Special Report

6-1976

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Land-Use Controls for Outdoor Recreation Areas

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Special Report No. 78

Agriculture and Home Economics Experiment Station
Iowa State University of Science and Technology
Ames, Iowa ...................... June 1976
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SUMMARY

Land-use planning and control is fast becoming a major issue in the United States. Dwindling natural resources, a growing population, a recognized need for a quality environment, and several incidents of controversial resource management have brought land-use problems to the public eye. State land-use legislation, numerous court cases, and extensive debate have resulted. Central to the general debate is concern over the role of government in this area, formerly considered to be the realm of the individual and private firm. This paper is designed to help clarify the role of government in land-use planning and control by analyzing the powers available to government entities in providing opportunities for outdoor recreation.

Land-use controls available to public agencies charged with the responsibility to provide opportunities for outdoor recreation fall into three categories from a legal viewpoint, but can be grouped in two from an administrative and operational viewpoint: (a) regulation and financial incentives and (b) public acquisition. In the optimal situation, land-use control through regulation and financial incentives is designed to maintain public values while allowing the land to remain in private ownership with little or no explicit financial burden placed on the owner. Control through public acquisition of property rights, conversely, affects private ownership and owners directly.

Regulations or use of governmental police power control use of private property in the interest of promoting the general public welfare, and no compensation is required to the owner. Examples of regulations include zoning, subdivision controls, parkland dedication, and the official map.

Land-use control through financial incentives can include both government spending powers and special tax arrangements. These are used to influence private land use and to secure compliance with government programs. In certain instances, regulation and financial incentives can be more effective when used together, particularly in the case of zoning and special tax arrangements.

Public acquisition of rights to landed property is another means of controlling land use for outdoor recreation purposes. Acquisition can be either complete or partial, depending on the needs of the agency. Complete acquisition is desirable when a high degree of control is needed to maintain or develop an outdoor recreation project or program. When total control is not necessary, partial acquisition or easements may be used. Easements can be acquired; for example, scenic and open-space easements. Development rights also can be acquired through a recent innovation, development-rights transfer. Property rights may be acquired through voluntary or involuntary measures. The spending power of government allows agencies to purchase needed land or easements from owners willing to sell. Through the power of eminent domain, government agencies can acquire property rights against the owner's will through the process known as condemnation. Rights obtained through condemnation must be for "public use," they must be obtained through the due process of law, and just compensation must be paid the owner.

Government agencies also can influence land use through their proprietary power. Management of public lands is a key to quality land use. Management objectives and disposal policies on specific public lands can directly and indirectly determine the use of private and other public lands for outdoor recreation purposes.

Different governments and agencies have differing abilities to control land use. Not every agency can use every power. For example, although the federal government has the general power to tax, it has no authorization for property taxation. Usually, however, one or more land-use controls are available to government agencies for purposes of providing outdoor recreation opportunities. Agency administrators and natural resource managers should determine which combination of legally usable powers will most effectively facilitate outdoor recreation programs and projects desired. To help insure a successful program, legal counsel should be consulted.
Land-use planning and control, including preservation of open space, has been a matter of intense public concern for several years. This concern has resulted in passage of major legislation in a considerable number of states and serious deliberations of federal legislation in several successive Congresses. Examples of state legislation range from protection and management of quite specific natural resources (for examples, shorelands in Wisconsin, coastal wetlands in Massachusetts, and prime agricultural land in California) to relatively complete control of state growth such as in Hawaii. Vermont, Florida, and Oregon are states that recently passed land-use legislation falling midway along this scale. Particularly well-documented and interesting accounts of the passage of pieces of legislation are available in three excellent analyses published by the Conservation Foundation (24).

Concern over land-use planning and control has strengthened in the United States several times over the past 150 years. This concern initially had a strong urban orientation. Washington, D.C., and Savannah, Ga., were very early examples of carefully planned cities in which land use in growth areas was controlled by public ownership of land and other devices (22). Specific concern for preservation of open space began more than 100 years ago with creation of Yellowstone National Park. Subsequent efforts, including creation of both the National Park and National Forest systems, had substantial connection to concerns for open space, although there also were other, more commodity-oriented objectives, particularly in the case of National Forests. The 1920s and 1930s were periods of intense and renewed concern for land-use planning and control. One major focus then was on agricultural adjustment and the gradual removal of settlement from areas of marginal soil productivity, poor living conditions, and high costs for public services. Another major focus was on the legal basis for urban land-use control. In a famous court case originating in Ohio, the Supreme Court in 1926 established the constitutional basis for zoning in the next few years, every state enacted enabling legislation for zoning, and nearly every city passed a zoning ordinance. A substantial lapse of concern for land-use planning and control occurred after this period of intense activity. After 30 or 35 years of dormancy, interest in land-use planning and control returned during the early 1970s. Focus is again on urban growth and its effects on rural land uses (including agriculture, wildlife habitat, water, forests, and related natural resources), on provision of recreational opportunities, on energy supply, and on creation and protection of a quality environment for living.

A number of urgent factors have brought about this revival of interest in land-use planning and control. One principal factor is population shifts—shifts that are simultaneously moving population both from rural to urban areas and from the center to the periphery of those urban areas (50). A second principal factor is rising concern for a quality living environment, a concern that led to passage of the National Environmental Policy Act and a large number of other specific actions. A third principal factor is rising concern about adequate supplies of many resource commodities—food, timber, energy, and others. All these factors, and most notably their interactions, heighten the need for carefully considered choices about uses to which specific land resources are to be put. In short, society is facing some major land-oriented problems. For example, Ellerson has pointed out that over the next three decades (40):

1. Nearly 20 million acres of rural land will be taken over by urban sprawl;
2. three million acres of land will be paved for highways and airports;
3. seven million acres will be required for the 300,000 miles of needed electric power lines.
4. about 2 million acres will be required for the 200,000 miles of needed electric power lines.

Anxiety and interest about the increasing demands placed on a finite and sometimes fragile land base are a reality. The form of this concern may change, and its rate of growth fluctuate, but it seems likely that concern about natural resources will substantially increase in the foreseeable future (21).

This study focuses on a part of land-use planning and control—that part carried out by agencies providing opportunities for outdoor recreation. These agencies are found at many levels of government: federal, state, regional (both inter- and intra-state), county, and municipal. The role played by agencies differs widely from one geographic area to another. For example, federal agencies are extremely important in Montana; both state and federal agencies are vitally important in Michigan;
more influence can be exerted over the uses made of land resources when they are held in public ownership than when they are held by private owners (7). The extent to which a government can influence a land-use objective by manipulating resources is largely related to the amount of land area under its jurisdiction. With one-third of the nation under its administration, the federal government can exert the greatest influence. Aggregate ownership data, however, shield wide geographical variation; the northern Lake States have particularly heavy concentrations of state and county ownership.

Proprietary powers have a great potential for influencing land use and recreation programs through either: (a) disposal policy of government-owned lands or (b) actual management objectives being pursued on these lands. The legal basis for proprietary powers depends heavily on the specific public purpose to be served. The major limitations of proprietary actions are that they must not be in violation of public law or sanction and that they must be accomplished within the scope of public funds available.

The right of a government to spend monies, the spending power, has often been termed the "power of the purse." Proprietary power and spending power can be related since spending power is one way a government can finance proprietary goals. The spending power may be used to acquire the very lands to which the proprietary power will be applied. Government's power to spend is much broader, however, extending beyond proprietary goals and into the private sector. Spending has influenced land-use through subsidies and cost-sharing programs as well as through direct efforts to control through property rights. This last application is probably the most widely used form of the spending power in controlling land use.

Governmental acquisition of land or property rights may involve voluntary sale by the private owner. Or it may involve condemnation and fixing of value via the power of eminent domain (11). Voluntary sale is ordinarily used to the maximum extent feasible. Condemnation usually is reserved for projects of overriding public importance where some of the owners refuse to sell voluntarily at reasonable prices.

**Eminent Domain**

The end result of acquiring rights to land under the eminent domain power is exactly the same as when the spending power is used to acquire rights. The government controls the desired land rights, and the landowner receives the fair market value for the rights relinquished. The process, however, is quite different. Under the spending power, rights are voluntarily sold by the landowners; under eminent domain, they are involuntarily relinquished.

Condemnation is the procedure by which property is taken and compensation paid under the power of eminent domain. Several types of condemnation warrant mentioning. *Advance condemnation* is public acquisition of private rights to land in advance of actual need (32). This often is desirable because escalation of land prices occurring between project approval and commencement may be avoided, as well as loss of land to incompatible private uses. Advance condemnation may be particularly important for projects that require a unique site; for example, waterfowl habitat where a swamp, once drained, would have no value. The authority of several highway commissions to use advance condemnation has been upheld in several court cases, particularly where a relation of condemnation to a comprehensive plan can be demonstrated (92, p. 19).

*Excess condemnation* involves acquisition of more land than is needed for direct and immediate project purposes. In specific instances, this may be important to protect project integrity or to allow for future expansion. "Excess condemnation can be used to acquire land for such purposes as small parks along a highway, or a neighborhood park adjacent to a school, or a buffer between a city and adjacent residential areas" (32, p. 14). Cities also have used excess condemnation to allow for future street widening (42). State constitutional provisions and acceptance by particular courts have provided the legal basis for excess condemnation (7).

*Access condemnation* concerns additional compensation to landowners when a public project impairs access to other lands that remain in private ownership. In some instances, a loss of access value can be readily determined, as in one involving differential value of a farm before and after installation of a highway right-of-way (79). In other instances, it is very difficult to determine the value of "landlocked" property. Some agencies avoid this difficulty by buying entire properties, then reselling unneeded portions.

*Lease condemnation* involves special problems that arise when the property rights to be condemned already have been leased from one party to another (23). If the entire leasehold is condemned, the lease is terminated, and the rent obligation is discharged; if the leasehold is only partly condemned, the lease may continue, depending on the extent of the remaining interest. The lessee will be paid if the person has compensatory rights at the time of condemnation. The gross compensation award is divided between lessee and lessor in proportion to legally provable interests.

Even the casual observer will note that application of eminent domain procedures is quite controversial. The amount of "just compensation" is often at the heart of the controversy. Extreme points of view exist. The agency may see a greedy landowner trying to exploit the public purse. The landowner may see a heavy-handed government bureaucracy attempting to impose its will on a de-
fenseless landowner. These extreme views are often found when condemnation is applied for outdoor recreation purposes. One reconciling analysis states that just compensation in earlier days of abundant horizons and resources was relatively easy and nonimposing on any specific landowner. Today, however, the land base suitable for outdoor recreation activities is ever-shrinking. Sackman asks:

Is it fair or equitable to impose a major burden of these very real items of loss on individual condemnees...?(69, p. 194).

The difficulty may stem from a failure to recognize that compensation should consider both the impact on the land as well as impact on the owner of the land. The distinction being raised is between property rights and civil rights. This expanded concept may be more reflective of the type of "just compensation" commanded by state and federal constitutions (69).

Both eminent domain and the spending power (when used for this purpose) involve explicit or direct acquisition of property rights. Direct control over land use for outdoor recreation purposes is quite common. However, it is not always necessary or desirable to acquire all property rights—the fee simple—in land. When acquisition of only some rights is appropriate, the easement is commonly used.

**Partial Property Rights Acquisition**

An *easement* encompasses the rights held by one person to use another’s land for special purposes (7). Easements may be acquired by purchase, deed reservation, gift, condemnation, adverse use, or possession throughout the prescriptive period, or the doctrine of custom (83). Easements are of two types: affirmative (positive) and negative. An affirmative easement is a right to make limited use of land owned in fee by someone else; for example, one person may acquire the right to hunt or build a road on another person’s land. A negative easement is the right to prevent a property owner from using the land in specified ways (93). If a landowner agrees, in a legal sense, not to construct billboards on the land owned, a negative easement is involved. A restrictive covenant attached to the deed to property is a more frequently used device that accomplishes essentially the same purpose as a negative easement.

Another way of classifying easements relates to the location of the lands owned by each party in the easement agreement. An "easement appurtenant" is an easement held by the owner of nearby land and is used in connection with that land. For instance, if a hunting club were to secure the right to enter an adjoining landowner’s land for purpose of retrieving fallen gamebirds, an easement appurtenant would be involved. An easement "in gross" is ownership of an easement that has nothing to do with ownership of nearby lands (93).

That is, an easement in gross "is not created to aid the holder of the easement in the use of his land" (55, p. 51).

One of the first uses of easements for open-space purposes occurred in 1893, when the State of Massachusetts authorized the Boston Metropolitan Park Commission to acquire rights to land (92). Easements have since been used in different degrees in land-use programs. Probably the major effort to fully utilize this tool occurred in 1961, when the State of Wisconsin began a $2 million resource development and conservation program involving easement acquisition (49).

The cost of an easement incurred by a public agency has been the subject of much discussion in the literature. Although some authors consider cost in a social or opportunity cost context, most talk about market transaction cost (33, 78). Discussions usually center around the argument as to whether or not the easement price paid approximates the cost of fee simple acquisition; there is no reason to expect any general answer to this controversy. In theory, the cost of an easement depends on the value, reflecting both quantity and quality, of the rights transferred. Attempts to identify independent variables that influence total easement cost—kind of easement, timing, negotiator—have been made (49, 89, 90).

Several conceptual methods have been suggested to determine the cost incurred by an agency when acquiring an easement. One simple rule is to estimate the difference in fair market value of the land with (after) and without (before) the easement. This difference will represent what is being given up and, hence, the easement cost. Other cost-estimating techniques are: (a) the value of the property right acquired considered in isolation, plus damages to the remainder; (b) the value of the right, considered as a part of the whole, plus damages to the remainder; and (c) the damages to the remainder included in the value of the rights taken (27).

Attempts to estimate the cost of various types of easements have used two basic approaches. First, theoretical calculations have been made to determine what a specific type of easement should cost (27, 80, 81). For instance, if a piece of land, without easement restrictions, could produce net revenues of $50 per acre annually, and it produced $40 per acre annually with the easement, capitalized land value (using a discount rate of 10%) is $500 per acre in the first instance and $400 per acre in the second; therefore, the agency should be able to acquire the property rights associated with the easement for $100 per acre. A second approach uses empirical data. Cost estimates for various types of easements are obtained from appraisals that consider numerous factors pertinent to the particular type of easement desired (49, 89, 90). In aggregate, the total cost associated with acquiring property rights in an easement varies.
widely, from some small fraction of the fee simple price to actually more than the value of the fee. The value of property rights is but one component of cost. A public agency, therefore, may well be more concerned over total acquisition costs than simply over property rights; in some cases, nonland acquisition costs far exceed the costs associated with rights acquired (72). Advantages, disadvantages, and conclusions regarding easements have received widespread attention (6, 34, 44, 60, 81, 87, 91, 93). Some of the more important disadvantages are:

1. It is difficult to accurately determine and enumerate the exact rights being acquired.
2. It is difficult to assess the value of land, for property-tax purposes, on which an easement has been granted.
3. Because the price of an easement is based on the loss of value, needed easements may be exceedingly costly in semideveloped areas where landowners expect land values to rise rapidly in the future.
4. Although an easement, theoretically, may be taken in perpetuity, experience has shown that early invalidation is quite common; on the other hand, renewal problems have been encountered when easements are taken for less than perpetuity.
5. Agency-landowner misunderstandings frequently occur and raise questions as to the validity of the easement, especially when the agency attempts to keep its intentions secret.
6. The risk always remains that, if the public agency decides to give up its interest in a long-held asset, there is no way to recoup the public outlay.
7. Easement acquisition funds often have been tied to an unreliable source of revenue, such as a tax on cigarette sales, where, if these sales drop, acquisition funds diminish. This difficulty also applies to outright acquisition if similar revenue sources are used.
8. Landowners are uncertain about the effect of an easement on their income and (or) property taxes.
9. Acquisition personnel have difficulty appraising land values when properties are taken only in part.
10. Easements are difficult to administer on lands that receive heavy public use.
11. It is difficult to devise a uniform type of deed for an easement without becoming involved in complicated legal technicalities.
12. Easements are not likely to permanently secure lands against development.
13. Easement enforcement programs often are inadequate, and it is difficult to obtain a court injunction against prospective violators.

There is some confusion regarding terms used in conjunction with easements. The name given to an easement may imply acquisition of a specific set of rights or, alternatively, it may be used in a general sense referring to several types of easements. The number of easements used in open-space programs is a small portion of the total set of easements possible and includes: (a) conservation easement, the general term, including hunting and fishing rights, scenic beauty protection, and others (37, 87); (b) conservation easement (per se) (34); (c) scenic easements, the general term, including parks, parkways, highways, and others (92); (d) scenic easement (per se); (e) development-right easement; (f) right-of-way easement (92); (g) airport easement (92); (h) water-control easement (92); (i) game and fish management easement (49); (j) open-space easement; (k) cropping-rights easement (15); and others.

Scenic easements and development-right (or open-space) easements have received widespread attention. A scenic easement may be defined as "a restriction imposed upon the use of property for purposes of preserving the... attractiveness of lands. In the grant, the grantor agrees to refrain from the erection of any advertising structure, or ... new structure, or alteration of any existing structure, without the consent of the grantee" (80, p. 531). Scenic beauty along highways and historical sites and buildings have been preserved through this easement (57, 60). The term "scenic easement" may also be used as a simple way of describing the surrender of a wide variety of sight-oriented privileges of land use (13).

The scenic easement has had legal difficulties regarding condemnation. Courts have previously stated flatly that an easement of view was too ambiguous and would not be recognized (93). The following is a statement of a recent court position:

It should be clear, of course, that if the taking of a scenic easement by eminent domain meets the public use test, the expenditure of public funds to pay the landowner for the easement acquired will necessarily satisfy the "public purpose" test. On the other hand, a determination that the taking serves "public purpose" does not self-evidently mean that the taking is for the "public use." The major difficulty in this regard arises from the fact that a scenic easement is essentially a set of land-use restrictions imposed on private property, and that the public does not acquire any affirmative "use" privileges in the conventional sense.

Assuming... scenic easements can be deemed for a public use if it is for a public purpose, the next question is where a public purpose can be found ...(There) can be little doubt... acquisition of scenic easements... will be held to constitute a "public purpose" (30, pp. 226 and 231).
Yet, even if a project is for public purpose and with due process, it can still be argued that there is no "necessity" for the taking of a scenic easement at that location. If this location were selected by a legislature, the challenge would almost certainly fail; but if it were agency-determined, the challenge would be open to judicial scrutiny (30).

Another difficulty arises when a landowner attempts selling the land without mentioning the easement, and a misunderstanding results (93). Failure to record an easement usually is rare, however, especially when public funds have been expended for it. Inconvenience and other difficulties will be reduced if the easement is routinely recorded as a legal document. Recordation legally puts everyone on notice and therefore imparts notice to subsequent purchasers. Still, it is doubtful whether burden of a scenic easement "in gross" (such as the case of a single-isolated easement) is enforceable against subsequent owners. The burden of "appurtenant" scenic easements (as in the case of a scenic easement protecting the outskirts of a park) will, however, remain valid after ownership changes (30). Enforcement of easement conditions also is a problem. Courts typically will not issue injunctions to prohibit actions before the fact; thus, anticipated problems cannot be prevented (93).

A development-rights easement may be defined as a negative easement wherein the grantor (a landowner) agrees to give up the right to develop the property in the present, but retains the right to continue existing use (47). This also is known as an open-space easement (56). Typically obtained for some period less than perpetuity, future development of the property, after some period of time, is possible (37). Property rights associated with development-rights easements may be either purchased or condemned. They also may supplement zoning when the fine line between regulation and "taking" becomes an issue. If the courts decide that part of an ordinance is "taking," the whole ordinance may be voided. The development-rights easement, however, may be applied to the questionable parts of the ordinance, and by thus paying for the taking, the overall ordinance remains valid (51). Some disadvantages uniquely associated with the development-rights easement are (35, 47, 51, 56, 60):

1. The biggest problem with the development-rights easement is determining the value of lost rights.
2. This type of easement, when applied spatially over large areas, may almost totally prevent the development of the land.
3. Because most of the land close to metropolitan areas has the potential for urban development, acquiring this land for full development rights would require a sum approaching that of fee simple acquisition.
4. Development rights do not possess a clearly defined character in law since there is difficulty in defining what is being taken, and flexible definitions will not be enforced by the courts.
5. The community is normally required to pay at once for all development values that the owner is not now prepared to realize.
6. There may be unfairness to the landowner or the community because of uncertainty surrounding the potential for future development. If the land has no clear or evident future development value, the price should be $0. If one speculates positively on potential development, the price should be greater than $0. Either position may, in reality, be incorrect. Compensation will be unfair in retrospect.

Recently, a more comprehensive treatment of the concept has been developed in terms of establishing a system of transferable development rights for the entire private sector. This will be discussed later.

At times, problems associated with easements are sufficient to work to the detriment of an agency or its land-use program. Yet it may be desirable to control only some property rights. The purchase leaseback/resale technique may be used to great advantage in this situation.

A governmental unit can acquire less than fee simple interest in land by purchasing the land in fee, then disposing of unneeded rights through lease or conditional resale where the terms of resale include specified conditions (34). Under the purchase leaseback: (a) land usually does not remain on the tax roll; (b) land maintenance costs usually are borne by the government; and (c) enforcement of lease provisions usually is easy. This method is particularly applicable to handling commercial development in a park. With purchase and resale with conditions: (a) resale conditions are enforceable through a suit for damages or injunction relief, (b) the land remains on the tax roll, and (c) the government does not incur maintenance costs. The resale approach is particularly useful in urban-renewal projects (37).

Some disadvantages associated with purchase followed by leaseback or resale are (51, p. 197):

1. There is strong popular reaction against the government or its agent going into the real estate business.
2. Method requires large financial outlays, at least initially.
3. There are difficult "public purpose" constitutional problems.
4. It is difficult to adequately frame deed restrictions.
5. Condemnation with long-term leaseback might put many landowners in a tenurial relationship with the government.
6. Although these techniques may be acceptable for limited purposes, they are not generally good for large-scale programs, simply because of the enormous amount of land transactions involved.
LAND-USE CONTROL THROUGH REGULATIONS AND FINANCIAL INCENTIVES

Some types of outdoor recreation opportunities can be provided with land remaining wholly in private ownership. Situations in which a private enterprise directly provides these opportunities (often for an admission fee) are obvious and simple examples. There are, however, other more complex situations. They relate most commonly to recreational opportunities that do not require direct access to land, only that it be maintained in a particular condition. Open space is a case in point. Its major values frequently are for observation from residential and other recreational areas or from routes of travel. Keeping it open is the major issue. Ownership is less important so long as means to mesh public and private values and obligations are appropriately developed.

Land-use control through regulation and financial incentives is designed to mesh these values and obligations. Regulations include zoning and several related devices. Such regulations require private owners to use their land in ways that protect public values—or, more commonly, require private owners not to use their land in ways seriously impairing public values. Financial incentives are arrangements designed to encourage private owners to voluntarily protect public values. They also are arrangements designed to permit private owners to conform to regulations with less financial sacrifice (often no sacrifice) than would otherwise be the case. Both special tax arrangements and subsidies are involved.

Regulations

Control of land use by regulations is an exercise of the police power of government. To date, such control of land use has been used primarily in urban situations. But such control now also is being used in some rural locations (and considered in others) with particularly crucial natural resource values.

Police power is "a concept under which the legislature may constitutionally interfere with the use of private property...but for which no compensation is required because the property is not being taken for public use" (46, p. 8). Police power lies with the states. The U. S. Constitution carries no express federal authority. The basic rationale and limit to the use of police power lie in the due process and equal protection clauses of the 14th Amendment to the U. S. Constitution (11):

...nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws (84).

The 5th Amendment further delimits this concept:

...nor shall private property be taken for public use without just compensation (84).

The important elements here are the words "property," "public use," "taken," and "just compensation." As a general principle, if the public takes any private rights for public use, it must pay for these rights. Although these ideas will be explored again later, the concept of "taking" warrants immediate attention. When "taking" occurs, the police power is exceeded, and compensation must be paid.

The point at which property is taken has been and continues to be an open question of no small magnitude. When does taking occur? It is "obvious that merely citing the Fifth Amendment to the Constitution...fails to address the future problems of controlling land use of the owner" (45, p. 21). The following are recent appraisals of the "taking" issue:

Despite the intensive efforts..., our ability to distinguish satisfactorily between " takings" in the constitutional sense..., and exercises of the police power..., has advanced only slightly since the Supreme Court began to struggle with the problem some eighty years ago (70, p. 149).

Courts and commentators have been unsuccessful in drawing a (steadfast) line between taking and reasonable regulation because of the inconsistency among prior cases and the lack of criteria for rationally deciding future cases (14, p. 2).

Central to this problem is that the standards used to identify a taking are constantly evolving. For years, the dominant and accepted criterion was that a taking involved physical seizure or physical possession. This obviously casts property rights in a restricted context and is fundamentally at odds with the earlier discussion of property as a bundle of rights. The possession criterion refers to the entire bundle. It is too restrictive. A more modern expansion incorporates the notion of "damaged."

The intellectual, and pragmatic, problem that arises is that many state constitutions go beyond the simple notion that compensation must be provided when property is "taken" and require payment for property "taken or damaged." Moreover, in some states, whose constitutions contain only "taking" clauses, the courts have construed them as including damaging (10, p. 259).

Short of outright physical seizure, how is "taking or damaging" to be recognized? The dominant, and time-honored guide is the diminution-of-value theory and harm/benefit test. This test requires
compensation if the regulation(s) creates a community benefit but does not allow recovery if it prevents a harmful land use (25). The criterion for recognizing a particular economic injury as a taking is the extent of economic loss-value diminution. If great enough, a taking will result. How much? The answer is very elusive. One author states:

The extent of value diminution that the courts will permit as an incident of police power regulations in a specific instance simply cannot be known in advance (19, p. 37).

To further complicate matters, it has been argued that even the "bundle of rights" view of property is too narrow. The argument goes like this: Property rights should not be considered only within the context of property boundaries, but rather, the interrelated nature (external effects) of property usage should be recognized. The notion of "public rights" is advanced, rights held by the public beyond the property's boundary. Although largely speculation, if this view were to be accepted:

Much of what was formerly deemed a taking is better seen as an exercise of the police power in vindication of what shall be called "public rights" (70, p. 151). [emphasis added]

The essence of this idea is to modify the value-diminution test to what is called the "diminution-balancing test" (63). Under this test, compensation is required when the infringement on private property is so substantial as to outweigh the public benefit; severity of the restriction will not necessarily mean a taking (14).

Other changes are occurring. The use of the police power is designed to promote the public welfare by restraining and regulating the use of liberty and property (48). A striking evolution in police power lies in the area of re-evaluating the concept of public welfare. Heretofore, welfare has been very narrowly defined and interpreted. The courts now say that "general welfare" has a meaning of its own, quite apart from the other aspects of health, safety, and morals (11). Applications of the police power need only tend to accomplish some declared public end, and resource or environmental protection is an acceptable public purpose (62). Reinterpretation of "public welfare" has had a major impact in the area of recreational and open-space land use, especially through zoning.

The range of specific land-use regulations is broad, including such diverse controls as building codes and agricultural production controls. Major regulations related to outdoor recreation opportunities include zoning, subdivision control, and the official map. Zoning is simply the division of land into districts having different regulations. Control of subdivisions can play a vital role in promoting and protecting the interests of the land divider, home buyer, and the community in general. Recreation-oriented subdivision controls may vary quite widely. They can require the developer to dedicate some land for public use or leave certain areas available for open space before the subdivision plan will gain governmental approval. A main value of a community's official map is that it indicates, at an early date, where specific public service facilities are to occur; the developer is then forewarned not to develop sites so indicated. This device has not been used much in rural and natural resource programs, although important for urban purposes.

Zoning is the most widely applied recreation land-use control falling under the police power (20). It has been primarily an urban land-use control. Changing patterns of urbanization, however, have emphasized the importance of nonurban lands and provided the stimulus to seek solutions to new problems. Rural zoning was developed to meet, in part, these new needs. The mechanics of rural zoning have been thoroughly discussed elsewhere (76).

Rural zoning can be traced back to 1692 when Massachusetts granted Boston and other market towns the power to influence the location of "offensive" industries such as slaughterhouses, still houses, and houses for "trying, tallowing, and curing leather" (76). The State of Wisconsin is generally acknowledged to have initiated the first major rural zoning actions in 1929, restricted to the northern cutover areas. Leaders saw an opportunity to use restrictions against year-round residences as a means of checking the "back to the land" movement, not from enthusiasm for land-use control (7). The leading case concerning the legality of rural zoning was Zahn v. Board of Public Works in 1925, when the California Supreme Court held that zoning of rural areas was reasonable (26); this decision was tested and reaffirmed by the U.S. Supreme Court (85).

Many of the problems encountered when zoning is applied in a rural or open-space context result from the fact that this type of zoning is sometimes inherently different from the more traditional urban zoning. Some of these differences are (52, p. 6):

1. Open-space regulations are usually designed to protect scenic beauty, preserve wildlife, control water pollution, and protect watersheds, rather than the traditional objectives of protecting public health and preventing nuisances.

2. Unlike other land-use controls, which provide reciprocal benefits, open-space regulations benefit the regulated landowner little, if at all.

3. Many areas to which open-space regulations are applied are highly erodible, have steep slopes or high water tables which naturally limit profitable use of land such that the regulations may render an area uneconomic to operate.
Some specifically rural-oriented zoning districts have been developed and used in open-space projects (11, 35, 66, 75, 94):
1. Conservancy or conservation districts,
2. Shoreland districts,
3. Greenbelt districts,
4. Forest only or forest and recreation districts,
5. Floodplain districts,
6. Agriculture only districts,
7. Development districts,
8. Large lot districts, and
9. Historic districts.

These districts are neither mutually exclusive nor used in all zoning ordinances. They indicate the range of districts currently in use. The notions of aesthetics and zoning flexibility are particularly important in outdoor recreation.

Much of the movement today in providing open space is grounded, not only on community growth and health arguments, but also, and possibly to a larger extent, on the basis of aesthetics. In recent years, much controversy has centered on the topic of aesthetics. Past problems with justifying zoning, and other police powers, on aesthetic grounds centered around the courts’ view that “aesthetics” meant art and refined culture and could not be construed to influence health, safety, or general welfare (9). Early courts looked at aesthetics only as a luxury (68). Police power could not be used to accomplish purely aesthetic objectives (38). Promotion of aesthetics was rejected because it meant unreasonable interference with private property or that there was an insufficient relationship between the statute and the public purpose served (53).

Some progress toward aesthetic zoning has been made, but the pattern of court decisions is still substantially unclear (9, 59, 86). Courts no longer systematically invalidate legislation having aesthetics as one of its purposes (68). But, at the same time, courts have been slow to accept that zoning regulations may serve the general welfare when based entirely or primarily on aesthetic considerations. Many state courts have justified this sort of zoning on grounds of economic well-being and not of aesthetics (1). The case for aesthetics is made easier if the area being zoned is of historic, substantial scenic, or civic importance (29). In situations in which the courts had upheld zoning on purely aesthetic grounds, they had either defined aesthetics in a highly specialized way or found that the challenged legislation was sustainable by reference to some traditional police power objective (96). In balance, it seems that the historical trend is toward acceptance of aesthetic zoning per se, but this is not yet the case.

When the idea of comprehensive zoning (later called Euclidean zoning) was first initiated in New York in 1916, it was thought to be a milestone in advancing the use of police power. Authorization for government to comprehensively plan orderly community growth and development was considered a great innovation. This feeling was equal-
specific district boundary. Floating zones are especially applicable to an area that can be developed in several ways. Instead of lines drawn on a map, appropriate development standards are established for land-use alternatives. This procedure makes it possible to commit an area relative to a general objective (development standard) without specifying the means (land-use) and thereby gaining flexibility.

5. Contract zoning: This is also a relatively new technique, particularly applicable where a proposed land-use is not adequately covered by the zoning ordinance. The contract idea is used when neither the variance nor the special exception appropriately deal with a proposed land-use. For instance, an early ordinance that listed blacksmithing as an acceptable business for a district might not be able to cope with the advent of automobile manufacturing. The government and affected party form a contract of performance under which both presumably benefit. Contract zoning is legal in some jurisdictions and not in others. Where illegal, it is described as "bargaining with the police power" and banned on grounds that it undermines uniform application of zoning ordinances.

6. Density zoning: Largely a suburban development device, density zoning is used to provide open space by altering the usual family residential pattern. Density zoning permits higher density development on part of the development site, with lower density on the remainder. This pattern of lumpy development gives rise to areas of open space.

7. Cluster zoning: This technique is just the opposite of density zoning. Instead of putting more people on one lot, the basic idea here is to maintain some overall density and vary the lot size. The developer is allowed to reduce the size of the permitted or allotted number of lots for a given area and group or cluster them together. The unused area is then open space breaking up the housing development pattern.

8. Planned unit development: This method requires comprehensive planning within a development project, be it a neighborhood residential community or recreation area. Such planning must minimize adverse effects of the planned unit development on adjacent surrounding areas. In return for minimizing these external effects, the planned unit development is not required to directly conform to zoning requirements of the surrounding areas.

9. Timed development: This method provides for change-over time within an existing ordinance. This is done by tying allowed changes to capacity of the governmental unit to provide public services required by development. The best known example is at Ramapo in the New York City metropolitan area. There, the rate of development is tied to the ability of the municipality to provide needed public utilities such as sewer, water, roads and other transportation facilities, as well as schools. The State Supreme Court in New York has upheld the validity of this ordinance.

10. Critical area designation: Needed change in zoning toward greater restrictions can be accommodated through power of an appropriate level of government to designate critical areas at appropriate times. Critical area designation has been used for a variety of specific purposes including protection of water supplies, waterfowl habitat, and scenic resources associated with a metropolitan area river. Several states have enacted and used critical areas legislation; Florida and Minnesota are widely recognized examples.

Within limits, these techniques constitute the major device to provide planners with flexibility. They are judicially acceptable techniques, but not on a carte blanche basis. Heretofore, one technique, usually considered undesirable, has received widespread application. When a government periodically modifies its zoning ordinance, it may rezone certain areas in response to a landowner; this gives flexibility. When small area rezoning is abused, it is called "spot zoning." The term may be used to describe zoning of a spot. Illegal, spot zoning can be invalid on both statutory and constitutional grounds. On statutory grounds, the amendment may not be in accordance with the comprehensive plan; on constitutional grounds, it often amounts to arbitrary legislative favoritism in rezoning the tract which may violate "due process," "equal protection," or both (29). Needless to say, spot zoning should be avoided.

Control over land-use through the police power in general, and specifically zoning, has led to many difficulties over the past years. One remedial approach says that zoning is neither as efficient nor as equitable as alternatives: merging of ownerships, use of covenants, and a reformulation of the nuisance doctrine are recommended by Ellickson (41). Another approach involves a modification of how police powers are administered. A recent innovation in land-use controls, which is purported to combine the best features of the police powers and controls involving public acquisition of property rights, is the compensable regulation scheme. This is discussed later.

Police power, spending, and eminent domain often are confused. One reason for confusion is that, while distinctions are often presented in black and white with cases illustrating extremes, reality often lies in the gray zone.

Nothing seems to stay put for very long,
least of all the point at which judges will
draw the line between police power and
the power of eminent domain (25, p. 77).
However, some general differences can be stated. A
fundamental difference involves the extent or scope
of control applicability; police powers tend to broadly
affect significant portions of the community,
while control through eminent domain is more
restricted, impacting on individuals or groups of
individuals. Another difference involves the reason
for controlling property rights. Property rights con-
trolled under the police power serve the "public
purpose," under eminent domain, they are for "public use." Police power generally attempts to
promote the general welfare by preventing undesired activities, while eminent domain and spend-
ing attempt to further the general welfare by promoting what is desirable.
Under the police power, the rights of property are impaired, not because they become useful or necessary to the public or because some public advantage can be gained by disregarding them, but because their free exercise is believed to be detrimental to the public interest; it may be said that the State takes property by eminent domain because it (property acquired) is useful to the public, and under the police power, because it (exercise of rights) is harmful (48, p. 17).
Further distinctions between these powers involve "just compensation" and "taking." Compensation is required only when property rights are acquired through exercise of eminent domain or spending (5). And finally, only under the spending power, are rights obtained from a private owner voluntarily; under eminent domain, they are taken. As a practical matter, an important question relates to when compensation is required; the following have been suggested as criteria for compensation, which help distinguish between the police power and eminent domain (77, p. 607):
1. Has a "property interest" of the kind that could pass between private owners been involved or affected? That is, a known species of private property interest must be involved.
2. Has the interest been taken? Has the property interest been transferred from an owner to the condemning entity?
3. May the government agency invoke the eminent domain power in this instance? Is this action in furtherance of some objective that is within the power of that particular governmental body?
Table 1 presents some relevant distinctions.

### Financial Incentives

Financial incentives may involve both govern-
The dual role played by taxes calls for an unusually high level of prior planning when taxation is used as a land-use control (85). Some taxes may and can be employed to influence land use, while other taxes influence land use as a by-product. A distinction may be made between taxes on the basis of their direct and indirect influence on land use. The major types of taxes that either directly or indirectly affect land use are: (a) property tax, (b) special assessment tax, (c) capital gains tax, (d) severance tax, and (e) other taxes such as sales and business taxes (7, p. 534). Of these, the property tax, or some variation, is the most important and widely used. State and local levels of government are in the best position to influence land use with this tax. "After three unhappy attempts to use federal property tax levies, Congress has abandoned this approach as substantially unworkable" (6, p. 342).

Taxation designed to promote more intensive land use has allegedly caused a withdrawal of large areas of land away from open-space functions, particularly around urban areas. Normally, land is valued for property tax purposes under the "highest and best" use. While this is an economic concept, taxation often is used to further social objectives. The problem of taxation in open space areas is to transform a system of taxation that is inherently biased against land uses of low market value into a system that actually encourages this sort of land use.

Not only have past tax programs supposedly been related to the loss of open space, but revamped tax programs have been recommended and used as solution vehicles. In reality, tax program modifications usually only maintain the status quo. Rather than being a positive step toward the accomplishment of public policy, such tax solutions typically amount to a defensive or "holding" tactic to insure that future public policies are not precluded by current private actions. In a general sense, tax solutions are based on the idea of changing the taxation basis from the value as determined by the market to that determined by social desires, which often reflect current or status quo use. Approaches to tax modifications vary widely among states and have been discussed in detail elsewhere (8). The two most widely used modifications of property taxation relating to open-space programs fall under the heading of use-value assessment (65). They are preferential taxes and tax deferral.

Preferential taxation is a technique whereby the government attempts to encourage the status quo land use by removing the incentive to change its use. Neither originated with nor restricted to the open-space context, preferential taxation need not be the result of a conscious policy action; it can result simply from erratic administration of a "neutral" property tax system.

Preferential taxation consists of outright forgiveness for part of the real property tax that would have been levied on a parcel of land if the assessed value were based on fair market value and not "use-value" (32). Some land-use planners have argued that open-space land can be maintained by taxing at less than fair market value. Several states have enacted preferential tax programs; they often do not withstand court action (43). The schemes run into problems with constitutional provisions that one person’s land must be taxed the same as everyone else’s—on the basis of fair market value (91). Nevertheless, special taxation arrangements have been used with some modest success in protecting agricultural, forest, and other types of rural and open land from premature development. The Williamson Act in California is one such arrangement that has been judged to be at least partly successful in protecting agricultural land (18).

Another modification of the property tax system to encourage open-space reservation is tax deferral. Under the tax deferral system, the tax assessor values the open-space land parcel both in terms of its use-value and its highest and best use value. Landowners are then given the option of paying the tax on either basis. If the person elects to be taxed on the use-value basis and later converts to another use, the back tax differential is charged (43).

Some authors are less than totally impressed by tax modification as a device to keep lands in an open status (47, 91). One argument goes like this: It is high land values, not taxes, that induce sales of open-space lands. If true, tax modifications may be ineffective controls of land use. A recent innovation addresses that issue—the Vermont land gains tax. To discourage rapid conversion of open space, a tax (up to a 60-percent rate) is levied on short-term gains resulting from sale of land (4). Although this device may dampen speculation in land, the impact on sales of land held for long periods is less certain.

Regulations and Incentives

The techniques and rationale associated with land-use control are constantly changing. Zoning and other forms of the police power are criticized on "taking" grounds. Eminent domain is a drastic form of control. It and other techniques used to acquire fee simple interests are expensive. Easements and tax system modifications have problems. Not surprisingly, composite systems of land-use controls have been advanced that tend to take the best features of several controls; undesirable features are discarded.

Foremost among these composites is a system of "compensatable regulations." Under such a system, compensation can be allowed for possible "takings" or for economic damages resulting from the regulations. The purposes served by such a system are varied, but include the purposes served by scenic easements and other controls over development (73).
Regulation and financial incentives can be used together. Specifically, zoning and special tax arrangements keyed to present-use values can be used jointly. So combined, they are likely to be more effective than either would be separately. The regulatory part of this combination directs use; the incentive part encourages the owner to accept such direction. Direction and encouragement are a meaningful combination.

Regulation and compensation payment for loss of private value would also be a combined method. Fully applied, they could be extremely expensive. The validity of regulation without compensation, the "taking issue" discussed earlier, has indeed been a matter of intensive controversy and considerable misunderstanding (17). This type of compensatable regulation would largely defuse concern over " takings." An analysis of past court cases, however, indicates that regulations without compensation have been legally sustained more often than frequently supposed (13). Such regulations have been sustained particularly when there is a clearly demonstrated connection between specific regulations and the resource values they are designed to protect. They also have been sustained particularly when designed to protect regional rather than strictly local values. Nevertheless, a system of regulation that explicitly provides for compensation has the distinct merit of maintaining integrity and longevity of the system.

One of the most widely publicized forms of compensatable regulation systems involves compensation for economic damage, as opposed to "taking," resulting from regulations. Two approaches should be noted: (a) guaranteed-value method and (b) transferable development rights.

The guaranteed-value method is quite straightforward (51, 82). First, the value of the land in question is determined by using the fair-market or just-compensation values, as if the land were being condemned. Second, this value is guaranteed in the event the land should lose some of its value to government-imposed regulations. Third, a detailed set of regulations controlling land use is developed and imposed on the landowners. Fourth, if regulations lower the present-use land value, the landowner can claim immediate compensation. If the landowner feels that the imposition of regulations takes away development value, he may at any time claim compensation to the amount of the owner's guarantee, by submitting his property to public sale, where the amount of loss can be determined. The amount of compensation that the landowner receives is the difference between the guaranteed value and the amount that is received from the public sale. This difference is given to the landowner by the governmental entity that imposed the regulations.

The guaranteed-value method is similar to the English Greenbelt system of guarantees (56). The main advantages lie in the fact that the sum of all reimbursements, plus the sale value, must not be greater than the original or guaranteed value. No unnecessary public funds are expended because the landowner is paid only when value loss is demonstrable. Because society will eventually pay only for rights obtained, a lower initial outlay of public funds is required. A lower overall cost relative to either partial or complete property rights acquisition is incurred, with valuation uncertainties eliminated. Because the guaranteed value is for the fee, it does not overestimate the development rights portion and is a good method to use where lands are very valuable and close to a city. Finally, this method is extremely flexible. Decreases in land value after a given date may result from public regulations. These regulations may then be changed in any way that is publicly desirable. Any subsequent loss in value is then the result of additional public regulations and will be routinely compensated.

The guaranteed-value method, as stated, has an important peculiarity. If countervailing pressures (or phenomena) exist such that, while the regulations per se lower the value, other pressures raise it so that the observable new land value is greater than the guaranteed value, society pays nothing for the regulatory cost. In such a case, the loss due to regulation would not be demonstrable. On the other hand, if one set of regulations decreases the value, the owner is reimbursed. If a second set of regulations raises the value, does the landowner pay back the difference? The system is primarily based on value lost. Presumably, procedural modifications are possible.

Following are some disadvantages associated with this control (43, p. 571; 56, p. 25):

1. Decision between either absolute regulation and absolute compensation does not allow compromise.
2. Administration is extensive and complex.
3. Regulations are difficult to enforce.
4. Eventual costs are difficult to predict.
5. Public ownership of development rights is widespread.
6. Landowners are denied right to speculative value of their property.
7. Regulations are impermanent, subject to the same "erosion" through development pressures as zoning.

Another composite land-use control device is known as the "transferable development rights" or "floating rights" system. Although still largely in the discussion stage, several cities have made efforts to implement this type of system—New York City, Chicago, and others. The basis for this system is an overall set of development regulations for each zone in a particular area. Owners having use of their property restricted would be compensated by being allocated "rights," in effect, to a zoning variance in another district; the "rights" would be transferable (bought and sold) on the open market and exercised by another owner (73).
The basic elements of a transferable development rights system are (88, p. 225):

1. The right to develop land is a quantifiable and transferable incident of land ownership, separable from the normal surface property ownership right, the latter being largely defined in terms of present uses of the surface area.

2. Development rights can be quantified and allocated to each parcel of land on an equitable basis, consistent with a master plan for the district by means of a process similar perhaps to zoning. Some owners would get more rights than the plan would permit them to use; others would get fewer rights.

3. Development rights may be severed from the residual rights of present use in a fashion similar to mineral or subsurface rights.

4. Under governmentally established guidelines, development rights may be transferred (bought and sold) in specific quantities, from one parcel of land to another, not necessarily contiguous, but in the same development-rights district or zone.

5. When an owner seeks to develop the tract to its fullest physical capacity and to maximize profits, the person must generally be required to purchase additional development rights from owners of land on which development has been restricted and who therefore have a surplus of rights.

6. The owner of land on which development is restricted receives cash for the sale of unusable rights and is thus compensated for the restriction on the right to develop his property. Payment comes from the purchasing developer and not from tax sources.

Under this system, a person selling all assigned rights could not develop the land, and no tract of land could be developed unless the owner possessed all the rights needed for the proposed development. Development rights would be extinguished by construction and could be rejuvenated by razing buildings. It has been proposed that the government also be allowed to purchase development rights and retire them if the density within districts becomes too great or lopsided. The government would also be allowed to issue more rights so as to achieve some measure of control over the total amount of development.

This system of transferable rights would first be established through the police power of the state. After being implemented, its direction would be determined by the market forces at work within each district. By allowing for some measure of government influence through the issuance and buying up of rights, this system could have a positive effect on shaping and controlling the development of both urban and rural areas.

Innovations, including development and refinement of composite land-use control systems, increasingly seem to characterize current thinking about land-use control. Evaluations of the full range of controls available is a particularly worthwhile venture.

Although these methods have been treated separately, it is suggested that any analysis should be to compare the efficiencies of the various techniques. One must ask which method would most clearly define the state's interest in the property and thereby overcome problems of indefiniteness and judicial reluctance to recognize new interests in property. Which would be easiest to administer? (73, p. 456)

Each governmental power involves several specific land-use controls. Table 2 provides a brief summary description of the controls most widely used or advocated for open-space purposes. All involve direct or indirect infringement on private property rights.

### DISCUSSION

The literature of land-use control is quite wide ranging and primarily deals with the legal aspects of these controls. Table 3 displays some conclusions concerning the usefulness of land-use controls in accomplishing outdoor-recreation programs. Several other pertinent dialogues permeate land-use control literature.

Some assert that there has been relatively little effective land-use planning in the United States to date. As Delafons has aptly stated, "One of the characteristic features of suburban development in America is its lack of contiguity. Individual developers use whatever land they can acquire quickly and cheaply...The result is a patchwork of development, unsightly, wasteful, inconvenient, and expensive to service" (34, p. 74). Thus, many land-use problems stem from reaction instead of action. Zoning laws often are criticized for being enacted after nuisances are established. Reacting to problems also results in agencies incurring high land-acquisition costs because they wait until development is imminent. Better planning is needed to avert land-use problems before they occur.

People's attitudes and approaches to problem solution have been cited as the reason open-space problems exist today. "Before necessary land-use controls can be implemented, popular attitudes about private property must be changed to engender a collective sense of social responsibilities for the manner in which land is used" (36, p. 2). Americans perpetuate the myths of the frontier and of absolute ownership, and governments largely protect and advocate these traditional views of private property rights (54). "Local governments have not been overly zealous in protecting the public's long-run land-use-control interests" (37, p. 9). A movement away from absolute property ownership and toward more public and less private
Table 2. Major outdoor recreation land-use controls.

<table>
<thead>
<tr>
<th>Government power</th>
<th>Land-use control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Police</strong></td>
<td></td>
</tr>
<tr>
<td>Rural zoning:</td>
<td>Ordinance divides area into districts of development and regulates uses of property outside cities and villages. Typical districts include conservation (11, 75), shoreland (94), open space (56, 66), forest (74), and other desired districts (29).</td>
</tr>
<tr>
<td>Subdivision control:</td>
<td>A device that can be used to regulate and order the process of subdividing and developing private land (37). May provide for open space by planning for parks and playgrounds (7), requiring open space in subdivisions or substituting monetary payment (11).</td>
</tr>
<tr>
<td>Official map:</td>
<td>A map on which government indicates the location of current planned facilities including open space. Has been used to temporarily freeze land use before property rights acquisition (11). One of few controls, though not widely used, comprehensive enough for open space purposes (51).</td>
</tr>
<tr>
<td><strong>Taxation</strong></td>
<td></td>
</tr>
<tr>
<td>Preferential taxation:</td>
<td>Technique by which government often attempts to encourage status quo land use by removing incentive to change its use (95). Consists of outright forgiveness for part of property tax levied if the land were assessed at fair market and not use value (32). Also called tax incentives, this method has been successfully challenged in court (28, 43, 91).</td>
</tr>
<tr>
<td>Deferred taxes:</td>
<td>Property is assessed at both its current-use and best-use value. Owner is given option of paying tax on either basis. If he chooses the current-use basis (e.g., open space) and later converts, he is charged with the back tax differential for some specified period of time (32, 43).</td>
</tr>
<tr>
<td><strong>Proprietary</strong></td>
<td></td>
</tr>
<tr>
<td>Land management:</td>
<td>The ability of a government to direct land use for lands under its jurisdiction; impact is largely related to the size of the ownership, management funds available, and public policy.</td>
</tr>
<tr>
<td>Land disposal:</td>
<td>Land use can be influenced in the process by which governments dispose of public lands.</td>
</tr>
<tr>
<td><strong>Spending° and Eminent Domain</strong></td>
<td></td>
</tr>
<tr>
<td>Fee simple ownership:</td>
<td>Public acquires all available private property rights for some public use. This gives a public agency maximum flexibility to manage lands for open-space purposes. This is an expensive control limited largely by agency fund appropriations and public sanction.</td>
</tr>
<tr>
<td>Less than fee simple ownership:</td>
<td>Public acquires only certain rights to land. Ability to manipulate land use is determined by the conditions stated in the rights-granting deed.</td>
</tr>
</tbody>
</table>

°The spending power can also control land-use through various incentive programs such as grants, subsidies, and credit arrangements.
Table 3. Land-use control conclusions.

<table>
<thead>
<tr>
<th>Land-use Control</th>
<th>Cost</th>
<th>Flexibility</th>
<th>Applicable project size</th>
<th>Longevity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoning</td>
<td>No direct cost</td>
<td>Difficult to change</td>
<td>Large project in a single political jurisdiction</td>
<td>Ordinance &quot;erodes&quot; through political pressure</td>
</tr>
<tr>
<td>Subdivision</td>
<td>No direct cost</td>
<td>Uniformity requires semi-inflexibility</td>
<td>City or county in a single political jurisdiction</td>
<td>Relatively permanent</td>
</tr>
<tr>
<td>Official map</td>
<td>No direct cost</td>
<td>Relatively inflexible once lands are included on map</td>
<td>Less than a city in a political jurisdiction</td>
<td>Relatively permanent</td>
</tr>
<tr>
<td>Taxation</td>
<td>No direct cost</td>
<td>Inflexible, difficult to establish or change</td>
<td>Uniformity requires this to be applied to political unit</td>
<td>Relatively permanent</td>
</tr>
<tr>
<td>Proprietary activities</td>
<td>Direct cost, depends on level of management</td>
<td>Flexible within public policy</td>
<td>Any size</td>
<td>Permanent depending on public desires</td>
</tr>
<tr>
<td>Acquire fee ownership</td>
<td>Direct cost, full value of rights</td>
<td>Flexible within public policy</td>
<td>Any size</td>
<td>Permanent depending on public desires</td>
</tr>
<tr>
<td>Acquire easement ownership</td>
<td>Direct cost, percentage of full rights value</td>
<td>Flexible in planning, inflexible later</td>
<td>Any size</td>
<td>Theoretically permanent; empirically, not enough experiment to say</td>
</tr>
<tr>
<td>Incentive programs</td>
<td>Direct or indirect cost, depends on program</td>
<td>Flexible within public policy</td>
<td>Any size</td>
<td>Permanent depending on public desires</td>
</tr>
</tbody>
</table>

Property rights may be warranted and essential to effective land-use control.

A change of attitudes now seems to be moving toward acceptance of arrangements for more systematic land-use planning and control. The Congress has considered several alternative national land-use policy bills during recent years. These legislative efforts often call upon the states to establish improved land-use planning processes. These processes compel the states to take a firmer hand in land-use planning and control on the premise that local governments operate on a scale too small for effective planning and control. Although national legislation has not been enacted, major new initiatives in land-use planning and control have already been undertaken in a considerable number of states in essentially all sections of the country (16,67). These efforts range from actions to protect particular natural and agricultural resources to more general control and direction of state growth. Some new directions in land-use planning and control are substantially based on legal controls closely related to zoning, and others are largely based on special tax arrangements designed to alter economic incentives.

These current efforts give promise of more effective planning and control. But such effectiveness is still primarily prospect, not yet demonstrated fact. Even so, the prospect is there—creating urgent need for more complete information concerning the effectiveness and costs of various land-use controls. Probably the most overriding conclusion in the land-use control literature is that maximum effectiveness requires an integration of land-use controls. "It's combination. Not one of these devices is worth very much isolated by itself" (90, p. 68). Open-space programs should obtain a good balance between police power, eminent domain, and other land-use controls (58). "We customarily compartmentalize our thinking ...; compartmentalization causes us to overlook possibilities of integrating" (12, p. 56). Before serious efforts can be made to integrate land-use controls, the user ought to be reasonably familiar with the range of land-use controls available for use in the field of outdoor recreation. While this analysis has attempted to provide a brief synopsis of such controls, it should not be used as a substitute for competent legal advice. Indeed, the successful application and integration of land-use controls requires the coordinated efforts of administrators, land-use planners, managers, and very importantly, legal counsel.
REFERENCES


The various studies conducted as part of the regional program are designed to: (1) determine the traits that contribute to net merit in beef cattle and their relative economic values, (2) develop the most effective methods for evaluating these traits and obtaining estimates of their heritabilities, (3) evaluate the effects and uses of inbreeding and crossbreeding, (4) evaluate the importance of genotype-environment interactions, (5) compare the effectiveness of different breeding and selection procedures for making genetic improvement, (6) determine the mode of inheritance of hereditary defects and develop methods for controlling them in beef cattle.

Results in many phases of the regional program come slowly because of the long generation interval and low reproductive rate of cattle. Experiments often must be continued for several years to obtain any reliable data at all. Results obtained in one project at one experiment station provide only partial answers and generally must be considered and compared with other results to be most useful.

Despite these difficulties, animal scientists have accumulated comparative data on breeding systems and procedures, selection methods, and estimates of genetic response to long-term selection that producers can apply in improving the genetic potential of their cattle.

Crossbreeding Raises Questions

Crossbreeding in commercial hog production became common soon after World War II, but it gained widespread acceptance in the cattle industry only during the past decade. The importation of semen or breeding stock of numerous European breeds, such as the French Charolais, Simmental, Limousin, and Chianani, un-
doubtedly stimulated interest in crossbreeding. Some of the imported breeds have the potential for rapid growth rate, leanness in the carcass, and extra milk production in cows—traits that could improve productivity and carcass merit in commercial beef enterprises.

Although the potential advantages of crossbreeding are substantial, not just any crossbreeding program will reap profits for producers. The rapid influx of exotic breeds and adoption of crossbreeding brought to the fore many unanswered questions:

Which breeds should be used as dams and sires?
How much benefit comes from using crossbred cows?
What value do the newly imported breeds have in U.S. beef enterprises?
What effects do management and environment have on the performance of different crossbreeds?
Is there any advantage in using some dairy breeding in beef cow herds?
Which crossbreeding systems are practical and profitable in different sized herds under various management conditions?

In recent years, cattle breeders at the Iowa Experiment Station have tried to answer some of these questions relating to crossbreeding. They began evaluating the effects of introducing dairy breeding into an extensive beef production system in 1967. Recently, they undertook another project, which is still in progress, to determine the lifetime production of crossbred cows that differ in the amount and kind of dairy breeding.

The growth potential, carcass merit, and general performance of various types of crossbred calves are compared with those of straightbreds at McNay Farm.