also noted that, while it might be desirable to limit land divisions to the economic size of complete farm operations, non-contiguous tracts alone would not be a proper subject for restrictions on subdivision.

A "variance" permits a departure from the strict terms of zoning district requirements. Rather than primarily an instrument to grant a change in land use, it is usually an opportunity to adjust space, parking, height or yard requirements. "Conditional uses" give the Board of Adjustment the opportunity to use site review to examine a particular location to determine if the designated land use is compatible with that of neighboring sites. In their study, Coughlin and Keene, et. al., 1980, found seven of the 94 communities surveyed had adopted zoning ordinances in which non-farm dwellings were treated as conditional uses, with requirements for small, minimum lot sizes. These lots set the conditional use zone apart from area-based allocation zones where non-farm dwellings are a permitted use as of right. Clay Township, Pennsylvania, Stow Creek Township, New Jersey, Deschutes County Oregon, Minnehaha County, South Dakota, Polk County, Oregon, Whitman County, Washington, and Marion County, Oregon were found to have conditional use zones.

"Special exceptions or permits" are issued when unique circumstances accompany the use of property and make it economically, environmentally or socially acceptable to deviate from current practice (Lapping, Daniels and Keller, 1989). Coughlin, Keene and Laarakker, 1984, note that special exceptions should be compatible with agriculture and supportive of the objectives of the agricultural zoning district. Special exceptions or permits should specifically include uses accessory to agriculture (e.g., farm stands), and uses that serve agriculture (e.g., agricultural equipment and services for households in the district). These exceptions should not permit uses that: serve customers beyond the agricultural area and require employees from beyond the agricultural area (as this may increase pressure for further non-agricultural related development), and produce excessive amounts of air or water pollution.

Coughlin, Keene and Laarakker, 1984, indicate that Hopewell, Peach Bottom, and Shrewsbury Townships, Pennsylvania, allow exceptions generally

FARMLAND SUBDIVISION

consistent with the criteria listed above; among those are agricultural societies, veterinarian offices, animal hospitals, feed and grain mills, farm equipment sales facilities, saw mills, stockyards and commercial feed lots. Lapping, Daniels and Keller, 1989 cite "granny flats" (i.e., an additional housekeeping unit on a lot zoned for only a single-family dwelling) which allow the elderly the opportunity to live close to families while in their own dwelling unit as affording a social and economic benefit to the community without violating the basic spirit of the zoning ordinance.

"Private property agreements" usually take the form of easements or covenants between adjacent property owners, or owners of lots within a development (Lapping, Daniels and Keller, 1989). Made between buyers and sellers, these agreements are designed to limit the use of property, and could be fashioned to conserve agriculture. Often, however, these agreements are made to prohibit the keeping of farm animals, and have frequently resulted in bitter conflict in rural areas.

"Compensable zoning" allows a landowner to receive payment for the loss of development value to the property due to restrictions placed on the land (Lapping, Daniels and Keller, 1989). This compensation occurs only at the time the property is sold to another farmer. Administrative and expense problems hamper this technique.

Other controls cited include: special overlay zones developed through a mapping system (e.g., the Land Evaluation and Site Assessment [LESA] system, Geographic Information Systems [GIS], etc.) to protect agricultural or forest activities by identifying areas with superior soils, land in active farming, and land comprising of farms with substantial sales of agricultural products; special use permit procedures to ensure that proposed development projects do not prevent or interfere with the achievement of accepted objectives; strengthened goals or statements that address the need to protect agricultural land rather than agricultural clusters; limitations on public investments that would encourage non-farm development; modifications to state agency administration regulations and procedures to encourage maintenance of viable farming in agricultural districts (e.g., see Heimstra and Bushwick, 1989, pp. 69-71 for a discussion of Illinois Executive Order No. 4, "Preservation of Illinois Farmland"); site planning standards that ensure the careful location of non-farm development on each tract; joint planning among owners of adjacent tracts; careful location of infrastructure; acquisition of development rights using revenues from the tax on land sales; and the donation of development rights (Coughlin and Keene, 1987).

"Right-to-Farm" ordinances and differential assessment programs may also be used to reduce farmland subdivision and preserve and enhance agricultural uses of land (Lapping, Daniels and Keller, 1989). Although drafted in most states to protect the business of agriculture from legal responsibility in nuisance suits,

FARMLAND S U B D I V I S I O N

these ordinances can be used to limit the amount of development in agricultural areas. Right-to-Farm laws, according to Lapping, Daniels and Keller, 1989, serve a vicarious need of rural and farm advocates to tell the non-farm resident: "You paid rural prices, you wanted rural taxes and privacy, and now you are going to have to make do with farm neighbors. Welcome to the countryside!" (p. 90). The authors hold that the most equitable method of dealing with the farm and non-farm residents is to avoid allowing the nuisance situation to arise in the first place.

Lapping, Daniels and Keller, 1989, advance the idea that the farm community must go beyond right-to-farm laws to deal with the fundamental problems associated with development in agricultural areas, for they hold that the farm community itself initiated the gentrification of the countryside. They cite a Washington state regulation that attempts to prevent the establishment of subdivisions in rural areas that might incite nuisance disputes. This state statute [Wash. Rev. Code Ann. ss 814.04, 823.08, West, 1982-1983) requires farm operators to forfeit the right to qualify for protection when land contiguous to the farm has been sold for residential purposes.

ASSESSMENT OF ALTERNATIVE TECHNIQUES

OVERVIEW

Many of the techniques listed above attempt to protect the agricultural land base by limiting the division of agricultural land; this occurs primarily by preventing the division of land into small or medium parcels that are too small to comprise economically viable farms. This assessment of the alternative techniques will address the economic, environmental, fiscal, intergovernmental, legal and social/quality of life implications of such actions.

Because of the high cost of acquiring development rights and the complexities of private agreements, agricultural zoning will probably continue to be the most common method of directly protecting agricultural lands from conversion (Coughlin, 1991). Indirect methods (such as agricultural districting and tax incentives) have made it easier for farmers to continue farming; however, in almost all cases cited, this does not prevent them from selling the land for development.

Unlike more typical zoning that is intended to give order to development, agricultural zoning seeks to protect a resource. Coughlin, 1991 states his belief that it is first necessary to demonstrate that the land constitutes a valuable resource whose protection is in the public interest; and, that the ordinance must be strong enough to make possible the continuation of agriculture while permitting enough development to withstand political and legal challenges. Agricultural zoning ordinances can be measured for their effectiveness by examining changes in ownership and sales patterns following adoption of the ordinance. The varieties of agricultural zoning listed above have been utilized throughout the country, and case studies of these techniques are cited in this report.

In their 1984 report "Agricultural Protection in Shrewsbury, Hopewell, and Peach Bottom Townships", Coughlin, Keene and Laarakker list seven generally applicable principles for effective agricultural zoning:

- (1) Restrict uses in the agricultural district to agriculture and uses compatible with agriculture.
- (2) Maintain parcels that are large enough to constitute economically viable units and encourage the assembly of smaller tracts.
- (3) Avoid conflict between farm and non-farm uses — limit the number of non-farm dwellings

FARMLAND

SUBDIVISION

- locate non-farm uses away from concentrated animal production facilities
- preserve large uninterrupted areas for farming.

- (4) Avoid the use of good farmland for non-agricultural development.
- (5) Avoid public actions that increase the pressure for development of the agricultural area.
- (6) Strengthen the infrastructure that supports the farming industry.
- (7) Combine incentives with controls.

Evaluating the effectiveness of agricultural zoning has not been easy, according to experts such as Thomas L. Daniels and Robert E. Coughlin. They note that this type of zoning cannot be proven effective solely because conversions to non-farm uses do not occur after the institution of agricultural zoning. A case study of land ownership and implied intention of use in Shrewsbury Township, Pennsylvania (where agricultural zoning was adopted in 1976) demonstrates that the adoption of agricultural zoning significantly reduced the flow of land in the agricultural district from owners who generally intended to keep the land in rural use to owners with intentions of developing the land.

ECONOMIC ISSUES

Agricultural zoning involves economic issues affecting the farmer, the farming industry, and the general public. Farmers require a stable supply of land available in order to expand operations and take advantage of cost-reducing economies of size; however, with rising land prices, and a fragmenting land base, it is increasingly difficult to expand and function efficiently (Lapping, Daniels and Keller, 1989). As for the industry, new technologies are well-suited for larger farms, and the scarcity of farm help has contributed to the decline of small farms. Federal farm programs also favor larger farms. Potentially conflicting with this are the large capital requirements for machinery and chemicals, operating losses, increased land prices, competition over land from non-farm investors and higher-paying non-farm employment. Farmers are also concerned about retirement and the value of their land for loan collateral, as well as the changing nature of agriculture in metropolitan areas.

Maintaining the land in a form that allows the continuation of agriculture is a major objective of agricultural zoning. The first sub-objective, according to Coughlin, 1991 is to restrict the division (or parcellation) of farmland to avoid its

FARMLAND

SUBDIVISION

breaking-up into small parcels. In their 1987 research on Clarke County (Virginia), Coughlin and Keene found a significant difference in price per acre of large tracts and smaller ones. The authors believe that this reflects the movement of land from large tracts in a stable agricultural market, through medium sized tracts in an increasingly unstable agricultural market, to smaller tracts in a market where the development value of land dominates. The smaller tracts are less efficient and less attractive to farmers because the higher value per acre reduces potential income. Also, farmers intending to buy land for long-term use in agriculture can only afford to pay a price that is supported by the respective agricultural activity. This situation has accelerated the shift of the land market from rural to suburban and urban.

However, the critical question. "How do you define the acreage beneath which division of a tract should not be permitted?" remains without an easy answer, and little research to rely on. The extensive literature on the economics of farm size is of little direct use, according to Coughlin and others, in determining the minimum acreage that should be permitted. A 1984 study in York County, Pennsylvania, of three townships attempted to determine how large individual farms were in the area of interest, and at the "farm core" to identify the minimum amount of contiguous land necessary to farm in an efficient manner. Coughlin, 1991 notes that the farm core is the economic basis of the farming activity; it is also the part of the farm that has the most permanence. A general standard of 100 acres was chosen as the limit beneath which division should not be permitted outside of the subdivision process (Coughlin, Keene, and Laarakker, 1984). A similar result of approximately 100 acres was found in Clarke County, Virginia (Coughlin and Keene, 1987).

Farm cores, however, may vary considerably in size. Coughlin, 1991 recommends that a reasonable, representative core size, though potentially arbitrary, needs to be identified. Coughlin, Keene and Laarakker, 1984 selected the lower quartile from the array of all farm cores in York County, Pennsylvania; these researchers found that 3/4 of all farm cores were larger than 83 acres in Shrewsbury Township, 100 acres in Hopewell Township and 122 acres in Peach Bottom Township. Three Oregon studies (i.e., Polk, Yamhill and Deschutes Counties) base standards on an examination of the size distribution of farm cores classified by important types of farming in the county (Coughlin, 1991; Pease and Lorenz, 1990; Pease, Mickaelson and Clinton, 1992). Coughlin warns that similar conclusions should not be interpreted as a general standard; the limit will differ from region to region, depending upon the type of farming, soil quality, climate, historic ownership patterns and other factors. He recommends that local surveys and analyses be undertaken.

The second sub-objective of agricultural zoning, according to Coughlin, is to keep open enough land that agriculture remains functionally viable. Area-based

FARMLAND SUBDIVISION

allocation zoning provides flexibility in site planning to allow a large portion of land to remain open. The total amount of land depends upon the tract size-class schedule, the minimum allowable lot size and the size distribution of all the tracts existing at the date specified in the zoning ordinance.

Related to the issue of suitable land under build-out, according to Coughlin, 1991 is the question, "Will the density of dwelling units permitted at full development under agricultural zoning be low enough so that land use conflicts will be acceptably low for farmers?" The increased level of conflict between farmers and non-farmers makes farming more difficult, fosters an "impermanence syndrome" among farmers, and leads to the dissolution of the agricultural economy.

Coughlin, 1991 also notes that research on the acceptable number of non-farm dwelling units is practically non-existent. In 1984, York County commissioned a questionnaire to all farm operators in Shrewsbury, Hopewell and Peach Bottom Townships which indicated that 2/3 of the respondents said that no more than 3 non-farm DUs per 100 acres should be permitted. The farmers polled indicated that it would be very difficult for them to continue farming beyond this density. The York County researchers also developed 3 density maps to show farmers the spatial considerations; results indicated that farmers could co-exist with non-farm development of 1 DU per 40 acres. Coughlin recommends the application of these types of studies prior to the adoption of an ordinance.

Lapping, Daniels and Keller, 1989 note that the mixing of farm and non-farm uses has not been beneficial to preserving agricultural land, because of the higher non-farm value of the land base. The market value of land and its value in agricultural use tend to converge, though, in exclusive agricultural zoning, which facilitates farm expansion and serves to keep down property taxes.

One study indicates, however, that agriculture has adapted to the urbanizing environment through the use of smaller farms, more intensive production, an increase in high-value crops and livestock, and greater off-farm employment. Heimlich, 1989 notes that agriculture is competing with urban uses for land by matching the higher rents urban uses are capable of bidding; this has, in turn, forced farmers to adapt their practices to generate higher net returns. Farmers in metropolitan areas where land values are supported by the urban demand are in better financial condition than elsewhere. The author also found that farms in metropolitan areas are less than half the size of those in non-metropolitan areas — due partly to farmland values and to the amount of time farmers spend working off the farm. The intensive farming is reflected in agricultural products that are sold per acre. Heimlich concludes that the more dispersed settlement pattern in newer metropolitan areas, the emerging environmental and lifestyle trends, and the recent developments in agricultural policy and economy favor the survival of farming in the metropolitan areas.

FARMLAND S U B D I V I S I O N

In her 1984 study "Minifarms: Farm Business or Rural Residence," Nora L. Brooks found that those farms with less than \$ 2,500 in farm sales annually account for about 25% of all U.S. farms. The author also found that most minifarm operators spend over 200 days a year doing off-farm work. Most relevant for this study is her finding that minifarms and small farms are primarily rural residences for those employed in non-farm occupations or the retired. She concluded that,

"The characteristics of minifarms in this analysis — high total income, high proportion of operators with nonfarm occupations, extensive farm resource use, and farm assets heavily weighted toward residential rather than production uses — indicate that these operators are interested in rural living, but not necessarily in farming as an income-generating activity.

If, as this evidence strongly suggest, minifarms and small farms are maintained primarily as rural residences and secondarily as farm businesses, then programs aimed at improving their operators' farming skills are unlikely to be effective" (Brooks, 1984, p. v).

The central problem with agricultural zoning in Oregon, according to Daniels, 1989 has been the creation of the minifarms or "hobby farms"; these parcels of less than 50 acres generate less than \$ 10,000 a year in sales and compete with commercial farming operations for the same farmland. Daniels utilized agriculture census data to develop the following methodology to evaluate agricultural zoning:

- (1) the change in the number of farms in each county, along with the number of acres in farming, and the total value of farm output to determine the level of farmland conversion and the strength of the local farming economy;
- (2) the change in the number of farms with sales of less than \$10,000 a year, the change in the number of farms of less than 50 acres, and the change in the acreage in these farms to indicate the degree of presence of hobby farming;
- (3) an overall evaluation of the performance of agricultural zoning: a poor rating reflects a loss of over 10,000 acres, an increase of over 10% in hobby farms or hobby farm acreage, and a decline in the total farm output value; a fair rating describes a 5,000 to 10,000 acre loss, a 5-10% increase in hobby farms, and a

FARMLAND S U B D I V I S I O N

marginal (less than 5%) increase (or decrease) in the total farm output; a good rating indicates a loss of fewer than 5,000 acres and little, if any, increase in hobby farms and acreage, along with total farm output increasing; and, an excellent rating for very small losses in acreage (fewer than 1,000 acres), and a decrease in hobby farms and acreage, with a total farm output value increasing by more than 10%.

Daniels concluded that the performance of agricultural zoning has greatly improved from the 1978-1982 period when Oregon led the nation in the creation of hobby farms. Most importantly, he notes that the value of agricultural output grew by almost \$ 150 million, or 20% during that time. Daniels observes that keeping agriculture profitable is the single surest way to preserve farmland because farmers are integral to this industry. He further recommends that periodic performance checks are needed to monitor the health of the local economy, and to determine whether farmland is being protected.

According to Pease, 1991, economic considerations suggest that a farm should be of a sufficient size to cover operating costs and amortize land costs. He also pointed out that part-time farming has become a commonplace and acceptable lifestyle alternative that does not necessarily reduce the food-producing potential of the land.

Regarding the issue of "equity" and the potential loss of land value due to agricultural zoning techniques, research has indicated that the more flexible types of agricultural zoning, including non-exclusive and area-based sliding scale provide adequate protection. In their 1991 study, The Effects of Agricultural Zoning on the Value of Farmland. Gray, et. al. found that data from actual land sales in four counties with agricultural zoning indicate no evidence of decreases in land values over a period of fifteen years. Perhaps more importantly, their interviews with leading lending institutions in Maryland revealed that the ability of the specific farm operation to repay the farm loan is the most specific criteria for approving both real estate and operational loans. The authors conclude:

"In summary, agricultural zoning creates an economically viable environment for farmers so they can make a suitable return on their investments." (Gray, Fesco, Purdy and Vosick, 1991, p. 3)

ENVIRONMENTAL ISSUES

Heimlich, 1989 notes that the concern expressed by people for the built environment is only a part of the pervasive environmental awareness that extends

FARMLAND S U B D I V I S I O N

to multiple agricultural concerns, including farmland preservation, food quality and safety, and "factory" agriculture that uses highly mechanized monoculture or confined livestock operations. He cites Lessinger, 1987 who has named the residents of the newly developed areas as "caring conservers" who support environmental protection, historic preservation and farmland retention in reaction to the suburban mass-consumption values of previous decades. The author notes Anderson's 1986 finding that new residents have been among the most vocal and effective proponents and supporters of laws to protect farmland at the local and state level. And, he found that if emerging environmental and consumer trends continue, metropolitan farms will increasingly adopt high-value enterprises, reduced-input or organic production methods, and innovative and direct marketing strategies to meet the constraints and to exploit the marketing advantages inherent in metropolitan areas. This will favor a return to locally grown fruits and vegetables over transcontinental shipping and trans-seasonal storage. Agricultural zoning techniques, especially those that accommodate growth pressures, preserve agricultural land and encourage locally-grown and sold produce could be successful given this increased environmental awareness.

Toner, 1978, notes that many communities see farmland preservation as one part of a more important program to maintain natural systems and natural processes. He found that communities meet objectives other than agricultural in the preservation of wetlands, small watersheds, aquifer recharge areas, flood plains and special wildlife habitats. The author acknowledges that fanning can damage sensitive natural areas and systems; yet, as a whole, he felt that fanning can be a compatible use, especially if communities sensitize fanners to the sensitive environmental qualities of the area as a part of the farmland preservation program.

FISCAL ISSUES

Agricultural zoning and other techniques listed above seek to limit urban sprawl and thereby reduce infrastructure and service costs to taxpayers. Pease, 1991 indicates, however, that the benefits of these objectives are directed more at the general public than at the individual farmer, and provide little guidance to specific farm size standards.

In their cost of community services studies for the Massachusetts Department of Food and Agriculture and the Towns of Agwam, Deerfield and Gill (1992); as well as for Beekman and Northeast Dutchess County, New York (1989), the American Farmland Trust compared the fiscal impact of major land uses — residential, agricultural land and commercial/industrial — to determine the relative impact of a particular land use on a town's budget and to use this to promote a balance of land uses within a community. Does Farmland Protection Pay? The Cost of Community Services in Three Massachusetts Towns provides

FARMLAND

SUBDIVISION

significant fiscal support for agricultural protection techniques such as agricultural zoning. Julia Freedgood indicates in the 1992 AFT study that for every dollar raised in three Pioneer Valley (Massachusetts) towns from farms, forest and open lands, \$ 0.67 cents remained after the payment of community services. This compares very favorably to the \$1 to \$1.12 ratio for residential lands, and is only marginally less beneficial than commercial/industrial uses (\$1 to \$0.41). For this study, the "Farm/Open Land" category includes property used or designated as open space, forests, agriculture, recreation lands, farm buildings (but not farm houses and housing for farm employees, which were assigned to the residential sector), vacant commercial or industrial parcels over five acres and residential parcels over six acres. The AFT studies clearly demonstrate that agricultural land is far more than undeveloped open space awaiting a higher and better use; these studies could also be utilized to support agricultural zoning and other techniques that seek to reduce fiscal burdens on taxpayers.

INTERGOVERNMENTAL ISSUES

Although zoning is viewed as a suspect technique because it is easily changed when development pressures rise, agricultural zoning is less likely than other types of zoning to be changed to allow development. The public purpose, incentives and presence of supportive state legislation enhance the effectiveness of agricultural zoning. In addition, growth management programs that facilitate development in other areas where public facilities are provided, along with available development incentives and an expedited approval process were found to increase the long-run effectiveness of agricultural zoning.

Critics also complain that agricultural zoning is "exclusionary," "environmental zoning in disguise" and that it ignores agricultural interests (CToner, 1984). A survey by the American Planning Association of jurisdictions represented in the National Agricultural Lands Study (NALS) asked local officials about five areas of interest:

- (1) if they felt that agricultural zoning was accomplishing intended goals;
- (2) what zoning was intended to do;
- (3) what special interest groups were involved in the design or administration of agricultural zoning;
- (4) did communities put agricultural zoning in a comprehensive planning context before adoption; and,

FARMLAND
S U B D I V I S I O N

- (5) what were the technical weaknesses and strengths of the zoning?

According to Toner, 1984, the initial results made clear that agricultural zoning activity had increased substantially since the NALS, that officials seemed satisfied with agricultural zoning, and that the agricultural community had played a strong role in developing and implementing the ordinances.

Exclusive agricultural zones are difficult to get adopted, for they prohibit all non-farm development. Toner, 1981 notes that most landowners resent such a total prohibition and fight against its adoption. Exclusive agricultural zoning has also been found to have higher administrative costs, with each proposed home requiring a case-by-case evaluation to ensure the home is for a farm purpose.

The Exclusive Farm Use zones in Oregon have been credited with slowing the loss of farms and farmland; over 16 million acres have been placed in EFU zones (Lapping,- Daniels and Keller, 1989). However, recent studies have indicated that there has been a sharp increase in the number of hobby farms, with local jurisdictions lax in enforcing the Oregon Land Use Act.

Large lot zoning has been criticized as inefficient and ineffective. Regarding large lot zoning, Randall Arendt has said:

".. large lot zoning.. destroys open space and town character. It consumes land at an alarming rate and leaves a bland homogeneous landscape, with lot dimensions, building placement and road layouts predetermined by a straitjacket of uniform zoning regulations. Good design is precluded by inflexible zoning by-laws that force development into 'cookie-cutter* molds... If residents prefer compact town centers to 'hamburger highways,' the choice is theirs. No one is forcing them to keep inappropriate regulations on the books." (The Boston Globe, July 3, 1988, as cited in Coughlin, Denworth, Keene, Rogers and Brown, 2nd edition, 1992)

The principal weakness of large lot zones, according to Coughlin, Keene, et al., 1981 is that regardless of the various approaches taken throughout the country, the minimum lot size defines the farm use. Anyone purchasing the minimum land area is permitted to build a single-family dwelling regardless of the actual use of the property. While large lot zoning discourages most non-farm residences, it does not deter the non-farm buyer who is determined to erect a non-farm dwelling.

FARMLAND

SUBDIVISION

LEGAL ISSUES

A major objective in designing land use controls, according to Coughlin, 1991, is permitting enough development to guard against court challenges and to satisfy voters that these regulations are not overly restrictive. The author notes that legal challengers typically argue that the controls constitute a taking without just compensation, or that they constitute exclusionary zoning. Coughlin holds that the courts have not provided any clear guidance as to how large the reduction in value must be to constitute a taking. As long as the public purpose of the ordinance and the method of drafting it are clear, the courts will uphold the zoning.

In "Agricultural Land Preservation: Legal and Constitutional Issues," John C. Keene identifies 5 questions related to legal problems in regulatory programs for preserving agricultural land:

1. Is the program authorized by state enabling legislation?
2. Is it in accordance with a Comprehensive Plan?
3. Is there a taking without just compensation?
4. Does the program expose the municipality to liability under federal anti-trust laws?
5. Does an agricultural land preservation program constitute exclusionary zoning?

The major constitutional issues raised by Coughlin, Keene and Laarakker, 1984 in their study of Shrewsbury, Hopewell and Peach Bottom Townships include substantive due process, equal protection, anti-exclusionary zoning and takings. Regarding substantive due process, the authors questioned whether agricultural land protection provisions conform with these constitutional provisions; they found that the Pennsylvania court recognized the protection of prime agricultural land as a legitimate purpose for police power regulation, as well as one that is consistent with the national, regional, state and local needs. However, the court held that the ordinance could not be overly restrictive, weighing the burdens imposed by the ordinance with the landowners' rights against the public interests sought to be protected.

As for the equal protection issue, the court held that the general interest in preservation of farmland must justify the disparity of treatment. Anti-exclusionary zoning concerns relate to whether or not the ordinance, taken as a whole, is exclusionary. If a land owner in the agricultural zone is able to show that insufficient allowance has been made in other parts of the municipality for

FARMLAND S U B D I V I S I O N

higher density housing, the courts may order the town to allow such development in the agricultural zone.

Regarding the taking issue, the authors note that when a regulation such as a zoning ordinance limits drastically the uses of a parcel, the ordinance may be illegal. Cases involving the reasonable use of property and the denial of any use were cited.

Agricultural zoning per se has generally been found to be valid and not a taking. The New Jersey Supreme Court affirmed, in Gardner v. New Jersey Pinelands Commission (125 N.J. 193) that the Pinelands Protection Act and regulations implementing it, which limit residential development by large tract requirements and complementary deed restrictions on undeveloped, non-residential land, did not violate the takings clause by restricting the owner's use of the property to farmland and related uses; and, that the Pinelands Comprehensive Management Plan did not deny the owner of farmland equal protection under the State Constitution by subjecting him to restrictions more severe and granting him less benefits than farmers participating in easement programs under the Right-to-Farm Act and the Agriculture Retention and Development Act. As a result of this decision, the Pinelands Commission continued to undertake a program of farmland preservation through the court's affirmation of the present scheme of three options.

Successful challenges to agricultural zoning have generally relied on arguments related to its application, primarily the reasonableness of the restriction. In Grand Land Development Co. v. Bethlehem Twp. (196 N.J. Super. 547, 483 A.2d 818, 1984, cert. denied. 101 N.J. 253, 501 A.2d 924, 1985), the court did not question the validity of agricultural zoning, but found that the decisive issue was "whether residential use in the A-25 zone was unreasonably restricted, without justification under applicable statutory and decisional zoning law and without reasonable relation to any valid zoning objective." (483 A.2d, 820) Under the A-25 zone in question:

"residential use on one and a half acre lots [was] permissible by subdivision of both a building lot and a 25 acre lot which must remain in agricultural use; or alternatively, by a subdivision of a single one and a half acre lot conditional upon the reservation of 25 acres of the property prior to subdivision, not necessarily adjoining, in continuing agricultural use..."

The court found that this restriction was "palpably indefensible and without authority in the Municipal Land Use Law or decisional law.... We conclude that the restriction on residential use in the A-25 zone is invalid..." (Grand Land at 820)

SOCIAL/QUALITY OF LIFE ISSUES

Lapping, Keller and Daniels contend that preserving the benefits of a way of life in the face of rural in-migration and recreation or second-home residents is a classic area of litigation. They acknowledge that when agriculture and non-farm uses are contiguous, there are likely "spillovers" from one use to the next. "Right-to-Farm" ordinances favor agricultural uses above all others and supersede local nuisance ordinances to provide the farmer with some protection. This, combined with agricultural zoning and other financial incentives could be an effective program to retard farmland subdivisions.

Toner, 1978 holds that communities seek to maintain their dominant rural lifestyle by maintaining farms and farmland. He contends that Mr. Justice Douglass could have been speaking to these communities when he wrote the majority opinion in Borras v. Village of Belle Terre:

"A quiet place where yards are wide, people few, and motor vehicles restricted are legitimate guidelines in a land-use project addressed to family needs....The police power is not confined to elimination of filth, stench and unhealthy places. It is ample to lay out zones where family values, youth values and the blessings of quiet seclusion and clean air make the area a sanctuary of people" (Toner, 1978, p. 4)

Pease, 1991 cites the U.S. Rural Development Act of 1972 which targets the social and economic stability of the whole rural community, rather than just the farm community to support his finding that a policy objective in a zoning ordinance should include the stability of the rural community. Given this, he contends that the local regulation of a minimum parcel size could result in a quantitative standard significantly different from that resulting from analysis of the agricultural sector or individual farm management. Pease also cites a study by E. Thompson of the American Farmland Trust that small farmers are more conscious stewards of the land than larger farmers, and that such stewardship attitudes may strengthen the long-term sustainable use of the land and the social and economic stability of the community.

CONCLUSIONS

APPLICABLE TECHNIQUES

"As the land resource is broken up into smaller and smaller tracts, its value for agriculture is diminished. Two effects can be observed:

First, the assembly of enough land for a farm of minimum efficient size becomes more difficult, and farmers are forced to farm several scattered tracts. These are less efficient to farm than is one farm composed of contiguous tracts.

Second, as parcelization progresses, more and more non-farm owners are brought into the market because the supply of land contains more tracts of the size they can afford. They bid up the price of land beyond agricultural use value, making it unaffordable by farmers, especially beginning farmers attempting to acquire land for a core farm....

The change in the size distribution of tracts that constitute the agricultural land resource is invisible and often precedes more obvious changes in land use, but it is a real change in the land market that almost inevitably leads to changes in land use years later. This progression is difficult to reverse, but it can be stopped." (Coughlin and Keene, 1987, pp. 97-98)

This report identifies over 25 techniques cited in the literature which may address how to preserve land and enhance agricultural uses of land in the face of subdivisions. Agricultural zoning techniques were found to be the most widely used, with varying intents and results. Exclusive agricultural zoning can eliminate subdivisions; however, this may be legally and politically contested. Existing use zoning follows the same direction and may provide similar opportunities and constraints.

Non-exclusive agricultural zoning will address preservation and development issues, yet may require additional administration. Large minimum lot size ordinances seek to reduce growth pressures and the need for urban

FARMLAND
S U B D I V I S I O N

services; they may also result in conflicts between residences and farming operations. Area-based allocations (i.e., fixed, sliding-scale and parcel-based) increase the opportunities for development — especially on poor soils — yet increase the administrative and infrastructure costs.

The other techniques listed provide additional avenues for study. Utilized in conjunction with a strong agricultural zoning ordinance, one or more of these techniques could strengthen the agricultural industry and the farmland base.

Land Use Subdivision Techniques to Preserve Agricultural Uses of Land

<u>Type of Technique I.</u>	<u>Jurisdiction</u>	<u>Advantages/ Disadvantages</u>
Agricultural Zoning A.		
Exclusive		
1. Farm Related Residential	Hawaii, Oregon, Wisconsin	Prohibits non-farm homes; /Political and legal problems
2. Other Farm Related	Santa Cruz, CA; Boone & DeKalb Counties, IL; Carbon Co., WY; Utah Co., UT; Auburn, ME; Velva, ND	Restricts non-farm-related subdivisions; /Political and legal problems
3. Existing Use Zoning		Reduces Sprawl; /Political problems, untested in NJ
B. Nonexclusive		
1. Large Minimum-Lot Size Zoning	Brookings Co., SD; Sherman Co., OR; Walworth & Columbia Co., WI; Black Hawk, Co., IO; Tulare Co., CA	Ensures large parcels; /Inefficient & ineffective
2. Area-Based Allocations		
a. Fixed (Quarter/Quarter)	Carver, Blue Earth, & Rice Counties, MN	Allows some residential development; /Potential use conflicts
b. Sliding Scale	York Co. (incl. Shrewsbury, Hopewell & Peach, Bottom), PA; Baltimore Co., MD; Dakota Co., MN	Allows some residential with development flexibility; /Potential use conflicts

Land Use Subdivision Techniques to Preserve Agricultural Uses of Land

<u>Type of Technique</u>	<u>Jurisdiction</u>	<u>Advantages/ Disadvantages</u>
* Parcel-based	Kendall Co., IL; Frederick Co., MD	Allows some development without overall tract-size restriction
II. Other Techniques		
A. Rezoning	Various	Allows some flexibility and equity in decisions; /Uneven application
B. Parcel Splits	Various	Allows added lots - equity; /Resulting lots may not meet requirements
C. Subdivision Regulations	Various	Sets standards for dividing large tracts; /Inefficient, often not effective
D. Variance	Various	Allows adjustments; /Haphazard use
E. Conditional Uses	Various	Allows development compatible with adjacent areas; /May cause conflicts
F. Special Exceptions or Permits	Various	Allows for unique circumstances; /Can lead to additional parcel splits if not carefully designed

Land Use Subdivision Techniques to Preserve Agricultural Uses of Land

<u>Type of Technique</u>	<u>Jurisdiction</u>	<u>Advantages/ Disadvantages</u>
G, Private Property Various Agreements		Easements or covenants to limit use of property; /Can result in restrictions and conflict
H, Compensable Zoning	Various	Payment for loss of development value; /Administrative and expense problems
I. Right-To-Farm	Various	Reduce nuisance conflicts; /Not effective at limiting subdivisions that cause conflicts

III. Other Controls requiring further review

- A. Special Overlay Zones
- B. Special Use Permit Procedures
- C. Strengthened Goals in Master Plan
- D. Limitations on Public Investments
- E. Modifications to State Agency Administrative Regulations & Procedures
- F. Site Planning Standards
- G. Careful Location of Infrastructure
- H. Acquisition of Development Rights
- I. Donation of Development Rights

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