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OPEN SPACE

ITS USE AND PRESERVATION

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CONTENTS

	<u>Page</u>
Summary-----	iii
Introduction-----	1
Concepts of Open Space-----	2
Functions of Open Space-----	3
Esthetics-----	3
Mental and Emotional Well-Being-----	3
Structuring Development-----	4
Air and Water Management-----	5
Uses That Provide Open Space-----	6
Farm-----	7
Forest-----	8
Recreation-----	8
Institution-----	9
Other Aspects to Consider-----	10
Size--Absolute and Relative-----	10
Open--But is it Open Space?-----	11
Social Benefits-----	11
A Working Definition of Open Space-----	12
Methods for Preserving Open Space-----	12
Purchase, Fee Simple-----	13
Purchase of Partial Rights-----	14
Tax Policies-----	14
Land-Use Control-----	15
Gift of Land for Parks, Recreation, and Other Open-Space Uses-----	16
Incorporation of Lands-----	16
Information and Education-----	16
Concluding Remarks-----	16
Literature Cited-----	18

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SUMMARY

In an increasingly urbanizing world, the multiple benefits of open space are becoming more important. Yet, despite this importance and many people's recognition of it, efforts to preserve land in open-space uses often fail. Two main reasons for this are misuse or lack of understanding of the term "open space" and choice of the wrong method for keeping the land open.

Open space is a term that means many things to many people. For this reason, there is often difficulty in planning for the location, acquisition, and maintenance of land in various types of open-space uses. Open space needs to be defined each time the term is used in order to convey a particular concept of open space to the audience. Definition may seem unnecessary when one begins work toward acquisition, for example, of land for a green strip to buffer the sight and sound of an intensive-use recreation area from nearby housing. But if the owners of adjacent land believe the tract is being acquired for a buffer, and proponents of recreation visualize the tract as an expansion area for active recreation, conflict may well arise at the most awkward time in the transaction.

The distinguishing characteristics of open-space lands are the following:

- Open space can, in part, be defined by its function--that of serving esthetics, mental and emotional well-being, the structuring of development, or air and water management.
- Open space may vary in size according to its uses, its location, and the density of development and intensity of use of nearby land areas.
- Open space may be provided, either primarily or incidentally, by areas devoted to farm, forest, recreation, or institution use.
- Most important, to be classed as open space, a parcel of land must be relatively free from development, have a low percentage of surface covered by buildings and other impermeable surfaces, have a low permanent population density, have vegetation, provide a visual contrast to manmade environment, and provide significant, identifiable social benefits in excess of social costs resulting from all uses of the land.

The benefits of open space are certainly not limited to people on the site; significant public or social benefits accrue in large measure to people who live or work near the site and to others who are miles away. The many social benefits of open space include air "recharged" because of the presence of trees and green plants, underground water reservoirs recharged by rainwater entering ground not covered by buildings or other impermeable surfaces, the creation or preservation of scenic areas, and the conservation of soil--which in turn reduces silt pollution of streams and rivers and the hazard of flooding.

Open-space programs sometimes fail because their proponents neglected to stress, or even to mention, some of the less obvious reasons for keeping land in open-space uses. Other attempts to preserve open space get little public

support because the selected method for keeping the land open was inappropriate or too expensive for a particular use, place, or point in time.

Land may be kept in open-space uses by methods ranging from those costing the taxpayer little or nothing to others that require large amounts of money.

Methods include purchase in fee simple, purchase of partial rights, tax policies, and land-use controls such as zoning. Land also may be given to a government agency or to a tax-exempt private trust established to preserve and maintain open-space lands for various uses.

State and local governing bodies might also use information and education programs as a tool to preserve open space. For example, cost-benefit studies can be made to show developers ways to reduce costs by better land-use planning. Information programs to provide developers and the general public with examples of good and bad development at scales ranging from a few houses to entire towns, cities, and regions also would point up the many benefits of keeping an adequate portion of our total land supply in open-space uses.

OPEN SPACE; ITS USE AND PRESERVATION

3rd by
Jeanne M. Davis and Peter House^{1/}

INTRODUCTION

America is a country richly endowed with natural resources. However, these resources are not unlimited, and some are presently in danger of being depleted or permanently spoiled. In recent years, there has been an increasing awareness of the need for judicious use of our supply of resources, one of which is open space. As the late President Kennedy said in his 1961 housing message to Congress:

Land is the most precious resource of the metropolitan area. The present patterns of haphazard suburban development are contributing to a tragic waste in the use of a vital resource now being consumed at an alarming rate.

. . .

Open space must be reserved to provide parks and recreation, conserve water and other natural resources, prevent building in undesirable locations, prevent erosion and floods, and avoid the wasteful extension of public services (9, pp. 6-7).^{2/}

The loss of our open space to urban and related uses is substantial. Each year, the amount of land converted to intensive urban uses is greater than the total acreage of the State of Rhode Island. Once large open spaces are absorbed for other purposes, it is likely that few--except for the relatively small proportion kept in such uses as parks and recreation areas--will be returned to open space. It is less costly to save adequate open-space areas now than to reconvert built-up land to open space later.

Recognizing the concern about the loss of needed open space, Congress provided for an Open-Space Land Program in the Housing Act of 1961. By June 30, 1968, 1,393 grants--totaling nearly \$172 million--had been made

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^{2/} Underscored numbers in parentheses refer to items in the Literature Cited, p. 18.

under this program to communities in 45 States for acquiring and developing land for open-space recreational use.^{3/} In addition, the Food and Agriculture Act of 1965 provided for assistance to public bodies, whether local, State, or Federal, that wished to obtain farmland for permanent conversion from production of crops in plentiful supply to other open-space uses (Greenspan projects). Between May 1966, when the first project was approved, and June 1967, grants were approved for 139 projects in 27 States, and Federal grants for land acquisition and cost-sharing assistance to establish conservation practices were approved for \$1.5 million. No funds were available for additional agreements under this program in fiscal years 1968 or 1969.^{4/}

Despite the growing interest at Federal, State, and local levels in questions of open space, there is still little agreement on certain aspects of the subject. For one thing, open space has no generally accepted, clear definition. Also, answers are needed to such fundamental questions as: Why have open space at all? What purposes should open space serve? What are appropriate methods for retaining open space? The focus of this paper will be on these questions. The answers are basic to rational decisionmaking about which lands to retain in open-space uses.

CONCEPTS OF OPEN SPACE

The generality of the term assures widespread support for any program labeled "open space." To many people, the term suggests something that is good; because of this, the idea of preserving open space has broad appeal.

On the negative side, the term is so all-encompassing that a general plea to preserve open space may engender support from diverse groups having disparate ideas about the use of open space. Recreationists, farmers, and conservationists may all want open space--but for different purposes. Clashes between such groups may delay or prevent implementation of plans for open-space preservation.

Many laws have been introduced and some enacted by State legislatures, study committees formed, and research papers written on the subject of open space, but the term generally is not defined. To some people, the definition hinges on use. But even those who agree that use is the major criterion differ about the type of use which may be included. Some consider large lots around suburban homes to be open space; others exclude lawns but include the common recreation area of a cluster of houses. Some consider farmland as open space, while many others include only parks or recreation areas.

Some consider open space to be either land or water; however, usually only land is included. Some say the land must be green, while others include stretches of brush or desert, and still others include areas of gravel, asphalt, or concrete.

^{3/} Conversation with Director, Community Development Information Center, U. S. Department of Housing and Urban Development, August 8, 1968.

^{4/} Conversation with information specialist, Agricultural Stabilization and Conservation Service, U. S. Department of Agriculture, May 13, 1968.

Writers too often assume that the reader will understand what is meant by "open space" from the context of the article or paper in which the term appears. The frame of reference of the writer and the reader are usually not the same, however, and misinterpretation may result. Even a cursory review of publications on this topic reveals a great variety of reasons given in support of the preservation of open space. In general, these arguments for (or implied definitions of) open space take one of two distinct approaches. One develops reasons for retaining any and all open-space land uses; the other develops specific reasons for retaining each particular open-space use. The one is concerned with the functions served by open space, the other with land uses that provide open space, either as their primary purpose or incidentally.

FUNCTIONS OF OPEN SPACE

The benefits of and reasons for preserving open space per se, that is, unrelated to specific type of use, can be divided into four separate categories. These range from the esthetic to the utilitarian.

Esthetics

The first group of reasons for preserving open space is concerned with esthetics. This includes natural beauty, freedom from disturbing noise or unpleasant odors, and readily available escape, if only for a short while, from the city and all its real or imagined discomforts. Some urbanites (and non-urban dwellers, too) apparently want open, uncluttered land to walk through, to admire while on a drive, or to photograph. In discussing the demand for outdoor recreation, the Outdoor Recreation Resources Review Commission stated that:

At present, it is the simple pleasures Americans seek most. By far the most popular are pleasure driving and walking; together, they account for 42 percent of the total annual activity.... The Sunday drive through the countryside is one of the great experiences that families share, and for those who live in the city it is anything but passive; they will often put up with an extraordinary amount of intervening traffic to break their way out (11, pp. 25-26).

Others see open space as a major means of providing visual relief from manmade cityscapes and comment on the usefulness of open spaces within a built-up area to provide a change from the usually harsh lines and hardness of materials in buildings and streets.

Mental and Emotional Well-Being

Open space has a role in maintaining mental and emotional well-being. Dr. Karl Menninger, the noted psychiatrist, has stated that among the essential human needs are the needs for air--preferably unpolluted, for exercise, and for contact with nature. Dr. Menninger commented that one way in which the latter

can be achieved is through "the somewhat artificial but pleasant provisions in an accessible and properly maintained park--trees, flowers, shrubs, lawns, lakes and streams." He further stated, "In my opinion, we must add to this a proximity to larger non-urban areas of farm or wilderness or near-wilderness as essential to the mental health of both child and adult" (10, p. 198).

The noted English historian, George Macaulay Trevelyan, commenting on our need for open space, said: "All of us have deep emotional drives which impel us whenever possible to seek the open sky, open spaces, open land" (13, p. 1). And:

The need to preserve natural beauty is not merely a question of preserving holiday grounds for masses of people from the town. It is also a matter of preserving a main source of spiritual well-being and inspiration on which our ancestors thrived, and which we are now in danger of losing forever. We are literally "children of the earth," and removed from her spirit wither or run to various forms of insanity. Unless we can refresh ourselves at least by intermittent contact with Nature, we grow awry (13, p. 11).

Structuring Development

Open space can serve as a buffer between disparate and conflicting types of development. A strip park along a highway reduces noise and dirt that would adversely affect the livability of nearby residential developments. Cropland or other open-space uses adjacent to an airport can insulate approach and takeoff zones.

A planning report of the County of Santa Clara, California, equates the loss of open space with the loss of community form and community identity. With maps and legends, the startling change due to urbanization in the county is shown. The map for 1940 shows "scattered communities set in an agricultural landscape...with geographical identity clearly defined." The map for 1950 indicates that "the highway is the artery encouraging communities to spread into the countryside." The map for 1960 shows the huge, amorphous, sprawling form of the county's urbanization, with:

...open space, which defines and gives form to communities, gradually losing out to all the land-occupying activities that make up the total urban pattern.... (5, p. 5).

A number of planners have visualized using large amounts of open space to separate densely developed urban places. This would make it possible for people living in built-up areas to have the best of both worlds--to live where there are urban facilities and services while, at the same time, being near the open spaces so many long for. Concentrating development, they assert, would reduce the cost of providing streets and utilities significantly below the cost of providing them in areas of sprawling, scattered development. The cost of providing some of the necessary community services--such as school bus transportation, police and fire protection, trash collection, and street cleaning--

also could be reduced by clustering, rather than sprawling, development, since travel times and distances would be shortened.

In addition, development with planned clusters of concentration separated by land in permanent open-space uses might preclude the unnecessary and often premature disruption of agricultural activities in areas where urbanization is characterized by numerous scattered subdivisions leaping beyond the suburbs--leaving undeveloped vacant land behind.

Examples of the use of open space to define developed areas include (1) open space to give visible form to neighborhoods (as in the plan for the new city of Columbia, Maryland), (2) open-space wedges to distinguish corridors of development strung along transportation arteries leading to the central city (The Year 2000 Plan for the National Capital Region), and (3) large areas of land in open-space uses such as farms, forests, parks, and institutions to define and separate towns, cities, and metropolitan areas. The latter use of open space to structure development is recommended in the Baltimore Regional Planning Council's report, *Metrotowns for the Baltimore Region*, which suggests that provision be made to accommodate the accelerated growth of population expected in the next few decades in "metrotowns," each having concentrations of population of 100,000 to 200,000 people.

Metrotowns should be defined at their outer limits and separated from each other by open spaces. These would identify the physical features of the metrotowns, channel growth into designated areas through pre-empting land from unplanned development, and conserve land for parks and recreation, agriculture and conservation, public and institutional use close to each metrotown (2, p. 3).

In addition to its usefulness in structuring or channeling development, retention of large open spaces adjacent to built-up areas would provide flexibility for future development.

Air and Water Management

This fourth category of reasons for preserving open space relates to our very existence. Adequate amounts of open space, carefully located, are vital to improved management and use of our most necessary natural resources--air and water. They suggest that large amounts of open land near cities are needed to act as air recharge or "mixing" areas where the noxious air of the cities can be diluted with fresher air. The preservation of large agricultural areas as "ventilating green spaces" was one of the three major ways to help alleviate or prevent air pollution proposed in the Santa Clara County, California, General Plan (5, p. 13). Actually, forests, parks, or other green space also serve this purpose.

With urbanization, land previously in such open-space uses as agriculture and forests has been covered with impermeable surfaces. This increases the amount and speed of rainwater runoff. One immediate consequence is the increase in flood potential in those same urban areas as well as in others downstream.

Perhaps an even more important, although less apparent, result is the decrease in percolation of water into underground streams and reservoirs--the source of much of our fresh water supply. In Santa Clara County, where there is serious overdraft of the area's natural underground reservoir, planners comment that, "We are further closing the lid on the underground reservoir by urbanizing the areas which permit percolation into this reservoir" (5, p. 23).

A number of other important considerations regarding water, open space, and urbanization are well summarized in the report, *Open Spaces and Our Cities*, prepared by The Washington Center for Metropolitan Studies.

The principal need for open spaces in metropolitan areas is to assist in maintaining the balance of nature. Not only stream flow and water tables must be considered, both as they relate to water supply and to the disposal of sanitary wastes, but as they interact with plant life, the soil, and human activity as well....

. . .

Closely related to water and to soil is the preservation of the natural cover of trees and grass. The extensive replacement of such natural absorbents of moisture by concrete pavements and roofs have tremendously accelerated runoff and greatly complicated problems of flood control. In many suburban jurisdictions the most serious problem resulting from previous failure to attend to these considerations is the growing need to provide storm water drainage (14, pp. 7-8).

USES THAT PROVIDE OPEN SPACE

Open-space lands should be identified according to the major use of the land, not merely as "open space." This is essential in order to identify and classify the on-site and off-site social benefits or gains and the public costs of keeping these lands in open-space uses.

The major specific land uses that provide open space can be divided into four categories: farm, forest, recreation, and institution.^{5/} These are not mutually exclusive. For example, there may be farm, forest, and recreation areas within the boundaries of a large institution. Similarly, although the primary purpose of a farm may be to produce food, and the primary purpose of a forest to produce timber and wood products, both may provide recreation opportunities.

^{5/} Each of these can be further divided in various ways--for example, by type of ownership (that is, whether public or private) or specific use (dairy farm or orange grove, community college or chronic disease hospital).

Farm

The need to keep large areas of open space in farm use can be classified along two main lines: The need for farmland to produce food and fiber, and the usefulness of farmland to meet other needs.

The open space report of the Washington Center for Metropolitan Studies calls attention to some of the areas where agricultural open-space uses are vanishing.

...There is a growing recognition among agriculturists of all sorts of the impact of the city upon their work. This is true particularly in the Soil Conservation Service and among men in agriculture concerned with marketing. The loss of uniquely rich trucking areas of Long Island and New Jersey; of valuable dairying areas in the vicinity of Philadelphia, Washington, and Chicago; of richly developed orchards in the Santa Clara and the San Fernando Valleys of California are widely appreciated as evidences of waste.... (14, p. 9).

The dwindling supply of land for certain specialty crops is held to be an especially acute problem. S. Goldweber has written about the change in the production of tropical and subtropical fruits in Dade County, Florida.

Urbanization is taking its toll of fruit production through: (1) elimination of old established groves by housing developments; (2) discouragement of new plantings as a result of increasing land prices; and (3) increased taxation of most agricultural lands.

Within the continental United States, only a few counties of Florida can successfully produce many of these tropical fruits. California produces an avocado, but it is a type that is distinctly different than those produced in Florida, and is grown during a different season.

Much land now producing fruit is owned by speculators who are waiting for the expanding housing developments to reach their land. Many of these areas are located in or near highly desirable residential areas and will soon be used for housing developments (8, p. 46).

Arguments concerning the usefulness of farmland to meet nonagricultural needs are its scenic appeal to the urbanite, and its potential use as park or development land. Farming also may be the cheapest method of keeping land in an open-space use.

Forest

Reasons for retaining large tracts of forested land parallel the reasons for including farms as an open-space use: The need for forested land to produce timber and other forest products, and the usefulness of forested land to meet other needs.

Projections made by the U.S. Forest Service indicate that the demand for timber products will nearly double by the year 2000. Despite this, the Forest Service expects that the anticipated timber demand can be met without any increase in area if there is more intensive forest management and utilization (6, pp. 2-4). However, the projected amount of timber and forest products required probably could not be supplied if there were a significant decrease in the amount of forest land.

Multiple use of forest lands makes it possible to provide for other needs, too--recreation, water supply, soil conservation, wildlife habitat, and many others. The usefulness of forest lands to meet these needs is well documented. A Forest Service publication calls attention to the fact that:

Grassland adjacent to forest or brush cover is the preferred habitat of many wild animals. A common practice is to clear relatively small openings in timber stands or brush fields, and establish good forage in such openings. Wildlife habitat is thus greatly improved.... Openings also provide pleasing variations in unbroken expanses of vegetation as well as better opportunities to observe the wildlife.... (7, p. 16).

American Forest Products Industries, Inc., also indicates the need for forests for uses other than growing timber. This association states that:

...forests provide far more benefits than wood alone, and the demands for other uses of the forests are growing by leaps and bounds. In particular, the question of how to meet the outdoor recreational needs of the nation is one that also must be answered (1, p. 8).

Recreation

Emphasis on the need for land for recreation has been particularly strong since the inception of the Outdoor Recreation Resources Review Commission in 1958. The Commission's report to the President and Congress, published in 1962, provided a great deal of information about the need for outdoor recreation, data concerning the types of outdoor recreation activity people are interested in, and projections of demand.

The Commission estimated that the demand for outdoor recreation activity will triple by the year 2000 (11, p. 47). If this demand is to be met, some recreation lands will have to be developed for more intensive use, new ways of providing recreation opportunities will need to be devised, and thousands of acres of additional land will be needed for a variety of recreation uses.

Reasons for keeping large quantities of open-space land include: The need for land for recreation, per se, and the usefulness of recreation space to meet other open-space needs.

The problem of providing adequate quantities of open space for recreation use, both now and in the future, is becoming increasingly difficult. The California Public Outdoor Recreation Plan states:

Particularly noticeable is the loss of recreation and open space about cities and towns. Where once there was countryside, there are now housing and industrial developments. In some places, governmental jurisdictions have been able to acquire or reserve open "breathing" spaces; in far too many areas, they have failed (4, p. 17).

This report further states that:

The problem of land and space permeates almost every aspect of recreation. Not only must there be sufficient space to accommodate the necessary developments for recreation, and to hold all the people who wish to use them, but there must be ample space surrounding each and every sort of recreation area to provide elbow-room and to retain the feeling of freedom of the outdoors (4, p. 19).

Most of the land required for future recreational purposes would also meet other open-space needs. Statements concerning the usefulness of park and recreation areas for other open-space purposes include primarily those which stress the importance of park and extensive recreation spaces as open-space buffers between various other land uses, and those which include recreation space as a land bank for future development.

In common usage, there is considerable overlap in the use of the terms "open space" and "outdoor recreation." Care should be taken to maintain their separate identities as concepts. Areas of intensively developed outdoor recreation facilities may produce more adverse offsite effects in terms of esthetics than would, for example, a well-landscaped plant engaged in light industry.

Institution

Little has been written about the need and usefulness of open space for various public and semipublic institutions. However, several studies for planning commissions have included this category as an open-space use.

The reasons stated for keeping existing institutional lands and acquiring other fairly large amounts of land for institutional uses can be classified as: The need for space for various types of institutions, and the usefulness of institutional lands to serve other open-space needs.

In its 1961 report, Open Space in Cuyahoga County, An Introduction, the Regional Planning Commission of Cleveland, Ohio, included in its categories

of open space the following institutions: Academic, correctional, hospitals, residential, and other (which included military facilities) (12, p. 4).

In the course of a study in 1960, the Baltimore Regional Planning Council inventoried the types of institutions needing open-space land, and, as a result of the inventory, was able to distinguish between those institutions requiring large areas of land and those needing little. For the former, suggested working standards of acres needed per 1,000 people were evolved and projections of open-space land needs made for 1980 and the year 2000.

The Council inventory included hospitals, homes for the aged, orphanages, sanitariums, military installations, facilities owned by religious orders (other than churches, schools, cemeteries, and recreation areas, each of which was inventoried separately under its own heading), facilities owned by fraternal organizations, organized camps (such as the Boy Scouts' camps), golf and country clubs, and colleges and other institutions of higher education (3, p. 44). The study demonstrated that many of the lands of these institutions are open space and, in addition to their primary function, can be quite useful to structure development at the regional, city, and even neighborhood level.

OTHER ASPECTS TO CONSIDER

We have discussed the functions of open space and the major uses that provide it. In order to arrive at a working definition of open space, several other aspects of open space must be considered.

Size--Absolute and Relative

Size of area has assumed importance in definitions of open space. Minimum size of an area to be classed as open space varies in relation to both density of development and intensity of use of nearby land. For example, small open spaces in a city's center, where most land is in streets or medium-to-high-rise buildings and the intensity of use is great, might be as small as one-tenth of an acre yet still be effective. Center city open spaces might include a parklet around a fountain, a square or mall, or a landscaped area around a building. Larger open spaces are needed for park and recreation uses in residential areas. It may also be desirable to have large parks--such as New York's Central Park--to serve the entire city.

In the suburbs, where land is less intensely used, the scale of open space generally is larger than in the city center, but still is small in comparison with that in the rural-urban fringe or in predominantly rural areas. Because density of development and intensity of land use are less than in the city, it is unlikely that any parcel of less than an acre would be an effective open space in the suburbs; most lands in open-space uses would be considerably larger. Examples of open spaces in the suburbs might include hospitals and nursing homes for the chronically ill, "parks" for light industry, and community colleges (if other conditions of open space are met), as well as neighborhood parks, some school recreation areas, and golf and country clubs.

In rural-urban fringe areas, open spaces are usually larger in scale than those in suburban or city areas. That any parcel of less than 50 acres would be considered as open space is unlikely; most would be much larger. These large-scale open spaces include the four major use groups discussed earlier: Farm, forest, recreation, and institution. In all areas, but particularly in rural-urban fringe areas, several small open-space uses can be grouped to create a more effective open space.

In predominantly rural areas, open spaces are largest in scale. In fact, one could consider that predominantly rural areas (such as the Great Plains) are vast areas of open space containing relatively small pockets of urban, nonurban industrial, and transportation development. Because there are relatively few people living in the rural areas, there is little public pressure to identify and preserve rural open spaces other than wilderness areas, national parks, national forests, and other areas of scenic or historic value.^{6/}

Open--But Is It Open Space?

Some land that is "open"--not built upon--should not be classed as open space. The widely diffused social costs of air and sound pollution in the vicinity of airports, for example, are likely to be greater than the social benefits of the airport as an open area.

Areas allocated for vehicular use--expressways, streets, parking lots, railroad yards, for example--should not be classed as open space. Vehicular areas exhibit many qualities that are undesirable for an open-space use: air pollution, noise, high population density, large proportion of site covered by impermeable surface, lack of vegetation to contrast with manmade environment.

Over time, a particular site may shift from one class to another within the open-space category or may shift in and out of the category. For example, land now in open-space use as an undeveloped park on the fringe of an expanding city may be planned for temporary removal next year from the open-space category for use as a landfill area. Plans might also designate this site's return to open-space use three years hence as an improved park and recreation area--with a new forest planted on manmade hills of compacted trash.

Social Benefits

The benefits of open space are certainly not limited to people on the site; significant public or social benefits accrue in large measure to people who live or work near the site and to others who are miles away.^{7/} Benefits include enhancement of real estate values of property adjacent to land in open-space uses (and additional tax revenues stemming from this higher value, air

^{6/} Preserving the large rural open spaces is a problem for State and Federal agencies and various conservation groups; it is not considered in this paper.

^{7/} Social cost is defined here as public and private dollar costs plus the value of nonmonetized losses attributable to a change in land use; social benefit is the sum of all gains.

"recharged" due to presence of trees and green plants, underground water reservoirs recharged by rainwater entering ground not covered by buildings or other impermeable surfaces, the creation or preservation of scenic areas, and the conservation of soil--which in turn reduces silt pollution of streams and rivers, the hazard of flooding, and the loss of capacity in manmade water reservoirs through siltation.

When the social benefits of open-space land uses are greater than the social costs, land in such uses should be considered for long-term retention as open space. Whether land is classified as open space or not hinges on realizable public or social benefits. The rolling wheat fields of the Midwest provide a variety of open-space benefits to the few who live in the area, as well as directly and indirectly to others in the Nation, but large public expenditures for their preservation as open space per se would not be justified at the local or regional level. These, and other well-managed large farm and forest areas, are open-space uses on a national scale. They have little value as regional or local open space, because almost all environment in the locale is natural and there is no nearby man-created environment to contrast with these open areas.

A WORKING DEFINITION OF OPEN SPACE

The distinguishing characteristics of open-space lands, derived from the preceding discussion, are as follows.

- Open space can, in part, be defined by its function--that of serving esthetics, mental and emotional well-being, the structuring of development, or air and water management.

- Open space may vary in size according to its uses, its location, and the density of development and intensity of use of nearby land areas.

- Open space may be provided, either primarily or incidentally, by areas devoted to farm, forest, recreation, or institution use.

- Most important, to be classed as open space, a parcel of land must be relatively free from development, have a low percentage of surface covered by buildings and other impermeable surfaces, have a low permanent population density, have vegetation, provide a visual contrast to manmade environment, and provide significant, identifiable social benefits in excess of social costs resulting from all uses of the land.

METHODS FOR PRESERVING OPEN SPACE

So far, the discussion has concerned the growing realization that open space is a necessity if we are to maintain and enhance the quality of our environment. Many aspects of open space have been considered. A working definition of this multifaceted term has been suggested. Given the desirability of preserving open space, what are some of the methods to achieve this goal?

The following list of methods for keeping land in open space is not meant to be exhaustive, but rather to be representative of the range of methods that have been suggested or employed. These possibilities vary from methods costing the taxpayer little or nothing to others that require large amounts of money to implement.

Purchase, Fee Simple

The first and most often used method is outright purchase of the land. Many private groups are deeply interested in maintaining open space for one reason or another, and spend much effort and money toward this end. A number of these groups buy land for open-space uses. Examples include the areas bought for conservation purposes by the Audubon Society, the Izaak Walton League, and the Nature Conservancy; those acquired by golf and country clubs for the members' recreational use; and sites bought for ski area developments or hunting preserves where use of the space and a specialized recreational service is sold to the public.

Governments, at any level, can purchase land in fee simple. This method is most often used to acquire park and recreation areas, which remain in the ownership of the jurisdiction buying them.^{8/}

There are a number of variations in the use of purchase in fee simple. Those used by individuals, firms, groups, and governments interested in keeping land in open-space uses include advance acquisition, purchase and lease-back or purchase and sellback, and purchase at a tax foreclosure. In addition, Federal, State, and many local governments can use the right of eminent domain and condemn land for a public purpose.^{9/}

Advance acquisition--Buying land in advance of the time it is required is as useful for governments acquiring land for open-space uses as it is for private industry buying sites for future growth. This method keeps land open until construction of the project for which the land was bought actually begins. It also helps agencies reduce the cost of public facilities by buying before the price of land increases due to inflation or population growth.

^{8/} Money for this purpose--as loans or grants--is available to local government agencies from the Open Space Program of the U.S. Department of Housing and Urban Development; from the Land and Water Conservation Fund through the Bureau of Outdoor Recreation, U.S. Department of the Interior; from a number of other Federal programs; and from the programs of various States. (The Greenspan Program of the U.S. Department of Agriculture was not funded in Fiscal 1968 or 1969.)

^{9/} Eminent domain is the right of a government to take private property for public use. Condemnation in this sense is the declaration that the property is being legally appropriated for a public purpose; the owner is paid the fair market value of the property.

Purchase and leaseback, or purchase and sellback--These arrangements can be useful for keeping land in such open-space uses as farming and forestry. Whether the land is leased or sold, restrictions upon the use of the land preserve its usefulness as open space.

Condemnation and excess condemnation are methods available only to governments. There is a constitutional requirement that land be taken only for public purposes. Recent court decisions have expanded the public purpose concept from only the land actually needed for roadbeds and building sites to that land plus adjacent land which enhances the beauty of these types of public projects. Condemnation can be used to acquire land for a park. Excess condemnation can be used to acquire land for such purposes as small parks along a highway, a neighborhood park adjacent to a school, or a buffer between an airport and adjacent residential areas.

Purchase of Partial Rights

Property ownership, in a legal or an economic sense, is the proprietorship of a bundle of rights. Typically, these rights, to name a few, include the ownership of any minerals on the property, water rights, the right to sell the property or transmit it to heirs, and the right to use the land. Recent attention has been given to public acquisition of partial rights as a means of retaining land as open space.

For example, public acquisition of a scenic easement along a highway would permit the owner to use his land for any purpose except one that would obscure or mar the view from the highway. As another example, a conservation or natural resources easement would limit the land to such uses as farms and forests. These limiting or negative easements usually do not include the right of public access to the property.

Tax Policies

One of the principal reasons cited by many for the loss of open space on the rural-urban fringe, particularly farmland, is that real property taxes based on the value of this land in areas that are growing through suburban development are too high for the owners to pay unless they change the use of the land. At least three methods have been devised to deal specifically with this problem:

- Preferential assessment is a departure from the standard ad valorem assessment of real property. It consists of the outright forgiveness of part of the real property taxes which would have been levied on a parcel of property had market value been used as the standard for assessment rather than use value. Such laws usually require the assessment of farmland and other land (such as golf courses) on the rural-urban fringe on the basis of its value in its current use regardless of its potential value in any other use.

- Tax deferral is also a departure from ad valorem assessment of real property. This plan is much the same as preferential assessment, except that the real property taxes which would have been levied on the basis of potential suburban use are not forgiven outright but are deferred until the land is actually converted to a higher use. Variations of this plan provide for different periods of deferral, and some provide that interest should be paid on the property taxes deferred.

- Grants to pay property taxes--Some people believe that the city, State, or Federal Government ought to give a direct grant to the owners of open space near a growing city. These people hold that the real property tax should not be further changed; instead, if taxes on real property are truly a significant factor in an owner's decision to sell land on the urban fringe, then the Government could subsidize the owners of such land directly. The amount of the grant could be exactly enough to cover the cost of the higher property taxes (for example, the difference between the property taxes in the current use and in the potential use), or the grant could be somewhat higher, thus providing an incentive for the owner to keep the land open. Such grants could be thought of as rental payments by the public to keep the land as open space.

Land-Use Control

Zoning is probably the best known method of land-use control. Natural resource or conservation zoning may be used to keep land in open-space uses in rural and rural-urban fringe areas by designating zones for such purposes as conservation, flood plain, agriculture, forestry, or other low-intensity uses. Such zoning is of limited usefulness in places where pressures for development are strong.

Zoning in cities and on the fringe of urban areas is usually classified by type of use (e.g., industrial, commercial, residential) and, if residential, by density (the number of people, or more usually, the number of dwelling units permitted on a given acreage). Density zoning may be used to keep land open in urbanizing areas by permitting the developer to build at higher densities on part of the site, thus requiring him to keep part of the site open in order to stay within the maximum allowable density for the entire site.

Recent variations of density zoning are cluster zones, planned unit development zones, and new town zones. Cluster zoning allows the developer to reduce the size of the permitted number of lots and group or cluster them provided that the land saved by this method be kept as open space. Planned unit development and new-town zoning permit variations in density and in land use. These new types of zoning encourage a more creative approach to land development which can result in more rational use of available space, including reservation of land for various open-space uses.

The subdivision regulation is another form of land-use control often used in connection with zoning. Subdivision regulations can require the developer to dedicate a certain percentage of the total tract to open-space use, such as parks.

Gift of Land for Parks, Recreation, and Other Open-Space Uses

Land may be given to a government agency or to a tax-exempt private trust established to preserve and maintain open-space lands for various uses. Similarly, the landowner's right to develop his land may also be given to agencies of the above types, thereby assuring that the land will remain as open space. This could reduce the owner's property taxes (because the value of his property would be reduced by the amount of the dedicated property rights) and the land would remain in private ownership.

Incorporation of Lands

Landowners in some States are able to combine and incorporate their lands as a separate municipality. This device relieves pressures to change the land from its agricultural use. The tax burden can be stabilized and, often, future tax increases can be avoided because the services required in the agricultural area are minimal. The few services needed, such as schools, can be obtained on a contract basis. Also, the farm municipality is freed of the threat that its open land will be condemned for intensive public use. The preservation of this open space depends upon the desires of the incorporated landowners.

Information and Education

State and local governing bodies might also use information and education programs as a tool to preserve open space. These might include:

- Preparing and disseminating to developers cost-benefit studies that show ways to reduce costs by better land-use planning and the inclusion of open-space lands in developments of all sizes.

- Sending to developers, and to the general public, literature stating the many reasons for preserving open space--and how this can be assisted by developers.

- Working with radio, television, newspaper, and magazine writers and photographers to show developers and the public examples of good and bad types of development at scales ranging from a few houses to entire towns, cities, and regions.

Not all of these methods could be used to preserve a particular type of open space, nor would all of these tools be equally appealing to all local government officials. In some cases, combinations of two or more of these tools might be more workable than any one of them alone.

CONCLUDING REMARKS

To prepare and implement plans for retaining open space, people in each State, region, county, city, and town will have to decide for themselves what concepts and definitions of open space apply to their particular situation.

They will need to determine answers to many questions, if the plans for open-space preservation are to be effective. Questions such as the following should be considered:

- What are the open-space uses in the area? What purposes do the open spaces serve? Where are they located? How large are they? Are they linked, or discontinuous?

- Where should open space be retained? What functions should these open spaces serve? What are the most suitable locations for each of these specific uses? Which general purposes are to be fulfilled by each specific open-space use suggested for various sites?

- What are the monetary and nonmonetary public or social benefits of the various areas proposed for retention as open space? What is the distribution, off-site as well as on-site, of these benefits? What are the public costs of these open-space areas? What is their distribution? Do the public benefits of retaining each proposed open-space area outweigh the public costs?

- Which methods of open-space land acquisition and/or retention are least expensive for the community? Which are the most feasible politically? Which have the greatest chance of keeping the land in open-space uses for long periods of time, if this is an objective? Should the method adopted provide for permanent preservation in a particular open-space use, or should conversion from one open-space use to another--or to a use other than as open space--be permitted at some time in the future? Which method or combination of methods provides the best opportunity for beneficial development of the area?

These and many other questions will need to be considered. The first problem is to define and identify the type of open space being discussed. The term needs to connote the same thing to the public, the planners, and the decisionmakers each time the question of retaining land in open-space uses is raised.

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