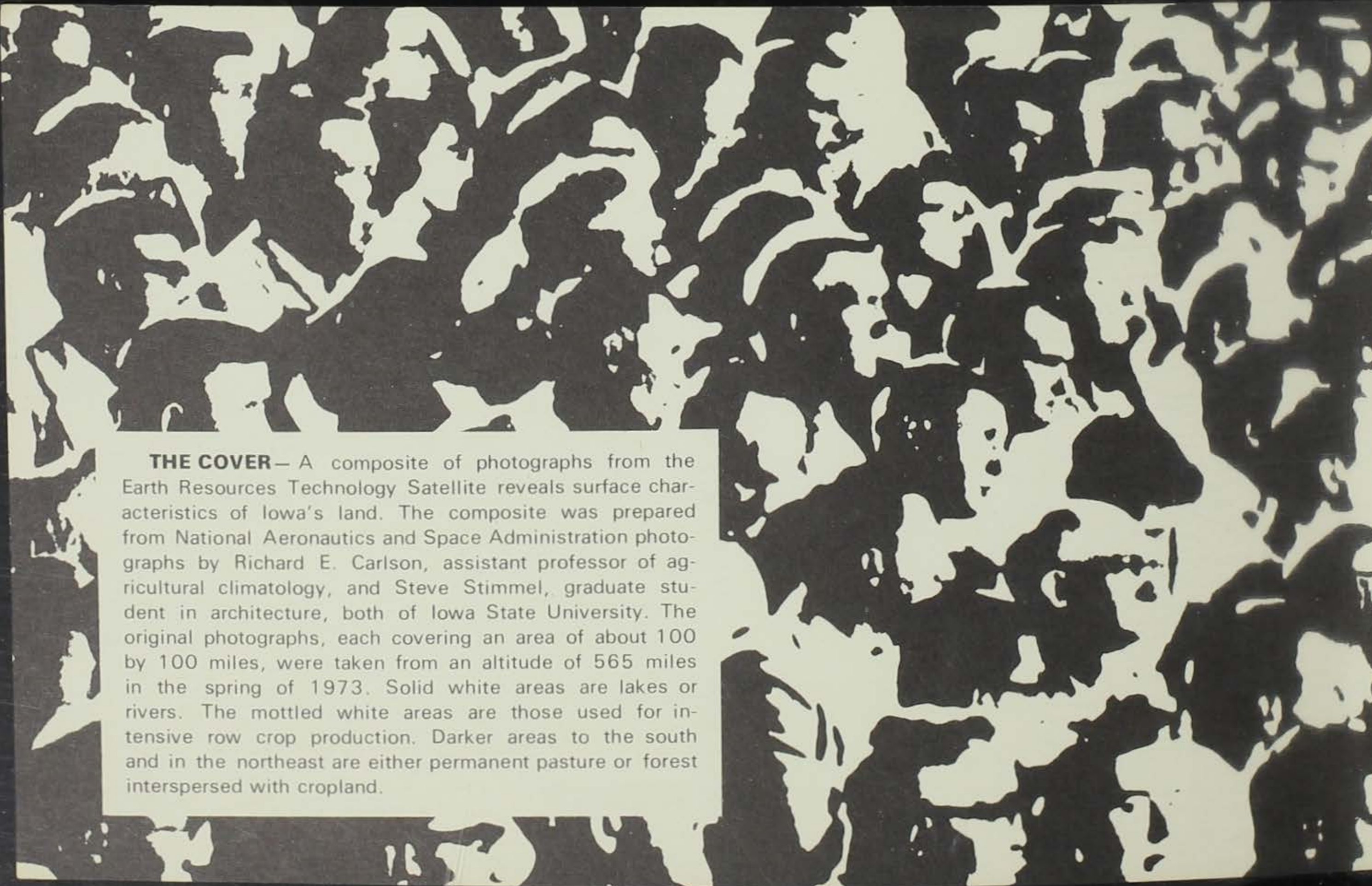




**guide
for a
growing
Iowa**

LAND USE POLICY



THE COVER— A composite of photographs from the Earth Resources Technology Satellite reveals surface characteristics of Iowa's land. The composite was prepared from National Aeronautics and Space Administration photographs by Richard E. Carlson, assistant professor of agricultural climatology, and Steve Stimmel, graduate student in architecture, both of Iowa State University. The original photographs, each covering an area of about 100 by 100 miles, were taken from an altitude of 565 miles in the spring of 1973. Solid white areas are lakes or rivers. The mottled white areas are those used for intensive row crop production. Darker areas to the south and in the northeast are either permanent pasture or forest interspersed with cropland.

foreword

If families in the United States average two children in the future, the population of the nation will reach 300 million in the year 2015—about 40 years from now. The nation passed the 100 million mark in 1915 and the 200 million mark in 1968. If families average three children in the future, the nation will reach 400 million by the year 2013.

Between now and the year 2000, Iowa's natural increase in population under current trends will amount to about 600,000 persons. The state's actual population is expected to grow about one-third of a million, and the remainder of that natural increase will migrate to other states.

In addition to population growth, there are other changes. Neither in Iowa nor in the nation is there a vast area of unsettled land for development. The frontier is gone. So an increasing number of people will live where we are now living.

Also, these future members of society are not like their ancestors who once used the earth and left little more trace of their existence than the sun and the wind upon the environment. Our future population will be much like ourselves, equipped with chain saws and bulldozers to build factories, roads, and communities and to bury wastes.

Since all that man does relates to the land, where

do we put our increasing numbers of people and the facilities they need? Do we need a land use policy—a plan to locate people and facilities efficiently, or to preserve valuable agricultural land, recreation space, or historic sites?

Land use policy or planning appears to be a new phrase. But the nation has had such policies—under different names. Most of those policies worked well. They worked so well that we have become attached to them emotionally, culturally, and economically.

But with unlimited demands for land, there's a question if our past land policy is adequate to meet the future needs of our state and nation.

If a new land use ethic is to be developed, active participation of all the people is desired. That participation is needed to develop the policy so that the concerns of all are represented; so there is agreement that benefits will exceed the costs; and to ensure that the program works.

To achieve that goal, local decision-makers and the general public must be informed about the land, its use, its capabilities, and the people's needs. This booklet is intended to help provide that information.

—*The Iowa USDA Rural Development Committee*
May 1974



A land use policy should assure sound use of all resources.

what is a land use policy?

Essentially a land use policy is a settled course adopted and followed by the state regarding use of land in a prudent and wise manner.

Land use policy goals should provide for all legitimate uses of land and might include such things as:

- * Identifying space for orderly urban and industrial development.
- * Identifying the best agricultural areas for farming.
- * Reducing or maintaining satisfactory levels of pollution.
- * Assuring sound use of all other natural resources including minerals, timber, and wildlife, as well as natural beauty, historical sites, and scenic values.

- * Reducing conflicts between individuals and between individuals and society.

- * Identifying space for parks and recreation.

A land use policy generally is a statement describing goals. Usually, the policy is followed by development of a land use plan which contains guidelines, procedures, maps, and administrative organization. The more detailed plan is used as a guide in reaching land use decisions. It is often supported by factual data and should reflect the community's previously-agreed-to policy with respect to land use.

Zoning is one tool for regulating use of land. To be effective, zoning must be based upon a land use plan and enforced in order to make public and private land uses conform to the plan. If the land use plan reflects community policy, zoning can carry out the policy with little resistance.

reasons for concern

There are many reasons for concern about land use. Congestion, environmental decay, pollution, and urban sprawl are a few. But there are three basic reasons for concern—increasing population, advancing science and technology, and a limited land and resource base.

All that man does involves the land. We live on it, play on it, eat from it, travel over it, and are buried in it. And much of what we do to the land is irreversible. Once land is developed for urban residences, it is difficult or impossible to return it to productive farm land, a reservoir site, or a wildlife refuge.

We allow the marketplace to determine land use. Generally, land is used for whatever enterprise will return the most dollars. With virtually an unlimited amount of land, that system has worked well. But with our growing population and recognition that the amount of land is limited, it becomes questionable if

we can allow the economics of today to dictate the pattern for tomorrow.

For instance, as the intensity of use increases on the land, the dollar return usually increases. Since industrial use of land is more intensive than farming, the dollar return per acre is greater with industry (table 1).

However, should we allow the marketplace alone to determine land use, more and more of our land could change from agricultural use to more intensive uses. Should that trend continue long enough, farm land would become scarce. At that point, agriculture would have to intensify its land use to sustain food production. This would reverse the previous economic trend and make land more valuable for farming than industry. But while the economics reverse, we may not be able to reverse our use of land.

*Once some land decisions are made,
they may be nearly impossible to
reverse.*

Table 1. Economic impact of 13 acres compared for industrial use versus agricultural use.

Factor	Industrial Use	Agricultural Use
Jobs created	80	0.08
Investment in land	\$26,000	\$5,720
Investment in buildings, equipment	\$1,300,000	\$1,000
Total taxes paid (land and improvements)	\$35,000	\$104
Annual payroll	\$700,000	\$520

Source: Iowa Development Commission, based on actual industrial locations, 1972-73.





history of land use

We've always had a land use policy. Until the mid-twentieth century, the U.S. land use policy was designed to encourage land settlement. Taming the frontier and moving people west was the prime objective.

The earliest land use policy in America was probably that expressed by Thomas Jefferson. His dream was to establish and preserve an agriculture of freeholders—full owner-operators—much the monarchs of all they surveyed.

The Jeffersonian "freeholder" concept was a strong belief in America's early years. It remains dominant with many people today. The idea that "a man's home is his castle" is still a strong belief and is a part of the Jeffersonian concept regarding land.

This concept was reflected in land use policies that followed in later years. First came the survey so land could be identified, sold, and held. Then there were the Land Grants of 1789 and the Homestead Act of 1862 to encourage settlement and development of the land.

America was founded by those seeking to escape the restraints of European feudalism, where the master-servant relationship prevented the masses from ever becoming property owners. With the success of the freeholder concept, it is easy to see why strong beliefs about hard work, the right to own property, and the right to use and protect property as the owners see fit became so ingrained. The system worked in the frontier setting.

When the frontier was no longer available, the nation's land use programs changed. In Iowa, land use for many years was considered to be crop rotation. Later, land use policy involved local governments in controlling land use through planning, zoning, and building codes in the cities.

Even these tools of land use are not fully accepted by all people today because they limit or threaten those traditional beliefs that were so successful.

We've had other types of land use policies, too. State highway commissions have made decisions in the past regarding how land was to be used for highways. The commissions' criteria included the type of soil, the cost of construction, the mileage motorists would be required to drive, transportation needs, and the volume of traffic. Assuming land was unlimited, the criteria made sense. Only in recent years with the realization that land resources are limited, have other considerations in highway construction been raised. Should land use for highways not also consider farm lands, wooded areas, parks, and displacement of people?

The highway commission is but one example. Many other public and private agencies made decisions regarding land use for flood control, housing, business, or industry—again, often with limited criteria. What has been lacking is a comprehensive land use plan to consider all factors in land use.

New problems have emerged. Land use now requires a new definition and new programs. And because of our past beliefs, there is considerable concern and controversy over land use policy.

our present situation

Table 2. Types of Iowa land use in acres and percentages of total, 1970.

Types of land use	Acreage	Percent of total land
Cropland	26,458,321	74%
Pasture	3,996,911	11
Forest	2,585,585	7
Urban*	1,564,033	4.3
Other (farmsteads, roads, etc.)	1,028,715	3
Federal	159,397	0.4
Water	45,941	0.1

Source: Conservation Needs Inventory, Iowa Conservation Needs Committee, Soil Conservation Service, USDA, Des Moines, Iowa.

*Urban includes cities, villages, and built-up areas of more than 10 acres, industrial sites, railroad yards, cemeteries, airports, golf courses, parks and recreation areas, institutional and public administrative sites, railroads, and state and federal highways.

Land use figures are subject to many interpretations. For instance, in the United States there were 1,110,187,000 acres of land in farms in 1964. Between 1945 and 1964, the total land in farms declined 2.8 percent in the nation. While a 2 or 3 percent change in 20 years looks small to some, others point out that 1 percent of the 1964 figure is 11 million acres.

Total cropland in the United States was 434,236,000 acres in 1964, according to the U.S. Census of Agriculture, and had declined 3.7 percent since 1945. Woodland totaled 39,671,000 acres in 1964 and had declined 12.2 percent since 1945.

Between 1945 and 1969, the total land in farms in Iowa declined by 2.6 percent. Again, the percentage figure is not large over a 24-year period. But that 2.6 percent also is the equivalent of more than 1,300 square miles—an area equal to two average size Iowa counties.

But surprisingly, with the number of acres in farm land being reduced between 1945 and 1969, the number of acres in cropland increased 11.2 percent in Iowa during that time. The additional cropland came from forested land that had been cleared, land that had been drained, or converted from pasture or other uses.

why a policy change is needed

As mentioned earlier, the nation and the state have had a land use policy—or maybe more correctly, policies. In recent years, local, state, and federal programs have related directly to the use of land. But they have been called urban renewal, reforestation, conservation, environmental protection, or flood control. But all of these problems have been approached as separate issues. In reality, they are all part of the same challenge—the prudent and wise use of land resources.

In essence, a land use policy as now being discussed is not new. Rather, a change is proposed from a fragmented series of policies to a comprehensive approach including all factors in land use. Fragmentation is but one reason why a change is needed. There are others.

In the past, land was considered a commodity to be bought and sold as other commodities. Land ownership and land use were largely determined by the price of land set by the buyer and seller. Historically, the commodity concept of land served our land use

objectives well. As long as the frontier existed, as long as unsettled spaces were waiting for development, the economic system accomplished settlement and development efficiently and rapidly.

After about 1900, no frontier existed and congestion began to grow in many parts of the nation. By the mid-twentieth century, many of the nation's leaders began to question land use and whether land should be considered as any other commodity.

For example, wildlife, scenic wooded areas, and open spaces provide relatively little, if any economic return. Noneconomic returns to society as a whole are not considered by either buyer or seller in the usual economic transaction.

Therefore, anyone wishing to use wooded areas, wildlife, or scenic areas for general farming could afford to enter the land market and bid successfully for the land. Since farming would be a more intensive use, it would be a more highly valued use of land.

Then a commercial feedlot is a more intensive use of land than general farming. A large livestock op-

eration or commercial feedlot can expect a higher return from the land. So the livestock operator can enter the land market, outbid another person engaged in general farming, and change the land use.

Land decisions based on the highest value have already been questioned. This is the reason that zoning and other land use restrictions exist. However, for a large part of the nation's land, use is still decided by its highest economic return.

the buyer, the seller and...

In addition to the economic return of land determining its use, there are other concerns about treating land as a commodity. Historically, when land was sold, only two parties were involved—the buyer and the seller. The transaction was no one else's concern.

But sometimes, the benefits—or the consequences—of that transaction affect a third party and go beyond the interest of the buyer and the seller. These effects are referred to as "externalities"—factors outside the two-party transaction.



...externalities

In a suburban development, for instance, an empty lot might be purchased for a landfill, a junk car storage area, or a factory. The traditional deal would affect only the buyer and seller. But with this type of use, everyone in the neighborhood would be affected by a decrease in the value of his property. This is why zoning came into existence.

Likewise, third parties can be affected by feedlot odors, factory smoke, or unsightly strip mining scars. Too often the profits of land use go to the individual, but the costs for later correction are borne by the community or state. Society as a whole may pay actual costs of congestion through increased driving time, or health costs due to pollution—problems arising

is the land suitable?

Also in the traditional economic determination of land use, physical properties of the land received little recognition. This was partly because land was viewed as an unlimited resource and the effect of changing the use of one piece of land was viewed as negligible. With the more intensive uses—and more profitable uses—the cost of making adjustments to physical characteristics of land was considered a minor one. Little thought was devoted to the total availability of land with certain physical characteristics.

Physical characteristics are being recognized as part of a rational land use policy. Whether land is used for agricultural or timber crops, recreation, home-

ing from the use of land where society was not consulted or involved in the decisions.

Thus, questions are being raised more frequently about the wisdom of permitting land use decisions to be made by only two parties without considering the interest of the general public.

sites, industrial parks, schools, or highways should be influenced by the characteristics of the land. The properties and characteristics of the soil are related primarily to the geology, hydrology, and soil resources. Soil characteristics that should be considered in land use are listed in table 3.

For example, soils with a high water table or soils subject to frequent flooding could be used for recreation areas. But these would not be suitable for a housing development. Steep, rough lands are suitable for woodland or pasture, but have limitations for row cropping or construction.

Too often soil is not considered in homesites. Wet



basements or crumbling foundations may result when houses are built on unsuitable soil. For homes using septic tanks, soil type must be considered to obtain a properly functioning system.

Flat, deep, well-drained land that is best suited for crop production is also well suited for industrial development. Such land also is sought for highways, airports, and shopping centers.

Table 3. Soil characteristics of importance in determining land use suitability.

Texture	Depth to water table
Structure	Depth to bedrock
Density	Depth to impervious layer
Organic matter content	Slope
Type of clay	Topography
Fertility	Landscape position
Reaction	Erodibility
Water holding capacity	Plasticity
Drainage	Bearing strength
Permeability	Shear strength
Infiltration capacity	Shrink-swell potential
Flooding potential	Compressibility
Depth of topsoil	Stoniness

limited resources

Historically, the economy of the United States has operated on three basic assumptions:

- * Natural resources were in unlimited supply.
- * Wastes could be disposed of in a limited space without damage to our environment.
- * There would always be unlimited space for our population and our economic activity.

Until recently, most Americans believed in the strength and productivity of this type of economy. And indeed this economy has been good to its people.

But we are beginning to realize that our assumptions are no longer valid. The first warnings came from the problems with waste. Water pollution and air pollution became serious problems in some areas.

Soon after the first formal recognition on the space limits for waste, the fuel shortage focused the public's attention on the problem of future resource supplies.

As a result, man is changing his attitude. The energy crunch, mud slides in California, floods, loss of wilderness areas, and other events are causing us to take a closer look at land use. In a few areas



of the nation, where growth has been intensive, some economic activities—new industries, shopping centers and housing developments—have been stopped. A few short years ago, these developments would have been welcomed. These limitations have been controversial and have limited economic growth. It is too early to determine the exact effect of such actions, but some people have indicated they are willing to pay the cost of less growth for other benefits.

We may be moving from the unlimited resource and space economy to what might be called a spaceship economy. That economy is much like a spaceship—there is not an unlimited supply of resources, and recycling becomes necessary.

We may not have to move to a pure spaceship economy. But many experts feel we'll move in that direction. Examine the activities within Apollo 17 to see what implications this might have. In Apollo 17:

- * Recycling is a fact of survival.
- * No one can make a move without affecting his companions.
- * The good of the individual must come second to the good of the group.
- * There is a limit to the number of occupants.

* All must follow the accepted rules of behavior.

Translated to our world, the spaceship economy poses some troubling questions for land use and our way of life. The spaceship economy will affect jobs, production, levels of living, family size, and property rights. And though we may not have to face all the problems of a spaceship economy, will our children or our grandchildren?

human needs

With such vital questions involving our children and grandchildren, and with land use decisions often resulting in irreversible situations, it becomes obvious that long-range effects upon society and the environment must be considered.

Land use decisions must consider harmony, efficiency, health, and peace of mind for all of humanity. It is obvious that land is needed for production of food and fiber. It is also needed for such things as industry, commerce, housing, transportation, civic and leisure purposes. Land use planning should arrange land use so that it promotes health, safety, and the general welfare of people.

FUTURE NEEDS

food and fiber

The importance of agriculture to the state's economy is well recognized by most Iowans. It is also reflected in Iowa's high agricultural land values, Iowa's second-place standing in the nation in cash receipts from agriculture, and Iowa's high standing in the production of hogs, beef, corn, and soybeans.

Both nationally and world-wide, food and fiber production is a vital concern. There is a growing concern for protecting land that possesses high capability for producing food. With world food shortages anticipated and the danger of irrevocable decisions that remove land from food production, suggestions that soil with high agricultural potential be preserved for food production have considerable merit.

In the past, there have not been large shifts of land from farming. As shown earlier, total cropland in Iowa has actually increased in recent years.

Iowa is more fortunate than some other states. The pressures on farm land are not as severe in Iowa as in some eastern states. However, between now and the year 2000, some development pressure is expected in the counties located in the triangle from Dubuque to Des Moines to Burlington. It is in this area that much of Iowa's future industrial and population growth is likely to occur.

The east-central triangle of Iowa could have substantial land use competition. Much of the problem is likely to be concerned with uncontrolled development. The remainder of the state probably will not have as intense pressure to remove farm land from food production. However, localized pressures are likely to occur, particularly near urbanized areas, and all areas of the state share the need for sound land use planning.



FUTURE NEEDS

forest land

Forestry is probably the least understood use of land in Iowa. Although most people appreciate the woodlands, if only for the landscaping value, few know of the other assets of forested land. The fiber crop production from farm woodlands often is overlooked even by the landowner.

Forested acres—whether public or private—provide public benefit. These benefits include erosion control on steep slopes, production of clean water, protection of wild birds and animals, amelioration of the climate, slowing snow melt to aid flood control, provision of pleasant sites for homes and cabins, landscape diversity, areas for outdoor recreation, and jobs in the wood industry.

Areas of blow-sand, steep bluff lands, loess hills, and severely eroded agricultural lands need the protection that only forest or pasture can provide. These

areas, although only a small percent of Iowa's land, are nonetheless critical. Any land use policy must favor retention of timber or permanent vegetation on such sites.

A land use policy, perhaps in combination with special real estate tax assessments, must recognize the long-term nature of forest crops and the values to the public and the landowner. Young oak forests often must be protected for 80 to 100 years for the landowner to make the greatest financial return. Consequently, the land use policy should recognize the likelihood of several ownerships of forest land over this period.

Forest land also is particularly subject to pressures for more intensified use. It is often cleared for agricultural crops or developed into home or cabin sites or recreational uses.



FUTURE NEEDS

industry

Industry, of course, provides jobs for people, provides off-farm supplemental income, and broadens the tax base. Strategically located, it can provide transportation savings for suppliers and consumers.

Obviously, suitable land is required for growth and expansion of industry. Industry's special needs include

accessibility to available modes of transportation, proper soil compaction and drainage, and locations compatible with other industry and for its work force.

About 240,000 people in Iowa are now employed in manufacturing. Another 975,000 are employed in non-farming jobs. The decline in the number of persons

employed in farming is expected to continue in Iowa. Therefore, if the state population is to remain stable, new jobs must be provided through the growth and expansion of manufacturing and nonfarming employment. Likewise, any future population growth will depend on the availability of nonfarming jobs.

A land use plan, therefore, must consider the space needs for industry and provide for orderly economic growth.

FUTURE NEEDS

transportation

Transportation services are indispensable to the Iowa economy. More than 90 percent of Iowa's corn and soybean production is sold out-of-state either directly or after conversion to livestock or livestock products. In addition to this outshipment, a vast variety of consumer goods must be brought into the state.

Specific land needs for transportation use are somewhat difficult to project, particularly until the effects

of dwindling supplies of fossil fuel become known. Basically, Iowa now has a suitable land base for its transportation needs.

It appears that little additional land will be required for rail lines in the state. And the desires of producers and consumers for close access routes has provided the state with a proliferation of highway routes. Few Iowa farms are more than half a mile from all-weather miles of a four-lane highway if existing freeway building plans materialize.

Expansion of road acreage in open-country farmland areas is likely to occur only as rights-of-way are widened during road improvement. Upgrading of existing routes into four-lane highways uses the least additional land if an existing right-of-way is used for part of the new roadbed.

roads. Almost all towns are on a primary hard-surfaced highway. And most Iowa towns will be within 25

However, the cost of acquiring farmsteads and other improvements along one side of the existing right-of-way generally will be more than the savings on land. This becomes another example of where economics alone may not provide the best solution. It's also a good example of the many considerations that must go into a land use plan.

Another highway-land tradeoff is related to highway access. If access to a route is limited to interchanges, the cost becomes still greater and less land is saved because remaining farmsteads must be provided new access routes to the freeway. The benefits of interchange access are safety and smoother traffic flow.

Land could be reclaimed for farming in some areas of the state by abandoning some of the section line roads. This is most likely to occur where the rural population becomes quite sparse and values of farmland are high enough to pay the cost of conversion.

Other land savings could occur through the use of underground and overhead transportation systems. Usually, use of the land is interrupted only during construction and for periodic maintenance. Also, it would be possible to require underground and overhead systems to use the same right-of-way as highways and roads. Again, costs due to indirect routing and safety considerations for highway travelers must be considered.

Routing of highways also illustrates the complex problem faced by land use planners. It seems only logical that nonagricultural activities should be placed on land least suited for farming purposes. But an ab-

solute policy of forbidding road construction on prime agricultural land may result in a greater loss of productive capacity than a direct route over prime land.

For instance, an attempt to use poor agricultural land for highways might require 30 percent more land than for a direct route. If this poorer land is only 25 percent less productive per acre, a net loss of agricultural productivity results.

In 1964, a group of Iowa State University economists projected future land needs for the state from 1960 to 1980. That study is now 10 years old, but apparently is the only projection available regarding Iowa's land needs. While an updated projection would be desirable, the 1964 projection appears to be reasonably accurate. Therefore, the 1964 figures are used here to indicate the wide variety of land use needs in the state and also to give an indication of the amounts of land needed for these uses.

On the basis of Highway Commission records, the economists estimated that 110,160 acres would be needed for road expansion in Iowa during 1960-80, or about 5,500 acres per year. The estimate did not include land used for roads within cities, but the base period of the projection did include land acquired for the interstate highway system.

FUTURE NEEDS

urban expansion

At the time of the 1960 census, 25 Iowa cities with populations over 10,000 persons were asked to estimate their requirements for additional land from 1960 to 1980. These city officials estimated they would need about 100,000 additional acres in the 20-year period. The remaining Iowa cities estimated they would need about 25,000 acres for expansion by 1980.

These estimates are the equivalent of about one-fourth of one-percent of Iowa's farmland that would be converted to urban use during the two decades.

An Iowa Development Commission estimate shows that new industry utilized 7,358 acres of Iowa land between 1964 and 1973. This is equivalent to .02 percent of the total farm land, or about 3½ percent of the number of farm acres lost during the past 10 years. Much of this land may also be included in what the cities estimated they needed.



FUTURE NEEDS

recreation

A study by the Bureau of Outdoor Recreation in 1967 indicated a fourfold increase in outdoor recreation by the year 2000. Iowa experts say participation in recreation will increase greatly in this state, though the increase may not be as great as the national average.

Contributing to the demand for outdoor recreation are the increases in population, income, amount of leisure, earlier retirement, and longer paid vacations. As a result, public outdoor recreation participation is growing faster than actual population growth.

In contrast to several other states, Iowa does not have large areas of public land available for outdoor recreation. Therefore, many Iowans must look to private owners of rural land for recreation sites. A 1966 survey by the Iowa Conservation Commission and the ISU Forestry Department showed about 50 percent of all Iowans use public facilities for outdoor recreation. Thus, 50 percent of the Iowa pop-

ulation depends on private landowners for recreation.

In Iowa, the greatest rates of increased participation are expected to come in golf, volleyball, swimming, water skiing, camping, ice skating, motorcycling, bird watching, walking, sightseeing, and attending outdoor concerts and plays. Only small increases are expected in fishing, and a small decrease is expected in hunting and horseback riding.

The Iowa study suggests not only that additional recreation facilities are needed, but that a substantial shift is needed in the type of facilities to be provided. Intensively developed facilities will be needed, for instance, for golf, water skiing, camping, and nature walking.

The ISU economists estimated 3,830 acres of land would be needed for additions to existing parks and for new state recreation areas between 1960 and 1980. Much of the pressure for recreational land again will come in the east-central triangle of Iowa, where industrial and population growth is expected to occur. Fortunately, much of the land for recreation is usually not well suited for crop production, since it is often situated near lakes, along rivers, and in timbered and hilly areas.

TRANSPORTATION

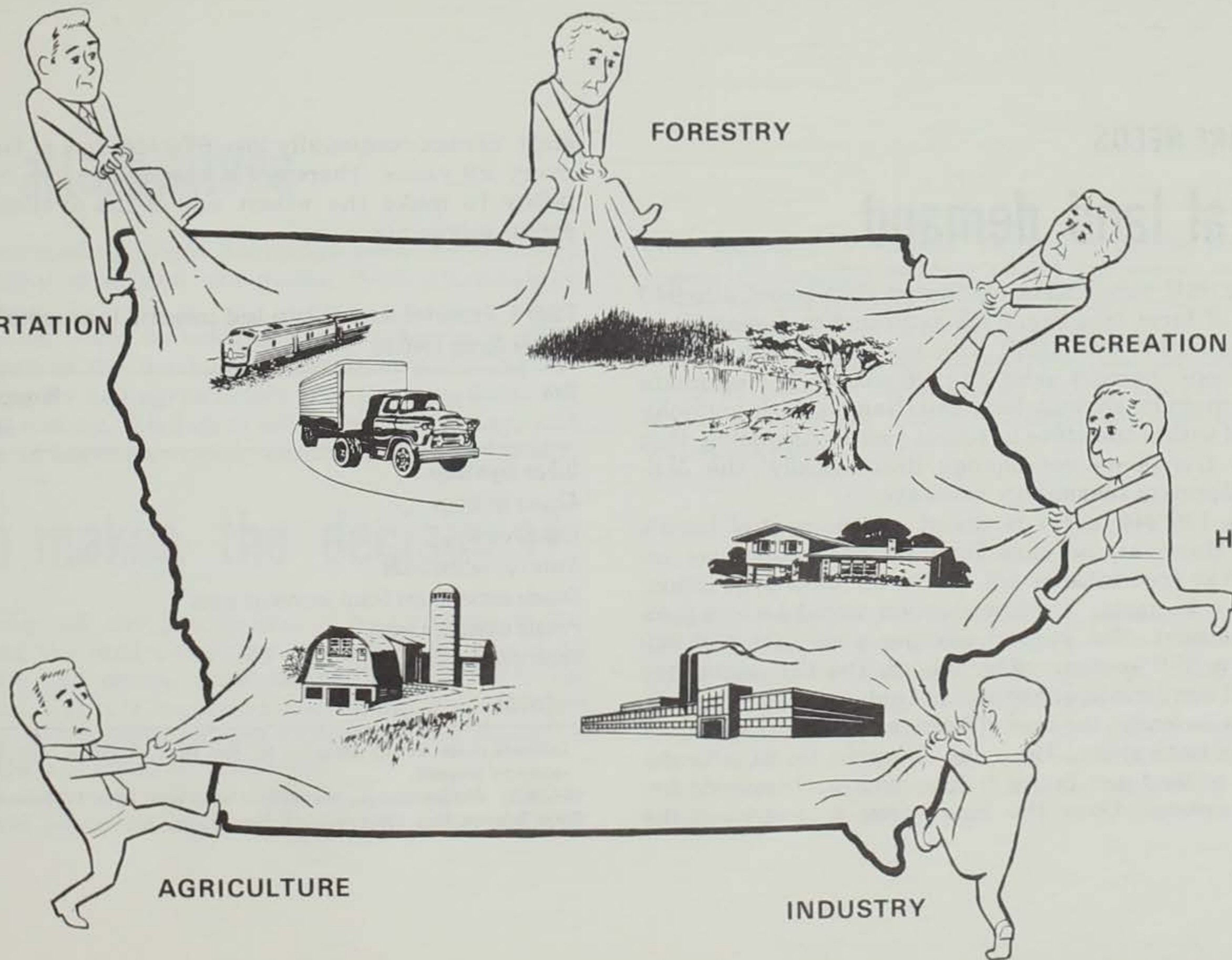
FORESTRY

RECREATION

HOMES

AGRICULTURE

INDUSTRY



FUTURE NEEDS

total land demand

The ISU economists estimated that about 426,940 acres of farm land would be converted to nonfarm use between 1960 and 1980. This would be a reduction of about one percent over the 20 years. The estimate fits rather closely with land use changes both nationally and within the state in recent years. Assuming that future trends do not change dramatically, the estimate appears reasonably accurate.

The 426,940 acres is about one percent of Iowa's land. However, because land for recreation use included in that total is not suited for crop production, the loss to agricultural production would be less than one percent. But viewed another way, that 426,940 acres is 670 sections of farm land. The ISU estimates of land conversion are shown in table 4.

In summary, the loss of farm land in Iowa does not appear critical yet. However, it might be wise to develop a land use policy before such problems do become critical. Over the long term, it is obvious the

state cannot continually lose 670 sections of farm land every 20 years. Therefore a comprehensive land use policy to make the wisest use of the available land seems advisable.

Table 4. Estimated acres of farm land converted to nonagricultural uses in Iowa during 1960-80.

Use	Acreage required in the state
Urban expansion	122,690
Airport facilities	17,600
Highway use	110,160
State recreation areas	3,830
County conservation board recreation areas	45,060
Private recreation areas	29,700
Federal reservoir projects*	97,900
TOTAL	426,940

* Estimate made during planning for Red Rock, Rathbun, and Saylorville reservoir projects.

SOURCE: William Saupe, Kenneth Joslin and John F. Timmons, *Iowa Farm Science*, May 1964, Vol. 18, No. 11, pp. 3-5.

the alternatives

The preceding pages have expressed the need and desirability of a land use policy. Now, what can be done?

First, we could do nothing. We can decide to allow the forces of the marketplace to determine land use or policy. We can agree to live with the injustices, the costs to society, the loss of efficiency in land use, and the loss of low-dollar-value attributes such as beauty,

open space, and wildlife. The policy in this case becomes ignoring the need for a land use policy.

Or, we can prepare a policy for land use and then either fail to enforce it or to follow it.

Or, we can consider all interests and alternatives, using all relevant facts, and develop a land use policy which would make intelligent use of the land and enforce that policy.

who makes the decisions?

Ideally, all the people should be involved in developing the land use policy so that it recognizes all interests and needs. Realistically, that is not likely to occur. But it is important to keep the process open and to invite those citizens interested and willing to participate in policy development.

The land use policy might be developed by professional planners in consultation with other experts

on soil, geology, conservation, economics and other subjects. Before being adopted, however, policies or plans should be presented and explained to the public for full understanding and adoption or rejection.

Once the policy and the land use plan that follows have been adopted, the plan can be administered by a governmental unit. Special problems or conflicts can be resolved through the courts.

A related question becomes: What level of government should administer a land use plan? Essentially, there are about four levels of government that might fulfill that role with advantages and disadvantages for each.

First, there is the local—community or county—level. Many people feel strongly that local government is the most accessible and the most representative and feel such matters should be handled at this level of government. Others argue that the local level is too easily influenced by local pressures and tends to grant too many exceptions to land use or zoning plans. Local decisions are sometimes difficult when they have to be made for neighbors and friends.

Second, there is the area or multi-county level of government. A strong case can be made for administration of land use planning at this level. Many problems do not end or begin at the legal borders of the community or county. In fact, many communities and some counties cannot provide complete services to their residents, and many services must be provided and planned on an area or multi-county basis.

Many special facilities such as airports and sanitary landfills are more economical per person when developed

and operated for a larger area population. Since the area level is the next step away from local government, there is some logic in administering land use plans at this level.

Next is the state level. Again, many land use problems extend even beyond areas. Thus some justification can be made for administration of land use plans by the state. The state level, of course, is further removed and less accessible than the local level. The state may be less subject to local pressure and may be more objective, since decisions are not made for neighbors. The state often is better financed and may be more able to hire needed specialists. The state also holds the power to enforce a land use policy—though that power may be delegated.

The same arguments for state level administration can be made for regional and national levels of government. Many problems extend beyond state borders—particularly in the Council Bluffs, Sioux City, and Davenport areas. Many of these problems can be and are being solved by bistate planning groups.

Other problems, particularly those involving watersheds, might run from Minnesota to Louisiana, again suggesting federal administration.

And though it's not being suggested as a level

of administration for land use programs, there is a relationship between Iowa's land use plan and the world. Considering the world food need, the productive capacity of Iowa agriculture, and our sizable agricultural exports, Iowa's response to land use in regard to agricultural land could have international implications.

the costs

Despite the desirability of land use planning, there are costs that must be recognized. In economic terms, there will be dollar costs to hire planning specialists, land use experts and administrators. Also, there will be court costs to resolve differences.

But of probably even greater concern are the social costs. Ideally, the goal of a land use plan is to reduce conflicts between men and man and society. That is an ideal goal—one not likely to be perfectly attained.

If Iowa were unsettled, a land use policy could be adopted and everyone could buy his or her land with full knowledge of the restrictions on its use. This is not the case, of course. Many people have already

purchased land with the intention of changing its future use. Others may have purchased land for speculation, already paying a premium for the land because of its anticipated future use. For these people, a land use policy may change the rules "in the middle of the game."

Others would like to have advantages both ways. They would like their farm land to be preserved for farming so that they'll not be forced out of business, or be damaged in some other manner by neighboring land owners. But when the opportunity comes to change the land use at a profit, they'd like that opportunity also. A logically enforced land use plan generally will not provide for both.

When opponents of land use planning claim their decision-making power is being restricted, they are correct. Land use planning will place the societal or public good above some of the individual rights we've had in the past. The issue is whether the benefits for all are far greater than the costs.

Finally, the land use plan will put all the issues and priorities out for public view. While this is desirable, it can create friction in the adoption or operation of a land use plan. In the past, many deci-

sions regarding land use were made on each piece of property individually.

With the land use policy, it is possible that one certain group of property owners will feel unfairly treated and can organize to provide opposition. While it may be more equitable to resolve such differences in this manner, the land use plan may increase the degree of conflict in the initial stages.

Finally, the sheer complexity of land use planning will make it a difficult task. How to allocate the limited amount of land to provide for the many needs of man and to do it in an equitable and just manner is quite a challenge.

summary

There are three basic reasons for concern about land use. These are:

- * Population is increasing.
- * Land is a limited resource.
- * Advancing science and technology literally allow man to change the face of the earth.

In addition, there are many other factors that sug-

gest the need for a land use policy. These include:

- * Many changes in land use cannot be reversed when conditions change.
- * Many benefits to society from land use, such as beauty or open space, do not provide an economic return and are not considered in present land transactions.
- * Traditional land transfers between buyer and seller can affect other parties who are not part of the land transaction.
- * There is a question whether the highest economic return can properly allocate land use for the changing needs of tomorrow.
- * Physical characteristics of soil have not been strongly considered in past land use decisions.
- * Much of our land use policy is now fragmented, considering only a limited number of factors.

Finally, a land use policy must provide for both present and future needs of man in:

- * Food and fiber production
- * Forestry
- * Industrial growth
- * Transportation
- * Urban expansion
- * Recreation

where to get help

AGRICULTURAL STABILIZATION AND CONSERVATION
SERVICE, U.S. Department of Agriculture, Des Moines
(Offices also in many counties)

- Agricultural production data
- Conservation programs
- Farm programs

IOWA COMMERCE COMMISSION, Des Moines
Transportation and utilities information

IOWA CONSERVATION COMMISSION, Des Moines
Fish and wildlife information
Forestry advice
Recreation needs data

IOWA DEPARTMENT OF AGRICULTURE, Des Moines
Agricultural statistics

IOWA DEPARTMENT OF ENVIRONMENTAL QUALITY,
Des Moines
Regulations and guidelines on environmental standards

IOWA DEPARTMENT OF REVENUE
Tax, revenue and income data

IOWA DEPARTMENT OF SOIL CONSERVATION, Des Moines
Conservancy district administration
Mining regulations
Soil conservation programs
Soils information
Soil loss limits

IOWA DEVELOPMENT COMMISSION, Des Moines
Agricultural production figures
Demographic information
Housing information
Industrial development opportunities
Statewide recreation and tourism information

IOWA GEOLOGICAL SURVEY, Iowa City
Geological information
Ground water data

IOWA NATURAL RESOURCE COUNCIL, Des Moines
Dams—permits, safety and location
Floodplain regulation
Floodplain zoning
Water data and plans
Water use permits

IOWA HIGHWAY COMMISSION, Ames
Transportation information

IOWA OFFICE OF PLANNING AND PROGRAMMING
Federal programs on land use
Land use data systems

IOWA STATE UNIVERSITY, Ames
(Educational programs, research information and consultation available in the following areas. County Extension Service directors are local contact persons for the University.)
Classification and interpretation of land use data
Land use planning
Local government
Planning and zoning
Population projections
Public school data
Social and economic characteristics
Soil productivity
Soil survey maps and interpretation
Taxation
Transportation
Recreation
Water resource information

LOCAL COUNCILS OF GOVERNMENTS

LOCAL, COUNTY, AND REGIONAL PLANNING BOARDS
AND COMMISSIONS

LOCAL AND COUNTY ZONING COMMISSIONS AND
BOARDS OF ADJUSTMENT

Information on local regulations and current planning problems.

SOIL CONSERVATION SERVICE, USDA, Des Moines

River basin surveys
Soil and water conservation
Soil surveys
Watershed planning

STATE UNIVERSITY OF IOWA, Iowa City

Institute of Public Affairs
Government data
Law information

U.S. GEOLOGICAL SURVEY, Iowa City

Geologic information
Topographic surveys
Ground water data

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