

## Rural Cluster Zoning: Survey and Guidelines

By Gary Pivo, Robert Small, and Charles R. Wolfe

Rural counties close to urban areas are the fastest-growing places in America. During the past three decades, outlying metropolitan counties, characterized by rural settlement patterns and heavy commuting to the metropolitan core, grew at a much faster rate than the nation, central metropolitan counties, or metropolitan statistical areas as a whole. Between 1970 and 1987, the population of outlying counties in metropolitan areas increased by nearly 7.5 million.<sup>1</sup> As more people work at home, retired populations grow, and workplaces suburbanize—people are looking for homes beyond suburbia. A new rural sprawl is consuming large amounts of land, splitting wide open spaces into fragments that are useless for agriculture, wildlife habitat, or other rural open space purposes. Residential and agricultural land uses often conflict. When residential subdivisions move into agricultural districts, rising land values and nuisance complaints often discourage the continuation of farming or forestry.<sup>2</sup> Favorable property tax rates, agricultural zoning districts,<sup>3</sup> and right-to-farm laws are all aimed at reducing these conflicts.<sup>4</sup>

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1. U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 1039, PATTERNS OF METROPOLITAN AREA AND COUNTY POPULATION GROWTH: 1980 TO 1987, U.S. Government Printing Office, Washington, DC, 1989.

2. See *Spur Industries, Inc. v. Del E. Webb Development Co.*, 108 Ariz. 178, 494 P.2d 700 (1972 Ariz.) for a commonly cited judicial discussion of incompatible adjacent land uses.

3. The objectives of agricultural zoning are: (1) to protect productive agricultural land from development; (2) to locate new development on suitable soils in areas where public sewers could be efficiently provided; (3) to ensure a proper balance of different types of land uses to meet the needs of the future; (4) to minimize land use conflicts arising from nonfarm uses near active farms; and (5) to control the escalation of property values of farmland and reduce taxes paid by farmers. A typical agricultural zoning ordinance requires: (1) large lots (i.e., 50 to 100 acres in size); (2) a prohibition against conversion of farmland to nonfarm uses; and (3) restriction of residential development to structures directly related to farming activities, such as a home occupied by a farmer, the farmer's parents or children, or unrelated people working on the farm. Special exceptions and conditional uses, such as farm implement dealerships or feed lots, may be compatible and allowed within an agricultural zone. Once agricultural zones (or districts) have been adopted, affected properties often qualify for tax relief under a state's use-value assessment program. Certain states have adopted legislation providing for the establishment of agricultural districts. For example, N.Y. Agric. & Mkts. Law 14, §300 (McKinney, 1972, as amended 1988).

4. The law of the majority of American jurisdictions, see, for example, N.Y. Pub. Health Law, §1300-c, (McKinney, 1990) has been modified to provide farmers with a defense against nuisance actions resulting from changed conditions in the locality. These statutes, generally termed "right-to-farm laws," vary considerably in many particulars but share the common goal for encouraging farmers to continue devoting their land to agriculture. The impetus for this policy is recognition that a serious effort must be made to protect America's agricultural base. As of December, 1983, 47 states had adopted "right-to-farm laws" to protect farmers from nuisance suits.

An alternative is rural cluster zoning. In the case of *Orinda Homeowners Committee v. Board of Supervisors*, 90 Cal. Rptr. 88, 90 (Cal. App. 1970), 23 ZD 79, a California court has defined cluster zoning as:

... a device for grouping dwellings to increase dwelling densities on some portions of the development area in order to have other portions free of buildings . . . the plan is to devise a better use of undeveloped property than that which results from proceeding on a lot-to-lot basis. Control of density in the area to be developed is an essential part of the plan. The reservation of green, or at least open, spaces in a manner differing from the conventional front or back yard is another ingredient.

This commentary focuses on the application of cluster zoning to rural areas. Ordinance writers need to pay special attention to rural clustering since not all suburban cluster concepts are readily transferrable to rural locations. Specifically, suburban cluster concepts are inapplicable to rural areas because of their unique issues related to rural character and lifestyles, environmental protection, and compatibility with agriculture. New, special principles must guide the adaptation of cluster zoning to the rural countryside.

To assure a successful translation from a suburban to a rural cluster approach, we have developed 11 general guidelines for rural cluster zoning. The purpose of this commentary is to present these guidelines and to explain how they differ from current regulatory practice and implementation efforts.

Our ideas are based on review and development of general legal "ground rules" for cluster development, an analysis of 20 rural cluster zoning ordinances from across the country, interviews with and recommendations of the officials who use them, and graduate planning and design studios conducted at the University of Washington, in Seattle. Overall, we found significant opportunity for improvement in planning for and implementing rural cluster regulations.

### LEGAL BASIS

Whether the cluster approach appears in a suburban or rural context, it must be based on sound legal and planning principles. Before drafting a cluster ordinance, those involved must assess the rural community's overall goals and objectives for open space preservation and provision of housing types so that these goals can be included in planning documents that precede the cluster ordinance. For instance, if two of the goals are to link open spaces and to complement existing agricultural uses, these sentiments should appear as policies in the adopted municipal "master plan" or "plan of development." In addition, planning and zoning authorities should develop inventories and maps of desired protected areas in order to target parcels of land suitable for cluster development in the future.<sup>5</sup>

### State Guidelines

The local authorities implementing a rural cluster program must also consider any statutory language regarding cluster ordinances from the enabling authority at the state level. A minority of states' zoning enabling legislation specifically ad-

5. Such advance planning is essential in the wake of *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987), 39 ZD 226, in order to establish that the requirements of the cluster regulation bear a substantial relationship to a legitimate governmental interest.

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dresses cluster zoning.<sup>6</sup> Nonetheless, several courts have held that a cluster ordinance may proceed under ordinary zoning enabling authority, even if the cluster technique is not specifically authorized by the state<sup>7</sup>, because properly drawn cluster ordinances restrict only the location of structures on a parcel and do not severely impede the overall density of development. Cluster ordinances have also been generally upheld under general zoning enabling authority as long as adequate procedural due process provisions and administrative standards and guidelines are included.<sup>8</sup>

Most cluster ordinances are optional—a developer can readily ignore the cluster alternative in favor of a conventional subdivision. There is, however, an increasing trend toward allowing local authorities to require cluster development on a given parcel. New York's zoning enabling law, for instance, expressly allows a local legislative body to authorize its local planning board to mandate cluster development under certain circumstances.<sup>9</sup> Many legal authorities argue that, under a properly drafted ordinance, mandated cluster developments may be permissible even without such express enabling language.

## Rules and Standards

To be workable and legally defensible, a cluster ordinance must set out rules and standards that can be applied to proposed developments. Such an ordinance should contain, at minimum, provisions that set out:

1. Application procedures;
2. A statement of minimum parcel size, natural features, or other qualifying parcel characteristics necessary for allowing the use of the cluster approach;
3. A method or calculation for determining the allowable number of dwellings (overall density);
4. Infrastructure requirements for roads and provision of water, sewer, and other utilities;
5. Permitted types of dwellings and design standards, if any;
6. Criteria for establishing dimensions of lots, setbacks, and road frontages; and
7. Perhaps most importantly, specific criteria addressing

6. See, for example, 111. Ann. Stat. Ch. 24, §§11-13-1 *et seq.*; Ind. Code Ann., §36-7-4-601; N.Y. Town L., §281; N.Y. Vill. L., §7-738; N.Y. Gen. City L., §37; Ohio Rev. Code, §§519 *et seq.* •

7. See, for example, *Orinda Homeowners Committee v. Board of Supervisors*, *supra*; *Littlestone Co. v. County of Cook*, 311 N.E.2d 268, 279 (111. App. 1974); *Cheney v. Village 2 at New Hope, Inc.*, 241 A.2d 81 (Pa. 1968), 20ZD178. For a landmark history of the cluster concept, see J. Krasnowiecki, *Planned Unit Development: A Challenge to Established Theory and Practice of Land Use Control*, 114 U. PA. L. REV. 47 (1965).

8. *Id.* See *Prince George's County v. M & B Construction Corp.*, 267 Md. 338, 297 A.2d 683, 694 (1972 Md.), 26 ZD 22; *Bruni v. City of Farmington Hills*, 293 N. W.2d 609 (1980), 32 ZD 353.

9. N.Y. Town L., §281; N.Y. Vill. L., §7-738; N.Y. Gen. City Law, §37. N.Y. Town L., §281, allows the local legislative authority to authorize local planning boards to require cluster developments upon review of subdivision plats. This procedure is applicable only to lands zoned for residential purposes and cannot result in a number of "building plats or dwelling units" that would exceed the number allowed pursuant to an ordinary subdivision in the underlying zone.

the location, amount, and use of open space on the parcel, as well as permitted methods for open space ownership and maintenance. (For instance, whether the land and/or development rights are owned in conjunction by all the landowners, within specific lots in the name of individual owners, or altogether deeded to another party, such as the town.)

Additional provisions may address specific requirements for affordable units, and/or allowance of a density bonus to developers of cluster projects. Density bonus provisions are common, where legally allowable, and can often provide an extra incentive for a developer to use cluster development. As discussed below, however, its applicability may be of questionable value where preservation of rural character is a major goal.

## PURPOSES OF RURAL CLUSTER ZONING

Two purposes for rural cluster zoning are commonly given in cluster ordinances: to allow residential development in rural areas and to protect open space suitable for agriculture or environmental protection. The ordinances' fundamental premise is that both purposes can be achieved on the same parcel. The following statements of purpose are typical:

[T]o allow single-family dwellings to be clustered together in areas of non-prime agricultural farmland in a manner that prime agricultural farmland, woodland, and unique natural amenities would be preserved. (Rochester-Olmstead County, Minnesota)

[T]o provide . . . a compatible mixture of agricultural uses and low-density residential development, to promote agriculture, and to protect scenic and environmentally sensitive areas. (Montgomery County, Maryland)

[T]o encourage the preservation of agricultural lands for continuing and enhanced production through use of a variety of techniques. One technique is clustering instead of dispersal of units on larger parcels. (San Luis Obispo County, California)

But the purposes of rural cluster zoning are not always achieved in practice. Impediments can include, among others, conflicts with existing agriculture, developers choosing not to use the cluster option, and open space reserves that are unsuitable for their intended purposes.

The following guidelines help practitioners overcome these types of impediments. Because practitioners may use the guidelines in a variety of jurisdictions, they are stated in general language and performance terminology wherever possible. The guidelines are intended to be adapted to specific situations by local practitioners.

## LOCATING RURAL CLUSTER DISTRICTS

*Guideline 1: Rural cluster zoning is most suitable in rural- to-suburban transition areas where it can preserve small-scale farming and open space while providing needed housing.*

Many of the planners we interviewed believe that rural cluster housing could conflict with, rather than protect, agricultural uses. This suggests that rural clustering may make more sense as an alternative to large-lot (one to 10 acres) zoning in transitional areas where residential development is already displacing major commercial farming and forestry operations. In these circumstances, rural cluster developments can prevent open lands from being fragmented and can preserve open tracts large enough for wildlife habitat, recreation, and certain kinds of smaller-scale agriculture and

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forestry that are compatible with residential development. The preservation of these activities amid residential development will enhance the rural character of the area.

Figure 1 illustrates this guideline. It shows an archetypical planning area, based on a common metropolitan county, with an urban/suburban core in the center and large-scale agriculture and forestry on the periphery. Rural cluster zoning districts are located according to Guideline 1 in the transitional zone between the urbanized and resource production areas.

The ordinances we reviewed generally adhere to this principle by limiting clusters to areas that are already zoned for one- to 10-acre lots. Nevertheless, some of these areas are currently undivided and continue to support large-scale agriculture. Jurisdictions should be careful not to encourage residential development through introduction of the cluster option in areas planned for large-scale agriculture. Cluster developments should be introduced only in areas planned for residential subdivisions.

Land use conflicts can occur even when cluster developments are restricted to transitional areas. Smaller-lot cluster developments are often viewed as incompatible with rural character by the residents of larger-lot hobby farms. These conflicts must be addressed by careful siting and site planning decisions which will be discussed below.

*Guideline 2: Cluster district boundaries should be drawn in relation to the boundaries of existing agricultural areas and environmental systems.*

In practice, the boundaries of zoning districts are often arbitrary. A major goal of rural cluster zoning, however, is to preserve the integrity of natural systems, rural areas, and agricultural activities. If zoning district boundaries are the

boundaries of natural features or systems (watersheds, plateaus, river valleys, or agricultural areas defined by common soils), the natural features can more easily be protected from incompatible land uses. Thus, it is essential to use these natural boundaries when laying out zoning districts.

## LOCATING PROJECTS WITHIN RURAL CLUSTER DISTRICTS

*Guideline 3: The total amount of development in the zoning district should be limited through gross density requirements that protect and maintain existing rural character, open space systems, and water resources, and control traffic volumes and road building.*

As noted above, cluster ordinances often give developers a density bonus.<sup>10</sup> Several ordinances we reviewed allow density bonuses as an incentive to cluster. For example, in Washington County, Oregon, the gross density of rural clusters can be one unit per eight acres, while traditional subdivisions may not exceed one unit per 10 acres. An extreme case is Clark County, Washington, where a traditional subdivision in the agricultural district can be developed at one unit per 20 acres, while clustered subdivisions can be developed at one unit per five acres, plus an additional two dwellings for each 20 acres in the project.

In some jurisdictions, cluster developers receive a density bonus in return for providing certain public benefits. For example, in Orange County, Florida, the dedication of land to a public purpose yields a 25 percent density bonus. Similarly, in King County, Washington, gross densities can be doubled in exchange for a variety of public benefits.

While density bonuses often avoid allegations of a taking without just compensation, the cumulative effects of density bonuses should be carefully assessed. Rural areas can be easily damaged by excess density because they often contain natural drainage systems, septic systems, and lower-standard roads.

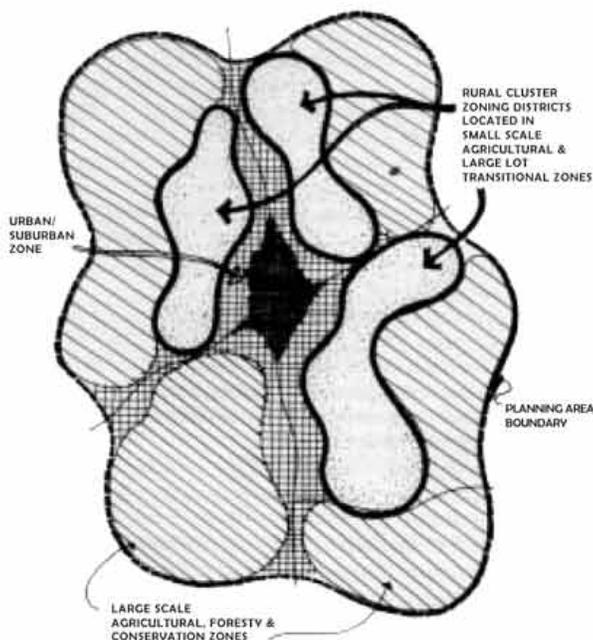
For example, groundwater pollution from septic systems is a common overdevelopment problem in rural areas. Many current gross density standards were adequate as long as development remained sparse. Heavy development dependent upon septic systems, however, has led to serious groundwater pollution problems. The low density and scattered development pattern in these areas has in turn led to prohibitive additional development costs where rural sewer service is proposed to prevent more groundwater pollution.

The total permitted development under a density bonus program should be kept well within the carrying capacity of these natural, infrastructural, and environmental systems. If density bonuses are allowed, the density allowed without a bonus should be reduced so that the total density with maximum bonuses will not exceed a reasonable total density for the area.

*Guideline 4: Control the siting of cluster projects in order to minimize impacts on neighbors, infrastructure systems, and the surrounding environment.*

Cluster developments can cause greater environmental impacts than lower density subdivisions. Cluster developments often require new access roads or road improvements, generate more traffic, stress groundwater supplies, increase

Figure 1. Cluster District Location



10. New York enabling legislation specifically prohibits density bonuses for cluster developments at least as to single-family dwellings. See f.n.9, *supra*.

surface runoff, and cause more negative visual impact.

Local land use decision makers should ensure that cluster projects are sited in locations that can absorb these potential impacts. It may not be appropriate to allow cluster developments throughout a zoning district. Some existing ordinances, for example, only allow cluster developments where public sewer and water service are planned or available, or on sites with adequate road frontage.<sup>11</sup> It might also be appropriate to restrict cluster developments to less visually prominent locations or away from areas already characterized by larger lots. One way to clearly designate those areas in a district in which cluster projects are allowed is by adding a cluster overlay to the zoning map in those areas where careful study has shown that only minimal impact will occur.

Figure 2 shows a typical result of regulating the siting of cluster developments within a zoning district. Reasonable access to major arterials is available to the cluster sites, which are separated by open space buffers from existing large-lot developments. The cluster sites are also located on upland soils away from the stream corridor to allow for the natural filtration of runoff from the developed portions of the project.

*Guideline 5: Permitting procedures for rural cluster projects should be no more difficult for cluster developments than for traditional subdivisions and should include incentives to encourage their use. Cluster developments should be mandatory where they are a necessary contribution to a planned open space network.*

One reason that local land use decision makers issue few permits for cluster developments is that cluster permitting procedures are often more complex and involve greater risk than the traditional subdivision review process. Developers prefer predictability, but more than half the jurisdictions we surveyed apply discretionary approval methods to cluster developments. These methods decrease the applicant's confidence that the appropriate approvals will take place. Half the jurisdictions we surveyed approve rural cluster developments through a floating zone application process, which usually requires approval by the municipal legislative body. Some jurisdictions require conditional use or special use permit applications, while others require either zoning or subdivision site plan approval. The authors of cluster ordinances require such additional discretion because local land use decision makers often recognize that cluster developments may not be appropriate everywhere in a zoning district. In our survey of jurisdictions, we found that, where cluster developments are permitted, they are not nearly as common as traditional subdivisions. Clearly, cluster ordinances will not achieve their purposes if they are ignored.

In fact, this avoidance of clustering is unacceptable when the preservation of open spaces and sensitive resources is at issue. It is particularly important that jurisdictions employ the cluster technique when each development project is intended to make a contribution to a larger planned open space system. As noted above, advance plans, inventories, and mapping are essential elements to adoption of a local cluster program, and the cluster ordinance should set out the parcel-qualifying

11. Cluster ordinances should provide specific language addressing provision of infrastructure and the necessary approval processes, especially with regard to rural areas where public water and sewer services are not planned or readily available, necessitating multijurisdictional approvals for community wells, community sewerage systems, and establishment of private water companies.

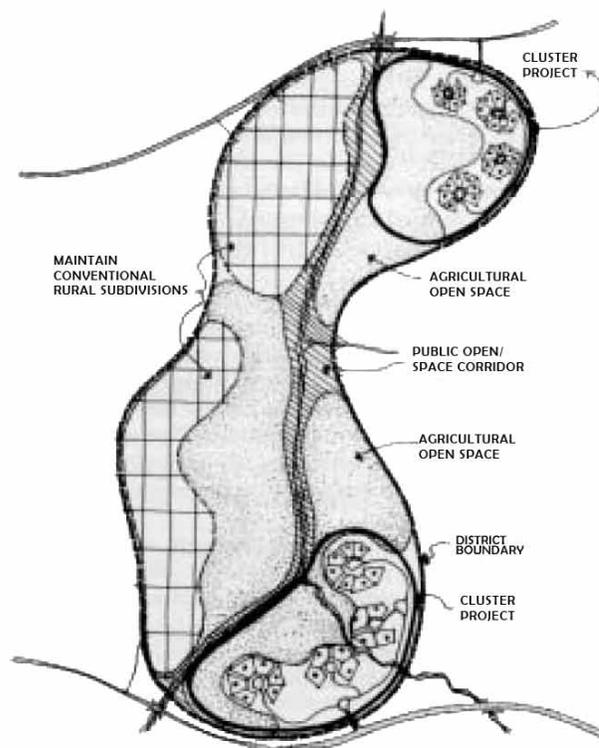


Figure 2. Cluster Project Siting

characteristics necessary for allowing the use of the cluster approach.<sup>12</sup>

Not all parcels of land in a zoning district are the same. Some parcels are ideal, but others are unsuitable for cluster development. Identification of lands that are suitable and unsuitable for cluster development might involve three steps.

The first step consists of a review of the open space plan of a jurisdiction, considering both lands of local and regional importance. Lands that are planned for open space, whether for safety, aesthetic, ecological, recreational, resource preservation, or other reasons, are good candidates for the siting of cluster developments. Cluster development can substitute for or complement other open space protection measures, but only where some development on a parcel would be consistent with the open space plan. Cluster development may not be appropriate where public access to the open space is desired, unless the open space portion of the cluster project is dedicated for public use.

The second step involves identifying lands that are not included in an open space plan but have characteristics for cluster development rather than for a traditional subdivision. Sensitive environmental and cultural features, or the presence of safety hazards, such as floodplains or steep slopes, suggest that clustering may be appropriate.

The third step determines whether the parcels identified as suitable for cluster development can accommodate higher net densities in a cluster development pattern. If not, then other techniques will be needed to implement the open space plan or protect the critical features. Social, environmental, and in-

12. See text accompanying f.n. 5 and "Legal Basis for Cluster Zoning," *supra*.

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frastructural capacities should all be considered. Environmental analysis should investigate soils, steep slopes, wetlands, wildlife habitats, and hydrological systems to determine which areas can accommodate cluster development without harmful impacts. Social and aesthetic factors should also be analyzed, particularly whether an area can visually absorb cluster development. Visually prominent areas or existing "viewsheds" that do not contain opportunities for screening buildings and structures might be inappropriate for cluster development. Finally, infrastructural capabilities, both existing and planned, should be thoroughly analyzed to ensure that a cluster development can be served without reducing service levels below acceptable standards. Local land use decision makers may elect to exclude cluster development in areas that would require extensive new roads or cannot be served by public sewer and water or community septic systems and wells.

Mandatory clustering may be most appropriate to ensure the development of an open space network where local land use decision makers have carefully engaged in this advance planning process.<sup>13</sup>

About half of the jurisdictions we surveyed treat cluster development as an outright permitted use. By combining a "permitted use" approach to clustering with the cluster overlay approach described above, a jurisdiction can control where cluster development occurs without discouraging its use. Where legally allowed, density bonuses can also be used to encourage the use of the cluster technique. According to our survey, however, the increased density incentive is unnecessary when cluster permitting is no more time consuming or risky than the traditional subdivision review process.

## RURAL CLUSTER PROJECT PLANNING

*Guideline 6: Standards should be established for minimum and maximum project size so projects are large enough to support viable open spaces but small enough to prevent the residential cluster development from overwhelming the surrounding area.*

Each project should be large enough to support viable and autonomous agricultural or other open space uses. (While it is often desirable to link the open spaces within a project with neighboring open space tracts to provide a larger open space unit, insufficient large-scale open space planning usually precludes such successes.) The majority of the ordinances we reviewed contained a minimum project size ranging from six to 30 acres. These minimums, however, may not be large enough to ensure sufficient open space. The minimum area necessary to support open space uses that are compatible with the surrounding district should be established first.<sup>14</sup> The minimum project size should then be based on the percentage of each project that will be preserved as open space. For exam-

13. Only one jurisdiction in our survey, Marin County, California, has made clustering mandatory. Mandatory clustering, however, is on the increase in the Northeast. Such an approach is expressly allowed under New York enabling legislation, see f.n. 9 and accompanying text, *supra*, and has been adopted on a town-by-town basis in the New England States. See R. Arendt, "Open Space Zoning: An Effective Way to Retain Rural Character," *Michigan Planning*, v.3, no.1 (January/February 1990), at 6-7, and "Varying Degrees of Mandating Cluster Design," unpublished, Center for Rural Massachusetts, September 15, 1989.

14. This approach will also avoid claims that the open space set-aside is derived in an arbitrary and capricious manner and will help to satisfy the Nollan standard. See f.n. 5, *supra*.

pie, if a 20-acre parcel is required for a viable agricultural operation and 50 percent of the project site will remain as open space, then the minimum project size should be at least 40 acres.

In Rochester-Olmstead County, Minnesota, a maximum project size of 160 acres is built into the cluster ordinance. This guards against oversized "master planned communities," which can amount to new villages in areas planned for smaller-scale settlements.

*Guideline 7: The primary component of the project site is the open space system. The system should be a network of spaces designed to be usable for their intended purposes and permanently protected or explicitly designated for future development. Requirements for ongoing maintenance, management, and use are advisable. Preparation and implementation of an open space management plan should be required.*

In our interviews, we learned that the open space in cluster projects often remains unused when not properly designed for its intended use. Rural open space uses usually require a certain type of land to be physically or economically feasible. If a goal of clustering is to protect agriculture and other open space activities, cluster ordinances must protect the sensitive land that these activities require.

Land requirements vary according to the planned use and the land's productivity. Critical characteristics can include slope, access, wetlands, drainage, aquifers, visibility, floodplain, land area, soil types, parcel shape, solar access, and separation from nearby residential areas. Consideration also should be given to protecting ongoing open space activities and, as noted above, creating linkages with open space units on adjoining sites.

Figure 3 illustrates the arrangement of cluster areas in relation to the project's open space. The open space within the project is a continuation of off-site open space. The environmentally sensitive stream corridor is included in the open space, and the area is large enough to provide an effective buffer for the water system. In addition, the open space tract is located on the most productive bottom land soils and is large enough to allow for an economically feasible agricultural operation.

Slightly more than half of the surveyed ordinances set a minimum standard for the amount of open space that must be provided. However, this standard is almost always given as a percentage of the site area—ranging from 10 to 97 percent, with 60 percent as typical. But, with a percentage standard, the size of the open space reserve depends on the size of the project. The result can be open spaces that are too small for their intended uses. In addition, an arbitrarily large percentage that seriously infringes on otherwise allowable densities can create the basis for taking and due process claims.<sup>15</sup>

Some ordinances use a minimum acreage standard for open space ranging from 25 to 40 acres. Yet a performance standard should be used, such as the median farm size in the region, county, or town, the minimum viable economic unit for agriculture, or the minimum viable ecological unit for wildlife habitat.

15. Recent federal and state case law, however, has suggested that courts will look beyond such claims and scrutinize the uses available on the "whole parcel" before finding that a taking has occurred. *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470, 39 ZD 221 (1987); *Penn. Central Transportation Co. v. City of New York*, 438 U.S. 104 (1978), 30 ZD 434.

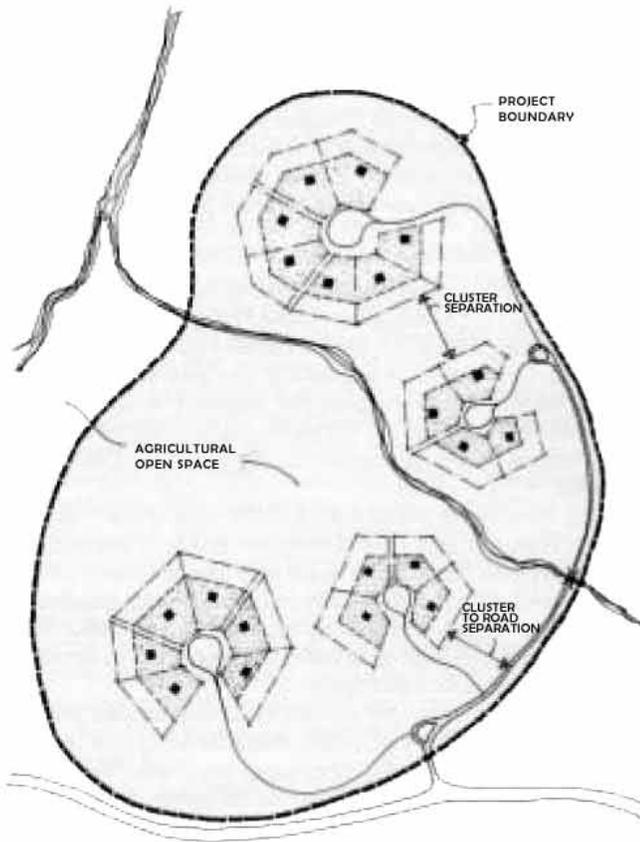


Figure 3. Cluster Project Site Plan

In contrast with the guidelines described above under "Legal Basis," two-thirds of the surveyed ordinances do not regulate the character of the open space reserve. This frequently results in open spaces that are fragmented, narrow, inaccessible, or without adequate soils for farming, timber management, or other rural open space uses. Only a third of the ordinances describe the type of land that should be preserved, how the open space should be sited, or its required dimensions. These standards are usually given in performance language. For example:

The design of open space should show consideration for habitats by leaving open large single blocks of land. . . . (Fort Collins, Colo.)

Open space should be appropriately located with respect to permitted uses. (Loudon Co., Va.)

The greatest amount of prime agriculture land shall be preserved and in such a way as to ensure continuing feasibility of agriculture and forestry. (Rochester-Olmstead County, Minn.)

A common argument for cluster development is that it helps to permanently preserve open space. Our interviews indicated, however, that opponents of cluster developments believe the open space will not be permanent and, eventually, more development will occur than if a traditional subdivision were allowed.

A successful cluster development must feature a regime of conservation easements, restrictive covenants and an established method of open space administration. But these

measures are ignored in many areas. Only one-quarter of the ordinances we reviewed require permanent open space. Most of them allow development upon rezoning of the underlying zoning district. In some cases, ordinances contain a time-bound limit on open space development, for example, prohibition of development for five years or without an affirmative vote by 75 percent of the residents.

Ongoing open space management was also frequently mentioned in our interviews. Common issues include poor land maintenance and failure to manage land for its intended use. Several ordinances in our survey address the maintenance problem by requiring open space to be maintained to certain standards, such as free of litter and fire hazards. A maintenance agreement is sometimes required that enables a homeowners' association or public agency to maintain the property and bill the owners or exercise lien rights if standards are not met. Half of the ordinances assure the creation of a homeowners' association to manage maintenance responsibilities.

Most cluster ordinances include permitted open space uses, but, without adequate zoning enforcement or an active homeowners' association, there is no guarantee that such uses will be pursued. We were informed of several lands that were planned for agriculture or timber production but not used for these purposes. Typically, permitted open space uses include crops, range, wildlife preserves, water storage, leach fields, and public outdoor recreation. In some cases, more intensive uses, such as radio towers, public utility buildings, riding stables, and dog kennels are permitted with a conditional or special use permit.

Only two of the surveyed ordinances require open space management plans. The plan required by one of these two ordinances is an agricultural management plan. Both requirements call for plans that go well beyond maintenance issues to address techniques for open space management that allow continued use as habitat, farmland, or other rural activities.

*Guideline 8: There should be a pattern of cluster areas established within the project site. Residential development should be confined to these areas. The cluster areas should be integrated into the site without causing significant impacts on neighboring properties and without interrupting the continuity of existing and planned agricultural and related uses.*

Residential portions of cluster projects should be carefully located and designed in accord with the advance plans, inventories, and mapping described above to avoid conflicts with neighboring land uses and on-site open space activities. Such location decisions should include, for example, visually screening dwelling units from off-site vantage points, locating housing away from environmentally sensitive areas, existing agricultural uses, and other portions of the site suitable for open space, and careful placement of dwellings upwind from areas subject to land management practices that will cause dust, noise, smoke, odors, or similar problems.

Figure 3 illustrates some of these concepts. Open space buffers are provided to screen cluster areas from neighboring properties. In addition, homesites are located away from the environmentally sensitive stream corridor, hazardous floodplain, and agriculturally productive bottomland.

None of the ordinances we reviewed contain explicit directions on siting residential areas within cluster projects. Yet

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conflicts between residential and open space uses were commonly reported in the interviews. By requiring cluster site plans to restrict residential development to carefully selected locations, houses are developed and open space is preserved.

## HOMESITE CLUSTERS

*Guideline 9: The net density of the cluster areas in the project should be matched as closely as legally permissible to the land requirements for rural lifestyles. In particular, private open spaces should be large enough for rural household activities, such as raising animals, keeping orchards, and gardening.*

One of the frequently cited reasons for citizen opposition to rural cluster developments is the assumption that such developments will not allow rural household activities that require larger amounts of land, such as keeping horses or other small-scale agricultural activities. Most of these activities, however, do not demand five- or 10-acre private open spaces and can be compatible with smaller private spaces in cluster developments.<sup>16</sup>

Many ordinances do not ensure that private open spaces will be large enough to support rural household activities. In most ordinances, the minimum lot size is usually less than one acre, and, in some cases, it can be as low as 5,000 square feet.

Our interviews indicated that, as a result, it is not uncommon for lots or private open spaces to contain insufficient area for a family to keep a horse, plant an orchard, or carry on other activities enjoyed by rural households. Site planners and land use decision makers should honor the expectations of families moving to a rural area, and private open spaces or lots should be designed (probably on the order of 1/2 to 1.5 acres) to meet rural needs.

Figure 4 illustrates a typical home site cluster area consistent with these suggestions. The net density and lot sizes are large enough to support the kinds of outdoor activities suitable for each rural household.

*Guideline 10: The number of home sites per cluster area should be limited. Within the cluster, there should be a minimum of four and a maximum of eight home sites, a cluster core and access corridor to accommodate vehicles, utilities, and commonly owned facilities, and a pathway to the project open space system. Cluster areas should be visually and physically separated from one another and roadways by open space buffers.*

The number of units in a single cluster area can affect how well the overall cluster development fits into a rural area. It is not unusual for traditional farms to group five or six buildings together around a central farmyard or for a similar number of farmhouses to be grouped around a crossroads. Clusters of homes that follow this traditional pattern do not conflict with normal expectations for rural development patterns. When the number of homes in a cluster development grows too large, however, the cluster development becomes more similar to a suburban subdivision than to a rural group of buildings. Some of the ordinances we reviewed appropriately limit the number of home sites in a cluster develop-

16. Cluster developments are often approved in the form of condominiums or common interest communities. In such developments, all land may be owned in common by a homeowners' association, precluding the concept of "private open space" or separate lots. "Exclusive use areas" of the common elements, however, may be established to benefit the owner of each dwelling unit through an elaborate system of cross-easements.

ment to six or eight. They require that, if a parcel can be divided to exceed this number, then more than one cluster area must be created, with separation by an open space buffer. Figures 3 and 4 illustrate cluster areas limited to fewer than six or eight home sites.

The few ordinances that do require separation between cluster areas do not establish the required width of a buffer or how it should perform. In forested areas, the buffers should be wide enough to provide visual separation. The actual required width will depend on the type of vegetation in the area. Typically, buffer width will need to be between 100 and 300 feet. But, in grassland environments, vegetative screening is not possible. In those circumstances, even wider buffers will be necessary. Figure 3 shows how adequate separation between clusters should be provided.

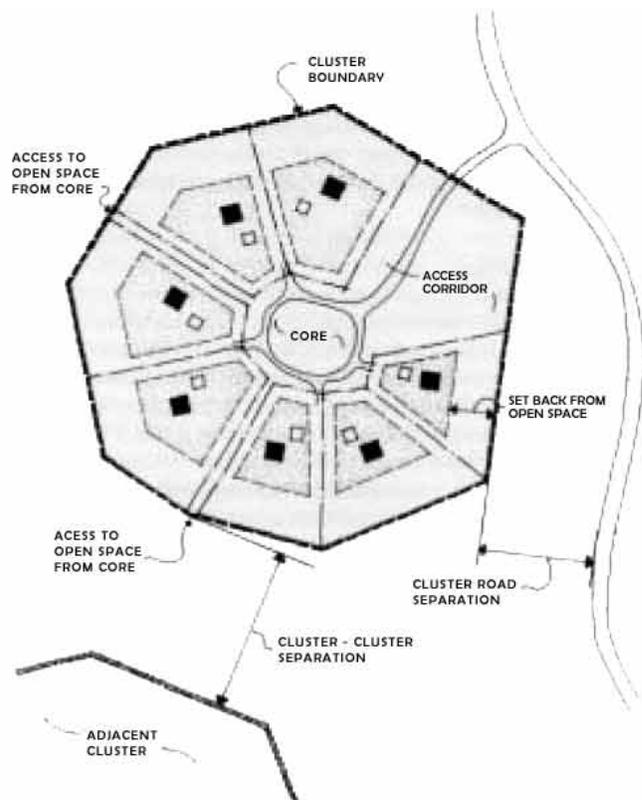


Figure 4. Home Site Cluster

Each cluster area also should contain an interior common area that provides vehicular access to the home sites and common land for a community leach field, small public water supply, or other necessary facilities. This is illustrated in Figure 4. Road access to the home sites from the interior of the cluster area gives residents direct access to the project's open space directly from their private yards, prevents the private open spaces from being broken apart from the larger project open space system, and causes buildings to look like part of a larger farm rather than a separate development across the road. The cluster area's interior common area should also be connected to the project's common open space system by a generous open corridor, as shown in Figure 4.

# Commentary

## PRIVATE SPACES

*Guideline 11: Lot dimensions, building heights, and setbacks should be compatible with rural character and provide the privacy, seclusion, and access to open space that are normally expected in rural areas.*

Most of the ordinances we reviewed contain standards for building heights, lot dimensions, and setbacks. Yet, in most cases, the standards are more appropriate for suburban development. Here again, the expectations of rural households should be incorporated into the area and bulk standards.

Each lot or private space should allow for reasonable vehicular access from the cluster interior and provide the maximum possible rear frontage onto the project's open space system. But, buildings should be set back as far as possible from the open space in order to augment the open space system. Buildings should also be set back as far as is reasonable from neighboring lots to increase privacy and seclusion. Variations in the front yard setback can also help to avoid the visual sameness typically found in suburban tracts but out of place in rural settings. Buildings should not exceed heights associated with traditional rural residences and accessory buildings in the vicinity. Several of these suggestions are illustrated in Figure 5.

## CONCLUSION

Many communities have adopted rural cluster zoning ordinances in response to the rapid rate of development in rural places close to urban areas. Their basic purposes are to meet the need for residential development while preserving agricultural and other open space uses. In practice, however, these ordinances do not always achieve their goals. We believe this reflects a lack of understanding of how to apply cluster concepts to rural areas, as well as an inappropriate application of suburban cluster concepts to rural locations.

In order to assure the success of rural cluster zoning, we have developed several guidelines. The guidelines are drawn

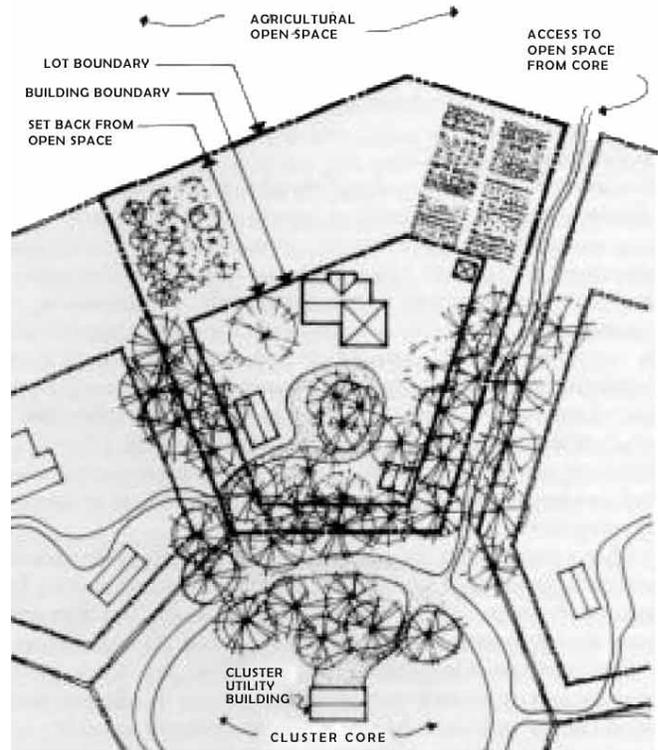


Figure 5. Cluster Lot

from general legal "ground rules," the advice of current practitioners, design studies, and existing ordinances. Experience with these types of projects, however, is in its infancy. Accordingly, every community that uses this technique should watch the results carefully and be willing to implement new solutions, to realize the potential of rural cluster zoning.