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ALTERNATIVE RULES TO INSURE LAND USE IN THE PUBLIC INTEREST

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Use in the Public Interest

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Alternative Rules to Insure Land
Use in the Public Interest*

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Historically, we have relied in the United States on the three classic powers of a government to control the use of land: the power to condemn, the power to tax, and the power to police. These are the powers inherent in every organized state; indeed, they may be regarded as primary attributes of sovereignty. We have added to these powers as the nation has developed, in ways that are more or less unique in scale of execution if not in concept. This has been done in two ways: Through the power to spend public funds discriminately, and through the power to inform.

Over a century ago, Alexis de Tocqueville was impressed during his celebrated tour of America with the scale of the programs of public works that he witnessed and the vigor with which they were pursued. This tradition remains strong. The spending power has undoubtedly been the dominant tool by which government has sought to guide land use in the public interest in the United States. We spend public money in ways that discriminate among land uses. There has been a tolerance of differential distributions of benefits that in an international perspective is amazing. Many private land users have benefited and have largely retained their gains. Many less fortunate land users have been hurt and have not been compensated. Only if their land is taken in a legal sense are they entitled to damages. This legal and cultural convention has shaped land use in the United States more powerfully than any other rule. First with canals and wagon roads, then with the railroads, ports, and street railways, and finally through the manner in which we have built roads, airports, drainage and irrigation works and promoted river basin development we have guided if not controlled the

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use of land. It remains to be seen whether or not this has always been in the public interest.

The power to inform has hardly been less important. Land records are public records in the United States. They are not, in many countries. Transactions in land have been openly reported. It has been culturally acceptable to inquire about the price. The market has been a relatively open one, with a tradition of disclosure that is regarded with awe, and suspicion, in many other countries. The land was for the most part uniformly surveyed, at early stages of development if not always ahead of settlement. Conditions were created, in short, that promoted market processes in allocating land among alternative uses. This freedom was abused, and still is, but it is testimony to the fact that perfection of the market has been a major goal of public policy to promote land use in the public interest.

The power to police has evolved in the past half century from simple beginnings in the law of nuisances into a complex structure of powers to zone. To many people, land use control means zoning. It is clearly the most ubiquitous example of public policy toward land use at the local level of government. The authors of a recent assessment of land use controls in the United States begin with the history of zoning.^{1/}

This is a disservice to the understanding of our land policy. Preceding efforts to regulate land use through the police power there were significant developments of control through outright ownership, most prominently of the National Parks and National Forests. The National Parks in particular were unique institutions. Nothing quite like them existed before. They have been widely studied and used as models by other countries. This expression of control rested on public ownership.

The acquisition of land for public works projects has also had a history in the United States that is unique among developed countries committed to a system of private property rights in land. Beginning with canals, and railroads, and perfected in the era of the motor car and large-scale river basin planning, we possess one of the world's most

^{1/} Fred Bosselman and David Callies, The Quiet Revolution in Land Use Control, Washington, Council on Environmental Quality, 1971.

developed and efficient bodies of law authorizing the taking of private land for public purposes. Especially with regard to areas of "critical environmental concern", we have had our most extensive experience with land use controls in the form of outright public ownership or acquisition.

It is a misreading of our history to identify the birth of land use controls in the United States with the birth of zoning. A major part of the history of our land policy is a history of the exercise of land use control through public ownership.

It remains true, however, that the methods of overt land use control used to date in the United States depend primarily upon some variation of zoning. The use of this tool in the United States is more extensive than in any other country. This resulted from our federal structure, the historic detachment of local governments at the frontier of settlement, and a preference for modes of control that seemed to present a minimum challenge to established property rights.

This history contrasts sharply with the preference for more direct forms of land use controls in developed countries of Western Europe, from which we derive our cultural and our legal heritage.

Our modern development of land use control methods mirrors our history of transport development. The most portentous result has been the American suburb with single-family detached houses on generously sized lots.

The resulting suburban sprawl presents a variation on Say's law, that supply creates its own demand. This is illustrated by policies or programs to increase the available supply of building land in the suburbs by improved road systems. The increased supply has not only created its own demand, but increased demand above previous levels. It has been fashionable to "live in the suburbs" and commute to work. The greater the number who did it, the greater the number who wanted to do it. Suburban living has become a "taste good" or "style good." To deal with urban problems we must deal with questions of fashions in living--with "life styles".

This is the central problem faced by those who complain about our failure to develop mass transit. The automobile introduced a new life style, a new fashion, in living. In this case, the mode of transport was the independent variable.

But it is not clear that this process can be generalized to other modes of transport. If busses or mass rail transport are to be the independent variables which will change fashions in living, it is clear that people will have to be forced to ride them by strict land use controls. This is what the Swedes have done. This is what the British have tried to do. Can it be accomplished in the United States? It will be much more difficult than in Sweden or Great Britain.

Acceptance of strict land use controls in Sweden was helped tremendously by its role as a neutral in two World Wars. The possibility of maintaining this role was highly dependent on maintenance of a domestic food supply base. Prevention of the conversion of good farm land into urban types of land use was given tremendous moral and ultimately political support by the desire to preserve Swedish neutrality. Although Great Britain was not a neutral in the two World Wars, it was also acutely conscious of the fact that it could not feed itself from its own land resources.

When war broke out in 1939 it was estimated that the British could survive for only 13 weeks out of 52 from domestic production. By heroic efforts this was raised from 25% of requirements to perhaps 55% at the end of the war (28 weeks) and to about 60 per cent in the immediate post war period. This still left Great Britain dependent on imports for 40 to 45% of her food supply, for virtually all of her fiber supply and all of her demand for tropical and subtropical goods (citrus, tobacco, tea, etc.) Fresh from threats of siege and blockade, it was relatively easy to promote stiff controls in post-war Britain on the conversion of land from agricultural to urban uses.

In both England and Sweden the competition between urban and farm demands for land takes place in their more productive agricultural areas--the south and east of England (Manchester-Birmingham-London) and the south and west of Sweden (Stockholm-Malmö-Göteborg).

Many of the most acute urban pressures upon land in the United States occur in areas of relatively unproductive land! Boston-

Pittsburgh-Washington; Milwaukee-Chicago-Cleveland-Detroit; Houston; Dallas-Ft. Worth; the Twin Cities; Phoenix-Tempe; San Diego.

The San Francisco Bay area is an exception, as are a number of other California areas, Hawaii, and some Middle Western cities: Omaha, Indianapolis, Des Moines, Peoria-Decatur-Bloomington, and others.

But in general the U.S. areas of greatest agricultural productivity are not subjected to severe encroachment from urban demands for land. The Corn Belt, the Mississippi Delta, the Dairy Belt, and many irrigated valleys of the West escape the worst of the urban thrust.

This leads to a key question: Is it possible to enforce stiff controls on the conversion of agricultural land in a country producing an agricultural surplus? The countries that have the tightest controls on land use today are countries that have either faced recent threats to their food supply in wartime, or are dependent on imports for a substantial fraction of their food, or both. These forces are absent in the United States.

It is ironic that criticism of the use of the police power to accomplish land use control is most acute where zoning has been most effective. Its very success has become a measure of its failure. In a historic decision, the State Superior Court of New Jersey in 1971 set aside the entire zoning ordinance of Madison township, Middlesex county, on the grounds that the minimum lot sizes of one and two acres, and minimum floor space requirements could not be achieved in houses costing under \$45,000.^{2/} Earlier in the year both labor unions and business firms had brought suits to set aside large-lot zoning in other New Jersey communities seeking to keep out working-class residents. It was charged, for example, that the New Jersey Township of Mahwa had so zoned its land that virtually none of the 5000 workers in the Ford Motor Company's plant there could afford housing in proximity to their

^{2/} Ronald Sullivan, "Restrictive Zoning is Upset in Jersey", New York Times, Oct. 30, 1971, p. 1.

work.^{3/} In another action, the Johns Manville Corporation brought suit against the Township of Bedminster, charging that the 5-acre lot size minimum was "exclusionary, unreasonable, arbitrary and unconstitutional."^{4/}

More recently, the Report of the New York Temporary Commission on the Powers of Local Government recommended the establishment of state-wide zoning standards that would "make it impossible for suburban and rural communities to erect zoning barriers against members of minority groups trying to migrate from cities."^{5/}

This pinpoints one of the major arguments supporting state-wide zoning. Local control of zoning ordinances has become a tool in the practice of economic segregation. It has promoted the Balkanization of urban places, and deprived them of the invigorating power of economic, social and cultural heterogeneity. Within the boundaries of rule-making districts, land use patterns have become more homogenized. The municipal boundary becomes the most important boundary to the land user. His suburb is his castle, and zoning is the moat that surrounds and protects. We are in the process of recreating new feudal seats of municipal land-based power.

The power of these fiefs and baronies challenges that of the state. This is why a major part of the struggle for better regulation of land uses is a struggle between units of government, which have come to represent socio-economic classes.

It is in this sense that the class struggle is being reinterpreted in our suburbs. And it is this fact that has contributed to the deterioration of faith in zoning as a tool to regulate land use. It has been used to internalize the benefits and externalize the costs of land use, and especially in the social sphere. This is why pressures for state-wide zoning generate such violent reactions.

^{3/} Ronald Sullivan, "UAW Maintains a Jersey Suburb Keeps Out Poor", New York Times, Jan. 29, 1971, p. 1.

^{4/} Carter B. Horsley, "Company Brings Suit to Fight 5-Acre Zoning in New Jersey", New York Times, Sept. 2, 1971, p. 27.

^{5/} Murray Schumach, "State Study Asks a Curb on Zoning", New York Times, June 15, 1973, p. 33.

Underlying these changes are fundamental shifts in the economic and social structure. Two images of society are in conflict. In the traditional view, the socio-economic structure is visualized as a pyramid, with the bulk of the population in low income classes at the bottom. In contrast, a more realistic view is to recognize that the socio-economic structure is beginning to resemble a cube, standing on one of its points.^{6/} The masses are in the middle. This is a dominant fact of contemporary economic and political life.

As a consequence, the tax-paying population includes a large number of "new" taxpayers who come from families that have never in their family histories paid significant amounts of income tax or property tax. Higher income levels and the expansion of private home ownership are introducing these families to a class of problems never experienced before, and for which their family traditions have not prepared them.

There has been a sharp increase in awareness of the burden of direct taxes, and an even greater increase in awareness of the desirability of avoiding the burden. This has been a major force in determining our patterns of land use.

The result has been to set in motion a socio-economic sorting-out process. Low and lower middle class income groups have a high resistance to tax paying. They are apt to vote down bond issues for more or better schools. Those who want better public services, and above all better schools, move out of the central cities. An income stratification of suburbs tends to result, with higher-income taxpayers clustering in areas where they can get the quality of services they demand.

This migration of those who understand what taxes are for, and are willing to pay them if the services are good, impoverishes the central city in two ways:

- a) By reducing income levels, property values and taxpaying capacity
- b) By robbing the core city of civic leaders, and of men and women who feel responsible for "their" city.

^{6/} This trend is clearly marked in the agricultural sector. See T. Lynn Smith, "A Study of the Variations in the Class Structure of Farm Society in the United States According to Type of Farming", paper presented at the 1971 Meeting of the Rural Sociological Society, Denver, Colorado, Aug. 26-31, 1971.

A more serious consequence of socio-economic stratification is the loss of heterogeneity in our schools.

"A major problem in American education today is that public schools, reflecting and in turn influencing residential patterns, are becoming increasingly homogenous... The relationships here are complex and uncertain, and excessive heterogeneity in schools and classrooms may be as unproductive as excessive homogeneity. But the evidence seems to be that some racial, social and intellectual heterogeneity is productive."^{7/}

In characteristic fashion we turn to the motor vehicle for solution. The resulting bussing controversies have given rise to some of the ugliest incidents of our time, but the underlying cause is seldom traced to the defects in land policy that have generated major parts of the problem.

The propelling forces in the evolution of zoning have been micro-environmental in nature: Prevention of "sunless canyons" in skyscraper cities, protection of health through local control of sewage disposal and water supplies, avoidance of nuisance and noxious land uses, protection of "the neighborhood." The goals of these controls have been comparable to the objective functions in partial-equilibrium solutions to profit-maximizing problems in economic analysis, using the theory of the firm. The "firm" in the zoning case has been the municipality, the township, occasionally the county, rarely the region and only in Hawaii has it been the state. There has been no mechanism in our application of zoning to permit the consideration of macro-environmental issues. Zoning not only invites the abuse of existing externalities, it creates new ones.

In this setting, the sudden emergence of threats to the environment that transcend local government boundaries has revealed the inadequacy of our methods of land use control. We have no devices that bring macro-environmental data into the framework in which land use decisions are made. The private firm cannot afford to do so. The public firms empowered to zone have no authority to do so. Fear for the environment has become

^{7/} James Tobin, "On Limiting the Domain of Inequality", Journal of Law and Econ., Vol. XIII, No. 2, October 1970, p. 272.

the American equivalent of the threats of blockade or food shortages that have supported strict land use controls in other countries.

Just how effective will the environmental threat be in reforming our attitudes toward the goals and methods of land use control? Bosselman and Callies argue in The Quiet Revolution in Land Use Control that a major reason for this revolution is the change that has taken place in our concept of land. In the past we viewed land as a commodity, and zoning was a control device consistent with this view. The key supporting argument was that the land user should be prevented from engaging in uses that depreciated the value of his neighbor's land. More recently, they argue, we have begun to treat land not only as a commodity but as a resource. In their view, land as a resource introduces considerations of conservation, protection and preservation that are ignored or undervalued when land is treated as a commodity.

This distinction between land as a commodity and land as a resource is not very helpful. The term resource is conventionally defined as an input into a production process. This leaves unresolved the questions of what is produced, and in what types of markets is the product exchanged.

A major cause of the change in our attitudes toward land is found in the changing nature of the markets in which it is traded. The automobile and the airplane have greatly expanded the market for land as a consumer good. Our past attitudes toward land have reflected primarily our view of it as a producer's good. Land was needed for a food supply, or for timber supply, or for minerals. Our laws regulating land ownership, use and exchange embody this concept.

The dramatic change that has occurred in our time is the enormous expansion of the market areas in which land is desired for housing, for recreation, for scenic beauty, for isolation and for related purposes that fall within the economy of the household rather than the economy of the firm. It is the demand for land as a consumer's good that has generated the revolution in land use control.

We are only just beginning to understand the operation of this expanded land market. It is badly structured, the services of land that are demanded are non-standardized, and we lack good classifications and descriptions of the differential capacity of lands to provide these

services. The market, in short, is lacking in essential elements needed for efficient operation.

One measure of the change that is occurring in response to this new dimension of demand for land is provided by the many ways in which the services of land are being redefined, disaggregated, and separately traded.

In the United States, the first major step in this direction involved the separation of mineral rights, and in the Western states, of water rights. These are long standing practices, and the markets in which they are exchanged are reasonably well organized. The new dimensions have come in the separate identification of air rights, of scenic values, of watershed protection needs, of wildlife habitats, and of environmental protection measures embodied in air and water pollution controls.

The legal framework for the separate identification of these rights in land has been constructed. Markets exist in which the first halting and cumbersome exchanges are taking place. One major element in this "new demand" for land that is not well served by market processes is the demand for residential and recreational sites. That market has suddenly become national and even international, while the totality of our body of laws and regulations that govern its operation are state and local in nature. And the automobile and airplane inject the demand for home and recreational sites into competition with agricultural, forest and grazing land uses for which our institutional structure not only provides no protection but intensifies the conflict.

The focus of this conflict is most sharply visible in our policies on property taxation. It is rapidly becoming impossible to tax land fairly on the basis of market values in a pluralistic market in which agricultural lands acquire market values that have no relation to the relative or absolute levels of productivity of the land in agricultural use.

Paralleling this change in the nature of the market for land services, our concept of the nature of the firm that is involved in land use decisions has also undergone a major change. At one extreme is the common property firm, or public agency. This may involve outright ownership, or control so extensive that it amounts to ownership. This is now a major control

device, and use of this level of control will almost surely increase.

The more interesting area of control is the intermediate area occupied by mixed firms that involve both private profit-oriented firms and public agencies or administrative firms. The expansion in the uses of easements, partial takings, access limitations, licences for specific uses, controls exercised through municipal water supply and sewage disposal firms, airport and port commissions and quasi-public development corporations all provide evidence of the pervasive nature of this form of land use control.

Underlying this trend is a fundamental transformation in ideology. This must surely be recorded as the dominant dimension of our changing attitude toward the goals and methods of land use control.

The identification of good and evil with private and public ownership and control of land, in its broadest sense, is a measure of the degree to which much of our thought has been dominated by naïve ideologies. These absolutistic versions of ideology are crumbling. We can see this most clearly when we invert the ideology and view other countries. Milovan Djilas, the perceptive Yugoslav critic of ideology, can see the equation of evil and good with private and public ownership clearly on the decline in Eastern Europe, though not yet in the Soviet Union.^{8/}

What is more difficult for us to recognize is that this decline in the paralyzing power of ideology is also evident in the United States. This is the most significant dimension of the quiet revolution in land use control, and the one that we find most difficult to acknowledge.

The changing nature of the markets in which the services of land are traded raises basic questions about the extent to which market processes can be relied upon to achieve land uses in the public interest. It is less significant to observe that we are beginning to look upon land as a resource, however defined, than it is to recognize that we are increasingly regarding access to certain types of land services as rights that are not properly distributed by sale to the highest bidder. Rights to pure air, pure water and the protection of watersheds,

^{8/} Milovan Djilas, "Withering Ideologies", The New York Times, August 24, 1973, p. 33.

access to scenic beauty, opportunities for recreation, and a share in the national endowment of open space are not mentioned in the United States Constitution. Our courts, our legislatures, and responsive governments where they exist are busily reinterpreting the Bill of Rights to include these entitlements.

The resulting expansion in modes and degree of land use control raises fundamental questions that go straight to the constitutional prohibition against the taking of private property without compensation. What is a "taking"? This is the question raised in the sequel to The Quiet Revolution in Land Use Control just published by the Council on Environmental Quality.^{9/}

The first major reformulation of the answer to this question after the Second World War was a result of the Interstate Highway program. Access was controlled, i.e. taken, and in many cases no compensation was paid. Land uses adjacent to Interstate Highways but not touched by them were impaired and again, in the majority of cases, no compensation was paid. The basis for this expansion of the permitted scope of public interference in private land use was laid in the 1950's. In this sense it can be argued that the flowering of the automobile era laid the foundation for a further expansion of public control over private land when the full impact of the environmental crisis struck later in the 1960's. The precedent for expanded public interference in a land user's freedom of use was laid by the motor car, the same instrument that has contributed so heavily to the expanded demand for land as a consumer's good, and to the environmental damage that reenforced the pressures for more land use controls.

Valuation problems are central to the taking issue, and our tradition is to resolve these by turning to market prices. This added demand upon the land market process comes at a time when the ability of the market to yield unambiguous answers has been impaired.

^{9/} See Fred Bosselman, David Callies, and John Banta, The Taking Issue, Washington, Council on Environmental Quality, July 1973.

The concept of market price loses precision when ability to enter the market is reduced. Up to about 1960 it was reasonable to base land policy on the assumption that land ownership was becoming more diffused in the United States. The Taylor Grazing Act had effectively closed major portions of the frontier in 1934, but there was still homesteading after the Second World War. The headlong suburban expansion of the 1950's and 1960's made land owners of families who in earlier eras of urban growth would have been renters. But there is evidence that this diffusion of land ownership is coming to a halt.

Between 1950 and 1973 the number of farms was cut in half, while the acreage of land in farms remained virtually unchanged. We cannot speak with precision, since no nationwide study has been made since 1946. But it is unmistakably clear that there has been a major concentration in farm land ownership.

The 1960's witnessed the appearance of a new phenomenon in the American urban pattern: multiple-story and high-rise housing in the suburbs. Much of the recent suburban expansion has not been in owner-occupied single family detached housing. The rate at which new land owners are being created in the suburbs is slowing down.

Our property and income tax structures bear a heavy responsibility for these rural and urban trends. By taxing earned income at a progressive rate and capital gains at a flat rate, we guarantee that wealthy buyers can bid the highest prices for lands that are expected to enjoy capital gains. By depreciation rules, loss carry forward and carry back provisions, and permissive accounting procedures we insure that large firms are given the greatest tax-based incentives to enter the farm land or housing markets. Inflation has augmented these trends. High interest rates drive individuals and small firms out of the market, since our package of tax-based incentives is not available to those with low incomes or limited capacity to use financial leverage.

The land market is increasingly concentrated in fewer and fewer hands, but we lack the data necessary to measure this trend. The increasing complexity of our corporate business world makes it difficult to identify the true land owners. The entry of conglomerate corporations into the housing and farm land markets results in a sharp decrease in publicly available financial and accounting information. In some states, for

example, Arizona, the practice of accepting deeds recorded in the names of nominees or trustees makes it impossible to determine land ownership from public records. It is becoming increasingly difficult to answer the question: Who owns this land? The flow of information in the land market is drying up, at a time when we need it most.

The concept of a market price also loses economic relevance when market price signals become echoes of public policies. To the extent that tax and financial advantages are bid into higher prices for land, a taking of land for public purposes that results in compensation based on these prices involves the use of public funds to pay for values created by public policy.

If we are to use market processes in allocating land, a major effort is needed to improve the market. Some of the key steps that must be taken are concentrated at the national level of government, in income tax policy, accounting rules, and corporate financial disclosure requirements. It is for this reason that any attempt to promote land use in the public interest through market processes must include a far larger role for the federal government than has been thought necessary in the past. No ideological judgement is involved in this conclusion. It is the inevitable consequence of the changing nature of the land market.

This must not be interpreted as blind support for more land use controls. Costs are always present in any use of power to control. The popular recognition of the high cost of land use controls is focused on bureaucratic salaries, the size of planning staffs, and the "cost to the taxpayer." These may be the least significant cost elements.

The added time cost involved in land development decisions is often the most important direct cost of increased control. The burden of time costs increases dramatically when interest rates and tax rates are high. These rates are now at the highest levels we have known in this century. As a consequence the costs of controls are among the most rapidly increasing elements in land development costs. These are passed on to the consumer in a market economy. They play a major role in the current high cost of housing, and seem likely to play an even greater role in future costs of fuel and energy.

There is another dimension to the cost of controls that in the long run may prove to be the most significant. The cost of plan preparation, waiting for plan approval, or compliance with changes required by planning bodies are all a part of overhead costs. And they are frontloaded costs, which have an impact on cash flow that is often out of all proportion to their significance in total project costs.

As a consequence, they are highly regressive over the spectrum of firm sizes. The smaller firm may be required to incur plan-imposed costs that are almost as high as would be required for a project many times as large. Per-unit costs are disproportionately increased to the small firm, and there are few opportunities to offset these costs with less formal and time-consuming planning procedures.

Land use controls are thus a form of discriminatory tax on small firms. They may well become the dominant force in determining the optimum size of firm in our economy. By adopting a complex of land use controls we may unintentionally be insuring that only large firms can survive. This raises the prospect of food, fuel, and housing markets dominated by large firms, whose creation and survival has been dictated by a public policy aimed at other goals.

A typical barrier to land reform in developing countries has been the almost total absence of local organized interest groups. Laws have been enacted, central government agencies have been created, but implementation breaks down because there are no para-political organizations to aid in administering and policing the programs at the local level. The situation is reversed in the United States. We have a multitude of local interest groups focused on land use problems. They support a rich collection of competing units of government. But we have no central government agency with coordinating powers, and only a weak body of law at the federal government level to give guidance to land use controls.

As a result, we face the real danger that land use controls will be distorted to serve the interest of specialized groups. From the conflicts of the past decade we can identify the following examples of the promotion of land use controls in pursuit of single-valued goals:

- 1.) Prevention of urban encroachment on farm lands
- 2.) Conventional system of zoning to "protect the neighborhood"
- 3.) Wildlife protection
- 4.) Shoreland protection
- 5.) Creation of special recreation and wilderness areas
- 6.) Forest land protection
- 7.) Promotion of private road transport
- 8.) Promotion of public mass transit
- 9.) Water quality control
- 10.) Air quality control

The list is not exhaustive but it illustrates the urgent need for coordination at the national level. As Professor G.P. Wibberley pointed out at a recent conference on rural land use planning in Europe, "If these interest groups can get a separate, specialized government department as an ally, they are much more dangerous in twisting environmental planning along specialist lines."^{10/}

The risk in the United States today is that this twisting will take place in the search for solutions to environmental threats that evoke a fear psychosis. The most prominent are air pollution, water pollution, and shortfalls in fuel and energy supplies. These have the power to generate emotional reactions that transcend other motives for land use control. This potential for fear-induced action is an open invitation to specialized interest groups to exaggerate environmental threats as a least-cost method of precipitating public policy decisions.

And they are likely to be bad decisions. We are in danger of adopting land use control policies that rest on a faulty understanding of the nature of our resource endowment. In choosing the goals and methods of land use control we will do well to recall Howard Odum's injunction that we should always keep intact the age-old quartet of man and land, time and space.

^{10/} G.P. Wibberley, "The Planning of Rural Areas With Special Reference to Europe: An Analysis of Past Experience and Its Lesson for the Future", FAO, Second Ad Hoc Conference on the Planning of Rural Areas, Léon, Spain, May 27-June 2, 1973.

The automobile, the airplane and the moon-rockets have taught us that we cannot define space without a concept of time. In the same vein, we cannot define land independently of man. There is no resource until one is recognized by man. Its quantity cannot be measured, except in terms of the use to which it is put. These uses, in turn, are a function of rates of recovery, costs of transport, efficiency in conversion, and consumer tastes. These change, and the available stock of resources changes with them.

A stock of resources is thus not a physical quantity. The stock is created by man, in that it cannot be said to exist in economic terms until he can use it. A resource, in this view, is a cultural achievement, a unit of thought.

An example will illustrate this point. There are minerals in the ground that we do not know are there. The fact that we do not know they are there, or that we see them and do not know what to do with them, leads us to exclude them from our stock of resources.

Because we do not know they are there, or do not know what to do with them, we are unable to define a stock or supply of resources, except in terms of man's intelligence and skill in putting them to use. This intelligence and these skills are not finite. And therefore our stock of resources is not finite.

It is in this sense that the concept of "spaceship earth" has had a perverse influence. It has hardened the idea that we live on a finite planet, therefore we are in danger of exhausting its resources.

From this finite assumption we derive many of our basic philosophical and religious precepts. It is the basis for the concept of limited good, on which so much of our current political policy is based. If you can get more, then I must be satisfied with less. If I am to prosper, I must do so at the expense of someone else. If the developing nations are to overcome their poverty, the developed nations must consume less.

If land use controls are to be effective, they must prevent the consumption of some resource. If there are to be resources for our grandchildren, we must cut back on our rate of use in this generation. As a policy for survival, we must stop growth, and strive for a stable state. We are victims of a modern version of the "end of the frontier" psychosis.

This point of view can be illustrated by two quotations from Paul Erlich:^{11/}

"The Earth has come largely under the control of a culture which traditionally sees man's proper role as dominating nature, rather than living in harmony with it... I think our first move must be to convince all those we can that the planet Earth must be viewed as a space ship of limited carrying capacity."

These prescriptions betray a fundamental failure to understand the nature of resources. In an economic sense, they are created by man. They can be altered by man. And because our capacity for intellectual and spiritual growth is not limited, our stock of resources is not limited, in the conventional sense.

But there is a sense in which our stock of resources is limited. We can put a stop to intellectual growth. We can reach levels of over-population that destroy social and political organization. We can have levels of pollution, congestion and overcrowding that cause us to "bite each other's tails", as pigs do in close confinement.

In these ways we can limit or destroy our stock of resources. The surest way to do this is to destroy intellectual freedom in our universities and schools. This is where resources are created. And this is why the ultimate measure of our stock of resources is to be found in our cultural commitment, in our social stability, and in our ability to live at peace with our fellow men.

This is the recognition that can define a sound choice of rules for land use control. We need multiple methods because we have multiple goals. For many of our land use problems, public ownership is the preferred solution. For others, we can rely on the flexibility that is offered by innovations in zoning and use of the police power. The public-law corporation is a useful alternative, particularly in land use problems associated with transport and river basin development. The improvement of market processes hold great potential, and a reform in tax policies can contribute greatly to this end.

^{11/} Paul Erlich, "World Population: A Battle Lost", Stanford Today, Winter 1968, p. 4.

We need controls that protect and preserve, and controls that encourage full use and future development. It will be a disservice to the cause of land use planning if it is identified with an anti-technology bias and a no-growth policy. We can ride the environmental protection tiger, but it will take a great deal of skill, and no dogmatism.