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NATIONAL LAND USE POLICY

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HEARINGS

BEFORE THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

NINETY-FIRST CONGRESS

SECOND SESSION

ON

S. 3354

TO AMEND THE WATER RESOURCES PLANNING ACT (79 STAT. 244) TO PROVIDE FOR A NATIONAL LAND USE POLICY

JULY 8, 1970

PART 2

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Printed for the use of the
Committee on Interior and Insular Affairs

AUTHENTICATED
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LAND USE POLICY

WEDNESDAY, JULY 8, 1970

U.S. SENATE,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The committee met at 10 a.m., pursuant to notice, in room 3110, New Senate Office Building, Senator Henry M. Jackson (chairman of the committee) presiding.

Present: Senators Jackson, Metcalf, Allott, Jordan, Hansen, and Bellmon.

The CHAIRMAN. The committee will come to order.

The purpose of this hearing is to receive further testimony on S. 3354, the bill I introduced on January 29, 1970, to amend the Water Resources Planning Act to establish a national land use policy.

Since the introduction of the bill the committee has heard testimony from officials of Federal and State government, conservationists, foresters, architects, planners, landscape architects, and attorneys. We have also received many written comments, both solicited and spontaneous.

Eighteen Senators have joined as cosponsors. Many of these colleagues feel as I do that a National Land Use Policy is essential if this Nation is to meet the developmental and environmental challenges of the coming decades.

The committee has also received much constructive comment on specific provisions of the bill, which the committee staff has been recording and classifying. I said in introducing the bill that I hoped it would be a focal point for analysis and creative thinking. I am pleased to report that the extent and caliber of the response have been gratifying.

Today the committee will hear testimony from spokesmen for industry, county government, and the conservation community. Our first witness will be Mr. Harry Woodbury, senior vice president of the Consolidated Edison Co. of New York; followed by Mr. James Turnbull, executive vice president of the National Forest Products Association; and after that a panel composed of Mr. Thomas Haga, planning director of Genesee County, Mich., a metropolitan-suburban county; Mr. Douglas Powell, planning director of Middlesex County, N.J., a nonmetropolitan-suburban county; Mr. Robert Zapsic, planning director of Beaver County, Pa., a rural county; and Mr. Joseph Pollard, legislative consultant of Los Angeles County, Calif., a thoroughly urban county. Finally, we will hear from Mr. Peter Borrelli of the Sierra Club, who will wrap up the morning's testimony.

Gentlemen, I am delighted to welcome you to the committee. We will proceed now with the testimony of Mr. Harry Woodbury.

Mr. Woodbury, we are delighted to have you and you may be seated. You have a prepared statement, I believe.

Mr. WOODBURY. Yes, I do, Mr. Chairman.

The CHAIRMAN. You may proceed.

STATEMENT OF HARRY G. WOODBURY, SENIOR VICE PRESIDENT, CONSOLIDATED EDISON CO. OF NEW YORK

Mr. WOODBURY. Mr. Chairman, members of the Committee on Interior and Insular Affairs: My name is Harry G. Woodbury. I am senior vice president of Consolidated Edison Co. of New York. I joined the company in May 1968 after 30 years' service in the U.S. Army. In my last military assignment I served as the Director of Civil Works in the Office of the Chief of Engineers. I was also the Army's representative on the National Water Resources Council from inception of the Council. I am accompanied by Mr. Edward Sack from our Office of General Counsel.

Consolidated Edison Co. is an electric, gas, and steam utility. Our company supplies electric energy in New York City and Westchester County, an area of approximately 625 square miles, having a population of 8.9 million as of January 1, 1968. We supply natural gas to the boroughs of Manhattan, the Bronx, and part of Queens and in Westchester County. We supply steam to portions of Manhattan. As a public utility, we are subject to the regulatory jursidiction of the New York Public Service Commission and, to a lesser degree, to the Federal Power Commission.

I am pleased to respond to the invitation of Chairman Jackson to comment on S. 3354, a proposed law on a national land use policy.

There can be little doubt of the importance of land use planning as an aid in achieving our national goals of economic growth and protection of the environment. Too often, in recent years, we have witnessed last minute wasteful confrontations to determine whether for example an area should be used for economic development, or for parks or be preserved in its "natural" state with persuasive arguments for each. Timely comprehensive land use planning could facilitate a timely determination of an appropriate use for our land thus permitting a blending of development and preservation at less cost to the public. These hearings are important in focusing attention on the need for reconciliation of our dual objectives of development and preservation which, I feel, are not mutually inconsistent. You members of this committee should be applauded for devoting your time and energy to this long range, national problem.

Of course it must be recognized that planning is only part of the problem. Execution in many cases is more difficult than planning. The best of plans will still require vigorous and at times courageous statesmanship on the part of political leaders at all levels of government if planning goals are to be achieved on schedule. But comprehensive multiple purpose planning has to come first. We have but to look around us today to see the results of unilateral single purpose planning having only economic objectives.

Utilities are interested in land use planning because of the long leadtimes required to design and construct major power facilities. For

example, it takes 7 to 10 years to plan, design, obtain permits and licences, and build a nuclear powerplant. Frequently, during the development cycle, we have no knowledge of the competing plans of others, and conflicts become apparent only after designs are too far advanced to permit changes without adversely affecting the reliability and costs of utility services. Utilities do not propose a delegation to any Government agency, whether State or Federal, of their planning functions. But they do need a coordination mechanism to formulate realistic and reliable development plans to serve the long-range public interest. This bill lays a foundation for timely planning coordination.

Recent legislation mandates utility facilities be planned and constructed with due regard for protection of the environment. The National Environmental Policy Act of 1969, which originated with this committee, under the leadership of your able chairman requires, among other things, a study of the environmental impact of any facility requiring a Federal license or permit. Thus environment impact studies are required for a nuclear powerplant which requires a license from the Atomic Energy Commission, a hydroelectric plant which requires a license from the Federal Power Commission and most other generating stations which require permits from the Corps of Engineers. The Water Quality Act of 1970 requires that any facility for which a Federal license or permit must be obtained has to be constructed with reasonable assurance that it will be operated in a manner which will not violate applicable water quality standards. Furthermore, New York State law requires the Public Service Commission to issue a certificate of environmental compatibility and public need for the construction of future major utility transmission facilities, including both electric and gas. These are important developments in the field of environmental protection with respect to utility operations. The operation of the legislation which you are considering this morning must be carefully reviewed in the light of these measures to ensure that it is complementary and not duplicating or redundant.

Comprehensive multiple purpose land use planning must of course make provision for all competing land users: industrial, commercial, and residential as well as recreational and inspirational. There is little difficulty in single purpose planning. It is easy to plan either to protect the environment by prohibiting economic development or to permit economic development without considering environmental factors. The difficult job is to reconcile the preservation and development needs of all of our people, bearing in mind all of their needs.

The failure to carry out comprehensive land use planning will, in all probability, lead to increasing difficulties particularly in the construction of essential public utility facilities. Without a plan, land use questions are determined on an ad hoc basis in an untimely manner, a procedure which seldom maximizes the public interest.

This bill properly places the emphasis on the State for planning. Land use is by its nature a peculiarly local problem. However, I am concerned that the bill may exclude from the statewide land use plan, lands located within the borders of any incorporated city which has exercised land use planning and authority. In New York State cities, counties, incorporated villages and towns all have planning agencies. There would appear to be no reason to treat one type of political subdivision differently from the others.

We believe that city planning should be part of the proposed program. Some of the most critical land use problems are within cities and more particularly in the relationship of cities to their surrounding areas. The cities' requirements place demands on the surrounding areas. For example, our company's facilities located outside New York City are in large part for the purpose of serving people in the central city. Little purpose is served if the cities are to be encouraged to plan to put what they don't want out in the counties. So, too, the counties and the States cannot plan in a meaningful way without regard to demands of the cities.

Utilities presently are required to obtain a large number of licenses and permits to construct a generating station or a transmission line. One shortcoming in present laws and procedures is that there is no coordinated systematic review by a single regulatory agency in which all of the factors necessary to a wise decision can be considered. Environmental review is fragmented among many agencies and levels of government with each official looking at a single aspect, and from the point of view of a specialist in a single purpose area of interest. What is needed is not for the Congress to add additional State and Federal layers of approval but to consolidate the numerous approvals and time-consuming reviews.

What organizational elements of the Federal Government should coordinate land use planning I'm not prepared to comment upon except to say that land use planning has been closely related to the work of the Water Resources Council from its inception. The more important question for electric utilities concerns the agency within the State to handle planning and permits for the siting of utility facilities. Utility matters are generally handled by a public service commission, and recent legislation in several States specifically requires the utility regulatory commission to consider environmental matters in approving proposed utility facilities.

New York State enacted a law this year, to which I referred previously, which requires the public service commission to issue a certificate of environmental compatibility and public need for the construction of major utility transmission facilities. The same law created a temporary State commission on the environmental impact of major public utility facilities. This commission is directed to: investigate the present siting practices of utility companies with regard to locating major facilities, the considerations which should be brought to bear in making siting decisions and suggest State procedures which should be established to regulate and determine the siting of such facilities. The commission is further directed to propose legislation for presentation to the legislature next year.

The new State legislation also recognized the importance of consolidating environmental reviews in a single proceeding to provide for the expeditious resolution of siting problems. Accordingly, the certificate of environmental compatibility and public need issued by the public service commission is intended to supersede all other State and local approvals or disapprovals, except for laws relating to the protection of employees engaged in the construction and operation of the facility.

I believe that the public service commission is the appropriate agency within the State to determine these matters for regulated

utilities, so that the responsibility for environmental protection and the supply of essential energy service is in the same body. New York's law contemplates full participation by all interested governmental and civic groups and allows judicial review.

In summary, we believe S. 3354 raises issues of great importance to the future of the Nation's environment and economic growth. When reconciled and coordinated with other legislation and regulatory mechanisms affecting utilities, the bill, if enacted, could make an important contribution to the wise use of our Nation's resources.

Thank you very much, Senator Jackson.

The CHAIRMAN. Thank you, Mr. Woodbury, for a very fine statement. In view of the increasing opposition to the installation of power generating facilities by individuals and groups concerned about protection of the natural environment, what alternatives do you see to long-range planning, if we are to meet our huge projected demands for increased power in the coming decade?

Mr. WOODBURY. The alternatives, Mr. Chairman, seem to me to be a continuation, for example, of earlier practices, where, in the case of our utility, we accomplished our planning. We attempted coordination on our own initiative with State and local authorities, but in many cases without any specific machinery at the State and local level to work with and in an environment where one political subdivision acted in one way, another political subdivision in another way, and there was no way to reconcile the differences.

We feel that the alternatives to sound, comprehensive, long-range planning are undesirable and that some scheme such as has been suggested in this bill, is necessary.

The CHAIRMAN. In other words, what you are faced with, if I understand you correctly, is that by law you must meet the energy requirements of the people within your franchised area.

Mr. WOODBURY. We have no alternative, but to do that.

The CHAIRMAN. Your difficulty is that we have a number of archaic institutions dealing with it in separate units. If I understand the situation correctly, and it is not only in the New York area, but elsewhere, you lack a single forum in which you can have adjudicated the conflicting claims such as the fulfillment of your statutory requirements of providing energy and the environmental protection that the public very properly demands. Isn't that what it really boils down to in part? You appear before one governmental entity and you get part of the solution there, only to be confronted with another governmental entity, and the result is that it is so fractionated that you are unable to get a proper adjudication of all of these conflicting interests in one single forum, so that you can get a positive directive as to what you should or should not do?

Mr. WOODBURY. This is correct, with the exception of transmission facilities. The New York State Legislature did make provision for a transmission forum only this year. There has been no operation of that law to date, but at the moment we are faced with a need to apply to the New York State Public Utilities Commission for a certificate of need for a short section of transmission right-of-way in which we have secured permits and rights-of-way and franchises for the construction of a transmission line, except through one small county right in the middle of it.

The CHAIRMAN. It only takes one of anything to block it.

Mr. WOODBURY. That is correct.

The CHAIRMAN. My point is it seems to me in dealing with the utility problem there ought to be one forum in which all of the options that might be available can be properly ventilated and discussed and finally adjudicated.

For example, when you decide to locate a plant some distance from the load center, then, of course, you are using up valuable land space for transmission lines. Am I correct?

Mr. WOODBURY. That is correct.

The CHAIRMAN. When you do that you also increase the cost of power?

Mr. WOODBURY. That is correct.

The CHAIRMAN. These are things, of course, the public should understand, and have full notice of before coming to any final decision. On the other hand, if the plant is located near the load center, you do cut costs, you improve efficiency and, of course, you save that land that would otherwise be dedicated to transmission lines and, therefore, a serious impact on the environment; is that not correct?

Mr. WOODBURY. That is correct, Senator, and it is in connection with that particular problem that we are concerned, lest the cities be excluded from this planning effort.

There is always a tendency on the part of everyone to seek to have something that is not desirable to have it located in someone else's backyard.

The CHAIRMAN. This is an arbitrary decision. We did not want to bite off too much at once. Politics is the art of the possible and we may well want to put the cities back in. I can fully appreciate especially your problem where it is necessary to deal with the entire governmental structure within a State, otherwise, you are right back where you started and you will have roadblocks thrown in the way.

It seems to me what we would like to see come out of this legislation, of course, getting the States to do it, is provide for a forum in which these conflicting interests can be adjudicated. The public is unaware of the problem. In one breath they want the thermal plants located far away from the cities on the grounds this will enhance the local environment. It seems to me that has to be balanced against what it will do to the environment generally.

When you count the land that is taken up with transmission lines, you have a serious environmental problem presented first hand. But what is happening today is that one governmental unit, say, the city, says we don't want the plant in the city on environmental grounds. The problem is thus given to the county and to the whole State and as a result you have created an even larger environmental problem.

I think a great deal of this difficulty, of course, stems from the fear of what might happen to a nuclear plant, whether that fear is justified or not. The ideal solution would be to locate all of these thermal plants immediately adjacent to the load centers, because it would lessen the economic costs, improve the reliability of the situation and would cut down the amount of land that would have to be directed to the operation of a given utility project.

Mr. WOODBURY. The Senator shows great insight into the utility business.

I would say in connection with your comments, that the bill will provide a mechanism for surfacing differences early in the planning process but I do not see in the bill a means for reconciling differences unless they are resolved in the planning process.

The CHAIRMAN. We have tried to establish a broad charter here and, of course, the State land use plan will have to be approved by the Federal Council. This is where I think there will be an opportunity to review the effectiveness of a proposed State land use plan.

Mr. WOODBURY. We will still be required under this act, as we are now, to obtain permits and licenses and franchises from a great many people. It is because of that requirement that the Public Service Commission of New York has indicated an interest in trying to develop some way of having an overall review and consolidation of that part of our problem.

The CHAIRMAN. We would hope that there can be set up or will be set up—and of course we can be more specific about it—a single forum in which these conflicts can be adjudicated. It seems to me you have to end up with that kind of an operation. This is what you don't have in the New York area. I am familiar with your problem. You get one problem resolved in one jurisdiction, then you are frustrated in another. There is no single governmental entity, as I understand the picture, in which all aspects of the utility situation can be adjudicated, in which the required economic goals and objectives can be made compatible with the preservation of a quality environment.

Mr. WOODBURY. That is correct.

The CHAIRMAN. This is the problem throughout the United States in the siting and location of industry plants, including the regulated industries such as yours. The greatest problems we face in the 1970's is to modernize governmental institutions, bringing them up to date so that we can fulfill our proper economic goals and objectives consistent with a quality life.

The task is easy if all you do is say we are going to protect the environment and you close everything down. What about the 26 million people at the poverty level in this country? If you are ever going to help those people, as I believe we should, anything you do to help them is going to have an impact on the environment. There is no way of avoiding it.

It seems to me you must have sound, sensible economic growth, and I think that can be achieved while at the same time providing for quality life and a good environment. That is a challenge and is a tough one. I think this country is competent enough and able enough to do it. Science and technology have provided us with the means to accomplish this.

I think that must be our main trust in the 1970's. We need a balance in our efforts and it is going to challenge and take the best talents in this country to continue our growth and provide for our citizens' needs with clean air, clean water, and clean land and, shall we say, a more esthetic, enjoyable environment. That is what we are trying to do here, starting with the land as a base.

I want to thank you for a very fine and helpful statement.

Mr. WOODBURY. It is encouraging, Mr. Chairman, to hear the leadership in this great body express the thoughts that you just ex-

pressed. I am sure we are on the way to the solution of very difficult problems.

Senator JORDAN. I don't think the public realizes the nearing crises this Nation faces. I am convinced in my own area we are going from an era of brownout to blackout, because of those people who have the franchises and who are required by law to supply energy are handicapped in one way or another in going about their plans to supply that energy. I would like to develop that point, if you will help me.

First of all, what is the rate of load growth in your area?

Mr. WOODBURY. In our service area, our load growth is growing at a rate so that it doubles about every 10 years, sir.

Senator JORDAN. Over 7 percent annually, and doubles every 10 years?

Mr. WOODBURY. That is correct, and that increase in our area is occasioned not so much by an increase in population, but increase in use per capita.

Senator JORDAN. Do you think this rate of increase is likely to level off or likely to get worse, or better, or will it remain fairly constant, or double every 10 years?

Mr. WOODBURY. We naturally have to review this every year in our planning and it is our view the rapid rate of increase in the last few years will continue for another 10 to 15 years and then begin to level off. A lot depends, I think, on future development. A major environmental factor in New York, a major contributor to New York's pollution problems is the automobile.

If, for example, in the next 10 years there is developed an electric automobile which is economic to operate, our present load projections will be far too low, but should such a development come along, there would be great benefit to the environment because the pollution created by the automobile is far greater than the pollution that would be created by providing electric energy to electric automobiles.

Senator JORDAN. That is one of the best arguments I have heard for electric automobiles because the pollutants can be contained in the central stack rather than coming out of the exhaust stacks of separate, numerous conveyances.

Mr. WOODBURY. It is also more efficient in removing pollutants.

Senator JORDAN. Money could be spent to clean it up and make it less damaging.

To develop this a little further, how much leadtime is required, we will say, between the point in time when you realize that you have to build a new plant, say a nuclear fuel plant. How much leadtime is required to bring that plant on the line?

Mr. WOODBURY. Currently, Senator Jordan, we have over 8,000 megawatts on ConEd's system. We have in various States of construction another 8,000 megawatts of capacity. Some of these plants will be coming on the line hopefully yet, this summer. These are principally gas turbines. Some of these plants will not be coming on the line until 1978, contracts for which were placed 2 years ago.

A minimum leadtime for planning is 10 years. A responsible leadtime now will have to be longer than that in view of the increasing regulatory delays and successive reviews.

Senator JORDAN. Actually you have under various stages of construction about the same amount of capacity as you presently have in your entire system?

Mr. WOODBURY. That is correct—a little more, as a matter of fact. Our system perhaps is unique in that it is a very old system. We not only have to plan for load growth, but we have to plan to retire old, inefficient plants that did not have built into them the pollution abatement measures that we can put in new plants.

Senator JORDAN. So you have not only to meet the need for new load growth, demand, but also to replace the old plants that become obsolescent for the reasons you have mentioned?

Mr. WOODBURY. That is correct, sir.

Senator JORDAN. The hydro potential in your area is already exhausted, completely used?

Mr. WOODBURY. There is very little hydro potential in New York State, as it is understood in the Senator's territory, for example, since we don't have a Columbia River. The hydro potential which exists in our area is for pump storage and there is some potential for this.

I am sure you are aware of our efforts to build a pump storage plant at Cornwall, N.Y.

Senator JORDAN. It is very controversial, I understand.

Mr. WOODBURY. It is an effort that started many years ago and is still in litigation.

This sort of a peaking plant does improve the efficiency of our other plants by providing an ability to use the installed capacity at a higher rate of use and thus effect efficiencies and, in turn, reduce the power costs to our consumers and reduce air pollution. So, from this point of view, it is a very important addition to our system. But there is no falling water that nature places on high ground and lets flow to low ground that can be developed for hydro purposes in our territory.

Senator JORDAN. Up in the Northwest we have an abundance of hydro, at least for peaking purposes, but we are facing a time when we are going to have to go to nuclear and fossil fuel generation for the baseload, but in the absence of a potential hydro for peaking, what do you use for peaking?

Mr. WOODBURY. We are using gas turbines and we are using our old plants for peaking. Both are expensive. The heat rate, for example, from a gas turbine unit is only about two-thirds as efficient as the heat rate from a boiler, so you are consuming more fuel, more natural resources, exhausting more gases from a turbine than you are from a larger modern boiler plant, but gas turbines are effective for peaking purposes because they can be started quickly and pick up load fast.

Senator JORDAN. But more expensive?

Mr. WOODBURY. Operationally more expensive to the consumer, that is correct.

Senator JORDAN. Where do you meet the greatest public resistance when you propose to build nuclear fuel plants or fossil fuel plants?

Mr. WOODBURY. We have a unique service area which, as I indicated earlier, is only 625 square miles. That is not very much in your terms of reference. That is very highly populated. The practice of building nuclear plants up to now has been to find a site remote from population centers. Until such time as large nuclear powerplants have been in operation for a period of time and until such time as we have gained public acceptance for the safety of these plants, it will be difficult, it seems to me, to have public acceptance for the construction of a nuclear plant in a place like New York City.

We proposed such a plant in 1963 on Welfare Island. It caused quite a furor and we quickly withdrew the proposals.

The plants we are building up in Westchester, there is little doubt in our minds that they are perfectly safe, but they need to operate for a while to gain public acceptance of them.

These plants have imposed upon them, because of their proximity to population centers, construction requirements, safety requirements which are greater than that necessary for fossil fuel plants. As a result the costs of these plants in metropolitan areas are pretty expensive.

Senator JORDAN. It pretty well narrows your choice with the hydro used up.

Mr. WOODBURY. The fossil plants on the other hand can be built more quickly, on the order of 5 years instead of 10 and they do represent from a planning point of view an alternative to which you can turn if you are frustrated in the construction of a nuclear plant. But with fossil plants, there is always the problem of air pollution.

Senator JORDAN. You are driven to your last choice perhaps in fossil fuel generation and it is considered to be the greatest pollutant of all times.

Mr. WOODBURY. In the case of fossil plants at the present moment, the fuel industry in this country is in such shape that we are having more than a little difficulty in acquiring the necessary low sulfur coal and oil to fire our fossil plants.

Senator JORDAN. What is the outlook? If you have to double your energy supply every 10 years, what is the prospect of doing it? How are you going to do it?

Mr. WOODBURY. At the moment we are seeking a balanced development of fossil plants in our own territory, fossil plants in the territory of adjacent utilities which we joint venture with them, and we have two nuclear plants under construction now a third under contract and we have acquired a site on David Island off New Rochelle for two more in the early 1980's.

We hope to build one day 2,000 megawatts of pump storage at Cornwall and we have acquired 2,000 megawatts of gas turbines, so we have the best balance we can acquire and we hope by proceeding down four paths we offer our consumers the highest degree of reliability that can be had.

Senator JORDAN. How much has your timetable been upset or postponed by litigation and by having to meet the requirements at various levels of government as to their environmental regulations?

Mr. WOODBURY. Our most serious problem, Senator Jordan, is in the Cornwall plant. We have been in litigation on that facility since 1965. The matter is presently before the Federal Power Commission. We expect a finding from the Federal Power Commission some time late this summer. We have been advised that if that finding is favorable, it will again be litigated and taken to the Supreme Court, so are faced with another 2 or 3 years perhaps before a final adjudication of that problem—a total of some 2 years.

Senator JORDAN. The planning proposed in this bill for land use would give you some relief if these problems were ironed out ahead of time before you had to meet a confrontation or went to the courts or caused unusual delay, would it not?

Mr. WOODBURY. If this bill had been operational in 1955, I suspect the Cornwall problem would never have come up. It started out as an above-ground project. This was done at the time when environmental considerations were not as prominent in the public mind as they are today.

As environmental considerations and importance grew, this plant became obsolete before it ever got started. In the process there was created a lot of opposition to the construction of an above-ground facility along the Hudson River in the Highlands area.

Had we known ahead of time of this opposition, I am sure, ahead of time, we would have put the plant underground as we did finally. So now the plant is proposed to be built underground where it can't be seen, where it has a minimal environmental impact.

But the confrontation had already been joined and it seems to be difficult to disengage.

Senator JORDAN. Your testimony has certainly been persuasive for the need of this kind of legislation and I am pleased to have you before this committee.

Mr. WOODBURY. Thank you, Senator Jordan.

The CHAIRMAN. Thank you very much, Senator Jordan. You asked some very good questions. I don't want to further dramatize the plight of the utilities, but I could by asking you the question of how are you going to finance the doubling of utility requirements in the next 10 years? I noticed in an article here not too long ago, that the annual rate of capital investment projected for this year in plants and equipment is a little over $80 billion. No one really knows what it will be by the end of the year, but I think it is projected at $80 billion. Of that total, the utilities required one-fourth, about $20 billion, just to fulfill their plant and equipment requirements for the calendar year 1970. Interest rates, of course, are at an alltime high, and I notice the Bell System about 3 weeks ago on AAA bonds in New Jersey had to pay 9.35 percent interest. That is an AAA bond.

So your problems are not only environmental, but also the problem has been complicated by the scarity of available money for this purpose.

Mr. WOODBURY. If there is any more of that 9.35 percent money lying around, we might like to get about $200 million of it.

The CHAIRMAN. What was your last yield on the sale of bonds? Was it 10 percent?

Mr. WOODBURY. No; it was something like 8.9 percent but the money market has changed since then. Our capital requirements are indeed severe. We expect to have to spend this year on the order of $450 to $470 million on capital improvements. Next year this rate of expenditure will increase to over $500 million and again almost $500 million the next year. In the present money market, I am not sure where this is going to come from, and I am not sure what the alternative is.

The CHAIRMAN. I did not mean this as collateral.

Mr. WOODBURY. Fortunately, I am in charge of operations and not finance.

The CHAIRMAN. Senator Metcalf?

Senator METCALF. I am not going to share with you your sorrow or tear-jerking on the plight of the utilities because the utilities have earned more money than any other group in the United States.

Montana Power Co. last year, according to their reports to the Federal Power Commission got 23 percent return and when all this interest rate that you are concerned about is written into the tax base or the rate base, the consumer has to pay for it and the utilities have a guaranteed rate of return——

The CHAIRMAN. The public gets stuck for higher costs all the way around, assuming they get whatever rate of return the local public service commission will approve on their investment.

Senator METCALF. I am delighted that Mr. Woodbury is here as an operational rather than talking about the financial structure of utilities. The late Senator Robert Kennedy used to say Consolidated Edison was the company you learn to hate. Since then Chuck Luce has gone up and in the opinion of this Senator he is one of the most able and knowledgeable men in the public utility field, and I feel you working under him will help change that image. I know you have a problem that is almost insoluble because of your testimony about an old system, and insatiable demand for power, the need for power in remote places, such as we would have in the Northwest for hydropower and peaking power and fossil fuels and all those things.

Nevertheless, with that huge population in your service area, you must be more concerned than anybody else, probably more so than any other power company in America, in environmental situations.

You must be concerned when you are dumping tons of sulphur dioxide upon the people of New York every day. What are you doing about that, so far as your operations and research are concerned?

Mr. WOODBURY. Thank you, Senator Metcalf. It is nice to be with you again. We have been associates for a long time.

First, I would like to say with respect to ConEd, we did not earn 23 percent. We would be very happy to earn 7½ percent. We did earn 5½ percent last year and we are having to pay 9½ percent for our money, so it is a hard way to stay in business.

Senator METCALF. I put the earnings in the Congressional Record the other day. Mr. Chairman, I know about the earnings of a whole lot of the power companies in America, including the Montana Power Co., but I would like to put the earnings in since that came up. I would like to have the material put in the Congressional Record put in this record.

(The material referred to follows:)

[From the Congressional Record, June 1, 1970]

SEVENTY ELECTRIC UTILITIES NET 16 PERCENT OR MORE

Mr. METCALF. Mr. President, dozens of utilities are now asking for rate increases based on last year's performance, on which comparative data will not be available until next year.

Electric, gas, and telephone utilities are trying to add another inflationary $2 billion onto utility bills before the public learns how well the companies did last year, and how well they could do this year without rate increases.

None of the Nixonomists at the White House, Budget Bureau, or Council of Economic Advisers mention the inflationary impact of high utility bills and the pending requests for another $2 billion.

Current utility reports indicate profits will stay at their record, inflationary level, or even increase, unless the facts are disclosed and publicized promptly, and lax regulators are forced by the public to do their job.

One of the most important indicators of utility performance is net profit, after payment of all expenses, including taxes and interest. The Federal Power Com-

mission does not even publish comparative net profit in its annual statistical reports which are based on data submitted by the companies.

Last month the FPC, at my request, calculated net profit in 1968 of the 206 major electric utilities in relation to gross operating revenue. This compilation shows that:

One utility netted more than 50 percent.

Another netted more than 30 percent.

Eighteen netted 20 percent or more.

Seventy of these investor-owned utilities—more than one-third of the 206—made a net profit of 16 cents or more out of each dollar of revenue collected. The 206 IOU's averaged a net profit of 15.4 percent.

Mr. President, I ask unanimous consent to have printed in the Record the percentage relationship of net income to gross utility operating revenue for these companies, as compiled by the FPC staff from the IOU's own reports.

There being no objection, the table was ordered to be printed in the RECORD, as follows:

Classes A and B privately owned electric utilities in the United States—Percentage relationship of net income to gross utility operating revenues, 1968

[Net income percent of gross utility operating revenues]

Alabama:	
Alabama Power Co.*	15.8
Southern Electric Generating Co.*	10.6
Arizona:	
Arizona Public Service Co	13.5
Citizens Utilities Co.[2]	50.7
Tucson Gas & Electric Co	12.5
Arkansas:	
Arkansas-Missouri Power Co.[1]	7.8
Arkansas Power & Light Co.*[1]	15.2
California:	
Pacific Gas & Electric Co	16.7
San Diego Gas & Electric Co	14.0
Southern California Edison Co.*[1]	17.0
Colorado:	
Home Light & Power Co.*	10.4
Public Service Co. of Colorado	15.7
Western Colorado Power Co.*	16.1
Connecticut:	
Connecticut Light & Power Co	17.1
Connecticut Yankee Atomic Power Co.*	18.4
Hartford Electric Light Co	16.5
United Illuminating Co.*	16.8
Deleware:	
Delmarva Power & Light Co	18.4
District of Columbia:	
Potomac Electric Power Co.*[1]	18.0
Florida:	
Florida Power Corp.*	19.4
Florida Power & Light Co.*	15.1
Florida Public Utilities Co	7.3
Gulf Power Co.*	16.5
Tampa Electric Co.*	17.0
Georgia:	
Georgia Power Co.*	14.0
Savannah Electric & Power Co.*	15.3
Idaho: Idaho Power Co.*[1]	22.4
Illinois:	
Central Illinois Light Co	13.7
Central Illinois Public Service Co	16.1
Commonwealth Edison Co	17.3
Electric Energy, Inc.*[1]	.8
Illinois Power Co	17.1
Mt. Carmel Public Utility Co	11.8
Sherrard Power System*	9.5
South Beloit Water, Gas & Electric Co	6.2
Indiana:	
Alcoa Generating Corp.*	6.0
Commonwealth Edison Co. of Indiana, Inc.*	11.1
Indiana & Michigan Electric Co.*[1]	15.7
Indianapolis Power & Light Co	18.1
Northern Indiana Public Service Co	14.6
Public Service Co. of Indiana, Inc.*	19.6
Southern Indiana Gas & Electric Co	15.7
Iowa:	
Interstate Power Co.[1]	12.2
Iowa Electric Light & Power Co	10.2
Iowa-Illinois Gas & Electric Co.[1]	12.7
Iowa Power & Light Co	11.7
Iowa Public Service Co.[1]	11.9
Iowa Southern Utilities Co	15.5
Kansas:	
Central Kansas Power Co., Inc	10.4
Central Telephone & Utilities Corp.[1]	24.9
Kansas Gas & Electric Co.*	16.1
Kansas Power & Light Co	14.3
Kentucky:	
Kentucky Power Co.*	31.9
Kentucky Utilities Co.*[1]	18.3

Kentucky—Continued
- Louisville Gas & Electric Co. 16.5
- Union Light, Heat & Power Co 7.4

Louisiana:
- Central Louisiana Electric Co., Inc 17.6
- Gulf States Utilities Co.[1] 19.5
- Louisiana Power & Light Co.* 15.6
- New Orleans Public Service Inc 8.0

Maine:
- Bangor Hydro-Electric Co.* 14.4
- Central Maine Power Co.* 16.5
- Maine Public Service Co.* 14.0
- Rumford Falls Power Co.* 16.8

Maryland:
- Baltimore Gas & Electric Co 14.1
- Conowingo Power Co.* 13.3
- Delmarva Power & Light Co. of Maryland* 11.1
- Potomac Edison Co.* 22.9

Massachusetts:
- Boston Edison Co 12.5
- Boston Gas Co 4.0
- Brockton Edison Co.* 11.6
- Cambridge Electric Light Co.* 8.1
- Canal Electric Co.* 19.9
- Cape & Vineyard Electric Co.* 7.6
- Fall River Electric Light Co.* 10.6
- Fitchburg Gas & Electric Co 9.1
- Holyoke Power & Electric Co.* 0.3
- Holyoke Water Power Co 6.2
- Massachusetts Electric Co.* 6.2
- Montaup Electric Co.* 7.4
- New Bedford Gas & Edison Light Co 6.7
- New England Power Co.*[1] 14.6
- Western Massachusetts Electric Co.* 11.2
- Yankee Atomic Electric Co.* 11.2

Michigan:
- Alpena Power Co.* 12.8
- Consumers Power Co 12.4
- Detroit Edison Co 13.5
- Edison Sault Electric Co 12.1
- Michigan Gas & Electric Co 7.8
- Upper Peninsula Power Co.* 10.5

Minnesota:
- Minnesota Power & Light Co.* 15.3
- Northern States Power Co.[1] 14.4

Mississippi:
- Mississippi Power Co.* 15.1
- Mississippi Power & Light Co.* 15.9

Missouri:
- Empire District Electric Co.*[1] 15.5
- Kansas City Power & Light Co.[1] 17.5
- Missouri Edison Co 8.8

Missouri—Continued
- Missouri Power & Light Co 9.4
- Missouri Public Service Co 16.8
- Missouri Utilities Co 7.2
- St. Joseph Light & Power Co. 12.5
- Union Electric Co.[1] 17.6

Montana: Montana Power Co.[1] 22.7

Nevada:
- Nevada Power Co.* 17.2
- Sierra Pacific Power Co.[1] 17.6

New Hampshire:
- Concord Electric Co.* 6.0
- Connecticut Valley Electric Co., Inc.* 5.1
- Exeter & Hampton Electric Co.* 7.5
- Granite State Electric Co.* 8.1
- Public Service Co. of New Hampshire *[1] 14.3
- White Mountain Power Co.* 10.0

New Jersey:
- Atlantic City Electric Co.* 19.4
- Jersey Central Power & Light Co.* 20.0
- New Jersey Power & Light Co.* 8.0
- Public Service Electric & Gas Co 14.0
- Rockland Electric Co.* 11.5

New Mexico:
- New Mexico Electric Co. * 12.1
- Public Service Co. of New Mexico 19.1

New York:
- Central Hudson Gas & Electric Corp 14.6
- Consolidated Edison Co. of N.Y., Inc 13.1
- Long Island Lighting Co 14.5
- Long Sault, Inc 21.6
- New York State Electric & Gas Corp 15.5
- Niagara Mohawk Power Corp 11.6
- Orange & Rockland Utilities, Inc 13.5
- Rochester Gas & Electric Corp 13.9

North Carolina:
- Carolina Power & Light Co.*[1] 15.3
- Duke Power Co.*[1] 15.6
- Nantahala Power & Light Co 19.2
- Yadkin, Inc.* 11.4

North Dakota:
- Montana-Dakota Utilities Co.[1] 15.6
- Otter Tail Power Co.*[1] 12.3

Ohio:
- Cincinnati Gas & Electric Co. 15.2
- Cleveland Electric Illuminating Co 18.3
- Columbus & Southern Ohio Electric Co.* 15.6
- Dayton Power & Light Co 14.3
- Ohio Edison Co 22.9

Ohio—Continued	
Ohio Power Co.*	20.3
Ohio Valley Electric Corp.*	1.2
Toledo Edison Co	16.8
Oklahoma:	
Oklahoma Gas & Electric Co.*[1]	18.2
Public Service Co. of Oklahoma*	14.8
Oregon:	
California-Pacific Utilities Co.[1]	9.3
Pacific Pwer & Light Co.[1]	18.7
Portland General Electric Co.*	17.5
Pennsylvania:	
Duquesne Light Co.*	21.4
Hershey Electric Co.*	6.3
Metropolitan Edison Co.*	15.3
Pennsylvania Electric Co.*[1]	21.3
Pennsylvania Power Co.*	16.2
Pennsylvania Power & Light Co.*	16.4
Philadelphia Electric Co	16.2
Potomac Edison Co. of Pennsylvania*	8.9
Safe Harbor Water Power Corp.*	20.0
UGI Corp	12.2
West Penn Power Co.*	17.9
Rhode Island:	
Blackstone Valley Electric Co.*	12.4
Narragansett Electric Co.*	12.5
Newport Electric Corp.*	7.9
South Carolina:	
Lockhart Power Co	10.9
South Carolina Electric & Gas Co	15.7
South Dakota:	
Black Hills Power & Light Co.*[1]	11.7
Northwestern Public Service Co	9.1
Tennessee:	
Kingsport Power Co.*	5.5
Tapoco, Inc.*[1]	15.8
Texas:	
Central Power & Light Co.*	19.8
Community Public Service Co.[1]	9.2
Dallas Power & Light Co.*	17.1
El Paso Electric Co.*[1]	21.8
Houston Lighting & Power Co.*	18.2
Southwestern Electric Power Co.*[1]	17.8
Southwestern Electric Service Co.*	11.5
Southwestern Public Service Co.*[1]	19.7
Texas—Continued	
Texas Electric Service Co.*	20.3
Texas Power & Light Co.*	22.7
West Texas Utilities Co.*	20.9
Utah: Utah Power & Light Co.*[1]	17.9
Vermont:	
Central Vermont Public Service Corp.*[1]	13.0
Green Mountain Power Corp.*	11.7
Vermont Electric Power Co., Inc.*	.8
Virginia:	
Delmarva Power & Light Co. of Virginia*	12.8
Old Dominion Power Co.*	5.2
Potomac Edison Co. of Virginia*	15.3
Virginia Electric & Power Co.*	14.9
Washington:	
Puget Sound Power & Light Co*	14.9
Washington Water Power Co.[1]	15.0
West Virginia:	
Appalachian Power Co.*[1]	18.4
Monongahela Power Co.*[1]	18.4
Potomac Edison Co. of West Virginia*	13.5
Wheeling Electric Co.*	5.0
Wisconsin:	
Consolidated Water Power Co.*	16.9
Lake Superior District Power Co.[1]	12.9
Madison Gas & Electric Co	8.9
Northern States Power Co	11.5
Superior Water, Light & Power Co	6.5
Wisconsin Electric Power Co	14.2
Wisconsin Michigan Power Co.[1]	7.8
Wisconsin Power & Light Co	14.9
Wisconsin Public Service Corp.[1]	11.8
Wisconsin River Power Co.*	12.7
Wyoming: Cheyenne Light, Fuel & Power Co	5.0
Alaska: Alaska Electric Light & Power Co	7.6
Hawaii:	
Hawaiian Electric Co., Inc.*	14.5
Hilo Electric Light Co., Ltd.*	10.6
Kauai Electric Co., Ltd.*	1.9
Maui Electric Co., Ltd.*	8.4

*Companies are either straight electric companies or companies with only nominal operations other than electric.

[1] Also operates in adjoining States.

[2] Also operates in other States.

Mr. WOODBURY. I know Mr. Luce would like to have been here. He is meeting with the New England power companies today in an effort to solve the power problems in the Northeast.

With respect to your particular question, Senator Metcalf, we are proud of the contribution we have made as a company to the environmental improvement of New York City. We have done more to try to improve this environment than any other agency in the city, including the city itself, as was testified to by a commissioner for pollution in a radio program just this week.

We have more than halved the sulfur dioxide emissions in the last 5 years. We have converted as many of our boilers to natural gas as we had gas to burn and we would like to have twice as much gas as we now have, but we can't get it.

Senator METCALF. You use that gas as you testified to Senator Jordan, for peaking power?

Mr. WOODBURY. I was speaking of gas turbine generators. We use natural gas for fuel in our boiler plants and in our gas turbines as well.

Senator METCALF. On base power production?

Mr. WOODBURY. That is correct. We can use this only when it is available. It is available essentially in the spring and summer and in the fall; there is none available in the wintertime because it is used then for domestic heating.

We have converted our coal-burning plants to oil burning, and in the process we have reduced the sulfur content of our oil from 2½ percent to 1 percent. We are now purchasing all of the 0.37 sulfur oil that we can buy, and the market is a very tight market at this point. The production capability for 0.37 oil in this country and in Libya and throughout the world does not begin to meet the demand that are being placed on it. We expect it will be 1973 or 1974 before there will be available sufficient low-sulfur oil.

We have installed precipitators in all of our plants that continue to burn coal. These precipitators remove more than 99 percent of the particulate. We are burning only low sulfur coal and this, too, is difficult to get. We feel that we cannot in the interest of our customers convert our power production facilities to a single source of fuel.

The tug strike in New York Harbor this last winter seriously disrupted the delivery of oil, for example. It disrupted, too, to some extent, the delivery of coal. But had we not had a coal capability, had we not had coal stacked on the ground to use, there would have been a serious power shortage in New York as a result of the tugboat strike this spring. So we need to have a diversity of fuels.

We intend to continue this effort to reduce the effects of polution. Our present plans will do just that. We will be able to increase our production capacity while at the same time reducing the pollutants that are introduced into the air. They are indeed very small now, in comparison to pollutants introduced by the automobile, for example.

Our contribution is on the order of 7 percent and the automobile is on the order of 52 percent, and ours being delivered at 450 feet in the air and therefore being widely dispersed, as opposed to being right on the ground.

We do hope in the future to be able to depend more and more on nuclear power. We feel that in the long term nuclear power presents

the best oportunity to produce energy with the minimal impact on the environment.

Senator METCALF. Of course, that is one of the problems that this bill is concerned with and one of the problems that we are all concerned with, and that is the development of nuclear power and its impact on the environment.

More and more we are beginning to find out that some of our early dreams of a utopia from nuclear power will not be realized because of such things as the great heat generated and some of the dangers involved.

Mr. WOODBURY. At least not as fast as we had hoped they would be realized.

Senator METCALF. Mr. Luce told me the Basin Electric Cooperative offered him power. Under the exciting transmission trends we have today, direct current and ultra-high voltage, we can supply power from areas such as North Dakota or West Virginia by powerlines. Secretary Hickel suggested perhaps we should have regional grids. Would such an arrangement like that be a solution to your problem in New York?

Mr. WOODBURY. We are buying all of the power we can get. This summer it amounts to about 900 megawatts on an average day when we are buying emergency power not on a firm contract but wherever we can pick it up. This power comes to us from Quebec, from the Montreal area, from the northern part of the State of New York and New England. Their power peak in New England is in the wintertime.

There is, of course, a question of energy costs to the consumer. As Senator Jackson rightly pointed out, the most economical and reliable arrangement for the consumer is to have the power generated as close as possible to the load center.

Senator METCALF. I don't agree with you or Senator Jackson. It has been demonstrated time and time again the cheapest way to haul oil is over a high powered transmission line.

The CHAIRMAN. The only point I was making was obviously you have less plant investment if the thermal plant is located immediately adjacent to the load center because yo do not have to capitalize the cost of the transmission lines, number one.

No. 2, you save line loss. That was my only point.

Senator METCALF. Yes, but the chairman knows and he knows better than I——

The CHAIRMAN. I am talking about thermal plants.

Senator METCALF. As I say, they are exciting. The export of Northwest power to the Southwest has been developed so that the line life by high transmission lines and ultrahigh voltage has been minimized. These exciting developments, it seems to me, would work for the development of a national system of grids.

The CHAIRMAN. I was not discounting that. All I was pointing out was when you build a thermal plant as distinguished from a hydro system where you do get into the interconnections within the system it is cheaper to locate near the load center. After all, the siting of a hydro facility has to be in conformance with the river. The transmission line operation there is entirely a different factor than that in connection with a thermal plant. But the Senator is quite right. They just started

up, as you know, these direct d.c. lines from the "Dalles" down to California. Over a period of time, we hope this will save not only a lot of money but a lot of electricity, but I don't believe it is feasible to use d.c. lines on short-haul operations.

Mr. WOODBURY. I would like to say in continuing my remarks, Senator, that we are well aware of the advantages of bringing in particularly hydropower where it can be obtained. We have been in negotiation with the Canadians for 2 years in an effort to obtain a commitment for hydropower in Canada and to get it transmitted down to our area.

One of the real problems in transmission, however, is that there is no guarantee when energy is put in one end of the line that it is going to get where it is needed at the other end of the line, if someone in the middle is in trouble and drags it out. This is one of the problems now with the grids that exist, particularly in the mid-Atlantic States. It is very difficult for us to get energy for example, through Pennsylvania and through New Jersey and even thought we may buy it in Ohio, it never gets to us.

The CHAIRMAN. I support my friend from Montana on the interconnected grid. Technically we think this is sound and I think we have to go in this direction. We have demonstrated this in the Northwest with the Southwest. I want to emphasize my comments were directed solely to the question of plant and equipment investment involved in the thermal siting. That is an entirely different situation than I think my friend had in mind and I support the obvious need for some kind of an interconnecting national grid and the value of it.

Senator ALLOTT. Would the Senator yield for just an observation on this point?

Senator METCALF. I would be delighted.

Senator ALLOTT. I think he is right that the closer you can generate the electricity to the point of use, the better off you are and the cheaper the costs are. Your statement was that you can transport energy far cheaper by wire than you can on a railroad car and this is true.

Senator METCALF. I have just come from testimony before the House committee on the railroad bill to subsidize the railroads.

Senator ALLOTT. I think it should be kept in mind that this general statement of the Senator's with which I think I would agree is not applicable in the situation of nuclear power.

Senator METCALF. That is correct. I agree with the witness. If with experience we can demonstrate that nuclear power is absolutely safe in highly populated areas, it would be best to site the plant right in mid-New York City because that is the cheapest.

But when the Appalachian bill was up and I was on the Public Works Committee, I wanted to put in some proposals for the supplying of coal to burn it at the mine head and export it to our hungry Northeast. All of your colleagues in the utilities said no, no, no, leave it alone. Don't get this utility thing involved in Appalachia.

The greatest resource they have we are still hauling in gondola cars up to you in New York, and to other areas instead of burning it at the mine head. I don't want to belabor this. I think Secretary Hickel is right to have a national grid tied into several kinds of power that you suggest—fossil fuels, nuclear power and hydro. With our very exciting direct current and high voltage, if we could put wheeling provisions

through New Jersey and Pennsylvania, we could be supplying electric power which Chuck Luce told me about.

You are right, you can't do it today because you don't know how much will be drained off in Pennsylvania and New Jersey.

Mr. WOODBURY. I think it helpful to point out the transmission line we were having difficulty with is one of these lines which Senator Metcalf suggested needs to be built to tie a grid together. This is a line which will tie the western part of the State of New York to the eastern part of the State, reinforce the existing ties. We have been attempting to build it for several years and at the moment the line is frustrated because we are unable to get a permit in one small political subdivision. The operation of this bill, it seems to me, will help in this regard.

The CHAIRMAN. That is a good illustration of your point.

Senator METCALF. I certainly appreciate that. That is the whole point. We are growing into at least regional operations, and certainly a municipality or a local political subdivision should not be allowed to interfere with the type of progress that this committee wants.

I have suggested from time to time that the utilities are rather shortsighted in their attitude toward the environment. This would not apply to you, but it seems to me in building a transmission line, Mr. Chairman, a utility engineer looks at a map and says we have to run a man from a point A to point B, and he takes a ruler and he draws a line and he does not care whether it goes through a national park or a wildlife refuge, through the middle of the city or anything else.

They build that line that way. That is the way that the Bureau of Public Roads used to route our entire State highways. This committee has helped train them a little bit, avoiding putting four-lane highways through wildlife refuges, and so on, but it took a long time.

Mr. WOODBURY. I am responsible for the design and planning at Con Edison and am pleased that you disassociated Con Edison from that practice. I can assure you that is just what we don't do. We may have done it once, but we don't do it any more.

Senator METCALF. This committee has held several hearings on new power sources, magneto hydrodynamics. As a result of this activity and the committee over in the House, we have secured a modest appropriation for a pilot plant and further research.

But as in every other area of environmental control, Congress cannot do the whole job. It seems to me that the utilities are not allocating a sufficient amount of their money to research for advancement of their industry for developing new ideas and bringing in new alternatives.

Mr. WOODBURY. I would comment, Senator Metcalf, that Con Edison is participating financially in research to a rather major extent, as we properly should. We are investing in research in MHD, and I might say, lest there be some misunderstanding about this, that this is still in the research stage. There is a lot we don't know about MHD and there is a lot we don't know about how much pollutant MHD would cause. The pollution from nitrogen oxides is much more serious than we have with our existing fossil fuel plants.

We are also participating in research in breeder reactors. But we share with you that the electric utility industry is not making the investment in research that they should make.

You may be aware that our chairman, as recently as 2 weeks ago in a public statement, suggested consideration be given to a Federal trust fund with authority to tax utility consumers to generate on the order of $200 million a year for utility research to be administered perhaps by the National Academy of Sciences or Engineers or National Science Foundation as a means of coordinating research of all of the utilities. That thought needs to be explored further.

Senator METCALF. Yes; it does. That is what I meant by expressing my respect for Mr. Luce, the new chairman of the Consolidated Edison.

Mr. WOODBURY. He is very farsighted.

Senator METCALF. It seems with the, as I say, insatiable demand for power, especially in your area, where we have the highest standard of living perhaps in America and some of the most difficult problems of distribution.

Mr. WOODBURY. And some of the lowest living standards, too.

Senator METCALF. We are going to have to continue to work as hard as we can and spend as much money as the consumer interest can bear and at the industrial and governmental level to find out how we can generate and transmit power in better ways than we have in the past.

It would seem to me that this bill is one of the ways to have a centralized source to have that sort of development, because if we are going to protect our environment from the wasteful ways in which all of us generate and transmitted electricity even a decade ago, we are going to have to do something about it and find some new ways and new systems for doing it. We can't depend upon a municipality or political subdivision to do it.

We have to depend upon the cooperation from the industry and the Federal Government.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Metcalf.

Senator Allott?

Senator ALLOTT. I have just a couple of very short matters. With respect to the transmission of electricity, I think I have heard about some bad storms in the winter in your area time to time.

Mr. WOODBURY. Yes; but not as bad as Colorado sometimes, Senator, but we have storms, too. Our worst damage is done by hurricanes rather than by snowstorms.

Senator ALLOTT. Has your experience shown you have had any interruptions in power from storms in the Northeast?

Mr. WOODBURY. Our interruptions due to storms have been very, very minimal. It should be realized that about 90 percent of the underground utility facilities in this country are in our service territory, which contributes to no small extent to this reliability.

Senator ALLOTT. I would like to disabuse your minds about the bad storms in Colorado. You must know it is the greatest place in which to live in the world. I don't like to convey this idea of bad storms to people from around here.

The CHAIRMAN. That will be stricken from the record and the jury will be instructed to disregard it.

Senator METCALF. Immaterial and incompetent.

Mr. WOODBURY. It is always an inspiration to look at your majestic mountains.

Senator ALLOTT. You said the interruption of service. You are not sure when you put it on the line in Ohio that you are going to get it. Do these contracts not have any guaranteed minimums on them? In other words, is it not possible to contract so that those bad people in Pennsylvania or somewhere along the line wouldn't drain the line before you get it?

Mr. WOODBURY. Electric current flow is not like the Platte River. You cannot control electric flow in the same way that you control water fllow. It is a technical problem. If energy starts through a line and there is trouble along the line which introduces a demand for that energy, the energy is going to flow to the first place where that demand is placed on the transmission and there is nothing you can do about it except to shut it off and you can't shut it off without collapsing the system. You can't decrease it a little bit. You either have it or don't have it.

Senator ALLOTT. From a practical aspect then, the kind of contractual limitation I am talking about is impossible?

Mr. WOODBURY. Yes, you can't get a busy signal in a power system. You switch it on and it works or does not work.

Senator ALLOTT. I am still smarting very badly from the beating that the Federal Government took on the Mole Hole project and I would hope you would look to some other agency than the National Science Foundation to conduct this, because the National Science Foundation is not really set up to do this kind of supervision of work.

Thank you very much.

Mr. WOODBURY. We will defer to your judgment on who should do this. We just picked a name.

Senator ALLOTT. I hope you will pick another one.

Senator HANSEN. I have been very much interested in your testimony. I noted that you said you were attempting to combat pollution by converting boilers insofar as you were able from coal to natural gas as a means of producing the energy. I believe you said this source of energy was not available generally in the winter but was available in the spring and fall. Was I right about that? Did I understand you correctly?

Mr. WOODBURY. That is correct Senator Hansen.

Senator Hansen. I am sure you are aware that our reserve-to-production ratio on natural gas in recent years has dropped from about 18 to 1 down to roughly 10 to 1 now. I assume also that you are also familiar with the fact that gas can be transported by tanker only under conditions differing greatly from those required for the transportation of oil. When it is brought from other countries and delivered to this country, it would probably cost roughly three times as much as does domestically produced natural gas.

Do these figures reflect your understanding of the situation?

Mr. WOODBURY. Yes, sir; they do. The liquification of natural gas is a development which we are following closely. We presently are in the process of constructing a liquified natural gas facility in Astoria to service our gas customers, not our electric customers. This facility will be able to liquefy pipeline gas in the spring, summer, and in the fall and then make it available for peak purposes in the winter.

This facility will also have a capability of taking liquified natural gas that is brought in by ship, but the introduction by ship of natural gas to New York Habor has some problems associated with it. We are working very closely with the fire department in attempting to solve these problems.

As far as the pricing is concerned, if we could get it by pipeline, we would much rather get it that way.

Senator HANSEN. I don't know what the current figures are, but not too many months ago, as I recall, and these are just perhaps national averages, natural gas may have been costing about 20 cents a thousand cubic feet. If it is imported, it has to be cooled and compressed and brought over by tanker, which may cost in the neighborhood of 60 cents. Would those figures give some approximate idea of the relative costs, in your opinion?

Mr. WOODBURY. In New York City our film natural gas costs us 31 to 42 cents and our studies of liquified natural gas, depending on whether it is pipeline gas or brought in by tanker, our prices are between $1 and $3.

Senator HANSEN. Would that price be for that which is brought in by tanker?

Mr. WOODBURY. It is Transco's tariff price in New York. There is not much natural gas being moved by tanker.

Senator HANSEN. I think you testified further, Mr. Woodbury, you were very much interested in buying 0.37 sulphur oil, that you would buy all you could buy and the difficulty was trying to get as much as you would like to get. You mentioned some of that was available from domestic sources and some was coming in from Libya. I don't think you meant to imply these were the only sources, but you did mention Libya, as I recall.

Mr. WOODBURY. That is correct.

Senator HANSEN. In light of this colloquy, do you think that some of the people in the Northeastern part of the United States are wise in urging a policy which would bring about lesser production of natural gas in this country and would increase our dependency upon foreign sources of supply for both low sulphur oil and natural gas?

Mr. WOODBURY. The availability of low sulfur oil from the United States at this point in time, 0.37 sulfur, is not great and the natural oils that we can get from Libya have in their natural state a lower sulfur content. At such time as American and South American production of oil in the new sulfur removal plants has been developed, then there will be, of course, a much greater capability of meeting our needs from domestic sources. But those capabilities, as I understand it, do not exist today. So it seems to me it would be inappropriate for this country with its interests in the environment to exclude from the American use foreign sources of low sulfur oil.

Senator HANSEN. I believe the statement was, you think it would be inappropriate to exclude from use in this country a foreign produced low sulfur oil?

Mr. WOODBURY. That is correct.

Senator HANSEN. I think you testified you were attempting to combat pollution in cenverting from oil and coal burning equipment to natural gas equipment. Was that not right?

Mr. WOODBURY. To the extent that natural gas in available to us by pipeline.

Senator HANSEN. Would you not agree there is a very close relationship between domestically produced pipeline gas as you characterize it and the total production of oil and the search and development of oil and natural gas in this country? Do you recognize a relationship?

Mr. WOODBURY. Yes, I would agree there is a relationship.

Senator HANSEN. Would you not agree to the extent that we import oil from foreign sources or natural gas from foreign sources, we discourage by that amount the production of oil and natural gas in this country?

Mr. WOODBURY. I am really not qualified to comment on that. I have heard this. But I would comment this way, sir. The encouragement of develpoment in this country is a matter which takes time. The need for low sulfur oil happens today, tomorrow, and the next day. The people of New York City, I believe, want sulfur oil as fast as they can get it, wherever it comes from.

Senator HANSEN. I am sure they do.

Do you think they would be concerned about diminishing supplies of natural gas as a source of cooking and home heating? Would that be of interest to them?

Mr. WOODBURY. Yes, sir; it is certainly. There have been public hearings on this just this spring.

Senator HANSEN. I pointed out our reserves to production ratio in this country of natural gas has fallen from about 18 to 1 down to about 10 to 1. Does this give you some reason for some personal alarm?

Mr. WOODBURY. It certainly does. I meant I was not qualified to comment on what was the best way to encourage development.

Senator HANSEN. One further point. You spoke about the importance and the concern that I share over the emission of SO_2 from power stacks. I think it may have been Commonwealth Edison that requested permission to import residual oils by barge up the Mississippi to replace the coal that they presently burn in one of their important powerplants in the Chicago area. The oil that they intend to bring in, I am told will be higher in sulfur content than are most of the Wyoming coals we have. Insofar as pollution abatement is concerned, does this seem to you to be a wise step, if coal lower in sulfur than the oil that would be burned could be made available?

Mr. WOODBURY. I can only speak for the Edison Co. and we have not taken such a step.

Senator HANSEN. Thank you, sir, and Mr. Chairman.

The CHAIRMAN. Mr. Bellmon?

Senator BELLMON. I am going to pursue a little different line of qestioning.

On page 5 of your statement, Mr. Woodbury, you say the bill properly places the emphasis on the State for most planning. Land use is by its nature a peculiarly local problem. Your company operates in only one State, I judge?

Mr. WOODBURY. Yes, in the State of New York and only in the city of New York and Westchester County.

Senator BELLMON. Before I go into this, I want to say, having served as Governor of a State and having been associated with State

government far longer than the Federal Government, I tend to favor State responsibilities wherever possible, but I wonder if State agencies could resolve some of the problems that some of the power companies that serve New Jersey or Connecticut have. There are companies that cross State lines, are there not?

Mr. WOODBURY. There are many companies that cross State lines, I suspect, but I am not familiar with them. Iam only here to speak for the Edison Co. The representative from the Edison Electric Institute did file a statement and whether they will testify, I do not know.

In our particular case, we feel the State of New York and its Public Service Commission which controls our operations is the agency that we need to look to not only regulate our rates but to have something to do with the things that influence our rates such as where and how we have to build our plants.

Senator BELLMON. In our State, the gas and electric company serves Fort Smith, Ark. agencies. How could a State agency make the decisions that that company needs to make from time to time?

Mr. WOODBURY. I am afraid I can't comment intelligently on that, sir. It seems to me that the extent to which the bill permits State regulatory agencies exercise total jurisdiction, to permit them to operate is desirable, and I think that is what I have suggested.

Senator BELLMON. Let me bring up another question. The bill, as I have read and studied it, refers to land use planning and, in another section, to the land, water resources, and planning council. When you use the term land use planning, in your judgment, with what are we concerned?

Mr. WOODBURY. I served on the Water Resource Council for three and a half years. During my service with the Council, land use planning was very much a part of their interests. It is difficult to plan for water use without planning for associated land use and without planning for the water from the time it hits the ground until it gets into the rivers. At that time we found ourselves deeply involved in land use planning particularly as it related to forest and agricultural use, but also for urban use because of the influence on runoff from the conversion of the agricultural lands to urban lands.

As I understand this bill, and as I tried to indicate in my testimony, it seems to me that land use planning should include all the uses to which man puts the land. I specifically said in my statement that it ought to include planning for urban development which for some reason or other I don't read as required in the bill as it is now.

Senator BELLMON. When you say land, do you include water?

Mr. WOODBURY. It is difficult to separate land and water, because man uses both. In our business, we have to be concerned with planning for land and planning for water at one and the same time, because our generation facilities require both land and water.

Senator BELLMON. I recently attended a meeting and heard Dr. Mackelroy, who is head of the National Science Foundation, make the statement that we are presently using oxygen in our society faster than the plants are able to generate oxygen and it is a frightening possibility that some day we may run out of oxygen.

We are all aware of the serious problems we have with air pollution. Do you feel a commission such as this legislation establishes would also concern itself with the uses of air?

Mr. WOODBURY. The statement to which you refer is one of many statements that have been made by many people concerning the long-range dramatic effects of man on his environment. There is a lot we don't know about this. I am participating this month in a seminar at Wililams College in Massachusetts under the leadership principally of MIT, financed in part by the Federal Government and in part by the Ford Foundation and the U.N., addressing this very problem. I don't know that it is a fact that the regeneration of oxygen is a problem. I don't know that it is a fact that CO_2 from the atmosphere is a problem. The combination of CO_2 and the generation of oxygen, of course, is tied into the photosynthesis by both terrestial and marine plants and it is part of our environmental cycle on which we have very little worldwide statistics.

We need to develop this.

Senator BELLMON. My point is raising the question as to whether or not we should broaden the legislation or make certain that it does cover not only land as we think of the dry ground, but also water and the air above the land. Would you see any harm in this from your position in the public utility business?

Mr. WOODBURY. I believe consideration for air in the context that we are talking about pertains essentially to pollution matters, and there is other legislation, both Federal and State, dealing with air pollution. It is not clear to me that further jurisdiction is needed to be established in this regard.

Senator BELLMON. Mr. Woodbury, I have only one other question. It gets back to planning again, and use of land. When you think of the land, do you think of the mineral resources that come from the land?

Mr. WOODBURY. Yes, sir.

Senator BELLMON. Do you feel the commission at this time should have responsibility for planning, for instance, as to whether or not a public utility decides to power its generating equipment with natural gas which might have a higher use for domestic purposes, for the heating of homes, for instance, or whether the commission should be able to make the decision that you should use coal or low sulpher oils? What I am asking you is do you feel this land use commission should have a voice in planning for energy uses?

Mr. WOODBURY. I did not read into the bill any suggestion that the water resources planning council would get into that business, and it does not seem appropriate to me that they should.

Senator BELLMON. Who should make this decision as to what kind of energy a public utility should use?

Mr. WOODBURY. I think the decision that needs to be made is what sort of standards we want in the way of appearance, air, water temperatures, and then having established those standards, then it seems to me that those who utilize the air and the water and the land need to be made to meet the standards by whatever system is the best system for doing so.

I think to do otherwise would be stifling of initiative.

Senator BELLMON. That is all, Mr. Chairman.

The CHAIRMAN. Might I just observe here on this one point, in a nutshell we are really trying to provide an action-forcing procedure to force the States to exercise states rights. I think that will summarize the situation.

In other words, I don't think we should be involved in the detailed decisionmaking process. What we want is for the States to do that which the Governors today are not able to do to bring together all of the various governmental entitles that are involved in this fractionated land use planning, so there is a statewide plan so it fits into the national plan and then the council will pass on the State plans and that would be a condition precedent to compliance with the act.

These have to be related, of course, to your policies on water and air pollution. Your land-use planning does have a relevancy to those goals and objectives.

Senator BELLMON. I raise the question whether such a State agency could make some of the decisions that have to be made. In Mr. Woodbury's testimony he states his company serves an area of 625 square miles and a population of 8.9 million. That is 12,640 people per square mile, if my arithmetic is right. How many more people do you want in the area you serve and what State agency would ever make the decision we have enough people, enough congestion, enough pollution, more than we can take care of. It seems to me if you put this activity on a State agency they are going to reach for more and more State activity.

All of the Governors want as much industrial activity and jobs they can get.

The CHAIRMAN. They are responsive to public opinion, like the rest of us, and I detect, speaking only for myself, a growing desire for people to move away from the large urban areas into the smaller towns.

Senator BELLMON. Do you think you could run for Governor of Washington on a platform we don't want any more people or jobs in our State?

The CHAIRMAN. No, I don't think you could run on that platform, but you would run on a platform that you don't want the industries pushed into the huge metropolitan areas that are merging. I think there is a strong public sentiment in getting people to move away from the large urban areas into the small towns. Gallup poll recently showed 87 percent of the people living in the large urban areas, if they had their wish, they would move into a small town.

When you have 70 percent of our people living on 2 percent of our land, you are in a lot of trouble. This is another subject, as you know we will be getting into a program to revitalize small towns and to establish whole new towns. We are going to have to move in that direction.

Senator BELLMON. I certainly agree.

Senator HANSEN. Mr. Woodbury, it seems to me there are two approaches or two concepts that can be considered as we contemplate with wisdom and the desirability of sort of land-use planning mechanisms such as is contemplated in this bill, which would result in the stimulation of action by the States, as Senator Jackson has referred to.

My question is: may we not approach land use planning in two ways: (1) that a State agency or an agency with appropriate authority, at any level of government, could try to determine what should be located where, a course of action which in some instances I would think would lead to considerable argumentation and debate depending upon where a zoning board draws a line; or (2) that we will not try to tell any landowner what may or may not take place in that particular area, but, rather, we would set some standards which would be rigidly en-

forced. Then a community would have the option if it chose to make a different use of land than it was making at the present time. But if it made this decision, it would have to accept the responsibility for the other things that would be required because of the imposition of Federal standards.

It would seem to me if we were to give at least some consideration to this second alternative that there might be a quicker acceptance by the several States of land use planning in this regard than would result otherwise. In my own State of Wyoming, on a few occasions, I have seen a few land developers come in and buy a little bit of land and then immediately after having started some subdivision, they want to zone the rest of the county to be certain, I suspect, and maybe I am wrong, that no one else provides them with any competition.

It seems to me this sort of thing could very well delay some very worthwhile statewide planning.

It occurs to me also, if we could impose some meaningful restrictions, if we could impose some meaningful obligations upon communities by State authority, or whatever, we might achieve some very laudable objectives and escape the difficulty that would come from a board arbitrarily saying in this part of the State you cannot build a powerplant or you cannot build one here.

Mr. WOODBURY. I suspect that the witnesses that you have from the counties this morning are more competent to comment on that question than I. You have turned over an interesting stone, I guess, as you raise the specter of State zoning versus local zoning. This is really outside of the competence of a utility. But I share with you that this problem is perhaps the most knotty problem of the whole process, and I can't, as I sit here, see a way clear to resolve these problems. That is why I said that even though well-intentioned planning people can get together and make a great plan, that plan has to have some way to be implemented, and the exclusion part of this problem creates another problem, and it is not clear to me at the moment how that is going to be done.

Senator HANSEN. Thank you, Mr. Woodbury.

The CHAIRMAN. Thank you, Mr. Woodbury, for a very fine statement. All of the questions attest to the fine presentation you have made. It has been very helpful to all of us.

The Chair would like to announce that we will hear from Mr. Turnbull now and then we will resume at 2 o'clock, because we have a number of witnesses from outside of the city who have come here today and we will complete our testimony this afternoon. I might say we will probably be interrupted with rollcalls during the afternoon, but, nevertheless, in order to accommodate our witnesses who have come some distance, we will continue this afternoon.

After we hear from Mr. Turnbull and have had a chance to question him, we will recess then until 2 o'clock. I wanted to say that for the benefit of the witnesses who are here.

Mr. Turnbull, we are delighted once again to welcome you to the committee. You have a prepared statement. Why don't you proceed in your own way.

STATEMENT OF JAMES R. TURNBULL, EXECUTIVE VICE PRESIDENT, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, D.C.

Mr. TURNBULL. I am James R. Turnbull, executive vice president, National Forest Products Association with headquarters in Washington, D.C. We are a federation of some 20 regional product and species associations representing the forest products industry in all of the States. I appreciate having the opportunity to comment on S. 3354, as both owners and users of a large portion of the national land base, the forest products industry has advocated the development of a national land use policy for several years.

In early 1967 we first stated a position on the need for such a policy and this position was reaffirmed before the Public Land Law Review Commission late that year.

To promote a broader base of understanding and support, in September 1968 NFPA sponsored a seminar examining the need for a national land use policy. At that seminar some 175 spokesmen from 54 land using organizations, including grazing, mining, recreation, and the forest products industry, discussed the needs and problems involved in developing a policy for land use. A copy of the proceedings of the seminar are being attached to my statement today to be included, with your permission, in the hearing record.

(The proceedings of the seminar referred to above, is in the committee files.)

NFPA also testified before the Democratic and Republican Platform Committees in 1968 recommending the development of a national land use policy. We were delighted when both parties adopted a land use policy plank.

We feel that the lack of a national land use policy lies at the root of many of the problems in our industry, as well as other resource-oriented industries, such as mining, power, and grazing. In our case, the result is more instability in the entire wood supply economy than is necessary.

It affects forest communities, a huge labor force, and even home-building. We are pleased to see this committee studying the issues. We have rarely missed an opportunity to relate those contemporary issues of a specific nature to the underlying cause: the lack of a national land use policy.

The Nation does not now have such a policy because the need for one in the past has not been great. But today there are increasingly divergent views as to the values which may be derived from the land. Land decisions, therefore, tend to reflect the confusion brought about by conflicting purposes among large and local elements of our national society.

At present there is no statutory provision for the assignment of the highest and best uses to the land in the enduring interest of the people. Assignment of land to various uses has been made, on occasion, by political forces, but most often according to more immediate economic needs or opportunities.

In recent years there have been increasing demands on the land without regard to the versatility of the land and its ability, under

proper management, to fill the widely diverse needs for forest products, agriculture, grazing, fishing, and wildlife protection and replenishment, watershed development, outdoor recreation and a multitude of other uses.

Little attention has been paid to the constant shrinkage of usable land area as the consequence of multiple problems of urban sprawl, superhighway development, reservoirs, airfields, rights-of-way for fuel and power transmission lines, and setasides for a wide variety of single-use public purposes such as parks, military reservations, wilderness areas, scenic and wild rivers and greenbelts.

Let me refer to the specific relationships between land use and the forest products needs of the Nation. On June 18 the Task Force on Softwood Lumber and Plywood, appointed by President Nixon reported:

> It is estimated that annual demand for softwood timber, consistent with the achievement of the housing goals, would be about 11 billion board feet higher by 1974 than it was in 1969.

The report also states:

> Of 510 million acres of commercial forest land in the United States, 96 million are in national forests and about 16 million in other Federal ownership. Increased output from non-Federal lands must obviously play a major part in matching supply to demand in the years ahead.

While the forest products industry is in the forefront of those deeply concerned about the shrinking land base for growing commercial timber, and the increased need for lumber and plywood to achieve the 1968 housing goals, it is not alone in expressing the general concern for the patchwork practices now applied to the fulfillment of land for the public good.

There are innumerable proposals at various stages of development involving the establishment of wilderness areas, wild and scenic areas, scenic trails, national seashores, parks and related recreation and esthetic-oriented set-asides which involve either acquisition of private land holdings or removal of public commercial timberlands from forest management.

On the national forests alone some 14 million acres are presently managed to maintain their wilderness character and there is a strong indication that this may be increased to more than 22 million acres in the next decade. In the 12 Western continental States alone this reserved area includes billions of board feet of timber. Estimates, at best sketchy, indicate that in the West this volume will amount to more than a billion board feet of timber.

The area involved is approximately equal to the land area of Indiana. If the estimates of the wilderness advocates are correct, and the present trends continue, more than 60 million acres of public and private land may eventually be included in the Wilderness System alone.

The pressures for withdrawals of lands which are the economic foundation of large areas of the country and their citizens are relentless. A recent article in the July 6 issue of Time magazine commenting upon the recommendations of the Public Land Law Review Commission referred to a statement by Michael McCloskey, executive director of the Sierra Club, who was said to have expressed the view that "More logging, grazing and mining on public lands can only benefit the few at the expense of the many."

It seems to me that this is the hazardous "double-think" of fiction which ultimately led to the conclusion that "hate is love" and "war is peace." Mr. McCloskey's conclusion is that the few are the many.

One wonders who the "few" are. Are they the 200 million Americans alive today who must have lumber and plywood for housing as well as paper and 5,000 other wood products to meet their daily needs? Are they the same 200 million who depend upon cattle grazing on public lands to provide meat for American dinner tables? Are they the 200 million who must have the mineral riches from the public earth for everything from sewer pipes to telephone wires and vehicles for transportation? Has Mr. McCloskey lost sight of the 100 million more Americans by the year 2000?

It is interesting to speculate whether the "few" excludes the 1.6 million workers and their families who directly derive their livelihoods from forest-related payrolls. Or whether this "few" include the countless other Americans who explore and drill for oil, mine the minerals, tend the cattle, and convert and deliver all of these natural riches to the citizens of the United States and other lands.

It would be an appropriate, revealing and rewarding function for this committee to assemble statistics as the numbers of people who work with public natural resources to feed, clothe and shelter themselves. The same study should explore the number of communities wholly dependent upon the public lands for their existence.

Another aspect of such a study would measure the numbers of Americans from the logger, the miner, and the drover on through the retail clerk, who must directly benefit in an economic sense from responsible use of the public natural resources.

A similar study should be conducted for private lands. The inevitable conclusion, one which might create a new appreciation for natural resources on the part of many Americans, would be that our entire economy is like an inverted pyramid with land at its apex. If the foundation point is misused or limited, the entire economy suffers.

There is a direct chain of economic consequences which has its beginnings in the land.

Lands provide the opportunity for investment of private funds for the production of useful goods. When such investment is made, with the prospect of an adequate return, jobs are created. Jobs allow the creation of communities, family stability and payrolls, lead to taxes and social, business and government organizations.

Removal of the basic ingredient, access to raw material resources, has a domino effect throughout such communities and utilmately upon the entire economy.

When the resources use is not assured, the investment is not forthcoming; when the investment is withdrawn or withheld, jobs are reduced or are not realized; when jobs disappear, people are obliged to disappear from communities; whole communities dry up and go away. The people then tend to go to the metropolitan centers.

Thus, the lack of a national land use policy, dedicated to sustaining a vital rural economy, is contributing materially to the problems of the cities and the decline of our rural population and its self-sufficiency.

The harsh realities of this economic formula are best revealed when one considers that the forest products and other resource-based industries should provide an appropriate share of good employment oppor-

tunities and products for new workers entering the national work force over the years.

Without land, without resource stability and investment security, those jobs will never be created.

In the context, one might inquire, even as an exercise in citizenship unrelated to the special interest as a natural resource user, "What assurance does the forest industry have that its investment for processing raw material will be reasonably safe in terms of supply for continuous economic operations?"

The answer, under present circumstances, is, at best, very little. The more speculative the timber supply, the more speculative the investment and the livelihood of those dependent on it.

Unquestionably, the most significant area involves those discouragements to investment caused by raw material uncertainty.

The problems here arise from a lack of appreciation on the part of individuals, but especially on the part of government, that a secure raw material position is essential before investments can be expected to flow to build or modernize plants, engage in research and product development, and provide the base that can give firm support to healthy rural communities.

In the forest products industry many firms own or lease a substantial portion of their raw material supply. They do this to protect their factories against shutdowns due to wood shortages, and from runaway prices for market logs and pulpwood. The percentage of raw material supply controlled is generally dependent on how open the market is for wood.

If the supply side is characterized by numerous sellers, the manufacturing company is frequently willing to forgo land ownership and to compete with other firms for its raw material. But if the timber market becomes less open because one owner controls the supply, including the Federal Government the log buying firm must seek ways to protect itself or remain in business on a more speculative basis.

This leads to an important point. If forest industry expansion and stability are to be fostered, in order to meet the increasing demands projected in the report of the White House task force, it is not sufficient to merely have an excess of timber growth over drain. It is equally necessary to have the supply available to buyers on a basis that allows stability.

The question of raw material security is one of the most important problems facing much of the forest-based industry today. Ironically, it arises from policies, or lack of policies of the organization which expresses a great interest in rural employment, conservation and the supply of products and homes to consumers of the future: the Federal Government.

A national land use policy would serve the "many" in the Amreican society. These benefits can be summarized quickly:

1. Investments could be projected further into the future.
2. Research, product development and consumer orientation would be accelerated as a consequence of raw material stability.
3. Development of the rural economies and their standards of living would be enhanced, thus reversing the urban migration.
4. Rural-urban investment and opportunity balance would be improved.

5. Community stability and opportunity would be improved.

6. Land speculation would be diminished, thus putting housing within reach of more Americans.

7. A continuing flow of jobs and payrolls and consumer goods would be enhanced.

It is apparent to us that realization of a national land use policy will require a good deal more concentrated effort and investment than we have yet undertaken. We will readily agree that a land use policy should not be based on industry stability alone. But those of us concerned with the restraints upon the potentialities of our present public and private land base can summarize our position in eight points:

1. A national land use policy must contain language recognizing that the establishment of a statewide plan is a momentous undertaking and should be based on careful and continuing study and review. In a study such as this, social and economic values should be considered in addition to the ecological, recreational, and esthetic values. Special attention should be given to the wishes and desires of the citizens of a locality being studied.

Only after the economic impact and alternatives have been carefully and fully explained to all should a land use plan be adopted. Once a land use plan is adopted, it must be continually reviewed and not remain static. Only in this manner can it remain responsive to the citizens of a State, region, and nation.

2. Resource users need to be assured that their particular resource or use will be available on a continuing basis.

3. Those resource users requiring a substantial capital investment to convert or use natural resources need long-term assurances that predictable quantities of the resource will be available. On Federal lands this would include long-term timber sale contracts, long-term concession contracts for ski and other recreational developments, long-term leasing or long-term grazing permits, for example.

4. Federal, State and local land managers and decisionmakers must recognize and effectively deal with the impact their respective land use decisions may have on lands that are not under their jurisdiction.

5. These resources and uses should be made available at rates and under terms which will foster a healthy economy in the local area involved.

6. Local government units need to, in one form or another, be equitably compensated for the Federal land base within their jurisdiction and its influence on their revenue base.

7. Substantial additions to Federal ownership are not warranted. A basic need is that land acquisition, management and disposal policies be responsive to the needs of those persons, industries and communities dependent on those resources.

8. Federal lands are capable of providing several commodities and services which are not mutually exclusive in a long-term management plan. "Multiple use" is becoming a badly abused term. To an increasing number it seems to be a case of "multiple use is fine so long as my use is the predominate one." There is need for a rational analysis of the extent to which all or most of the land uses can and do exist in harmony.

With these points in mind, and after reviewing the report of the Public Land Law Review Commission, "One-third of the Nation's land," and noting the recommendations relating to land-use planning, the forest products industry considers that this report must be analyzed in depth by all concerned before legislation establishing a national land-use policy is passed by Congress.

After study and review of S. 3354 as introduced January 20, 1970, and Committee Print No. 2, dated March 17, 1970, we recognize, as did Senator Jackson, that much more input is needed from all segments of our society so as to develop a workable national land-use policy. NFPA does not pretend to have all the answers to this gigantic undertaking but we do look forward to working with the Interior and Insular Affairs Committee in evolving an effective national land-use policy.

The CHAIRMAN. Thank you very much, Mr. Turnbull. We appreciate having your statement in which you outline the problems as you see them in light of the industry people whom you represent.

Do you think comprehensive land use planning would assist the public to take a more balanced view than it does at present, of the best uses for our timber resources?

Mr. TURNBULL. I think anything that would both involve the public as well as give them a forum in which two-way communication would exist—and I am assuming this would be the process that we would go through—could not but help achieve a broader understanding, not necessarily an agreement, but a broader understanding of what the issues and problems really are.

For example, I had a luncheon with the editorial board of a major national newspaper which writes frequently on land use issues and found three out the seven men who were involved in that editorial board did not know the difference between a national park and a national forest. It is symptomatic of our information gap.

The CHAIRMAN. Thank you again. Senator Allott?

Senator ALLOTT. I think you have an excellent statement and as a member of the Public Land Law Review Commission for 5 years and one who has attended many endless sessions of that commission, I would be the last to say the report of that commission represents the ultimate gospel with respect to the multiple problems the commission discussed.

One of the things which I think faces all of us and I don't know if any of our conservation friends are in the room or not, but it would apply equally to them as well as you, and one of the concerns that bothers me in this whole area is it would not matter how much work this committee did or how many witnesses they had on any bill. It is fully possible that the bill in its applications in a given area would have to be modified or should be modified.

Unfortunately human nature is such that commissions often have the obstinancy of a mule, and any admission that times have changed or the situation has changed or that legislation had not worked out the way they had intended it to work, or the way they had written it, or it was not for the public good is not really forthcoming. When I say public, I mean private development, too.

Everybody sits in their position and continues to sit on that position until the position gets pretty well flattened out. To me one of the most

valuable parts of your statement is the fact that you repeatedly emphasized the fact that if we go at this with State plans that these plans must be under constant review.

I have been on this committee 15 years and I think I know my own State very, very well. I know that is impossible for any human being or any group of human beings to formulate a land-use bill for the State of Colorado that could hope to be the final answer to it, because with the burgeoning industrial, and recreational activities in my State and even the increased agricultural production, it seems to me anyone who approaches this has to follow the suggestion that you have made here, and emphasize that it has to be a constantly reviewing process and people who write these laws as well as the people who advocate the laws should open up their minds a little bit so that they are looking out over the horizons a wee bit rather than freezing themselves into a position which is going to obtain forever.

This is one of the most important things because we are going into an entirely new area. Nobody knows the answers and there will be no hard, firm, permanent answer for a hundred years, and not even then, because our situation will be changed.

So, I congratulate you on particularly your aspect of this.

Mr. TURNBULL. Thank you, Senator Allott. We laid some stress to bringing these policy determinations to the people who are living under these conditions and you would probably agree even though you have greater difficulty getting a land-use plan for Colorado developed for its people than you would by the U.S. Congress.

Senator ALLOTT. This is the mistake I think Congress has made over and over again in any field you can identify. We have a classical example in our coal mine safety bill which we passed last year, and even its most ardent advocates realize now that we have to modify that in order to live with it.

I agree with you entirely on that. I think you are correct.

Mr. TURNBULL. Thank you, sir.

Senator HANSEN. Let me add my words of appreciation for your excellent testimony. I don't think I need to belabor the point further. It seems to me that Senator Allott has very well caught the important thrust of your testimony. All of us would like to improve our invironment, we would like to abate the pollution and the air and we would like to clean up the litter on our landscape but as we do these things, we must also bear in mind, as I think Senator Jackson referred to this morning, some 24 or 25 million Americans who are just about at the poverty level, who need more, not less, of all of the things that contribute to air and pollution and to the desecration of the landscape.

Our task, which is a momentous one, will be judged on how well we are able to integrate the needs of all Americans, all of us sharing a desire for a more beautiful earth on the one hand and trying to meet our insatiable demand for products on the other.

I think your testimony states some important guidelines that we have to keep in mind if we are going to come out with an answer that will be acceptable.

Mr. TURNBULL. Thank you, Senator Hansen. May I make the observation in terms of those 24 or 25 million, I think we all have a responsibility to see that they all get to share the marvelous lands of

not only the West but elsewhere, and not only the products flowing from the lands but the lands themselves.

This might not be the right forum in which to make the plea but my organization is doing whatever it can to revive a civilian conservation corps to get young men into the forest lands, to give them useful occupations and means which will definitely pay off in the long-run future.

Senator ALLOTT. The chairman reminds me we have passed the youth conservation bill and I think we have a conference in the next few days with the House on that.

I would like to make this one sugegstion. I discussed this later in the committee. In making grants to States, it seems to me that one of the most important things before we talk about land use is to obtain a very careful analysis of what the pattern in a given State is, and what they have now.

Otherwise, somebody who has been in academic life just can't dream up a solution for a given State, even though he is in my own State. We have to start with what the land use is now, and I would hope we would put some emphasis on a careful analysis of what the present resources are.

Because of your statement, Mr. Turnbull, the counselor for the minority has prepared some remarks. Unfortunately I have some people I have to meet, but I wonder if you would oblige me by taking this, and there are three or four rather hypothetical questions, and would you mind writing us a letter and just commenting briefly on these?

Mr. TURNBULL. I would be very pleased to do that.

The CHAIRMAN. The reply will be included with your testimony when made available.

(The questions by Senator Allott, and the answers by Mr. Turnbull follow:)

NATIONAL FOREST PRODUCTS ASSOCIATION,
Washington, D.C., July 31, 1970.

Hon. HENRY M. JACKSON,
Senate Interior Committee,
U.S. Senate,
Washington, D.C.

DEAR SENATOR JACKSON: At the end of my presentation on S. 3354 on July 8 you asked me to respond to several written questions from the Minority Counsel. Following are my responses to the questions for the record.

A. *Question:* Should planning be on a river basin basis which tends to take into account natural and topographic features, or should planning be on a State-wide basis which takes into account political features, particularly in light of the fact that the bill excludes lands within the incorporated boundaries of a city (page 15 lines 10–12)?

Response: In keeping with the need for all planning to be based on sound ecological and economic considerations, planning on S. 3354 should be based on river basins and smaller watersheds. However, it may be necessary to compromise this ideal in the face of present political realities. Difficulties presented by political boundaries within river basins would be minimized by providing for mechanisms like regional commissions, created of course, by the states involved. Coordination and planning among political areas both within states and between states could proceed then on a geographic basis.

B. *Question:* Is not the real problem one of continued and expanded urbanization? The bill excludes lands within a city.

Response: Committee Print No. 2, page 15, lines 7–12 shows that exclusion of incorporated cities is permitted but not mandatory. At any rate, urbanization is

only one facet of the total land use problem. Dedication of non-urban land to less than optimum use is another facet which compounds urban problems.

C. *Question:* In the West, much of the land is in Federal ownership and has been subject to the Classification and Multiple-Use Act of 1964. How far are we willing to go in subjecting Federal lands to State planning control?

Response: Federal control over land in its ownership should not be surrendered to state planning authorities any more so than state control should be surrendered to federal authorities. The solution can be found in coordination, not in surrender. Moreover, if planning is based on sound ecological and economic principles, with due consideration for human demands upon the land, as revealed in public hearings, coordination between Federal, State and local planners should be sufficient to provide workable solutions. Problems of this sort may be more imagined than real, especially when actual situations are being considered. Area planning, however, if it is to be accomplished and the plans implemented, will necessarily require modification in the land management prerogatives for all political jurisdictions.

D. *Question:* Committee Print No. 2 provides for review and approval of each Statewide Land Use Plan with a comment period for each interested agency (page 19–21, Sec. 408). How far are we going to go in removing the decisions from the State and local arena to the Federal arena?

Response: The hearings have already shown that there are too many, too small jurisdictions for effective planning. There is a special need to broaden the jurisdictional level of planning for water, power and sewerage installation. However, there has been no need demonstrated for broadening the jurisdictional level to the point where State decisions should be moved into the Federal arena. Federal responsibility in approving State plans should be centered on coordinating plans between states and between states and Federal agencies. Neither State nor Federal sovereignty should be exercised to block planning. The Land and Water Resources Planning Council should therefore serve as a coordinating medium with the authority to withhold approval on all plans, State and Federal, until conflicts have been resolved to the greatest extent practical.

In my prepared statement submitted at the July 8 hearings I suggested that action on a proposed National Land Use Policy be delayed until the Congress has an opportunity to analyze the recommendations of the Public Land Law Review Commission. On reading those recommendations again I find the outlook of the forest products industry on land use planning to be in agreement for the most part with that of the Commission. Again, I urge that the recommendations of the Commission be analyzed and incorporated into legislation for a National Land Use Policy.

Sincerely,

JAMES R. TURNBULL.

Again, Mr. Turnbull, we wish to thank you for coming up here this morning and giving us the benefit of your views. This is a complicated problem. I think the biggest problem we face, as I said earlier, is trying to balance our requirements in the social and economic areas with a good quality environment and life.

The committee will now stand in recess until 2 o'clock, at which time we will have the various representatives from the cities and counties.

(Whereupon, at 12:30 p.m. the committee recessed, to convene at 2 p.m. the same day.)

AFTER RECESS

(The Committee on Interior and Insular Affairs reconvened at 2 p.m., Senator Henry M. Jackson, chairman of the committee, presiding.)

Present: Senators Jackson, Bellmon, and Burdick.

Senator JACKSON. The committee will come to order. Our next witnesses compose a panel of county planners. Will you gentlemen come forward, please?

STATEMENT OF A PANEL OF COUNTY PLANNING OFFICIALS COMPOSED OF ROBERT P. ZAPSIC, BEAVER COUNTY, PA.; THOMAS H. HAGA, GENESEE COUNTY, MICH.; DOUGLAS S. POWELL, MIDDLESEX COUNTY, N.J.; JOSEPH M. POLLARD, LOS ANGELES COUNTY, CALIF.; AND MARGARET S. SEELEY, NATIONAL ASSOCIATION OF COUNTIES, WASHINGTON, D.C.

Senator JACKSON. Off the record.

(Discussion off the record.)

Senator JACKSON. Back on the record. How do you gentlemen and lady wish to proceed?

Miss SEELY. Our testimony is such that a very small part of it has been written for each one of us. It is a very short statement.

Senator JACKSON. Who will start first?

Miss SEELEY. I will.

Senator JACKSON. Identify yourself for the record.

Miss SEELEY. I am Margaret Seeley, legisaltive assistant for the National Association of Counties. We are very pleased to be here. We would like to comment today on Senate bill 3354 which amend the Water Resources Planning Act to provide for National Land Use Policy.

We were particularily gratified to hear that you were the recipient of the Bernard Baruch Foundation award for your outstanding efforts in the field of conservation.

This bill, and S. 3505 to amend the Land and Water Conservation Fund Act are further evidence of your concern for the orderly development and preservation of open space and recreational areas.

With me today are four distinguished county officials who will introduce themselves and the individual county governments which they represent. In order to give you an idea of the very different characteristics and needs of the counties within our association, these gentlemen will offer specific local comments pursuant to the planning capabilities of: a large urban county (Los Angeles, Calif.), a suburban county (Middlesex County, N.J.); a metropolitan county (Genesee County, Mich., including the city of Flint); and a county which includes primarily rural areas (Beaver County, Pa.).

In review of this legislation, we found it primarily invokes the State as the planner of land use through its constitutional authority and tends to neglect the fact that this authority as further been delegated to counties, in fact in a majority of counties in the United States. Therefore, each witness will provide testimony and supporting evidence to indicate that the county is a basic, feasible planning unit.

Mr. Pollard, would you like to begin?

Senator JACKSON. Thank you very much. First of all, Miss Seeley, we appreciate your kind comments.

Mr. POLLARD. Senators and committee staff, my name is Joseph M. Pollard and I serve as the Legislative Consultant to Los Angeles County, Calif. One of the largest counties in the United States, Los Angeles County covers an area of 4,400 square miles and is larger than the combined area of the states of Rhode Island and Delaware. Seventy-seven municipalities (all cities) are included within the Los Angeles county boundaries and these municipalities occupy approximately half

of the land area. The remaining 2,000 square miles is unincorporated. Our population is 7,200,000 and is growing daily.

Each one of the 77 municipalities in the county has the authority to plan for the use of its land through zoning and building codes. However, in the case of 33 cities, the county has assumed the responsibility of zoning in a contract basis pursuant to the Lakewood plan. Thereby, Los Angeles County determines land use plans for 33 of its incorporated municipatlities and all of its unincorporated areas and, also reviews land use plans of the remaining 44 municipalities. You may be interested in knowing that efforts are under way by the county to unify all building and zoning codes, an activity which is supported and encouraged by the municipalities.

To put this in perspective, I might mention that the state of California participates, only nominally, in land use planning. To date the only activity performed by the State Planning Office has been to divide California into 10 planning districts.

Review functions of local proposals for federal assistance are handled for Los Angeles County by the southern California area governments, our local council of government. As the State of California is not currently disposed to or desirous of assuming either land use planning or review procedures, I feel that our localities and councils of governments, should retain these functions in which they have demonstrated expertise and efficiency.

Let me recall to your attention some of the studies made of western counties by the Public Land Law Review Commission. A significant majority of our western counties have land use planning authority and have been able to effectively cooperate directly with the Federal Government in establishing mutually beneficial priorities for the use of public lands.

Local government representing local interests and needs should take the lead in delineating effective land use, planning and zoning for Federal lands to be transferred from Federal ownership.

That concludes my statement.

Senator JACKSON. Thank you very much for your statement, Mr. Pollard.

I will defer questioning until all of the statements have been made.

Mr. Powell?

Mr. POWELL. Mr. Chairman, I am Douglas S. Powell, director of planning for the county of Middlesex in New Jersey, a suburban community of New York City with a population of approximately 600,000 people. Middlesex County serves as the review agency for the land use plans of its 25 municipalities in their proposals of: new or amended zoning laws; subdivisions; or individual developments which border on county roads.

In turn, the New Jersey State Planning Department executes the land use plans in the areas which are of multijurisdictional interest such as housing, public facilities, educational systems and commercial and industrial developments. However, local consultation is solicited from the communities affected by the State plans.

Applications for Federal assistance of the northeastern New Jersey counties are reviewed by the Tristate Transportation Commission, an officially recognized regional planning agency, providing review services to localities in three States. Because the tristate commission

is multistate rather than multijurisdictional, plans can be forwarded to and coordinated with Federal policy directly.

I feel that any new legislation which designates the State as the primary land use planner for all its subdivisions, must, at the same time, maintain the integrity of the county as the demonstrated review authority of municipal plans in its jurisdiction. It must be the responsibility of the State to assure adequate representation of local elected officials or their designees in drawing up State land use plans.

Senator JACKSON. Thank you very much. I appreciate your statement, Mr. Powell.

Now, we will hear from Mr. Thomas H. Haga.

Mr. HAGA. Members of the committee, I am Thomas H. Haga. I am privileged to serve as president of the National Association of County Planning, director and affiliate of the National Association of Counties. I also serve as director-coordinator of the Genesee County Planning Commission which has metropolitan planning jurisdiction over the Flint, Mich., standard metropolitan statistical area.

Genesee is a county of 442,000 people in an area of 650 square miles including 32 municipalities, which are our cities, villages and townships. The metropolitan planning commission has land use planning responsibilities under State statute and the continuing transportation planning responsibilities under provisions of the Highway Act of 1962.

Our local municipalities have also local land use planning and control jurisdiction.

The Genesee County Metropolitan Planning Commission as the federally designated review agency has responsibility for coordination of local planinng activities a swell as coordination of community facilities funded through Federal grants.

The State of Michigan has administrative authority over comprehensive health, law enforcement, water pollution control and educational facilities programs assisted by Federal grants.

Although the State does have a planning review role, I do not believe that this process effectively responds to the needs of local units of government.

Ineffectiveness of the review responsibility results from the fact that the jurisdiction scope is much too extensive and especially too greatly separated to achieve effective participation by the State.

May I suggest that in the bill, S. 3354, the establishment of the State as the primary planning agency with primary responsibility for land use planning within which planning, local planning activities must conform does a great injustice to basic tenets of American political philosophy.

This philosophy, I believe, is based on the sanctity of the individual. We should note that political decisions necessarily arise out of the needs of the individual and through many individuals forming societies, the needs of local units of government are successfully provided for through the hierarchy of governments ending with the Federal Government.

It should be noted here that this philosophy is also furthered in the concept of increasing the participation of the citizens in the governmental structure which purports to represent them.

This participation opportunity to the individual to local units of government, to counties, and all interest groups within the planning

process is to me essential to the continuation of our political system.

We need to make clear that this objective is part and pracel of this bill. In my opinion, any effort to change this basic belief will strike at the very foundation of our federal system and its uniqueness which has been so frequently emulated in other parts of the world.

Senator JACKSON. Thank you for your statement.

Mr. Robert Zapsic?

Mr. ZAPSIC. Senator Jackson, my name is Robert Zapsic. In my role as a representative of Beaver County, Pa., I hope to complete the composite picture of a variety of counties charged with different planning responsibilities. As executive director of the Beaver County Planning Commission, my jurisdictional concern covers many rural communities—some 53 municipalities (cities, townships, and boroughs) and the unincorporated areas within my county of 440 square miles. Our population, by the latest estimate, numbers 206,000. As I mentioned, much of Beaver County is rural, but we are adjacent to Allegheny County, and are included in the city of Pittsburgh's standard metropolitan statistical area.

All 53 municipalities are able to plan the use of their land, however, they must submit their plans to the county for coordination and review. In the event a municipality proposes new zoning codes which meet with county approval, the county contributes one-half of the cost of implementing such zoning codes.

As in other cases cited this morning, the State of Pennsylvania does not perform land use planning for its subdivisions. This responsibility has been delegated to a six-member county organization, the Southwestern Pennsylvania Regional Planning Commission. Beaver County officials use this vehicle to design all county plans and to review Federal grants-in-aid for the entire six-county area. In this multijurisdictional participation, two levels of land use compliance are achieved—county review of municipal plans and regional review of county plans.

This clearly demonstrates the most practical means of achieving an effective national land use policy. Planning must begin at the local government level (whether county or municipal) and proceed upward to the broadest level, in this case, the Federal Government. Frankly, it would be hard to convince me that the State of Pennsylvania wants to assume the responsibility of land use planning. It is my determination that local officials best reflect local priorities and can thus create the most meaningful plans. The various existing review authorities serve to coordinate the combined priorities of several localities.

Senator JACKSON. Thank you ladies and gentlemen.

Mr. POWELL. We have a little more to go. I have been asked, Mr. Chairman, to complete this presentation of the National Association of Counties.

In reading S. 3354 I feel this natural local to Federal planning process is destroyed because of the singular emphasis on the State as the land use planning agency and the omission of local planning in various sections of the bill.

In behalf of the National Association of Counties, I would like to provide for the committee record a list of suggested technical changes in the language of S. 3354, which would serve to satisfy some of the deficiencies we have outlined.

The changes are as follows:

(The document referred to follows:)

Page	Line	After	Insert
2	5	Statewide	And local.
2	14	do	Do.
3	4	State	Do.
3	15	do	Do.
6	11	Of	Local (including counties).
9	5	Add (3)	Any recognized areawide, regional, or local planning agency.
12	12	Factors	Such as local representation at the State planning level.
13	7	Agency	Or any recognized areawide, regional, or local planning agency
13	15	Subdivisions	Counties and cities.
14	19	Add (5)	That it includes representatives of the localities affected by the plans.
15	7	City	Or county.
15	17	Projected	Local.
18	14	Add (3)	The State has not adequately reflected local plans.
20	9	Under	Local.

Senator Jackson, although we have offered many suggestions for changes in the administrative authority provided for in this bill, the other concepts of integrated planning (local-State-Federal) for land use, protection of the environment and the orderly growth of population centers through new communities, are excellent provisions on which you are to be commended.

I can assure you that we are eager to continue to comment on this important, far-reaching legislation and would welcome any questions the committee or staff may have.

On behalf of my colleagues and the National Association of Counties, I thank you for this opportunity. It has been an honor to testify before this distinguished group of Senators who through the testimonies taken throughout today that we have observed are so demonstrably concerned with the balanced growth of the Nation.

Thank you very much.

Senator Jackson. I want to thank each and all of you for a fine presentation.

Let me say that first of all I served as a county official once. I was the county attorney or prosecuting attorney of my county. I know a little bit about county government and I have an understanding I think of the feel for it.

No matter how you look at this problem the counties in my judgment are going to play a very important role in land use planning.

What concerns me as a Senator looking at the problem in my State and in the other 49 is that I see nationally I think some 80,000 governmental entities at the State and local level that have a hand in zoning or land use planning.

It is obvious from the testimony this morning what one segment of our society, the utility industry, faces when you have to deal with so many government entities.

In my State we have over 2,000 municipal subdivisions of the State of Washington that are involved directly or indirectly in land use planning.

Now what I would like to ask you is if you vest all the authority here in the counties how are you going to work out a statewide land use plan?

I don't think you intend that, and I wanted to get the record straight on it, but I would like to have your comment because as we all know, the problems that we face cut across county lines. I do think

the county is a very very important part of the State process that we're talking about here. It is not intended in this legislation that the State undertake to do all the land use planning.

But in dealing with legislation of this kind, of course the State has to undertake the responsibility through acts of the legislature to work out plans by which there is local participation.

That is the key to it, in the formulation of a statewide land use plan. Maybe some of you would like to elaborate on this point because I am sure you do not contemplate having the counties undertake independently land use planning.

Would one of you like to comment?

Mr. HAGA. Yes, I would.

I would agree with you most wholeheartedly that the counties—that we did not intend that the counties should assume exclusive responsibility for land use planning.

I think it is quite important and I am sure you realize that all of these many municipalities and governmental entities that exist within the several States are not going to disappear overnight.

I think it is quite evident that there is considerable pressure to retain most of the institutions that we have evolved among the 50 States.

Senator JACKSON. No one wants to give up the power that they have, including Senators.

Mr. HAGA. I think it is going to be very important, the respective role that each of these units of government and whatever we call other jurisdictions can exercise within the context, and that the hierarchy of governments that we have been given responsibility can be effectively and efficiently, economically, exercised at these various levels.

So that there is an interrelationship between Federal, State, county, and local jurisdictions.

I think if in this we can provide an opportunity for effective participation of all of those who may care to participate in this process.

Senator JACKSON. What you are saying is that the counties can, should, and must participate because they are the largest governmental entity both in terms of land and people available to participate in this process to work out a statewide plan.

Is this a fair statement?

Mr. HAGA. Yes, if I may use my situation as an illustration Senator Jackson, we have a county consisting of 32 units of local government and 23 units of school district plus several hundred special purpose revenue producing districts.

Now what we have been doing is to insist that each of these units of government with their unique responsibilities be given an opportunity to participate within that process. And what are we doing is to go back to these units of government, requesting that they participate with us with the understanding that if they do not choose to participate, that we will provide decisions that will affect their interest.

And because of the nature of the planning process, we cannot leave portions unplanned and portions planned because of the inner reaction of the various decisions that will naturally come about through this technique.

We will be achieving a unity within our metropolitan area and this is what we have demonstrated to HUD in terms of our local planning effort and we are now providing along this line.

Senator JACKSON. I think we all want as wide a participation as possible in the planning process. But what we should want to avoid is a situation in which there is so much participation and it is too cumbersome, that decisions cannot be made.

This is what we really face today, I am sure you would agree with that. In other words, we are doing violence to our own stated goals and objectives when there are so many different governmental entities that can get involved in land planning that there is no decision made.

You must see this. I have witnessed it in my own State, where industry wants to come. Today, we are not able to tell an industrial head where that industry can be located especially if it is a heavy industry. We can say well, you can go over here but you may be subjected to a lawsuit on it. We have all witnessed a great change in this regard, and I think it is good that people are concerned about the environment.

All of us have been concerned a long time. But we are in a bad situation because some archaic governmental situations that we have to deal with are not equipped to make the kinds of prompt decisions that should be made, decisions that should once made be final.

This is what I have discovered. I do not know if there is a spokesman for any State who can identify the areas where industry can locate today without being subjected to an injunction or what have you.

Is that a fair statement?

Mr. ZAPSIC. I think it is reasonably fair. I think you have a tremendous competition in seeking industrial sites. For instance there is probably something like 250 plants locations a year and there are something like 15,000 or 20,000 agencies going after these.

Generally there has been a total disregard for environmental factors. There has not been any type of plan. When we talk about land use planning I think one of the things we are talking about is to what degree of intensity are you talking about land use planning.

I think if we are talking about general land use then we are talking about a very broad spectrum and when we are talking about specific land use we must get closer to it, to the source which may be the county's responsibility, the general versus the specific.

The comment insofar as who should be doing it, there could be and must be more coordination, because if you allow to local officials—generally zoning is sometimes a self-serving type of instrumentality.

We recognize that.

Senator JACKSON. So many of these problems cross county lines. I just cited industrial needs as one part of the problem. Of course I do not know if any of the States have really identified the areas that ought to be preserved or conserved; it is right across the border that concerns me.

In my State we are in a big argument now about where the nuclear power plant should be located. This is true in every State.

We do not have the developmetnal entities or entity available to make that decision. It is made by a long list that I mentioned to you which goes into the thousands, 2,000 in my State. In the United States there are 80,000 government entities that can get in the act.

Miss SEELEY. And yet Washington State has one of the strongest county governments that exist.

Senator JACKSON. But that does not answer my question does it?

Miss SEELEY. No; it doesn't.

Senator JACKSON. This is a national problem. I made a speech to the county commissioners association last month. You may have a copy of it.

(Senator Jackson's speech referred to above follows:)

SPEECH BY SENATOR HENRY M. JACKSON, CHAIRMAN, SENATE INTERIOR AND INSULAR AFFAIRS COMMITTEE, TO THE WASHINGTON STATE ASSOCIATION OF COUNTIES, OCEAN SHORES, WASH., JUNE 20, 1970

COUNTY GOVERNMENT AND THE ENVIRONMENT

The past few years have witnessed a new found public awareness and concern for the quality of our environment. A major shift in public attitudes is taking place. As we meet the basic material needs of a widening portion of our population, we discover that new public aspirations are created. Today many of these aspirations are directed towards recreation, open spaces, clean air and water, freedom from noise, natural beauty, pleasing design and other amenities of life.

One of the major tasks we face as public officials is the translation of these new found public values into reality through laws, policies and programs.

The translation will not be easy—"quality surroundings," "open spaces," "clean water and air"— to specific situations, the going gets rough. It gets rough because what is proposed is a change in accustomed priorities. This means vested interests will be challenged. It means new rights will be asserted. It means new sources of funding must be found. It may mean a fundamental restructuring of many of our institutions of government.

Official statements of governmental concern for environmental management have come chiefly from the Federal and State levels. In recent months there have been numerous examples of legislative action and excutive reorganization at both levels.

The achievement of effective environmental management will, however, ulti mately depend upon the commitment of local government. The counties and municipalities conduct most of our public business today. The quality of our environment is the aggregate result of multitudes of private and public decisions to use resources, to build, to act, or to refrain from acting. Our major national environmental problems—air and water pollution, haphazard urban sprawl, congestion, and crowding—result from actions which take place at the local level.

In dealing with these problems it is not enough to simply prescribe new national policies or to enact new Federal programs. Federal and State action, to be effective, must be so designed that they will influence an incredible number of decisions which are made every day in every locality. County government, more than any other unit of government, has the major responsibility for determining the shape of our State's future environment. The counties oversee the use of land; they enforce the law; they regulate construction and property transfers; and they tax real estate.

Only local government is in a position to recognize and influence the multitude of actions which contribute to or detract from the quality of the environment. It will be a tremendous task, and it will require strong county government.

Today, I would like to share with you some perspectives of the job ahead from my experience at the Federal level.

The National Environmental Policy Act, which I sponsored in the Senate declares that protection of the environment is equally as important in national policy and priority as a strong economy, national defense and other areas of Federal concern.

To implement the policy, the Act establishes the Council of Environmental Advisors. The Act also requires that a study be made of the environmental impact of every proposed Federal action which has significant environmental consequences. In effect, the Act says that we shouldn't rush headlong into projects that will deface the countryside or disturb ecological systems without carefully weighing the value of what might be lost against the value of what will be gained. It requires the consideration of reasonable alternatives and affords an opportunity for expert and for public comment on the analysis made by the sponsor agency.

The environmental consequences of public actions must be assigned equal importance by county government. Counties are regularly concerned with planning and construction that leaves physical imprints on our surroundings such as roads, commercial buildings, schools, factories, homes, and power lines. Although

planning authority, zoning restrictions, and building codes are valuable tools, they are not always comprehensive enough or flexible enough to assure that new facilities enhance rather than detract from the areas in which they are located. An evaluation of the environmental impact of proposed activities would stimulate constructive design ideas and alternatives that might otherwise be overlooked.

Another proposal, which in my view is of great importance, involves an approach to the treatment of environmental problems that is particularly significant to county government. This is my pending bill to establish a "National Land Use Policy."

While this measure, as introduced, does not purport to be the final answer, it does provide a focal point for analysis and for consideration of alternatives. The bill has three major provisions. *First*, it establishes a grant-in-aid program to assist State and local governments—county government in particular—in improving their land use planning and management capability. *Second*, States are encouraged to exercise "States rights" and work with the counties to develop and implement a State-wide "Environmental, Recreational and Industrial Land Use Plan." *Third*, the Federal government's responsibility for coordinating Federal land use planning activities, for improving Federal, State, and local relations, and for developing data on land use trends and projections is enlarged and centralized.

This measure recognizes that the land is the locus of interaction between man's social and economic existence and his environmental resources. It is based upon the premise that many of our environmental problems can be remedied by influencing the uses made of the land.

Land use planning and control is especially important at the State and local level. It is here, after all, where the basic constitutional power resides. State government and, by delegated authority, counties and other units of local government control the land. They shape the relationships between land and people.

The great issues of conservation and environmental concern—oil spills, air and water pollution, the disposal of solid wastes, the loss of wilderness—dominate the press and command public attention. These are important issues. But, the land under our feet, near our homes, and in our communities is no less important. It should have no lower priority; it demands no less of our attention or of our money.

One of the recurring and most complex problems of land use decision-making today is that existing legal and institutional arrangements are in many respects archaic. They weren't designed to deal with contemporary problems. Industry, for example, is often unable to get effective decisions on plant siting and location without, in some cases, running an interminable gauntlet of hearings, injunctions, and legal appeals. In other cases, however, under the banner of "broadening the tax base" industry is welcomed into areas which should be dedicated to other uses. Often this really means higher taxes, fewer amenities and more problems.

As public officials we must find ways to accommodate new industrial expansion in harmony with other public values. We do not face an "either/or" proposition. It is not a question of industry *or* parks; jobs *or* natural beauty. It is a question of having the best of *all* of these. It is a question of having properly planned quality growth.

The land use policy bill I have proposed would require the establishment of industrial, conservation, and recreational sanctuaries. These sanctuaries would be established in advance of their need and on the basis of projected demands. Industrial sites would be located so that utility, transportation and environmental problems would be minimized.

Another essential element of the bill relates to the planning and development of new towns and the revitalization of existing communities. In the next decade, population growth will cause the growth of new communities all over the country. Whether this growth is haphazard and ill-planned or organized and directed depends on our willingness to act decisively to formulate a new towns policy. The planned location and development of new towns and revitalized communities can relieve pressures on existing cities and avert potential environmental degradation in new areas before it occurs.

To give physical expression to the manifest concern of legislators, students, conservation groups, lawyers and millions of citizens, an adjustment of priorities and an adequate level of national investment in a coordinated, systematic and long-range program of environmental administration is needed. We must be prepared to pay for those best things in life that used to be free—the land, air and water that sustain life itself.

How should the county governments view this proposal? I believe they should view it as an opportunity to strengthen their role in American society and to provide better service to the public.

Regulation and control of the land in the larger public interest is essential if real progress is to be made in achieving a quality environment. It is essential because the land is the key to insuring that *all* future development is in harmony with sound ecological principles and environmental guidelines.

The problems of the present look relatively insignificant when they are composed with the problems we will have in 10, 20, 30 years *if* we accept the ultimate consequences of some current projections of future requirements.

Listen to these statistics which are thrown at us by government prognosticators:

> By 1975 our park and recreation areas, many of which are already overcrowded, will receive twice as many visits as today, perhaps 10 times as many by the year 2000;
>
> We must construct 26 million new housing units by 1978. This is equivalent to building 6 cities the size of the Seattle-Everett metropolitan area every year;
>
> Each decade, new urban growth will absorb 5 million acres, an area equivalent to the state of New Jersey;
>
> Demands for electrical energy double every 10 years; by 1990 demands will increase by 284%.

County government is by far most knowledgeable and experienced in using the devices we are contemplating for land use control. Counties have always exercised considerable influence over the patterns of development. They have done so by managing their property tax structure, by zoning, by building codes, and other regulations. The establishment of a national land-use policy offers the opportunity for the counties to do a more sophisticated and effective job.

There are more than 3000 counties in the United States. It is apparent that, even if funds were available, the trained personnel do not exist to build a technical organization in each county which would be competent to deal with the complex environmental problems we face. The national land use policy act would make that expertise available at the State and National level. The counties should not view these organizations as competitors but rather as servants. You should participate aggressively in the development of a State planning organization and insist that it be made responsive to your needs and objectives.

Environmental problems do not recognize political boundaries. Counties which adjoin major metropolitan areas know very well their neighbor's policies can frustrate their best efforts to plan for and govern their own jurisdictions. The national land use bill will provide the forums for cooperation and resolution of conflicts at the State, regional, and National levels and the data to view environmental concerns on a comprehensive scale. You should seek active participation in cooperative planning efforts. You can not escape the impact of the actions of your neighbors and you should welcome an opportunity to influence them.

As individual citizens, we are most greatly affected by the conditions of our every day lives—by the "environment" of the counties and cities we live and work in. Too often those conditions are shaped by the economic motives of individuals and small groups, by the inadvertent efforts of government action, and by carelessness and disregard on the part of ourselves and our fellow citizens.

We frequently dislike the results. We are frustrated at the trends we observe each day toward unsightliness, dirt, and destruction of our social and esthetic values. We never intended these things to happen and we don't know how to prevent them.

County government has a very important role to play in bringing about a change. We must decide in an orderly and democratic way how we want our counties and cities to look 5, 10 or 50 years hence. We must determine what policies, regulations and programs are required to achieve our goals. And we must insist that local government, with the support of State and Federal government, act to carry out our intentions.

Meeting the challenge of the land and the needs and aspirations of the public promises to be a difficult task. It will not be resolved in one legislative session, nor indeed in one Congress. It will require experimentation and refinement of programs over a long period of time. Meeting the challenge of the land

will cost money. It will require hard decisions about what is to be conserved and what is to be lost in the tides of social and technological change.

Fortunately, in the State of Washington—unlike many other parts of the nation—we still have time. We still have a choice. Our land, air and water have not, for the most part, been despoiled. We have many natural areas—beaches, wild rivers and forests—worthy and capable of preservation at reasonable prices.

We have the money, for what is required is an investment in the future. Making this investment now will pay dividends for future generations.

The responsibility for the policies which determine whether we have a better tomorrow rests with you and me as the elected representatives of the people. Our actions over the next few years will determine whether future needs will be met; whether the public receives fair value for its resources; and whether the generations that follow us will enjoy quality lives in quality environments.

Senator JACKSON. I pointed out that the counties are at the core of the participation and decisionmaking in land use planning. So I am not denigrating the counties at all. I am trying to point out there should be the widest participation possible locally but we do need to get our governmental house in order.

We want to be candid about this. When a Governor presents a proposal to State legislature, about trying to coordinate and bring together all of these competing government entities which means some entities have to give up certain power, and try to work out a means by which decisions can be made involving statewide considerations, the bill is all he has because of the competition politically that one must face in any State legislation.

This is why once again we have Federal legislation to force the States to exercise States rights. We have heard over the years about the Federal Government taking away the rights of the States. This is not true. The rights that the States have had to contend with are rights that they fail to exercise. Here is a classic case where we have legislation in which we are not trying to specifically tell the States what to do.

We are just saying, we have got statewide environmental problems that must be made compatible with our social and economic needs and you figure it out, starting at the State level, how to do it.

Your amendments here I think are quite helpful. We want to take a good hard look at them. I can only say to you that in my personal judgment, by the very nature of our county system of government, that the counties must play a major role in any kind of statewide land use planning that may be worked out.

Now how many other governmental entities should be involved is a matter for the States to decide. The key thing is what is participation possible, but not to have the kind of participation that results in an encumbrance in trying to make decisions involving a conflicting interest of social and economic objectives with a good environment.

This is what we are trying to do. As I see it the county is a very important governmental entity in this local process.

Mr. POWELL. Perhaps in that regard Senator a view could be taken that the counties become the kind of pivotal agency in what inevitably must be a continuing dialog from now on between broad regional and ecological planning an agencies that do represent a local interest.

If we could polarize more an more the counties on one end as the groups that represent the local interest and the state as that representing the broad areawide interest, you perhaps could narrow them, the two groups are of government down to the two that could most ef-

fectively talk to each other and put less emphasis on each individual postage stamp size municipality.

Let the counties represent those views and focus and coordinate those views so that the dialog can proceed primarily between then the counties and the State.

Senator JACKSON. It is pretty hard though for use to specifically direct legislatures to do certain things in regard to what local governmental entities should participate and what their roles should be.

Obviously local participation is indeed a part of this action, this force now in process, so that we can get the best possible solution to these problems. The more that can get involved in the presentation of their views, the better.

We can never overdo that part of it. What we can overdo is the compartmentalized authority that exists in every one of these governmental entities.

You realize that this could interfere with the prompt decision that has to be made as a matter of policy in trying to resolve the environmental and economic and social needs of the state and therefore of the county.

Miss SELLY. I don't think we would take objection with this statement at all. I believe we are just maintaining that the county is a blank unit and that it should continue to be recognized whether it is merely by participation on the State planning board or through another vehicle.

Senator JACKSON. Senator Bellmon, continue right on.

Off the record.

(Discussion off the record)

Senator BELLMON (presiding). Have you finished your testimony?

Mr. POLLARD. In the bill there is a $3 million amount to start the program. The State of California, $3 million, would take care of all the planning funds for the State of California.

So you are very modest in the amount you are starting with. If you are talking about nationwide you talk about at least the $100 million for the State.

Mr. BELLMON. $100 million one time?

Mr. POLLARD. For the start of the program and you probably have to go even further.

Senator BELLMON. How many years do you think it would take to accomplish the plan?

Mr. POLLARD. I don't think I could see it at the end of 10 years.

Senator BELLMON. How much per year?

Mr. POLLARD. I would think you would have at least $100 million per year.

Senator BELLMON. 100 million a year for 10 years?

Mr. POLLARD. Yes.

Senator BELLMON. Do the rest of you have any other opinions?

Mr. HAGA. I think if you take the example of what has been happening in local 701 planning I don't think that is too high a figure to consider because you have a manpower problem that you are going to have to cope with and I think the cost of planning that has come around about within the last decade is illustrative of some of the kinds of cost escalation that we can anticipate.

Senator BELLMON. What kind of work would be needed preliminary to planning?

Mr. HAGA. If you are referring to the State level I think it would depend on the level of planning that you are concerned with. My personal preference in order to have an effective planning process in operation in any area, whether at national, State, or local level, the types of mapping that you need will depend upon the level at which that planning process is to be communicated.

Basically the planning process as far as I am concerned has to start from the so called grassroots. We need to know what the people want and through their representative system assign responsibilities that can be uniquely carried out at the respective levels of planning such that those aspects that Senator Jackson was talking about in terms of industrial location shall transcend local units of government and be handled by the next level of government or the State level or Federal level or whatever level that can effectively cope with that specific problem.

But leave as much of the responsibility for carrying out planning decisions to as low a level of government as is possible.

Senator BELLMON. Do you feel that States and local governments would have resources available with which they could match Federal funding for planning purposes?

Mr. HAGA. I would say this is very difficult for any level of governmetn with the need of the people as they are today. Because, planning has not been as effective as I think it should have been.

I think it is intrinsic within the system within which planning is being practiced at the present time. Which creates this problem.

Senator BELLMON. Would it seem to you if the States and local units of government use part of their own money they might be more careful with how these funds are used?

Mr. HAGA. I don't think it matters. I think it matters more in terms of who is looking out to see that the plans that have been evolved are carried out.

I think this has been one of the weaknesses of the entire planning process. Meaning many brilliantly conceived plans have been drafted and written up and there is very little effective mechanism that can carry out these plans at the present time the way the planning process operates.

Mr. POWELL. While that is true I think there is rapidly accelerating concern and interest on the part of them not only individuals but organizations to make better plans.

And to implement those plans to effectively control and regulate the environmental problems that are emerging, air pollution, too much traffic on our highways, bad housing, the misuse of resources and so on.

So I think the environment for planning is much better than it was 10 or 20 years ago and so on. I think we are ready for this kind of move that is proposed in this bill. I think it should be implemented.

Senator BELLMON. As you know there is a vote on the way and Senator Jackson suggests we recess briefly, so we will recess and return as quickly as possible.

(Whereupon, at 2:50 p.m. a brief recess was taken.)

Senator BURDICK (presiding). I believe before we adjourn the panel of county government planners had testified. Is there anything at this time that you wish to add?

Mr. POLLARD. Yes, sir.

Mr. POWELL. Senator, I have a couple of thoughts that I would like to put into the record. In reading over the bill I find that it is proposed that some jurisdictions of a State would be exempted from a State land use plan.

The suggestion then that the concept of exempting certain jurisdictions leads to a thinking that any proposed use that could go on within such an exempted jurisdiction would be within the competence of that jurisdiction to properly control and that any consequences of that development would have no bearing on the surrounding area.

I am not so sure that that bears out then in the experience that all of us had seen in the developing areas that we represent.

Uses can go on which are such large nature and so intense that they are effects are felt over a very broad area and it may well be that the concept should be to look at the size, the intensity and the character of uses on an individual basis rather than to try to separate out jurisdiction entirely.

It seems to me that that thought is consistent with some of the preamble of the bill which indicates that because there is a changing character in the size and the scale of private actions, we are getting into an entirely different situation in the control of development and in urban areas and in States than we experienced in the past.

I think we found that in Middlesex County where I am active, proposals for community for example to house some 50,000 elderly people, that is a specialization in the size that I do not think anybody would have conceived of in the past.

Proposals for single industrial developments that would extend over several square miles of land. An area and intensity of use that could generate immense volumes of traffic and put impacts over a very broad area.

Proposals for other individual new communities seem to be coming on to the scene more and more often. So I question seriously that it would be possible to exclude entire jurisdictions within the intent and the concept of the bill that is proposed.

That is one point.

A second point gets at another real area. To get into broad statewide planning is to get into an area which we really have no experience in a meaningful way in this country.

I am afraid that in the manner in which we generally approach writing our new control concepts we do it on the basis of the experience that we have had in smaller jurisdictions and so on expecting that the experience is going to have full relevance to the future.

I am not so sure that we ought to depend entirely on that because our technology is changing so rapidly, the size and extent of the populations that we must serve is changing so rapidly, and the techniques of governmental and administrative management are also changing very rapidly.

It seems to me that there might be some value in writing into this bill provisions that allow for the fact that we do not really know all the answers and to call upon the States to experiment, to try different demonstration methods so that here the learning that we can get out of the use of different techniques can be plowed back into the application of this learning through the life and the extent of this law into the future.

Now this demonstration technically I think has been used rather effectively in a lot of other legislation. The Department of Housing and Urban Development has promulgated demonstration programs.

This has been done of course historically in agriculture, and it seems to me that this particular bill and the area that it deals with requires a lot of experimentation, a lot of new thinking.

Senator BELLMON. You suggested that we include in this bill some language to cover the parts you just discussed. Would you supply the committee with language that you think would carry this out?

Mr. POWELL. I will be glad to try it, yes, sir.

Mr. POLLARD. I have one thing to mention. We mentioned approximate cost of this program, $1 billion, I also might mention there is no personnel at the present time to start this study with the States. The four of us here represent four different parts of the country.

In the last several weeks we have been trying to hire personnel. You cannot find them. So you are going to have to get into the field of training personnel very strongly if you go into this type of study.

Mr. ZAPSIC. Senator, there was a mention of fragmentation of local municipalities previously and Senator Jackson mentioned it. I would like to point out that just because of the very nature of local government fragmentation that unless there is certain agreed to objectives by the jurisdictions involved—and this would be the Federal, State, and county, local—we will have more land use studies just for the sake of land use studies and I do not think we need more land use studies for the sake of land use studies.

This has been one of the weaknesses in the planning process. Up until now land use studies are put on a shelf, because they cannnot be implemented.

Senator BELLMON. Anybody else?

Miss SEELEY. I think we perhaps had finished our statement and we just would like to reemphasize the point that there are quite a few counties that are experts in planning for themselves and we want to make a bid that they be considered or that they have a vehicle to participate in this particular State planning agency if the legislation is enacted.

Then it certainly has been a pleasure for us to appear before this committee today and we are very grateful for your time.

We know it has been a very busy day for all of you.

Senator BELLMON. If you care to file any additional statements they will be received.

Thank you.

Senator JACKSON. We will recess now until the sound of the gavel.

(Whereupon, a brief recess was taken.)

Senator BELLMON. Senator Jackson has not returned but in his absence we will reconvene the hearing. Will Mr. Borelli come to the witness stand?

Do you have a prepared statement?

Mr. BORELLI. I do.

STATEMENT OF PETER BORRELLI, EASTERN REPRESENTATIVE OF THE SIERRA CLUB

Mr. BORRELLI. Mr. Chairman, I am Peter Borrelli, eastern representative of the Sierra Club. I am speaking today for Mr. Michael McClos-

key, our executive director. The Sierra Club is a national conservation organization with a membership of more than 100,000. We have, as this committee knows, long been actively concerned with the uses and misuses of our national resources.

Our purpose, and I believe it is the purpose of the legislation now before this committee, has been to create an ecological awareness that embraces mountains as well as cities for the welfare, enlightenment and survival of all Americans. The absence of any rational land use policy, however, continues to be the prime cause of destruction associated with the random and scattered development that now smothers much of the Nation.

Unless each and every governmental body within our Federal system begins to plan and to coordinate its planning, this situation will only compound itself to tragic proportions by the end of the century; for by that time our urban population will have doubled.

There is no danger that the present patterns of growth will consume all the Nation's land. Cities and adjoining suburbs presently take up less than 2 percent of our 48 mainland States, and it is predicted that this will increase to no more than 5 percent by the year 2000. The danger is that our population centers will become so ill-planned and spread out as to destroy their livability.

We are pleased to have this opportunity to comment on S. 3354 for it is a significant and responsible effort to stimuate an otherwise inefficient and ineffective method of anticipating the future. We specifically endorse the bill as it pertains to:

Comprehensive planning.

Development of a Federal land use policy.

Coordination of Federal construction and grant programs.

The priority status of ecological and environmental considerations in comprehensive planning.

Statewide planning jurisdiction and authority.

In general we believe that a national land use policy will bring creative order to the patchwork of existing Federal, State, and local planning efforts. National planning legislation will further help in coordinating the projects and planning efforts of Federal agencies concerned with the housing, transportation, and power needs of the Nation.

I am a Manhattan commuter living in Montclair, N.J. My office is only 12 miles away. But to reach it, observes one reporter with a flare for the absurd, I must cross four counties, eight municipalities, and the State line; not to mention no less than two dozen sewer, water, school, and highway districts. I am transported under the aegis of the Port Authority of New York and the Metropolitan Transit Authority. And once in the borough of Manhattan I cross several more oddments of the body politic. It is no wonder Greater New York is the nightmare that it is.

Unfortunately, New York is not atypical. The entire country is similarly Balkanized; divided into some 228 metropolitan areas, subdivided in turn into more than 20,000 local governments. With planning jurisdiction equally fragmented, it is obvious why planning has not come of age.

S. 3354, however, provides some incentive for the creation of limited metropolitan governments capable of guiding population growth and planning on both a regional and human scale. While "planning" has

unfortunate connotations within our system of government, there is growing sentiment for the kind of governmental reform suggested in the bill. Minneapolis-St. Paul is this country's most outstanding working example of "metro" government. San Francisco's Bay Conservation and Development Commission and Florida's Dade County are similar innovations.

At the State level the lack of control or planning has resulted in haphazard industrial and suburban growth. And though some State legislatures are now advocating statewide zoning, the absence of any such control in most States has jeopardized many valuable resources, including those held in public trust.

Point Reyes National Seashore, for example, is endangered because of the failure of local government to exercise suitable zoning controls on lands designated for park acquisition. Wild land speculation in Florida also threatens to disrupt the natural ecosystem of the Everglades.

A national land use policy that regards land as something more than a commodity to be bought and sold for maximum profit, will give us time to anticipate and provide for the future.

Finally, at the Federal level the time has come to reevaluate federally aided public works programs. The National Environmental Policy Act provides the initial safeguards, but many of our agencies are still plagued with an engineering mentality that serves only short term interests. In Florida a cross-State canal threatens one of the few remaining wild rivers in the Nation. In Lake Tahoe Basin a proposed highway threatens the lake itself with siltation and utrification. And here in the District the Three Sisters Bridge violates a scenic portion of the Potomac River.

The United States, of course, is not without some planning experience. And as citizens we are appreciative of some of the efforts at the national level, where major land management agencies such as the Bureau of Land Management and Forest Service have developed comprehensive plans and procedures for land under their jurisdiction.

The Federal Government, however, has had only minimal planning success beyond its immediate statutory jurisdiction. In the past decade it has required regionwide planning as a condition for grants-in-aid to States and localities for highways, mass-transit, public works and parklands. But these have usually been separate plans, uncoordinated at either the State or Federal level. And like so many city plans they have frequently been shelved.

If a national land use policy is to be effective it must be coordinated at all levels and depend on much more than moral suasion. S. 3354 gives some power and discretion to the planners by tying a string to more than the Federal funds appropriated for statewide land use planning.

The procedure is undoubtedly necessary but counter-productive when exercised. We would hope that the Federal planning information center would offer creative and functional planning ideas and incentives to planning authorities, business enterprises, and individuals before cutting off funds and that planning grants be made only to those agencies with sufficient statewide responsibility and authority as described in section 403(1) and (2).

Mr. Chairman, with your permission, at this time I would like to submit eight specific revisions, most of which involve only minor amendment to the present wording of the bill.

For the sake of your time, Mr. Chairman, I will not read all of these, but I will draw attention to items A, B, and C.

Item A: Since there are instances in which it is not possible to "foster" both economic growth and ecological stability simultaneously, we suggest 401 (g) (2) be amended to read: "Foster such continued economic growth as is compatible with ecological principles and environmental goals."

B. Past experience with city and regional planning has revealed a tendency on the part of some planners to fix their plans to already existing growth patterns. Each State we believe should be required actually to set aside areas under section 406(b) (3) (A).

The Federal planning agencies, furthermore, must be sufficiently informed about the existence and location of such areas in order to coordinate its planning with the States. Provisions to identify and protect these areas of national interest should be made as set forth in section 401.

Finally, under section 408, Federal agencies are barred from pursuing a plan contrary to a State plan. But what would happen if the State plan is a weak pro forma plan classifying most land for industrial uses? In such a case, would the National Park Service be barred from proposing an incompatible use such as a national seashore on this same land?

Provisions should be made in section 408 providing Federal agencies with authority to override State plans when a higher environmental standard can be achieved.

Thank you, Mr. Chairman.

Senator BELLMON. Thank you, Mr. Borrelli.

As you went through your statement, a couple of points you raised seemed to me to need clarification.

On page 2, paragraph 2, you endorse the provisions of S. 3354, and your fifth point is you endorse statewide planning jurisdiction and authority.

Then you mention, in the example you give, about the traveler that went to work and how many different jurisdictions he crosses.

Do you feel there are places where some grouping other than a State might be more suitable for land use planning?

Mr. BORRELLI. I think you will already find in existence a number of regional compacts that have been established by acts of Congress. As Senator Jackson mentioned this morning, many of our environmental problems today—the source of the problem cannot be identified within one single governmental entity, whether it be a town, city, county, or State.

It may very well be necessary under the provisions of such legislation as this, for there to be some type of coming together of individual States. I would assume, however, under the provisions of S. 3354, that that would be a situation that would be resolved at the council level. That is, if three adjoining States came to the council with their State plans after the required period of time, and there seemed to be some conflict between the three plans relating to a single and shared natural resource, that we would hope would be something that could be ad-

judicated within the council and with the cooperation of the States involved, at a lower level of planning.

Before they even came to the council, we would hope that there would be a continuation of the type of regional planning that does exist in many portions of the country. The Hudson River compact and Delaware River compact are two good examples of such cooperation among adjoining States.

In areas in the West in particular, where there are shared natural, nationally held resources, such as national parks and forests, there too, you would have a situation of mutual concern and interest on the part of adjoining States.

Senator BELLMON. It seems to me, as I read the legislation, that we are almost forcing planning to be done on a statewide basis. It occurs to me we might be wise to make provision for regional planning in case it is the State's choice to do this.

Mr. BORRELLI. I basically view the legislation as enabling legislation thrusting upon the State jurisdiction authority they have long since abdicated to more local forms of government. It is entirely possible, however, that the State plans that might be drawn up under the provisions of this bill would not be acceptable either on a regional or a national level.

Here it is purely a matter of politics and intelligent and creative long-range planning that I believe is going to pull its weight. These more long-range interests and national interests, I would assume, would be the interests that would be protected by the council as established by the bill.

Senator BELLMON. Another point, also on page 2, that had nothing to do with the plan. In the last sentence of the first paragraph, "The danger is that our population centers will become so ill-planned and spread out as to destroy their livability."

Do you see any provisions in this act that would make it possible to direct the kind of urban development that occurs in this county in the future?

Mr. BORRELLI. Yes, I believe there is. I feel that there is sufficient incentive in the bill as I indicate in my testimony, for the stimulation of what has been called by planners and others as metro government. Already a great many municipalities and States are playing with this notion, trying to develop it.

It has been developed in several portions of the country. I believe that if planning on a statewide basis is applied to the entire State, then we are talking, and talking most directly about the urban centers within those States.

Senator BELLMON. Before you go further, how would statewide planning help us here in the Washington area? We are involved with Maryland and Virginia and the District. How do you contemplate a State planning agency would would help us?

Mr. BORRELLI. I have lived in the District and I have the feeling that the problems of the District are more than problems of blueprint planning. Problems of the District are primarily problems of poor distribution of population and housing.

I don't believe that there is a basic lack of planning in terms of locations of industry and residential areas in the District. If any place in

the United States is planned, it has been the District of Columbia, in the sense of the most crude planning that we can foresee.

Now there is a regional plan for the District of Columbia, as you well know. The plan for the year 2000, which has been the subject of a great deal of controversy within planning circles. I won't comment on the substance of that controversy, but I think the very significant failure of that plan, or the portions of that plan which have been considered failures by planners is that the authority, the agency that was responsible for the planning basically had no political clout.

Their plan was presented and shelved as has been the case in most cities where city plans have been drawn up.

Planning is not a new concept in this country. What is a new concept and what I believe is a concept contained within this bill, is involving planning in the political process.

Since the bill, in a sense, calls for a certain degree of governmental reform, I believe that planning will find itself in a more advantageous and political situation to enforce its plans.

Senator BELLMON. What kind of an entity do you contemplate ultimately evolving in the District area, not speaking just of the District of Columbia, but in the metropolitan area? What kind of planning entity will evolve as a result of this legislation?

Mr. BORRELLI. I am sorry, Mr. Chairman——

Senator BELLMON. I say, what kind of planning entity do you envision finally coming in to existence here to cope with the problems of the Metropolitan Washington, D.C., Area? Do you see that Maryland will have their plans for Washington metropolitan area that lies in Maryland, and Virginia will have their plans for the section in Virginia? Will it be totally separate and unrelated?

Mr. BORRELLI. The difficulty with the District as an area for relating some model for a national plan is that the District of Columbia is at the center of an axis and most of the communities in Maryland and Virginia are spokes that have developed along that axis. That was, by the way, the final basis for the plan for the year 2000, the idea that the city, the District of Columbia, as it is spread out, would be developed along particular designated wedges. I believe because of the unique political and geographical location of the District of Columbia that it would have to be a multistate plan; that the District of Columbia itself, through the offices of its Mayor or any planning agency within the District, would be completely irrelevant to the realities of life in this area.

Washington, D.C., serves a rather substantial area within a 20 to 25 miles radius of the District, and it would be ridiculous to assume it was an entity in and by itself. This has been the basic contention, as you know, for those within the District who believe they should have some political say in our government process of this country.

But that is another issue.

Senator BELLMON. Have you ever visited Houston, Tex.?

Mr. BORRELLI. No, I have not.

Senator BELLMON. I was curious to know if you had an opinion about whether or not you feel it is a well planned city?

Mr. BORRELLI. I have read considerable amounts about the planning efforts in Houston. Planners whom I respect have spoken highly of what has gone on in Houston. There are many problems still to be

ironed out, but it seems to be in the downtown development, a good start, certainly well in advance of many of the early downtown city planning efforts that began in the late 1950's and early 1960's, where primarily the downtown area was redeveloped, first leveled, causing great social disruption within the community, and then redeveloped for rather specific and narrow range of interests, thus making the downtown area a showcase, and architectural showcase, and place to behold, but no longer an integral part of the city or surrounding area. A place certainly where people were not seen on the streets on Saturday afternoon and Sundays.

It is basically a nine-to-five operation. Houston has come a long way, indicating that it is possible to rebuild a city or in the case of Houston, to build a city, and still maintain—to rebuild a city in a manner consistent with the needs of the entire population rather than specific corporate interests that are financing the operation.

Senator BELLMAN. Mr. Borrelli, Senator Jackson apparently is not going to return immediately. If you have any further comments you would like to make, you are free to make them at this time, but I have no further questions, unless you have something further, we will adjourn.

Mr. BORRELLI. Thank you very much.

(Whereupon, at 4:05 p.m. the committee adjourned, subject to the call of the Chair.)

APPENDICES

(Under authority previously granted, the following communications were ordered printed in the hearing record.)

APPENDIX 1

Letter from Senator Henry M. Jackson to Departments of the Interior; Agriculture; Commerce; Health, Education, and Welfare; Housing and Urban Development; Defense and Transportation; the Atomic Energy Commission; and the Water Resources Council; and replies received between July 10, 1970, and July 31, 1970 (see Part 1, Appendix 6 for replies received before July 10, 1970).

U.S. SENATE,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C., June 4, 1970.

MY DEAR MR. SECRETARY: On January 29, 1970, I introduced S. 3354, to establish a National Land Use Policy. A copy of the bill was forwarded to you on February 10, 1970.

Hearings on the bill were held on March 24, April 28, and April 29, 1970. Russell Train, Chairman of the Council on Environmental Quality, testified on behalf of the Administration at the hearing on April 28. Chairman Train explained the Administration's policy and addressed the bill in general terms. I am seeking now to supplement his testimony with technical information, with suggested amendments, with the identification of existing information resources, and other comments from each of the departments and agencies that might be affected by the bill. This information is solicited to obtain data, comments, and recommendations conducive to the production of sound legislation. Therefore, the widest possible dissemination of this letter within the Department of Transportation is requested.

The following questions are offered as a guide to the kind of information the Committee desires. They are illustrative and by no means exhaustive.

a. What kinds of data and analyses of resources and patterns pertaining to land use does the Department of Transportation now collect or have on hand that might be useful in a Federal land use planning information center such as would be established by Section 409 (a) of the bill?

b. What kinds of systems or practices functioning within the Department of Transportation would be particularly useful in the implementation of a national land use policy?

c. What activities or programs now administered by the Department of Transpotation might be subject to land use conflicts such as are contemplated in Sections 408 and 409 of the bill?

d. Do you have any suggestions concerning the inter-agency cooperation ramifications of the bill?

e. Are there any other activities or programs administered by the Department of Transportation that should be specifically considered in the processing or implementation of this legislation?

f. Can you suggest any amendatory language that would enable the policy aims of the bill to be carried out more effectively?

g. Can you suggest any other ways in which the Committee might improve upon the bill as it now exists, particularly with respect to its impact upon the Department of Transportation?

44-011—70—pt. 2——5

This information is requested in lieu of oral testimony from each of the interested departments and agencies of the Federal Government. Nevertheless, if you would care to include in addition to the information requested above, a general statement of the Department of Transportation's views on the bill, it will be gratefully received and made a part of the hearing record. The Committee is interested in obtaining as much input pertinent to this legislation as possible in the interest of implementing its policy aims in a matter consistent with sound governmental administration. Your cooperation in this effort is earnestly solicited.

Ten copies of S. 3354 in Committee print form are enclosed for your use in complying with this request. In order for the Committee to maintain its schedule with respect to S. 3354, the above information will be needed by Friday, June 19, 1970. If any members of your staff have any questions with respect to this matter, please tell them to feel free to discuss them with members of the Committee staff at Government Code telephone number 180–2856.

Sincerely yours,

HENRY M .JACKSON, *Chairman.*

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., July 21, 1970.

Hon. HENRY M. JACKSON,
Chairman, Committee on Insular Affairs,
U.S. Senate,

DEAR MR. CHAIRMAN: As requested in your letter of June 4, 1970, relating to Committee Print No. 2 of S. 3354, we are attaching information responsive to the questions you raised.

Sincerely,

J. PHIL CAMPBELL,
Under Secretary.

USDA RESPONSE TO COMMITTEE ON INTERIOR AND INSULAR AFFAIRS RELATING TO QUESTIONS ON COMMITTEE PRINT NO. 2 OF S. 3354

"a. What kinds of data and analyses of resources and patterns pertaining to land use does the Department of Agriculture now collect or have on hand that might be useful in a Federal land use planning information center such as would be established by Section 409(a) of the bill?"

1. The national cooperative soil survey: (a) Provides general information about soil and related features important to land use for 20 land resource regions and 156 major land resource areas covering the 48 conterminous states. (b) Provides information about the kinds of soils, where they are located, and how they can be used in soil survey reports and accompanying maps on a scale of 1 to 20,000. Such reports have been prepared for one-third of the land needing them and are being made for some 50 million acres each year.

2. The nationwide forest survey provides information periodically on the extent and condition of forest lands, the amount and kind of timber growing on those lands, the rate of forest growth and depletion, and amount of timber cut, and probable future trends in timber requirements.

Rather extensive data pertaining to National Forest System lands is also being accumulated. For example, the National Forest Transportation System inventory includes detailed data concerning the present and proposed standard, investment termini, condition, etc.; the Recreation Information Management System is an orderly way of identifying recreation places, the number and condition of facilities there, and the potential capabilities and future plans for use of recreation, land and waters, among other things; and a series of manual systems for collecting and utilizing soil, water, and climatic data for use in the protection, administration, and development of National Forest resources.

3. The latest national conservation needs inventory includes data on a county basis about the Nation's agricultural land regarding (a) land capability, by class and subclass, (b) land use in 1967, (c) conservation treatment needed on land in each land use, and (d) small watershed projects needed.

4. The aerial photographic mapping program covers the major cropland and forest areas of the country with most of the photography on a 1 to 20,000 scale. As land use patterns change, areas are reflown at intervals of about 6 years.

Over 400,000 square miles of replacement coverage is contracted for each year.

5. The Department currently is revising its farm program reporting and data handling to enable compilation of information from farms that participate in Federal commodities and conservation programs. Data will be available on acreages of crops grown, yields, acreages diverted from agricultural production, acreages irrigated, and the extent of Federally assisted practices such as conservation works, reforestation, provision of wildlife feed and cover, and public access for recreation and hunting.

Some of these data are currently available but with the planned automation program more data will be readily retrievable.

6. The Department compiles annual data on acreages of crops produced and average yields. These are available on a county basis for those crops under Federal price support programs. Acreage and yield data on most other crops—all but the very minor ones—are compiled annually on a State basis. Annual series on cropland used for crops and crops harvested, beginning in 1909, are also prepared.

A systematic and continuing inventory of agricultural land and water uses for the total land area of the U.S. is the responsibility of the Department. The land use inventory is an organized project for collecting land use statistics not available except is scattered sources or unpublished and of limited accessibility in files of public agencies. The inventory provides information beginning in 1920 on the major uses of land, total cropland, pasture and grazing land, land in farms and not in farms, and land in various special uses such as urban, built-up and transportation uses.

Data have been maintained on land irrigated and land drained at periodic intervals since 1920. Data are compiled from secondary sources on water supplies and uses, and intracensal estimates of irrigated land are made annually.

A related statistical activity is the assembly of data on general land tenure conditions and trends. National data on type of farm ownership, rented land, type of rental payments and recent change in farm size were obtained in a general farm survey in 1966. A series is maintained on farm real estate values and rents as well as on agricultural output and productivity.

Numerous other statistical series are maintained in the Department that have direct and indirect relevance to land use policy and programs. These include statistics on farm labor, agricultural prices and returns, farm income estimates, production and its distribution and demographic and social indicators.

7. The Department has a capability to make national and interregional land use and production projections, based on its information about soils, land use, conservation needs, cropping patterns, projected crop yields for various kinds of soils, expanded markets for agricultural and forest products, with assumptions about foreign markets and population growth and distribution. The projections capability allows study of the land use implications of a number of important issues such as population redistribution, expanded agriculture exports, major resource developments investments or restrictions on agriculture inputs. In this connection, should the use of herbicides, pesticides, and fertilizers used for agricultural production be restricted, there could be a serious impact on land use and the productive capacity upon which we depend for our supply of food, feed, and fiber. In this way the projections system, serves as an analytical tool to study policy alternatives and program impacts.

The research arm of the Department undertakes a variety of physical, biological and behavioral science efforts of significance to land use policies and programs. The research reports and staff assistance of these scientists will not only improve the data base but will improve the analytical capacity of policy makers.

"*b. What kinds of systems or practices functioning with the Department of Agricultural would be particularly useful in the implementation of a national land use policy?*"

Nearly all of the programs of the Department directly or indirectly influence land use. Accordingly, the management and extent of USDA programs will be important factors in implementing a national land use policy. Only programs with direct land use effect will be summarized here:

1. The conservation operations and agricultural conservation programs provide technical and cost-sharing assistance to farm and ranch owners and operators in preparing and applying conservation plans for use and management of their lands. Nearly 2 million such plans have been prepared for nearly 548 million acres of farm and ranch lands. Program practices to convert cropland

to permanent vegetative cover, to terrace, drain and irrigate agricultural lands, encourages certain uses. The Department's allotment and set-aside program to reduce the amount of land resources devoted to surplus commodities also influences the way land is used.

2. The small watershed program provides technical and financial assistance to local organizations in planning and installing works of improvement for flood prevention and the conservation, development, utilization, and disposal of water in watersheds of 250,000 acres or less. Applications for planning assistance have been received by the Department from local organizations in 2,878 watersheds covering 221 million acres. Plans have been preapred or are in process for 1,561 watersheds covering 114 million acres. Works of improvement in these watersheds permit changes and improvements in land use. In many instances, water impoundments and other measures can influence the location of economic activity, especially rural community growth and development.

3. The resource conservation and development program is undertaken in multicounty areas. In each project area the type of resources available are analyzed and possible alternative uses of land and desirable changes in land use to improve economic conditions are suggested. The 68 projects now include 240 million acres in 400 counties. Project measures to encourage the location of processing facilities and other investments in the area can greatly influence land use as well as economic opportunity in the project area.

4. Borrowers from the Department's rural electrification program, both electric and telephone, are in a position to supply information on availability of electric and telephone service in rural areas for a large part of the country. Land use planning requires early consultation with utility companies to determine any problems or unusual costs that might be involved in obtaining required utility services. Borrowers can also, in many cases, supply information on developmental activities within their service area. In addition, they can supply information regarding the utility needs of their consumers and subscribers for use in regional planning by interconnected utilities, both electric and telephone, to avoid duplication of effort.

5. The Department provides financial assistance in the form of loans and/or grants to public agencies and private nonprofit corporations for the following developments affecting land use in rural areas: comprehensive area water and sewer plans; community water and waste disposal systems; soil and water development projects including irrigation, drainage, and grazing; the local share of development costs of certain watershed and resource conservation and development projects; community recreation facilities, and group housing facilities.

Assistance is also provided to help individual families in rural areas to purchase, develop, and operate family farms and to obtain needed housing facilities.

6. The full range of the Department's forestry activities has been and would continue to be useful in implementation of a national land use policy. These activities are carried out with the objective of promoting and achieving a pattern of resource uses that will best meet present and future needs. They promote high quality multiple use management on both Federal and non-Federal forest lands.

The patterns and practices of land use on the Federal lands wtihin the 187 million acre National Forest System would be affected by such a policy and would influence use of adjacent lands. Multiple use planning on the National Forests is a careful and deliberate decision-making system that considers judicious land use.

Through the various elements of our Cooperative Forestry Program, we work with State Foresters and other appropriate officials of the States to assure that forest management practices on non-Federal forest lands further a land use policy. This cooperative program involves forest management, under multiple use-sustained yield principles, forest protection, insect and disease control, and forestry in watershed programs.

Our direct forestry research program, carried out in stations throughout the United States, includes a systematic approach to solving problems of encouraging individuals to adhere to a land use policy with respect to use of forest lands, and investigation of other forestry related aspects of such a policy.

"c. What activities or programs now administered by the Department of Agriculture might be subject to land use conflicts such as are contemplated in Sections 408 and 409 of the bill?"

1. The national soil survey provides authentic information about soils and their suitability for various uses against which proposals for various kinds of proposed uses of land should be compared.

2. Proposed projects planned and carried out under the small watershed program of this Department are coordinated with projects of other Federal agencies and the States.

"d. Do you have any suggestions concerning the interagency cooperation ramifications of the bill?"

To accomplish the purposes of the bill, widespread participation by concerned departments and agencies which are prepared to contribute constructively on a coordinated basis to development and application of land use policy is necessary. They have responsibility for federal planning and action programs affecting or affected by such policy. Therefore, we believe any land use program, wherever the basic responsibilities for it may be placed, will have to make provision for an effective coordinating mechanism.

"e. Are there any other activities or programs administered by the Department of Agriculture that should be specifically considered in the processing or implementation if this legislation?"

Those referred to in response to question "a" and "b" are the principal ones.

"f. Can you suggest any amendatory language that would enable the policy aims of the bill to be carried out more effectively?"

This Department has long recognized the importance of using suitable land for farming, ranching, forestry, wildlife, recreation, open space, transportation, industry, and desirable places for people to live in a manner that will enhance the welfare and environment of all citizens. A National Land Use Policy should include keeping available an appropriately distributed agricultural and forest production base to provide continued adequate supplies of food, feed and fiber. In addition certain land areas could be used primarily for esthetic purposes because of unique characteristics.

We believe the states should have flexibility with respect to their organization for land use planning functions. Consideration should be given to the differences among states and regions, for the varying relationships in water and land use planning, and for the maximum use of present organizational arrangements and mechanisms and on the use of consistent information and planning procedures that recognize emerging regional and national trends.

The Department of Agriculture has responsibility for the national cooperative soil survey, the nationwide forest survey, the national conservation needs inventory, national air photo coverage, and programs dealing with most of the Nation's land area. It has a developed capability to make land use projections on a national and interregional basis. In addition it has on magnetic tape file information from the Census of Agriculture, annual crop reports, and farm programs. Other census data on population, housing, and manufacturing are available within the Department through remote terminal facilities.

Under authorities of the Intergovernmental Cooperation Act of 1968 and the Demonstration Cities and Metropolitan Development Act of 1966, cooperation with state and local governments in the administration of federal programs and projects is implemented through state, metropolitan, and regional clearinghouses under rules and regulations established by the President. We feel it is desirable to give positive encouragement to the states to accelerate and broaden their land and water planning activities.

"g. Can you suggest other ways in which the Committee might improve upon the bill as it now exists, particularly with respect to its impact upon the Department of Agriculture?"

Answers to questions above embody our principal suggestions. We wish, however, to repeat, because of its vital importance, a comment already made. A National Land Use Policy should provide for keeping available an appropriately distributed agricultural and forest production base to provide our Nation with continued adequate supplies of food, feed, and fiber

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THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT,
Washington, D.C., August 17, 1970.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request for information and comments relating to S. 3354, a bill to establish a national land use policy.

With respect to the specific questions in your letter, our answers are as follows:

a. *What kinds of data and analyses of resources and patterns pertaining to land use does the Department of Housing and Urban Development now collect or have on hand that might be useful in a Federal land use planning information center such as would be established by section 409(a) of the bill?*

Most of the programs of this Department result in, or involve the collection of, data which would be relevant to an information center of the kind proposed. These programs involve such things as the acquisition and development of open space, urban renewal, new communities, and the development of water and sewer facilities and other public facilities. They also involve the planning of all kinds of facilities and activities, at State, regional and local levels, *including planning generally for land use* pursuant to the HUD comprehensive planning and community renewal planning programs and various programs involving a requirement for comprehensive planning. This information, it should be noted, includes a great deal of data on the mass of State, local, and private projects and activities which do not involve any proposed use of Federal funds, such data being normally and necessarily collected as part of the planning which is assisted or required under the various programs of this Department.

The Department does not, however, undertake to maintain the above data in a current form that would permit it readily to be extracted and transcribed for use in a Federal information center of the kind apparently contemplated in the bill. Separation of information of "local" significance from other information would be difficult and, in our opinion, likely to result in serious distortions. And interpretation of data in a way responsive to the varying economic, social, and governmental conditions existing in the areas to which it pertains would present a major problem.

b. *What kinds of systems or practices functioning within the Department of Housing and Urban Development would be particularly useful in the implementation of a national land use policy?*

The Department currently operates several programs which, potentially, could assist in the planning and other activities involved in implementing a national land use policy. Your attention in this respect is particularly invited to section 701 of the Housing Act of 1954. This program, with an appropriation of $50 million for this fiscal year for State, metropolitan, district and local planning, has already been extended to all 50 States. It is not limited to urban areas or urban planning and provides assistance for a broad range of coordinated planning activities that would extend to all, or virtually all, of the work items listed in section 403 of S. 3354. In the words of the statute, these include—

(A) preparation . . . of general plans with respect to (i) *the pattern and intensity of land use*, (ii) the provision of public facilities (including transportation facilities) and other governmental services, and (iii) the effective development and utilization of human and natural resources;

(B) long range physical and fiscal plans for such action;

(C) programming of capital improvements and other major expenditures . . .;

(D) *coordination of all related plans and activities* of the State and governments and agencies concerned; and

(E) *preparation of regulatory and administrative measures* in support of the foregoing.

It may be noted that the 701 program also specifically provides for grants for technical assistance in support of planning operations, and that under that program and title VIII of the Housing Act of 1964, training programs may be provided that are also apparently contemplated under the provisions of S. 3354.

In addition to planning assistance, the Department also has relatively broad authority to condition other kinds of assistance upon the existence of, or progress being made in, planning. Such planning is commonly specifically required under the statutes which this Department administers and typically involves land use planning coordinated with other planning activities. In the case of HUD open-space land and basic water and sewer grant programs, for example, "areawide" comprehensive planning is required, and general plans for land use are considered a basic, initial element of such comprehensive planning.

How "useful" the above programs and authorities would in fact be for implementing a national land use policy depends upon the nature of that policy and the assumptions on which it is based. This Department is committed to viewing land use planning within a broad context of social, economic and resource requirements and considers that the planning it supports must be sensitive to the impact of land use patterns upon housing choices, including housing choices for lower income and minority families, upon job opportunities, upon group relationships,

upon the access of all citizens to healthful outlets for leisure time, and—indeed—upon the whole social fabric of an urban and urbanizing America. The usefulness of our programs to implementation of a national land use policy accordingly depends upon the degree to which that policy reflects all the human and physical needs associated with population growth, urbanization, and community redevelopment and revitalization. In this respect, if a national land use policy emphasized land use objectives that were isolated from overall development goals, or if it operated to penalize States and areas that made the greatest effort to plan in ways that take account of the whole range of social, economic and environmental needs, its implementation would not necessarily be served by the programs and authorities described above.

c. *What activities or programs now administered by the Department of Housing and Urban Development might be subject to land use conflicts such as are contemplated in sections 408 and 409 of the bill?*

Most of the projects assisted or supported by the Department involve some possibility of land use conflicts, but in practice existing coordination procedures, including those contemplated in Bureau of the Budget Circular A–95 and HUD's own planning requirements, should serve to eliminate most of these in advance of the time an application is filed. The more difficult and more basic, kind of "conflict" would be the result of differing assumptions or points of view between one kind of land use planning and another, or between land use and some other type of planning. For example, planning for industrial development might involve assumptions that are inconsistent with planning to meet housing needs; or planning for "evironmental" purposes might involve assumptions as to low density uses that are at odds with overall urban development considerations. One of the objectives of "comprehensive" planning of the kind which this Department seeks to encourage is to minimize the likelihood of these basic conflicts through the establishment of common goals, and common understandings as to needs and priorities, that will be reflected in all planning for the same State, region, or locality.

d. *Do you have any suggestions concerning the interagency cooperation ramifications of the bill?*

In our opinion, any reasonably adequate answer to this question must take account of the fact that "interagency cooperation" involves cooperation or coordination at different levels of government, Federal, State and local. Also, it should reflect the fact that the cooperation includes cooperation among different *systems* of planning, systems which in the best of circumstances have a tendency to operate independently and at cross-purposes. From this standpoint, we believe that the ramifications of the bill are most complex and involve problems that are, to say the least, difficult. We do not necessarily have specific suggestions as to the handling of these problems, since they largely involve relatively basic assumptions or features of the bill, but we do think that at least those set forth below require further and careful consideration.

Relationship to the 701 program and comprehensive planning. As indicated above, we believe that, from a standpoint of function, a good deal of what is contemplated under the bill can currently be accomplished under the comprehensive planning assistance (701) program administered by this Department; of the more than $8 million in grants to the States made under this program in fiscal 1968, 40 percent went to assist land use planning and related activities.

There is, in short, very substantial overlap or duplication between activities contemplated by the bill and the 701 program, and a resulting problem of coordination or cooperation. This problem is complicated by the fact that the premises of comprehensive planning and the planning system contemplated in the bill are not necessarily the same and may, as already suggested, even conflict. S. 3354 proceeds from a broadly drawn "policy", contemplates statewide plans, provides for new machinery for coordination of Federal and State plans and planning, and seeks to take account of many physical and environmental needs, and deals with a subject matter—land use—which is of basic importance to many other kinds of planning. It does not, however, undertake to deal with the full range of physical, social, human, and economic issues that are embraced within the broadest kind of comprehensive planning that can be assisted under section 701 or which is contemplated by some of the requirements for planning attached to this Department's programs.

With these characteristics, we think that S. 3354 may tend to encourage a category of planning, with a supporting institutional framework, that is so broad as in effect to compete with "comprehensive" planning or perhaps to some

extent supplant it, but without providing equivalent assurances of responsiveness to *all* development needs and priorities among them. One result could be to shift resources away from planning that is designed to cope with a combination of urgent social, environmental, and economic problems—and perhaps from agencies engaged in such planning—to other planning that does not have to deal with such complex matters. Indeed, the States that were most likely to be confronted with, or that tried the hardest to take account of, the complexities might even lose needed Federal assistance under section 407 of the bill, since they would probably have the most difficulty in developing and adhering to acceptable land use plans.

Other Federal Assistance Programs. We would generally defer to other agencies with respect to cooperation or coordination matters as they pertain to the dozens of specific assistance programs not administered by this Department which have a land use impact, or which are affected by land use planning or controls. We would note, however, a special problem insofar as Federal planning assistance programs and planning requirements are concerned. There is currently a great deal of overlapping among these programs and requirements and many inconsistencies in their structure and content, so that cooperation and coordination among the various agencies responsible for them is already very difficult. S. 3354 may intensify these problems by adding a major new category of authorities without replacing or combining existing planning assistance programs, or dealing with the major inconsistencies among them.

State planning and planning agencies. A variety of advantages can be derived from an expanded State role in connection with land use planning. Those advantages, however, can best be realized if that role extends not only to State actions to discourage unwise development but also to State actions in encouraging needed kinds of development, including if necessary actions to overcome local laws or policies that unduly limit or discriminate against development or housing. It is important that major new planning efforts be designed with a view to encouraging this kind of coordinated State approach, involving as necessary a variety of State agencies. Conversely, one of the risks of Federal action is that, in encouraging use of State controls over resources and development that are now increasingly appreciated as useful for a variety of ends, Federal programs may also encourage a fragmentation in State planning efforts that could, among other things, make State intervention in support of many development and housing goals more difficult to achieve.

Metropolitan and regional agencies. The bill expresses no role for metropolitan or multi-county "regional" planning agencies. These agencies play a particularly important role in assessing development needs in the areas that are most likely to be subject to intense urban growth pressures. They also are increasingly assuming responsibilities for areawide planning to meet housing needs, including needs for low- and moderate-income housing that may be disproportionately affected by development restrictions. And, for practical reasons, they may in the future come to play a major role in connection with the implementation of many kinds of plans.

While the States undoubtedly have an important role to play in regional or areawide planning, this role should be carefully worked out to build upon the progress already made, particularly in metropolitan areas, in developing effective regional planning agencies.

City and local planning. The absence of any specific provision in S. 3354 for coordinating State land use planning with metropolitan planning agencies can be contrasted with its authorization for exemption from statewide land use plans of "any incorporated city which has exercised land-use planning and authority". This distinction between certain city plans, on the one hand, and county, town, areawide or regional plans, on the other, could promote fragmentation of land use planning in metropolitan areas and very possibly to complicate relationship among the different kinds of governmental units which are now represented on metropolitan planning agencies.

e. *Are there any other activities or programs administered by the Department of Housing and Urban Development that should be specifically considered in the processing or implementation of this legislation?*

Major areas of program relationship are, we believe, covered in answers to the above questions.

f. *Can you suggest amendatory language that would enable the policy aims of the bill to be carried out more effectively?*

We have not made a full technical review of the bill and have no specific recommendations for amendments, given the objectives and basic structure of the bill, although certain changes are perhaps implicit in the observations and answers set forth above.

g. *Can you suggest any other ways in which the Committee might improve upon the bill as it now exists, particularly with respect to its impact upon the Department of Housing and Urban Development?*

S. 3354 is directed toward a number of pressing problems. We need a more efficient and comprehensive policy for accommodating expanding urban development. We need new or improved ways of resolving conflicts over land use, overcoming fragmentation in local land use planning, and implementing governmental policies dealing with environmental quality. We need to encourage an expanded State role in all of these areas.

However, as suggested in the above answers to specific questions S. 3354 in our opinion presents a number of serious problems, most of which in one way or another relate to the necessity of viewing land use planning within a broad context of social, economic and resource requirements. In other respects, we believe that the existing system of comprehensive planning provides a better framework for accomplishing desirable land use policy objectives than a separate system limited to land use planning and controls.

Sincerely,

(S) George Romney
GEORGE ROMNEY.

(An additional reply, from the Secretary of the Interior, is printed following Appendix 8.)

APPENDIX 2

Letters from State Governors (see Part 1, Appendix 1, for others.)

STATE OF CONNECTICUT,
EXECUTIVE CHAMBERS,
Hartford, July 9, 1970.

HON. HENRY JACKSON,
Old Senate Office Building,
Washington, D.C.

DEAR SENATOR JACKSON: I am writing concerning S. 3354, introduced by you, which would amend the Water Resources Planning Act to include provision for a national land use policy and financial assistance for statewide land use planning.

As Governor, I am aware of the rapid growth and change which states, especially states like Connecticut, are experiencing, and of the fact that there are often competing claims for land resources.

Connecticut, three million in population and 5,000 square miles in area, has many square miles of urbanized development, and also significant areas of fields, woodlands and lakes.

Our challenge involves maintaining a high level of economic activity, which often brings growth and change, and at the same time maintaining a high standard of livability.

Toward this end our state has done considerable planning with respect to its land and water resources at the local, regional or metropolitan, state and interstate levels.

Therefore, we are deeply interested in the intent and content of any federal legislation which might affect the planning for, and allocation of, these resources.

The desire to develop a national land use policy and to assist the states in their efforts is most appreciated. However, I have certain concerns and reservations about S. 3354 which I would like to share with you, especially in the light of my experience in a state with extensive local, regional and state planning.

My concerns primarily involve the inclusion of rather specific federal guidelines and requirements as they relate to state planning and implementation. Since states vary widely both in their characteristics and in their experience to date in land use planning, I would urge you to provide for as much flexibility as possible in planning and implementing state programs. I would further urge you to consider rewarding good planning and good management of land and water rather than punishing these states that fail to develop acceptable planning and management programs.

It is good to note that on page 4, lines 15–19, there is a recognition that a national land use policy ought to be formulated upon an expression of the needs and interests of state, regional and local government as well as the federal government, private groups, and individuals. I appreciate the fact that the bill assists in this process by helping to fund state land use planning. However, I believe that the policy would be strengthened if a mechanism were established whereby state and local groups would directly participate in policy formulation at the national level.

I thought it might also be helpful to offer specific comments and questions regarding certain lines of the bill, as follows:

1. Page 9, lines 3–5: I question whether there are many existing interstate agencies which are authorized to both "plan and regulate land use development." For example, inclusion of the term "regulate" might make an agency such as the Tri-State Transportation Commission ineligible for support even though it is doing extensive land use planning, especially as related to transportation activities.

2. Page 10, line 8: In Connecticut there has been extensive land use planning at the state level. Because of this experience, our planners question the feasibility and appropriateness of projecting land use requirements "for at least the next 50 years." This length of time poses a problem with respect to changing technology and population projection, to cite two examples.

3. Page 12, lines 4–7: Connecticut has made extensive use over the years of HUD "701" comprehensive planning assistance for state planning. That money is provided on a ⅔ federal, ⅓ state basis. I wonder if you would not want to consider mantaining that same level.

4. Page 15, lines 1–2: We are not certain what is meant by "identification of the boundaries of all the portions of the state subject to the statewide land use plan." Could this, for example, mean all of the state outside of "incorporated cities" which have planning and zoning? Here in Connecticut all of the state is divided into 169 towns, some of which have a town form of government and some a city form of government. State enabling legislation permits both towns and cities to exercise planning and zoning responsibilities, and, in fact, almost all do so. Thus, there is a question about the intent of lines 6–8 on page 15? In other words, why would an incorporated city exercising "land use planning and authority" not be subject to the statewide land use plan, while a town would be? Is this distinction between cities and towns intended? Also, what is meant by the term "authority" on line 8?

5. Page 17, lines 7–19: This section requires the state land use planning agency to have the "authority necessary to implement the Statewide Environmental, Recreational and Industrial Lane Use Plan." This section goes on to call for the state land use planning agency to have "authority to acquire interests in real property if deemed to be necessary under the statewide land use plan." This activity appears to be unique for a planning agency and one which deserves very extensive study and definition. This section also would give a state land use planning agency "authority, under the state police powers, to place restrictions on the type of land use activities which may take place in areas designated for a special use under the statewide land use plan." This provision appears to be a type of state zoning which, I believe, also calls for very extensive study and definition before any Congressional action. For example, what is "a special use" on line 18 in the terms of this bill? These are questions of great importance in a state where the exercise of planning and zoning powers by municipalities is so widespread.

6. Page 18, lines 22–24 and page 19, lines 1–2: This section appears to give the President power to reduce assistance from "certain" federal assistance programs if the requirements of the act have not been complied with, including presumably the implementation requirements. Surely, if this course of action were to be followed, it would be appropriate to define clearly the federal assistance programs involved.

7. Page 24, lines 10–15: Initial examination would appear to indicate that this section would allow a river basin commission, on request of the Council, to extend its "jurisdiction to encompass the land use planning provisions of this act." Is there a possibility here of a conflict between state land use planning and river basin commission planning?

I am also interested in S. 3354 in my capacity as Chairman of the Rural and Urban Development Committee of the National Governors' Conference.

One of our concerns is that currently there are before Congress numerous bills on conservation, community development, urbanization and land use as related to national, regional, state, metropolitan or local activities.

For example, I am concerned about a possible overlap between your bill and the various coastal zone management bills before Congress such as S. 3640 and S. 3183, especially as they relate to land use planning and implementation. Jurisdictional problems can be increased rather than decreased unless all of these bills are considered in relation to each other as they are being heard by various Congressional Committees.

This matter is of direct concern to the National Governors' Conference and its Rural and Urban Development Committee. The final draft of the Task Force Report of that Committee is enclosed. You will find it contains a policy statement regarding the broad issue of development. Land use is clearly a basic ingredient of development, but is not the only one.

I would like respectfully to suggest that all bills relating to urbanization, coastal zone management, land use planning and development policies be considered in relation to each other and in light of the Task Force Report so that legislation may be adopted which will provide the broadest possible benefit in dealing with developmental matters at all levels of government.

Sincerely,

JOHN DEMPSEY,
Governor.

Enclosure to Governor Dempsey's letter:

REPORT OF THE NATIONAL GOVERNORS' CONFERENCE COMMITTEE ON RURAL AND URBAN DEVELOPMENT

INTRODUCTION

The Committee on Rural and Urban Development has been assigned responsibility for a variety of topics of concern to the Governors. In addition to the more usual and obvious subjects of improvement in the agricultural sector, more rational rural development, the urban concerns of renewal, housing and model cities, the committee has considered land use policies, state and local planning grants and new communities.

Policy resolutions concerning these several matters are recommended in this report with accompanying discussion texts. These statements were preceded by serious discussion by committee members and by diligent work of the staff task force. A series of background papers were prepared by consultants to the task force and have been used to develop many of the recommendations. And past policy resolutions of the National Governors Conference were relied on strongly. None were deleted because they were considered wrong, rather because they had been accomplished.

However, the most important thing to note concerning this report is the format in which recommendations are presented. The committee believes that the continuation of separate (and perhaps somewhat unrelated) consideration of important policy and program suggestions is a disservice to the collective efforts of the NGC and dilutes the impact of such program recommendations when not shown in a rational and articulated context. Thus, the report and its policy recommendations have been cast in the format of a National Community Development Policy—the need for the existence of which the committee believes provides guidance for all other proposals. This need is basic and a lack of national policy guidelines makes much of what is done at the state and local levels irrelevant, as are many actions at the federal level.

The Advisory Task Force to the Committee on Rural and Urban Development in its deliberations has concluded that a national community development policy is essential in guiding the future of the nation and is a fundamental key to solving the environmental problems that face us in the years ahead.

Such a policy must identify areas and issues of national concern, to define what a national community development policy should encompass. It must then proceed to a statement of national goals for community development. Thirdly, it must include strategies and programs for achieving these goals.

Certainly, the National Governors Conference should have a significant role in the formulation of this policy and carrying it out. Thus, this report outlines (1) why a national community development policy should be formulated, (2) what the components of such a policy might be, and (3) the ways in which this policy should be established and implemented with participation by the governors and other representatives of the total American community. The Appendix to the report then elaborates upon the components of a national community development policy and suggests a number of strategies and programs relating to each component.

The Committee on Rural and Urban Development urges that the National Governors Conference adopt this report as an official statement of the governors, and that the National Governors Conference work in all appropriate ways for the adoption and effectuation of its recommendations by the executive and legislative branches of the federal government and by other organizations of state and local officials.

I. ADOPTION OF A COMPREHENSIVE NATIONAL COMMUNITY DEVELOPMENT POLICY
(PROPOSED POLICY POSITION A–1)

Congress and the administration should develop a comprehensive national community development policy with the effectuating funds, agencies and programs. The policy should provide the means whereby Federal, State, and local elected officials should participate directly in the formulation of national policies and goals and the establishment of major strategies and programs for implementation of such policies and goals. The formulation and implementation of such national community development policies in coordination and consonance with State development policies is essential to achieve the objectives of balanced growth.

A national community development policy should embrace the major areas and issues of concern for the quality of life within the United States. The most basic components for consideration in the formulation of this policy are policies relating to population growth and distribution, and to economic development. Other components are policies relating to allocation of natural resources, agriculture, transportation, housing, human resource development, and financing and administration—all established in a manner that will support policies concerning these two basic components.

The Need for a National Community Development Policy

The President and Congress have raised the urgent matter of establishing a national growth policy to the top of the national agenda. In his State of the Union Address, President Nixon proposed that the country now proceed to develop a framework of national goals and objectives to help guide future patterns of urbanization and development, maximize access to opportunity in all regions of the country and help minimize any further deterioration in the environment. Such a policy, he said, "must deal with the quality of life in America on the farm as well as in the suburb, in the village as well as in the city."

The President has given voice to a tide of concern which has grown since the mid-Sixties over the lack of a general national policy framework within which public programs can be planned and implemented to attain more desirable patterns of urban growth and land use throughout the country.

Congress has been indicating its own concerns with the issue. Legislation has been introduced during the last several sessions calling in various ways for "balanced" national development. In this session of Congress, hearings were held in both Houses on a National Community Development Policy. The National League of Cities and the National Association of Counties are making their own contributions to the discussion.

At least two committees of the National Governors Conference are at work attempting to devise gubernatorial recommendations concerning a national community development policy. All other committees are dealing with related issues.

We are thus well into the beginnings of a debate that should have come some time ago—long before the urban riots. We are finally facing up to the fact that "no policy" is a policy. To a significant degree, this "no policy" is responsible for the crisis in the central city, the haphazard disintegration of the rural hinterland, the ineffectiveness of so many public programs, and the critical environmental problems we now confront.

It is time to establish a partnership of Federal, State and Local interests and agencies for coordination and exchange of viewpoints, interests and needs, for realistic policy formulation and a potentially successful delivery of services. There must be active participation by state and local governments in the development of a national community development policy.

Thus the above general policy statement on a National Community Development Policy is proposed for adoption.

This policy would achieve four major goals:

1. Continued economic growth.
2. Balanced geographic growth.
3. Environmental improvement.
4. Opportunity increase.

The underlying reasons for a National Community Development Policy are:

1. Rapid urban population growth and development, together with a decline in farm population and migration to the cities, has created an imbalance between needs and resources which threatens the nation's achievement of satisfactory living standards.

2. Continuation of the economic growth of the nation requires more efficient operating environments for industry and availability of concentrated employment centers for workers in both rural and metropolitan areas.

3. It is necessary to protect the environment against overuse and pollution of land, air and water arising from uncontrolled, scattered, inefficient and costly development patterns in rural and urban areas.

4. There is a need to provide new and additional environmental and employment opportunities for poor and minority families.

5. There is a need to increase the availability of a high level of cultural, health and social services for rural and urban populations.

6. There is a need to secure more housing through provision of an atmosphere which will attract more private investment and allow more efficient and greater volumes of construction.

7. Prime agricultural lands are being threatened by unregulated urban and scattered development practices, with consequent threat to the abun-

dance of future food supplies and despoilation of habitats necessary for maintaining wildlife and hunting and fishing preserves.

8. Existing Federal and State programs in the areas noted above already have significant effects on population distribution, economic growth and rural and urban development, but their consequences often conflict or are only minimally effective because of a lack of a proper developmental framework.

9. There are many other programs in fields like health, education, welfare, transportation, recreation and cultural services, etc., which would benefit and work more effectively through provision of a community development focus.

10. The benefits of housing and planning efforts could be multiplied through the direction and resource allocation priorities to be gained by application of a community development effort at national, state, regional and local levels.

The Components of a National Community Development Policy

A national community development policy is essentially a national policy for domestic development. It embraces or is affected by public policies and programs in all areas of domestic concern.

The most basic area of policy formulation is that relating to people, meaning population growth and distribution. Such a policy requires consideration of population size and growth rate; the distribution of population among different age, income and other groupings; its locational distribution throughout the country; and the qualitative characteristics of various population groupings, especially concerning their contributions to and needs for the benefits of American society. Certain key programs involving all levels of government, such as new communities, are considered of primary applicability in this area.

Policies relating to economic development have an equally basic role in national community development, sometimes separate from, but often inseparable from, population policies.

Once a basic policy framework has been established in terms of population and economic development, additional areas of development policies must be examined to insure consistency with this framework. Most important among these additional areas are policies relating to allocation of our natural resources (land, water, minerals and air), agriculture and to transportation and housing. Intergovernmental management and financial policies to ensure efficient implementation and delivery of services at each level of government must similarly be considered. Of equal value are policies relating to human resource development which must be established both in support of the foregoing policies, and also to meet any remaining needs in arriving at a National Community Development Policy that will vigorously pursue the goal of quality of life for all Americans.

A. ADOPTION OF A NATIONAL POPULATION GROWTH AND DISTRIBUTION POLICY (PROPOSED POLICY POSITION A-2)

There should be an adoption of a national population growth and distribution policy, developed in concern with State and local planning policies, to lessen the congestion, and reduce pressure, on the already overburdened resources of our cities, to offer opportunities for the free movement of all of our citizens to realize their maximum personal potential, to match manpower and job training programs with the needs for community development and to lessen the problems of transportation, environmental decay and social service delivery that are not being adequately dealt with for today's population. Such a policy shall be consonant with a rural-urban balance of needs and regional potentials.

The movement of population to large urban areas has had three effects. First, rural and small town areas throughout the country have lost their young people and populations as a whole have declined. Second, while metropolitan areas have grown, the resources of these areas have been strained by the volume of immigration, especially of those with low employment and occupancy within metropolitan areas have resulted in decay of many areas in central cities, while the conditions for future deterioration have been established by over-development of some sections and accompanying land consumption that has not left sufficient room or given protection to natural resources, recreation and open space and aesthetic amenity.

1. Minimum Standards for Public Assistance Benefits

It must be an integral part of a national growth and distribution policy to establish national uniform standards for public assistance to reduce the migrational pull of existing programs. This, however, is of primary concern to NGC Committee on Human Resources, and policy statements and elaboration will eminate therefrom.

2. Family Planning Services

Again, an integral part of this overall policy—but a subject for the human Resources Committee.

3. Manpower Development

Amendment to the NDTA of 1962 to provide relocation costs and assistance to the unemployed to move to areas of greater employment opportunity should be considered basic to a national growth and distribution policy. Again, this is a matter of concern to the Human Resources Committee.

4. Other Policies and Programs

Other policies and programs such as industrial location incentives, research grant dispersal, etc., will all be integral to this policy. These policies and programs are not set forth here but will become increasingly important in the future.

These considerations point to the need for the mutual gearing and coordination of population, new town and economic development policy. The contributions of population policy would arise through spreading of information about opportunities in growth centers and new towns; through coordination with human resource policies to better prepare potential migrants for moves to urban areas and growth centers; through division and provision of incentives for directing movement to desired areas and regions of the country. The establishment of a national minimum public assistance benefits also would be a benefit in stabilizing population opportunities. As one of the Staff Task Force members concerned with economic development noted:

> In the centers of urbanized areas, congestion has been increased and the broad spectrum of problems related to congestion has been aggravated. In the remote areas the impact of certain federal programs has been slight. Where developments have occurred, the project mortality has been high and the infrastructure costs have been disproportionate.*

5. ADOPTION OF A NEW COMMUNITIES DEVELOPMENT POLICY (PROPOSED POLICY POSITION A–3)

To effectuate a population growth and distribution policy there should be the adoption of a comprehensive new communities development program which would include expanded communities, new-towns-in-towns and new towns as major components of a national policy designed to relieve growth stresses upon existing metropolitan areas and to promote growth in appropriate areas which have growth potential.

Both the orderly handling of growth in expanding metropolitan areas and the coordination of resource allocation to promote growth in the less developed areas of the country require a new communities framework to maximize public and private gains from investment.

Metropolitan areas require a full range of community development forms, and a National Community Development Policy can contribute in the following ways.

> (a) *Expanded communities* can serve as focal points of growth, taking advantage of existing infrastructure investments in utilities, roads, schools, housing, cultural and recreation resources. Moreover, investment in such communities, when warranted and if wisely directed, will ease the tax and financial resource problems arising from need to support an overextended and underutilized infrastructure. In addition many of the communities suitable for such growth occupy the strategic site and transportation locations which can serve as the focal points for coherent residential and employment centers connected to central cities and other parts of their metropolitan area. Existing mixtures of population groups and environments would be supplemented through expansion.

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*Cawthorne, Jack, "Industrial Development Incentives to Disperse Industry and Population."

(b) *New towns in towns* have to be conceived in terms of their relation to patterns of metropolitan housing growth and demand the growth and change of employment markets and the opportunities for housing low and middle as well as upper income groups. Such development would be designed to arrest the splitting of central city communities into purely upper or lower income sections, and offer a full range of urban amenities and services, some necessarily contained within the community and others made available in connection with improvement of the central city and the metropolitan area.

(c) *New towns* in essentially underdeveloped areas are needed to provide an orderly framework for peripheral development, which will not despoil the environment, but which will give a coherent, pleasant and efficient milieu for residential living and economic activity connected to the full range and variety of metropolitan environments and resources. In turn such new new towns would provide accommodations for a variety of income groups and varied density and style environments suitable to the differing demands and needs of people.

Although new town potentials should be explored carefully for rural and small town regions, generally it may make more immediate sense to utilize existing town developments, identifying specific growth centers for expanded town development. As in metropolitan areas, such centers already would be at strategic site and transport locations, have a considerable investment in facilities and services, serve as a known focal point for people in immediate and nearby regions and provide a mixture of population and environments which could be built upon to give a fuller range of opportunities for living, working and recreating. In addition, such expansion would help to solve many of the tax and financial problems for such rural and small town governments and their citizens.

B. ADOPTION OF A NATIONAL ECONOMIC DEVELOPMENT POLICY (PROPOSED POLICY POSITION A-4)

A national economic development policy should be adopted to coordinate economic assistance measures with a national population growth and distribution policy, thereby providing the employment concentrations and economic base that will make such a policy workable, offering more efficient operating environments for industry and concentrated employment centers accessible to workers in either rural or urban areas. Such policy should provide additional incentives to private business and look to new ways that public and private interests can be combined to meet public needs.

Economic viability is the keystone of a national growth and distribution policy, and there must be policies for directing economic growth to areas which will be able to support business activity. Consequently the identification of such growth areas and the coordination of incentive, development and infrastructure policies is fundamental to this effort, for without employment opportunities, existing and new communities will not grow.

These policies can take three directional forms. First, growth centers in rural and small town regions can be identified and aided through proper policy coordination and investment. Second, growth centers and/or new community opportunities can be identified in and around metropolitan areas, and the gearing of economic activity and employment to each metropolitan economic milieu. Third, strengthening of the economic base of central cities can be coordinated with new-town-in-town development and growth of central functions serving surrounding metropolitan and regional areas. These policies can be applied to labor surplus and depressed areas as well as to those sections having development problems arising from high growth rates.

A large variety of tools can be used to support such policies. They include subsidy and tax benefits, government contract preference, loans, small business aids and technical assistance, manpower training, development of infrastructure such as housing, transportation, utilities, education aids, etc. An initial step might be coordination of many existing federal and state programs in these areas. Details of such coordination and policy application would be established with formation of national priorities for new community development. Further, the policies recommended herein would require coordination with conference policies on human resource and transportation development.

C. ADOPTION OF NATIONAL AGRICULTURAL DEVELOPMENT POLICY (PROPOSED POLICY POSITION A–5)

There should be a national agricultural development policy as an integral part of a national community development policy to assure the Nation it can feed itself and meet its responsibilities to other people in the world. Such a policy should reflect the importance of and a system for the preservation and maintenance of agricultural land for future supplies and as necessary habitat for wildlife, water resources and hunting and fishing; all of which are a necessary part of providing quality environment in consonance with a population growth and distribution policy. Further this policy should focus attention on improving agricultural production capabilities, transportation, foreign market development, processing agricultural products near the source of production and efforts aimed at developing rural America.

Existing Policy Position A–6, *Joint Federal-State Evaluation of Rural Development Programs*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect.

The new Office of Intergovernmental Relations, in cooperation with the appropriate federal offices and the National Governors Conference and local government groups, should evaluate the possibilities and mechanisms for better coordination and delivery of federal and state programs in rural areas. The joint evaluation should examine and make recommendations for action on the following issues:

a. Avenues of cooperation between existing HEW, Agriculture, Commerce and HUD programs and state community development programs.

b. Restructuring of federal field operations to support and complement emerging state and local efforts for comprehensive rural development. As federal departments decentralize, they should utilize to the fullest extent possible the personnel, administrative and technical services of state and local government rather than building up federal field staff to handle delegated authorities for decision making accompanying the federal field office reorganization.

c. Recognition of state designated multi-county planning and development districts, primarily composed of local officials, as the primary delivery system for most state and federal programs in rural areas.

d. Recognition and support of several states as pilot projects for the purpose of coordinating federal and state programs into a package of rural development services.

In establishing national goals and objectives for future development of this country it is natural to look to the agricultural sector as one warranting special emphasis. Historically, the U.S. owes much of her strength to agriculture, and even though the industrial revolution and advancing technologies in farming methods have brought about a reduction in the number of persons engaged directly in farming, agriculture is still one of the cornerstones of our nation.

The decision with which we are faced today is not one of whether or not we should work to develop rural America. *Rural America is going to develop.* As our nation's population continues to grow there will be an increasing need for space which is available in rural America.

Our decision, then, is not whether or not rural America will develop, but rather *how* it will develop. Through the establishment of goals and guidelines for future planning for rural America as well as more urbanized sections, we can be more certain that the growth will be orderly.

The usage of our land should be the primary area of concern in a development plan for this country. While the broad expanses of land in rural America seem endless, haphazard land use could quickly eliminate this great resource.

In establishing a national land use policy, several things should be considered. First, in planning for "development" of the land, it must be recognized that there is equal value in the preservation of portions of that land in its more natural state. Sufficient areas of land must be preserved for the raising of food products and to safeguard America against hunger problems. And a strong effort must also be made to preserve the natural, rugged beauty of the rural areas of the U.S. As man's knowledge and technology increase, so does his need for leisure time activities. A retreat to a place where nature's balance is undisturbed is necessary to the welfare of mankind and for the education of our youth in the natural sciences.

To encourage the preservation of our most fertile lands for maximum food production, as insurance to future generations, consideration must be given to differential tax systems.

The raising of crops in the fertile soil of rural America offers little problem. With irrigation and other new technologies to help overcome the irregularities of nature, however, the ability to produce food crops at ever-increasing levels does bring about a need for future planning in the areas of processing and marketing of agricultural products.

Programs for future development of rural America should develop an atmosphere which would encourage food processors to conduct their activities near their raw materials. These programs should also provide provisions for Federal and State governments to participate with industry in research to find new and expanded uses for agricultural products and in the development of foreign markets for our nation's agricultural products.

A national agricultural development policy must focus attention on transporting agricultural products which is a continuing problem in some of our agricultural areas.

Sufficient transportation systems for these agricultural products, as well as people in rural America, must also be a factor in future planning.

Finally, as in all planning efforts, a system must be built into a rural development program to insure close cooperation between all agencies, units, and persons involved. In a program as important as this, there is no room for overlapping or waste of efforts. It is, therefore, additionally important that there be reviews made on a regular basis of financing programs for agricultural production.

There must be coordination of Federal, State and local programs in rural areas with reorganization and dovetailing of emerging State and local efforts and Federal field organization. There must be a recognition of State designated multicounty planning and development districts, primarily composed of local officials as the primary delivery system for most State and Federal programs in rural areas. This meshing of programs and effort can be accomplished through a National Community Development Policy which embraces the problems and opportunities of both rural and urban America.

D. ADOPTION OF A NATIONAL NATURAL RESOURCES ALLOCATION POLICY

A National Community Development Policy would not be complete without a National Natural Resources Allocation Policy component. This would provide some measure of guidance as to the use of our land, air, water, minerals and other natural resources. This is essential to the orderly growth of our communities, the creation of a healthy, liveable environment, the provision of a natural base for economic development and agriculture and the conservation of such resources for future generations.

A National Community Development Policy cannot exist without consideration of those natural resources which in many ways will dictate the location of our people and how they will be productively employed. Population increase and increasing pressures on finitely limited resources requires rethinking past policies (or lack of policies). It is apparent there is "just not enough to go around" for very long.

An advanced society cannot consider a return to a natural ecological balance or inorganic evolution that could exist only if there was no modern industrialized society. However, measures of allocation and depletion must be considered on a broad scale if society is to function.

1. ADOPTION OF A NATIONAL LAND DEVELOPMENT POLICY (PROPOSED POLICY POSITION A–7)

There should be an adoption of a national land development policy providing guidance as to what lands are appropriate for urban development, agricultural production, conservation and open space and recreation. Such national policies must be related to the allocation and conservation of water, air, minerals and other natural resources and be an integral part of a national community development policy.

The disappearance of open space and unique sites of recreational and historical interest in and around metropolitan areas has been a major problem accompanying growth. The ability to shape patterns of metropolitan growth in a more coherent and efficient manner is handicapped severely by the lack of adequate funds and regulation for either acquisition or protection of open space, with the consequence of combinations of continued and continuous coverage of land on all sides, plus unsightly string development extending for miles. In rural and metropolitan areas prime agricultural land has been taken out of farming when better regula-

tion of development might have preserved this use. Further, the unregulated expansion of vacation homes and resorts threatens the maintenance of wild life, fishing and water supply areas for rural, small-town and urban population alike. Thus, it is necessary to rescure coordinated Federal, state, and local policies and programs to provide protection and regulation.

2. ADOPTION OF NATIONAL POLICIES CONCERNING WATER, AIR, AND OTHER NATURAL RESOURCES

Similar to those concerning land development policy statements concerning allocation and conservation of water, air, minerals and other natural resources should be an integral part of a National Community Development Policy. These matters are largely the province of other committees of the National Governors Conference but several comments are appropriate here.

E. ADOPTION OF A NATIONAL POLICY (PROPOSED POLICY POSITION A–8)

There should be an adoption of a national housing policy to coordinate housing investment and construction programs with a national community development policy to carry out social objectives of making a place for all social and economic groups, to take advantage of the environmental and efficiency advantages of such a policy, to provide needed governmental aids for supporting housing construction and marketing, with special support programs to assist those who cannot secure decent housing through normal channels, to make maximum use of new technologies, *and* to stimulate additional investment by private industry and home property owners, thus adding to the overall housing supply, and to insure the availability of sufficient long term mortgage financing.

Existing Policy Position A–9, *Expanding the Housing Market*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect:

> All levels of government, in cooperation with private industry, should take action to expand the market for housing production. Special attention should be given to new methods of production, technological innovation, and marketing institutions in the private sectors and to simplified and flexible state housing codes, increased subsidies for low-income housing, land aggregation and tenant relation programs in the public sector. States should assist in the aggregation of public and private land for housing purposes.

Existing Policy Position A–10, *Consolidation and Coordination of Federal Housing Programs*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect with modification:

> The Administration should undertake the immediate streamlining and coordination of federal housing programs: (1) provide for full cooperation with emerging state housing instruments; [(2) eliminate or greatly modify restrictive program requirements such as: 100% assistance for any development receiving Section 236 assistance, the 20% limitation or rent supplement units in a 236 assisted development, unreasonable income limits, and workable program requirements; (3)] (*2*) phase out, merge, and consolidate the numerous federal low and moderate income housing programs and provide incentives and illustrations for program packaging and mixing; [and (4)] (*3*) substitute state certification of federal program requirements with only a post audit by HUD, *and* (*4*) *provide federal operating subsidies, as are now provided to federal housing projects, to state public housing projects.*

The slowdown of national housing construction is a result of many factors including cost increases greater than the rise in income in recent years, and the difficulties of organizing efficient and attractive construction and residential environments which would stimulate investment. While there have been a number of new community developments started, some have long waiting periods required to realize a return on investment.

New community development would provide one milieu for overcoming some of these problems with proper federal, state and local assistance. Continuation and development of programs to secure technological innovation and new methods of production could be applied best in new communities. Simplification and introduction of flexibility in building codes could be introduced. Reexamination of subsidy policies could be made to secure the private investment in housing that would yield the most construction per dollar of public investment, and with

it an adequate rent supplement for lower income families could be established. Finally, new community development needs could serve as a basis for merging and consolidating the numerous federal low and moderate income housing programs, and provide incentives and illustrations for program packaging and mixing.

Additionally funding sufficient to meet the nation's needs for the programs set forth in the Housing and Urban Development Act and the imaginative use of our financial resources is necessary.

Existing Policy Position A–11, *Full Funding of the Housing and Urban Development Act of 1968*, shall remain in effect with modification:

[*Full*] *Sufficient Funding of the Housing and Urban Development Act* [*of 1968*]

Congress should provide [full] *sufficient* funding for [the authorized expenditures of] the Housing and Urban Development Act [of 1968], especially for Section 236 Interest Reduction, Section 235 Home ownership, Rent Supplement, public housing programs, *and urban renewal.*

F. ADOPTION OF A NATIONAL TRANSPORTATION POLICY

Obviously a transportation policy and program is an integral part of a National Community Development Policy. The viability of new communities, continued economic growth and a sound agricultural base are all dependent upon such a system. This is, however, of primary concern to another NGC committee.

G. ADOPTION OF A NATIONAL HUMAN RESOURCES DEVELOPMENT POLICY

A whole range of efforts in developing our Human Resources in the fields of education, health, social welfare, culture, manpower training and public protection must be concerned in developing a National Community Development Policy. Again, this subject is primarily one of concern to another NGC committee.

H. ADOPTION OF A NATIONAL INTERGOVERNMENTAL MANAGEMENT AND FINANCIAL POLICY

The resources and the responsibilities needed to meet national community development problems are most efficiently located at various levels of government. A clear policy to coordinate and allocate these resources and responsibilities must be developed if an overall National Community Development Policy is to be workable. As William N. Cassella, Jr., Executive Director of the National Municipal League, stated: "It is assumed that any national community development policy would include a radically altered federal aid system which would significantly curb the trend toward the perpetuation of 'vertical autocracies.'" This subject is being considered by another committee of the NGC.

1. ADOPTION OF A POLICY ON THE MODEL CITIES PROGRAM (PROPOSED POLICY POSITION A–12)

For a national community development policy to be effective, it should include concepts for the coordinated delivery of services and financial assistance by both State and Federal Governments, as conceived in the model cities legislation. The entire effort must be a coordinated one which focuses the attention of agencies at all levels of Government on specific problem areas within our municipalities.

Congress should amend the model cities legislation to provide for a legitimate and positive role for State government in the operation of the program. Specifically, section 105 of the "Model Cities and Metropolitan Development Act of 1966" should be amended to authorize the Secretary of Housing and Urban Development to make matching grants to the States to provide continuing planning, coordination, programming and technical assistance services to model city agencies.

In those States where the State contributes a substantial portion of the local non-Federal financial share, the program should provide for State concurrence in the approval of the selection, program development and funding of all model cities applications.

HUD should immediately provide for State review and comment on model city work programs and supplemental grants.

Existing Policy Position A–13, *Comprehensive State Planning and Community Development Programs*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect.

Federal agencies should support the efforts of Governors and the appropriate state agencies designated by the Governors to begin coordinated planning of community development programs. The following specific measures should be undertaken by all federal agencies:

a. Federal administrative procedures and new legislation, where necessary, should be developed to provide financial incentives on a continuing basis to the states to "buy-in" to community development programs, specifically model cities and urban renewal. There should be increased federal provision for joint funding to encourage state efforts for the packaging of community development programs.

b. Both federal and state executives should seek sources of flexible funds for use as "glue money" in putting together and implementing coordinated development programs. At the federal level, these funds could come from Section 701 of the Housing Act of 1954, Title VIII of the Housing Act of 1964, Title IX of the Demonstration Cities Act, from existing funds for state planning for federal programs in functional areas, or from new legislation.

c. States demonstrating a readiness to act in implementing a package of community development programs and to commit state funds should receive priority attention from federal agencies. Federal funds should also be available to encourage states to develop their own competence in community development planning and programming.

Existing Policy Position A–14, *State Participation in the Renewal and Neighborhood Development Program*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect:

HUD should immediately issue an addendum to the Urban Renewal and Neighborhood Development Program Regulations that clearly recognizes the role of positive state participation in this program for: (1) local NDP conformity to state renewal policies; (2) state services to NDP's for application preparation, planning, and implementation measures as eligible project costs; and (3) whenever state laws and requirements for renewal exceed federal requirements, that HUD will accept state certification of local compliance without any further review by HUD.

Existing Policy Position A–15, *Uniform Federal Relocation and Land Acquisition Policies*, adopted at the 61st Annual Meeting of the National Governors Conference shall remain in effect:

The Uniform Relocation and Land Acquisition Act of 1969 (S. 1) should be enacted as soon as possible, but with the following amendments: (1) deletion of all cut-off dates for the federal funding of the first $25,000 of relocation expenses; (2) retention of shared funding for all costs above $25,000; and (3) provision of matching grant funds to all states that create uniform statewide relocation and land acquisition policies and programs covering all public programs. The July 1, 1970, cut-off date in the Highway Act of 1968 for federal assumption of the first $25,000 in relocation costs should be deleted.

The Model Cities program has reached the point where closer Federal-State community cooperation is essential. The program is now operating in over 40 states and in some 150 cities, both large and small, with a total population of 50,000,000. Not only the 6,000,000 people in the model neighborhood areas stand to benefit, but also the total city by the emphasis upon local innovation and the development of more effective and responsive procedures and policies at all levels of government. This program should become the prototype for a new federal assistance delivery system.

HUD has appointed a State Advisory Task Force to find ways for the Governors and other appropriate State officials to participate as partners with the cities in the development of Model Cities comprehensive program submissions, and to contribute to the review of these programs. However, federal legislation provides no clearly defined role for State government in the program, and the problems of field coordination among the federal departments in the model cities program remains unsolved.

The States continue to be concerned about the lack of communication between HUD, model city applicants, and the Governor's office. The States have repeatedly said that state budgets and programs cannot be suddenly changed at some

indefinite future date when the model city applicant comes to the state for approval of project elements that are part of long-range state development programs.

At the state level, the Governor's office should assume authority under federal legislation to coordinate the program as it operates through state line agencies, to synchronize local Model Cities plans with state plans, and (either directly or through an agency for community affairs) provide financial and technical assistance to the Model Cities.

Either through administrative change or by amending the Demonstration Cities Act, supplemental federal funds should be made available to states with appropriate funds for financial or technical assistance to Model Cities. This, in turn, would provide the incentive of the "multiplier effect" to State Legislatures and would encourage large appropriations. Where possible, both federal and state flexible funds should be earmarked for priority use in Model Cities, as has been done with federal urban renewal funds.

II. Policy Formulation and Implementation

A. POLICY FORMULATION MECHANISMS (PROPOSED POLICY POSITION A–16)

In order that formulation of meaningful national community development policy may be undertaken the procedures of the domestic council should provide formal means for bringing the President, the Governors and local elected chief executives together on a regular basis to secure an exchange of views and information on national domestic policy and priorities. Further, the council should give due consideration to the inclusion of the Governors and chief local elected officials in the regular meetings of the council.

Representation of State and local interests among the staff must be assured.

The President will transmit to Congress his annual report and such supplementary reports as he deems necessary to advise as to progress in formulating a national community development policy and suggested implementing actions.

In addition a Joint Congressional Committee on National Community Development Policy should be instituted. It shall make a continuing study of the annual report on national community development and its supplements, and study ways of coordinatng programs in order to further the national policy. The legislation shall require the committee to file a report annually containing the committee's findings and recommendations. The committee may make such other reports from the time as it deems advisable. To maximize citizen participation, the committee is encouraged to hold extensive hearings.

In order to develop the national community development policy, a number of functions should be performed by the Domestic Council within the Executive Office of the President. These functions include: the preparation of an Annual Report on National Community Development, the collection and evaluation of information on population characterstics, growth, and movement, urbanization, human resource development, environmental conditions, economic growth, agricultural development, housing availabilities, transportation relationships and natural resource development and allocation, a continuing assessment of federal efforts to develop and implement a national community development policy; estimation of needs identified by interstate, state, metropolitan, local, and private sector plans, policies, and programs; and an estimation of the needs of federal programs which affect those non-federal plans, policies, and programs.

Perhaps the most important aspect of the whole issue of developing a national community development policy revolves around the question of what body or bodies, agencies or offices, should have the responsibility for developing the overall policy and component policies. Furthermore, who shoudl receive and approve or adopt such policies? While it could be argued that the President should have complete discretion to devise his own administrative strategy for initiating this massive job of policy development, coordination and implementation, the Task Force recommends that there must be a direct and immediate input by Governors and local chief executives, if such policy is to reflect fully the interests of the States and localities.

Provision must be made for the dissemination of such policies to all Federal agencies, to all state and local governments and to all parts of the private sector. Major federal program and administrative proposals should be reviewed for conformance with such policy and the results of such reviews be made part of the legislative record in Congress. Planning requirements by the several federal

agencies, which are a precondition of federal funding to state and local agencies, should seek to effectuate these policies.

B. GRANTS FOR COMPREHENSIVE PLANNING AND COORDINATION (PROPOSED POLICY POSITION A–17)

Assistance should be provided to plan comprehensively at the interstate, regional, metropolitan and local levels; to encourage local governments to cooperate in solving area-wide problems through comprehensive planning, review, and coordination: To foster intergovernmental attacks on problems of national urban and rural development; and to establish a method for exchange of development information among local, State and Federal Government.

Any legislation should provide that the grants be administered through the Executive Office of the President for distribution to the States, and through them to regions, metropolitan areas, counties and localities.

Comprehensive planning and coordination of development activity on all levels of government—federal, interstate, state, regional, metropolitan, and local—will be essential to the effective formulation and implementation of a national community development policy.

The value of this development and conservation planning, review and coordination will depend, in turn, upon the resources available for it, and upon coordination of the planning itself. Grants for this purpose must be provided by the federal government—both to the expanded Domestic Council, to the states, and through them to regions, metropolitan areas, counties, and localities. Moreover, the allocation and coordination of such grants to other levels of government is a critical function that must be a responsibility of the Executive Office of the President through the Domestic Council, using powers granted in any national community development act and in Title IV (Coordination of development assistance programs) of the Intergovernmental Cooperation Act of 1968. As Harvey Galper of the Urban Institute stated in "Federal Grants and State Planning":

> The federal government can play an important role in encouraging improved planning for community development through two mechanisms associated with grant-in-aid programs: 1. Planning assistance grants to states, areas, and localities; 2. Planning requirements which are preconditions for many Federal aid programs.

Conclusion

With approval of these policies we would like the permission of the Conference to continue our work.

Thus, we request permission to coordinate our Committee's work with the efforts of other Conference committees working on transportation, human resources, natural resources, and others as needed.

Policy decisions in each of these areas are essential to the future of a national community development policy. Transportation decisions on patterns of high speed rail transport will affect national population distribution, efficiencies of goods and people movement and the availability of metropolitan services for rural and small town areas. Decisions on natural resource utilization similarly will set parameters for location and extension of new community and urban influences. Policies on human resource development will affect the income earning powers and mobility of our people and their ability to use the amenities and resources of our urban and rural environments.

Deleted policies

Existing Policy Position A–3, *Federal Planning Requirements and Balanced Rural-Urban Development*, adopted at the 61st Annual Meeting of the National Governors Conference, shall be deleted. It is repeated verbatim with additional paragraphs as Policy Position B–6, adopted at the 61st Annual Meeting of the National Governors Conference. The Committee on Executive Management and Fiscal Affairs has jurisdiction.

> The Congress and the Administration should take immediate action to correct the confusing, contradictory, duplicative and overlapping mass of federal planning requirements and definitions. Federal agencies should recognize the Governor as the chief state policymaker and planner responsible for the coordination of all statewide and multi-jurisdictional sub-state planning. The elected heads of local government, when appropriate, should

be recognized in the same capacity for all state and federal programs operating within their jurisdictions.

An appropriate share of the funds of each functional federal grant program should be made available to the Governor for the purpose of relating functional plans to each other, to statewide goals and policies and to local development policies. This effort should begin with HEW which has 39 programs, each requiring a statewide plan.

Existing Policy Position A–7, *Increasing the Annual Contributions Contract Authority for Public Housing to Better Serve Low-Income Families*, shall be deleted, Congress and the Administration having accepted this recommendation.

The annual contributions contract authority for public housing should be increased to better serve low-income families.

Existing Policy Position A–8, *Increasing the Obligational Loan Authority of the Farmers Home Administration for Rural Housing Programs, and Coordination with HUD Housing Programs*, shall be deleted. This policy is incorporated in Proposed Policy Position A–5.

The obligational loan authority of the Farmers Home Administration for rural housing programs should be increased, and coordination with HUD housing programs should be more clearly defined.

REPORT OF COMMITTEE ON RURAL AND URBAN DEVELOPMENT

APPENDIX: SOME PROGRAMS AND STRATEGIES RELATING TO THE VARIOUS COMPONENTS OF A NATIONAL COMMUNITY DEVELOPMENT POLICY

During the course of Committee and Task Force deliberation on components of a National Community Development Policy, there has been discussion of numerous existing and proposed programs and strategies for carrying out that policy.

Many of these programs and strategies are listed in this Appendix, partly to identify those that have been introduced into Congress, and those that have been featured primarily in our Task Force discussions.

There has been no attempt to present an all-inclusive list of programs and strategies. Moreover, some that are listed will be found under more than one policy component because of their multi-faceted nature.

A. National Population Growth and Distribution Policy

1. New communities

a. Loans, Grants, and Tax Incentives for New Community and Other Land Acquisition and Development.

b. Federal Land Acquisition, Improvement and Experimental New Communities

c. Development Assistance and Guarantees for Financing

2. Minimum standards for public assistance benefits

The Social Security Act could be amended to establish national uniform standards and eligibility requirements for public assistance benefits to reduce the migrational pull of existing programs which has resulted in the concentration of welfare recipients in certain areas.

3. Family planning service

a. The Social Security Act could be amended to provide a higher level of funding for existing family planning programs.

b. New programs for family planning services could be developed.

4. Manpower

Legislation could be enacted to amend the Manpower Development and Training Act of 1962 to provide relocation costs assistance to unemployed and underemployed persons to move from areas of high unemployment and depressed areas into areas of greater employment opportunity. A supplementary training program of assistance to employers and trainees for on-the-job training should also be provided. Spread information about job opportunities.

5. Business and industrial location incentives

Legislation could establish incentives for the private sector to provide additional employment opportunities to residents of labor surplus areas and growth centers.

6. Economic growth incentives

Other programs suggested by resolutions adopted by the National Governors Conference in the past two years as contained in the Task Force Interim Report are, "Tax incentives, incentive loan rates, transportation policies which meet the needs of all areas of the nation, resource development projects, higher education research grants, small business defense contracts, community development and housing of all types on an areawide basis, and other methods which tend to enhance opportunity, where opportunity, for various reasons, might not exist today."

B. National Economic Development Policy

1. New communities.
2. Depressed areas:
   a. Inner city development—increasing the housing supply in cities where little vacant land is available.
   b. Activities by the Economic Development Administration of the Department of Commerce.
3. Variable tax incentives—to facilitate development in certain areas.
4. Small Business Administration—adjusting requirements to effect increased participation.
5. Model Cities—continuing programs and appropriations.
6. New housing technologies.
7. Distribution of defense and space contracts.

C. National Agricultural Development Policy

1. A system for establishing a land use priority plan. See D–2 below.
2. The preservation of agricultural land from development in order to assure an abundance of future food supplies.
3. The maintenance and preservation of agriculture land as a necessary habitat for wildlife, water resources, and for hunting and fishing near large urban and emerging rural communities.
4. The establishment of differential tax systems for agricultural land so as to encourage development in preferred locations.
5. A provision for encouraging the processing of agricultural products in rural America.
6. Research and development programs directed toward planning new and expanded uses for agricultural products.
7. Further development of foreign markets for agricultural development.
8. Establishment of an integrated transportation system adequate for meeting the increased transportation needs and services for rural growth centers and agricultural and food producing industries.
9. The coordination of federal, state and local efforts aimed at rural development.
10. Review of financing for agricultural production.

D. National Natural Resources Allocation Policy

1. Environmental Balance:
   a. Establishment of policies and standards for ecological balance to limit location, intensity and rate of development in order to protect natural resources needed for human health and satisfaction.
   b. Control of land, air, and water pollution.
2. Land Use Development and Control:
   a. The creation of a national land development and investment policy and program, including purchase, use and regulation of land in consonance with state community development strategies and programs.
   b. State coordination of federal and local land development and capital investment policies within each state, as well as a reassertion of state authority in zoning where local zoning practices constitute unreasonable barriers to such land development and capital investment policies.
   c. Special assistance for land acquisition to control growth.
   d. Open space.
   e. Land banking.
   f. Purchase of development rights.
3. Conservation and Development—concern for all non-renewable natural resources.

E. National Housing Policy

1. New methods of production and technological innovation.
2. Simplified and flexible state housing and building codes.
3. Increased subsidies for low-income housing, land aggregation, and tenant relation programs in the public sector.
4. Full funding of existing programs.
5. Establishment of assessment and taxation standards.
6. New communities, neighborhood development.
7. Coordinate and consolidate the numerous federal low and moderate income housing programs, and provide incentives and illustrations for program package and mixing.

F. National Transportation Policy

1. The inclusion of all federal programs and agencies affecting transportation within the U.S. Department of Transportation.
2. The establishment of the principle that all modes of transportation should share in the maintenance of public facilities which they use and from which they benefit.
3. Operation of transportation facilities within guidelines for maintenance of a healthy environment.
4. The establishment of trust funds for various modes of transportation supported by revenues derived from the respective modes and minimum general appropriations.
5. High speed rail transit.
6. Funds to implement mass transportation plans.

G. National Human Resource Development Policy

1. Manpower. See A–4 above.
2. Social Services. The federal government more efficiently distributes tax dollars through legislation and administrative procedures that do not bypass the financial, legal, and administrative resources of state government in dealing directly with local governments through such programs as model cities, relocation assistance, mass transportation, rent supplements, low-income housing, urban renewal, code enforcement, and community action.

H. National Intergovernmental Management and Financial Policy

1. Intergovernmental communication and coordination.
2. Federal incentives for state and local participation in financing.
3. Relate federal programs to state and local taxation tax effort.
4. Model cities.

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GOVERNOR'S OFFICE,
Harrisburg, Pa., July 29, 1970.

Hon. HENRY M. JACKSON,
Chairman, Senate Committee on Interior,
New Senate Office Building,
Washington, D.C.

DEAR SENATOR JACKSON: I am writing to express my support for the concept and basic principles of the proposed National Land Use Policy Act of 1970, S. 3354. Because of the efforts of some States, and the lack of action by others, a statement of national policy with respect to land use is long overdue.

In Pennsylvania we have undertaken a rigorous study of our land and water resources in connection with urban growth, economic development, new communities, and recreational requirements. It is becoming increasingly clear that such comprehensive planning must continue, and proceed at an accelerated pace, if we are to take maximum advantage of our shrinking natural resources, while at the same time preserving our environment for future generations.

The National Land Use Policy Act, and similar legislation, should enable us to move at a faster pace. It is not only the statement of national concern and the infusion of Federal dollars, both of which are most desirable and sorely needed, but it is also the establishment of a Federal-State-local partnership with major emphasis on comprehensive State planning which are the most salutary aspects of the proposed legislation. No level of government can afford to proceed in a vacuum with respect to land use planning and expect to achieve rational and meaningful results.

There are other bills which have been introduced in Congress which are relevant to a national policy on land use. I would urge that all these bills be carefully examined and coordinated where possible into a single legislative proposal. However, if S. 3354 remains essentially unchanged and is to be the predominant legislation in the field, there are several modifications which could be made which I believe will strengthen and clarify it.

The first of these is the need for greater flexibility in State administrative structures. Section 406. (c) provides for the initial grants for a three-year period following the date of enactment, after which time the designated State land use planning agency must meet certain requirements. One of these is that the State agency must have the "authority to acquire interests in real property if deemed to be necessary under the State-wide Land Use Plan."

Because the agency to receive grants in many instances will be State planning agencies which do not have the right to acquire interest in real property, many States might not be able to continue in the program after the initial three-year period. This requirement should be modified to allow States the flexibility to establish their own administrative structure for implementation, subject to the approval of the appropriate Federal agency.

River Basin Commissions also do not have the right to acquire interest in real property and they, too, could be forced out of the program after the first three years. In addition to this problem, River Basin Commissions, established by Federal law as interstate agencies, will require further clarification in the language of the bill. Will the existing fifty percent Federal-State contribution to the operation of River Basin Commissions remain in force or will grants for planning be at the two-thirds level for the first three years, as indicated in Section 404. (b) of the proposed bill?

Some clarification should also be made between planning for land use and existing planning grants under the Water Resources Planning Act of 1965. The former, in Section 403. (b) (1), proposes to make grants "to prepare an inventory of the State's land and related resources." The latter is providing grants to inventory water and related land resources. Duplication and, perhaps, conflict could result because in many cases different State agencies would be responsible for the two programs.

The final comment I would make on S. 3354 is that I find Section 407 unnecessary and retrogressive. In accordance with this section, if a State has had its rights for financial assistance terminated because it has failed to develop an acceptable State plan or because the designted State agency has not been granted certain authority including the right to acquire real property, the State shall "have its entitlement to certain additional Federal assistance programs, which shall be designated by the President, reduced at the rate of 20 percentum per year until such time" as compliance is obtained.

The primary purpose of the legislation is to assist and accelerate land use planning at the State level. Section 407 is unnecessary because, if States are able to make any progress in the first three years, the money will have been well spent and at least one of the purposes of the legislation will be satisfied. It should be noted that some States may be unwilling or unable to vest the required authority in State planning agencies if flexibility is not provided, as discussed in prior paragraphs.

Section 407 is retrogressive because its language is both broad and vague, its inclusion reduces the spirit of Federal-State partnership and participation, and its purpose to provide discriminatory powers of potentially great consequence runs counter to the President's concept of New Federalism and could penalize a State which may be making progress within the limits of its statutory authority.

I repeat that I strongly endorse the need for a statement of national policy with respect to land use. I again recommend that other relevant bills be examined for possible inclusion into a single legislative proposal. Finally, I respectfully request that you give serious consideration to my suggestions for the clarification and strengthening of S. 3354.

I commend the work of your Committee in coming to grips with this important subject, and I thank you for the opportunity to express my views on it.

Sincerely,

RAYMOND P. SHAFER.

EXECUTIVE CHAMBER.
Montpelier, Vt., August 5, 1970.

The Hon. HENRY M. JACKSON,
New Senate Office Building,
Washington, D.C.

DEAR SENATOR JACKSON: This is to convey to you my interest in the bill which you have introduced into the United States Senate, entitled "The National Land Use Policy Act of 1970" and identified as S. 3354. I had hoped to be able to appear at one of the hearings on the bill conducted by the Senate Committee on Interior and Insular Affairs, but found that my schedule did not permit me to do so. In lieu of presenting a personal testimony, this letter is to express my support for the objectives the bill seeks to achieve.

The bill represents, to my mind, a bold and exciting effort to deal effectively with one of the most fundamental issues in the public life of our country today. My planning staff has reviewed the bill and advises me that in their opinion the bill treats the major aspects of environmental and land use planning well. From my understanding of your proposed bill, I would hope that an eventually adopted act would retain the emphasis this bill gives to the ecological content of environmental planning, to population distribution, to new community development, to state responsibility in a national land use policy and program, to Federal coordination of Federal programs, and to a land use information system. Most important, however, is the recognition the bill gives to the central significance of land use planning within the general effort to exercise environmental management (Sec. 401., (h)).

The 1970 term of the Vermont State legislature has passed several environmental measures. These measures will enable our State to take a lead in the country in environmental planning and control. In particular, a key bill provides for the public regulation of land development in accordance with, among other criteria, a state development and land use plan. Our state planning staff is now engaged in the first stage of producing such a plan.

The development and land use planning program we are formulating in Vermont is very similar to that called for by S. 3354. I think it is accurate to say that our environmental planning program in Vermont could well be a demonstration of the purposes of your bill which are concerned with state activities.

Our experience may also be useful as an illustration of the purposes of the bill in the area of Federal-state relations. In particular, we have been working over the past several months with the chairman of the New England River Basins Commission (NERBC), Mr. Frank Gregg, to devise a Federal funding approach to water and land planning in Vermont which would enable our State to present the several Federal agencies represented on the NERBC with a single consolidated grant application for Federal planning funds. The submission of such a consolidated grant application would provide the occasion for a similarly concerted response by the Federal members of the NERBC.

Our relationship with the NERBC here has been rewarding to me in that we have proceeded from the assumption that useful planning work, with interstate policy and programs developed that can be implemented in each state concerned, must evolve from the planning work done at the state level. This approach assumes that meaningful information about the natural, economic, and social environment of a region is most discernible from the level of a state, or of a political subdivision thereof. This approach recognizes the fact, moreover, that legally and administratively the state is the critical level of government in that the police powers reside in and are exercised through the jurisdiction of a state.

In endorsing the general purposes of your proposal, therefore, I want to stress the need I see for a national land use policy and program to provide for a balanced role between the states and the Federal government in this fundamental area of public responsibility.

My planning staff has developed comments on specific provisions of the bill. I am enclosing a copy of these comments for your information and use.

Sincerely yours,

DEANE C. DAVIS.

Enclosure.

COMMENTS ON PROVISIONS OF S. 3354 BY SENATOR HENRY M. JACKSON, THE NATIONAL LAND USE POLICY ACT OF 1970

1. Sec. 401., (g), (2) declares that the national land-use policy should "foster the continued economic growth of all States and regions of the United States." We would question the wisdom of such an unqualified declaration as this is about a matter as fundamental to the environmental issue as economic growth. At best, the nature of the relationship here is open to serious debate. Why not, then, look to a national environmental planning effort as an opportunity to explore economic growth principles which may be different from those which now prevail and which are tactily assumed by this provision of the bill.

2. Sec. 401., (g), (4) contains the first of several references by the bill to new communities. We would suggest that the treatment of new communities by the bill could be generally strengthened. Since the major pattern of changing land use in the country is a function of the general process of urbanization, a new communities provision which sought to create certain optimum forms of urban development could well be the major vehicle for implementing a national land use policy.

3. Sec. 402., (a) provides in effect that the three categories of "environment," "recreation," and "industry" are to structure the content of statewide land use plans. The category of "environment" is too broad, while at the same time the categories of "recreation" and "industry" are insufficient as a list of needed land use categories. This provision is a confusing element in the bill, moreover, in view of later provisions which indeed provide for adequate categories for comprehensive land use planning (see Sec. 403., (b), (2), (A)–(H), and Sec. 406., (b)).

4. Sec. 402., (d) provides for the Federal administration of the bill by the national Water Resources Council. This provision seems good for two reasons:

First, the interagency nature of the Council should encourage meaningful cooperation between Federal agencies. In contrast to this arrangement we have in mind the insular position of a Federal line agency which can develop when it is assigned the lead in interdepartmental coordination. For example, the convening authority of the Secretary of the U.S. Department of Housing and Urban Development (HUD) with regard to the Model Cities program seems to have resulted less in interdepartmental cooperation than in assuring that the role of HUD in the Model Cities program is a dominant one and that the role of other Federal agencies is confused.

Second, the fact of building upon an agency concerned with water is good since the natural environment is composed primarily of water, land, and air. And

where air quality is primarily a function of our economic technology, water quality and wise land management are dependent variables of the same ecological phenomena.

5. Sec. 403., (a), (1), and (2) provide for both state and inter-state agencies to undertake similar planning activities. A possibility could exist here for conflicts of overlapping substantive planning activities and plan implementation efforts with regard to the same geographical areas. We realize that the work of such bodies as the New England River Basins Commission is probably intended to be provided for here. Our concern would be, however, that a clearer relationship be articulated in the bill.

6. Sec. 404., (b) provides for a three year period for maximum Federal funding. While this provision would constitute a great pressure on states to initiate land use planning early on, one can envision the considerable confusion of state agencies and state governments rushing to get at the head of the line, and of Federal agencies trying to shift priorities once again. One can also imagine the exploitation by the planning consultant industry which this provision could generate. Secondly, however, the subsequent low percentage of funding could be a deterrent to environmental planning by states.

7. Sec. 404., (d) provides for funding by several Federal agencies for the same planning effort. This provision seems good because, first, it would help reverse the current pattern of fragmentation of planning projects receiving Federal assistance which is caused in part by Federal laws, regulations, and customs that prohibit the matching of Federal funds. Second, one would assume that this provision would foster "consolidated grant applications" by states, together with corresponding Federal responses, both of which activities would encourage coordinated planning efforts within the states.

8. Sec. 406., (c) provides that after the initial three year planning period, the state agency which draws up the state land use plan shall also be the agency to obtain certain authorities to implement the plan. This provision resolves categorically and by prescription an area of public planning and administration which is at best an open theoretical question and which in practice should be regarded on a case-by-case basis.

It is our opinion that in the case of Vermont—and probably in principle—it is wrong to try to have the state agency that makes up the state-wide land use plan also be the agency responsible for the administrative and regulative functions of implementing the plan. This is not to say that the planning agency responsible for making the plan cannot or should not use the occasion of this planning work to achieve certain administrative results. Indeed, we hope to use our land use planning effort as the catalyst of general planning coordination in state government. It can also be said that a state-wide plan of the comprehensiveness of that envisioned by the Jackson bill could not be achieved without the state planning agency effecting considerable administrative coordination.

On the other hand, however, implementation—or, in some respects "enforcement"—of any portion of the plan will, first of all, be a narrowing experience in terms of the subject area of the land use plan, and secondly, will urge the administrator of the plan to develop the typical vested interest of any executor of a line activity. It seems to us, therefore, that since the land use plan contemplated by the bill must remain "comprehensive" (as opposed to "functional") in its intellectual form, and since the emotional impetus of the plan should be from a concern for the environment that is as objective as possible, its proper formulation would only be jeopardized by mixing official responsibilities for planning and execution in this case.

APPENDIX 3

Excerpt from the Congressional Record of August 11, 1970, containing remarks of Senator Gaylord Nelson and proposed policy statements of the National Governor's Conference Committee on Natural Resources and Environmental Management.

[From the Congressional Record, Aug. 11, 1970]

ENVIRONMENTAL DETERIORATION

Mr. NELSON. Mr. President, the National Governors' Conference is presently meeting at Lake of the Ozarks, Mo. In the next several days, the Governors will be considering a number of proposed policy statements developed by their Committee on Natural Resources and Environmental Management which deal with the coordinated governmental mechanisms requisite national attitudes necessary to begin to come to grips with the massive and expanding problems of environmental deterioration that challenge this Nation.

The 10 proposed policy statements recommended by this committee, chaired by the Honorable William L. Guy, Governor of North Dakota, offer a significant agenda of many of the issues associated with effective environmental policies and management. Individually, the 10 proposals focus on the requirements for:

First, Comprehensive national planning and coordination of activities;

Second, the need for national goals in the fields of ecology, environment, conservation, and population;

Third, the placement of more responsibility for planning and action at the State and local level;

Fourth, increased and more relevant educational efforts in environment, conservation, and population;

Fifth, a national voluntary population distribution policy;

Sixth, a national and State policy on coastal zone planning and management;

Seventh, a change in national attitudes toward non-replaceable natural resources;

Eighth, a policy for State land use planning;

Ninth, full funding and implementation of State comprehensive outdoor recreation plans; and

Tenth, a revitalization for forestry efforts on a national basis by all ownerships.

Without specifically endorsing any one of these policy statement proposals, I would like to commend the Committee on Natural Resources and Environmental Management and the National Governors' Conference for making these issues an important part of their deliberations. It is certainly a reflection of their concern for improving the quality of the environment and the quality of life for all our citizens. It is also a recognition of the role which State and local units of government must play in the coordinated efforts that will be needed to end the senseless and disasterous destruction of our natural life support systems.

So that the full text of these proposed policy statements which will be presented to the Governors' Conference this week may be brought to the attention of the Congress, I ask unanimous consent that the policy statements of the Committee on Natural Resources and Environmental Management of the National Governors' Conference be printed in the RECORD.

There being no objection, the statements were ordered to be printed in the RECORD, as follows:

Policy Statements: Committee on Natural Resources and Environmental Management

COMPREHENSIVE NATIONAL PLANNING AND COORDINATION IS NEEDED

There is need for a Cabinet level Department of National Planning directly under the President of the United States, who is our Chief Planner. Such a department would be responsible for directing and coordinating all federal planning in all national and federal activities. The National Department of Plannig would include environment and conservation as essential ingredients to the planning in every field of national concern.

This department to be effective might contain several closely related bureaus or divisions such as the Office of Management and Budget; Division of Basic Data and Projections; Division of State-Federal Planning Relations; Division of Ecological, Environment and Conservation planning; and other divisions representing substantial pieces of the national planning action.

Such a Cabinet level Department of Planning would assist the President in developing national goals and would see to it that such goals were considered by all federal agencies in their planning and programming.

There is dire need for massive and comprehensive planning and coordination of effort in many broad fields such as Environment, Conservation, Population Distribution, Transportation, Crime Control, and many others.

There will always be inadequate, fractionated, and uncoordinated planning and programing taking place at the federal level until a mechanism such as a Cabinet level Department of National Planning is developed to enable the President to gain control and direction of his administration's planning efforts.

A Cabinet level Department of National Planning should not be confused with proposals for a national department of federal government management. The two departments' functions would be very different.

Nor should it be construed that a Department of National Planning would take over individual federal agency or state government responsibility in the field of planning.

States and the private sector, as well as the many federal agencies, will always have trouble developing their local plans in environment, conservation, and population distribution until there is a strong, unified Department of National Planning.

A single federal agency to which all state planning efforts could be directed for federal planning grants and planning matching funds would be preferable to the present system of requiring the states to shop through many federal agencies administering many federal programs to obtain federal planning funds.

NATIONAL GOALS ARE NEEDED

There is a need for the President and Congress to set National Goals in the fields of Ecology, Environment, Conservation, and Population. It would simplify the direction of state and local efforts if they could mesh their goals with national goals. These goals should stand out as signal flags on the halyards of our ship of state so that all could see them and understand them.

STRONG STATES IN THE FEDERAL SYSTEM ARE NEEDED

There must be a constant recognition of the need to place as much responsibility as possible in planning and action at the state and local levels. The unique abilities of state and local government to recognize priorities at the grass roots level should be respected and understood by the federal government. State governments should be permitted to set higher minimum standards than the federal government in the fields of environmental management and conservation.

The states need as much flexibility as possible in adusting state and local programs to those needs unique to the area, economy, etc. Therefore, the block grant approach to federal planning and action funds disbursement is preferred over categorical grants.

MORE RELEVANT EDUCATIONAL EFFORTS IN ENVIRONMENT, CONSERVATION, AND POPULATION ARE NEEDED

We must recognize the urgent need for the teaching of environment, conservation, and population as a major basic educational requirement in primary,

secondary, and higher education. Curricula of traditional offerings at all levels of education need to be examined for their relevance to the rapidly changing conditions of environment, natural resources, and population.

The competition for students' attention to a wide range of study matter should not be allowed to prevent a full understanding of the natural forces at play on this planet. Too often in the past, students have not been adequately taught the subjects of environment, conservation and population, and have not learned the interrelationship of these subjects. Yet failure to understand this relationship could possibly spell mankind's doom if informed action based on knowledge is not taken by the public.

States should require a constant updating of educational curricula in order to strengthen the offerings in environment, conservation and population.

A NATIONAL VOLUNTARY POPULATION DISTRIBUTION POLICY IS NEEDED

The United States needs to develop a national policy on voluntary population distribution. It is now projected that the population of the United States will rise from 200 million people at present to more than 300 million people by the year 2000.

Our nation has practiced population distribution incentives in the past through such devices as the Homestead Act. A new and fresh approach to population distribution at the present time is needed.

The social and economic problems of over-populated areas include ghettos, poverty, mass transit demands, overloaded educational, health, and recreational services, pollution of air and water, increased crime, and a growing level of individual frustration and nervous tensions.

On the other hand, underpopulated areas are suffering high economic and social costs as well. These costs are brought on by an inadequate tax base and too few people to support necessary institutions on a community basis such as schools, churches, hospitals, recreational areas, etc.

Environmental management and conservation become excessively costly because of the severe population imbalance between the overpopulated states and those which are underpopulated.

The federal government, through its inadvertent and uncoordinated planning and programs, is one of the major factors in creating population imbalance.

There are remedies that should be attempted to alleviate population imbalance. Subsidized low interest rates could be offered on loans for industrial expansion in underpopulated areas. Manpower training programs to assure an employee supply to industries which would expand outside of congested areas could be implemented. A revamping of the Interstate Commerce Commission freight rates, which now make economic expansion virtually impossible in some underpopulated areas, could be adjusted to permit industrial expansion in underdeveloped areas.

Federal tax incentives might be given to industries that locate away from overpopulated areas. Special federal grant programs to strengthen the desirability of living in underpopulated areas might be made. Grants for educational, health and recreational services necessary in order to attract people to live in areas now considered underpopulated would lessen the cost and burden of trying to provide these same services to the same people if these people are attracted to densely populated areas.

NATIONAL AND STATE COASTAL ZONE POLICY PLANNING AND MANAGEMENT ARE NEEDED

(a) National Coastal Zone Management

The coastal zone presents one of the most perplexing environmental management challenges. The thirty-one states which border on the Oceans and the Great Lakes contain seventy-five percent of our nation's population. The pressures of population and economic development threaten to overwhelm the balanced and best use of the invaluable and irreplaceable coastal resources in natural, economic, and aesthetic terms.

To resolve these pressures, two actions are required, First, an administrative and legal framework must be developed to promote balance among coastal activities based on scientific, economic, and social considerations. This would entail mediating the differences between conflicting uses and overlapping political jurisdictions.

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Second, efforts must be made to gain additional knowledge of the nature of the coastal zoning and the multiple effects that different uses would have upon our environment.

States must assume primary responsibility for assuring that the public interest is served in the multiple use of the land and water of the coastal zone. Local government cannot be expected to cope with the broad spectrum of interrelated coastal problems, nor can local political subdivisions be expected to make their judgments consistent with those of many interlocking political jurisdictions.

Coastal states, because of unique conditions existing along their shorelines, have advantages in coping with coastal zone planning and management that the federal government does not have. The federal government, however, should establish incentives and assistance to help the coastal states prepare plans and action.

The ultimate success of a coastal management program will depend on the effective cooperation of federal, state, regional, and local agencies. At the federal level, this would require the development of goals and an administrative framework which would avoid the existing duplication, conflict, and piecemeal approach that is too often typical of federal planning assistance programs. Any federal legislation which attempts to establish a coastal program must allow states the necessary flexibility for creating management instruments most suited to their specific conditions.

Basic to a coastal management program are the funds necessary to plan and take action. The requirements for coastal zoning management are so urgently needed in the nation's interest that federal monies must be made available to the states at a level which will not only provide incentive, but will allow an adequate program to be developed based on federal, state and local participation.

Any attempt to diminish the federal financial participation or to shift the burden to the states will result in irreparable delay and inadequacy in bringing under control the serious coastal environment and natural resource conservation problems.

(b) Coastal States Organization

In recognition of the need for preserving the invaluable and irreplaceable marine resources of the nation, and in response to the National Governors' Conference policy statement calling for the formation of a maritime states organization to pursue those ends, the Coastal States Organization was established.

Among its responsibilities, the Organization will:

(a) contribute to the development of common policy regarding national coastal zone management legislation and programs, and serve as spokesman for the maritime states, territories, and trust territories on marine and coastal affairs;

(b) provide mutual assistance is solving common state and intermarine resource problems;

(c) serve as a clearinghouse for information relative to marine activities of the member states.

In affirmation of the responsibilities and powers of the states in the management of marine and coastal affairs, and in recognition of the purpose of the Coastal States Organization to further these goals, the Governors urge all eligible states to become members of the Organization, and encourage the full cooperation of all states, inland as well as coastal, in the efforts of the Organization.

A. CHANGE IN NATIONAL ATTITUDES TOWARD NON-REPLACEABLE NATURAL RESOURCES IS NEEDED

There is a growing need to establish a new attitude in America among consumers which differentiates between quality of living and standards of living, as well as quantitative consumption and quality of life.

For example, we should examine the wisdom of our present system of reduced electric power rates as a reward for heavy consumption when that consumption might be beyond the electric consumption needed for a specific business or residence.

A flat rate for an adequate amount of electric energy based on the size of family or industrial need could be established. Sharply rising rates for electric consumption above the adequate standard set would provide a penalty for that waste which does not contribute to our economy or to the quality of living.

The consumption of non-replaceable coal in the thermo-generation of electricity which is wasted does not add to the quality of life and is an example of squandering natural resources without significant benefits to mankind.

Waste of fresh water cannot be tolerated indefinitely. Less than one percent of the water on the face of the earth is potable. In the face of rising populations and per capita water use, we are faced with the need to conserve our precious water resources by eliminating unnecessary waste. Wasted water adds nothing to our quality of living.

The same principle which applies to the wasteful use of electric energy and potable water can be applied to the use of petroleum products in our automobile engines. States should consider a policy of encouraging smaller but adequate engines through sharply graduated license fees which discourage larger than necessary engines that do not contribute to the quality of living. There are far too many vehicles in use today which wastefully consume the non-replaceable crude oil resource and add unnecessary pollutants to the air.

The national attitude which equates some forms of waste with a high quality of life needs to be changed. Waste does not add to the quality of life, but in fact denies a high quality of life to future generations.

STATE LAND USE PLANNING IS NEEDED

There is an interest and need for a more efficient and comprehensive system of national and statewide land use planning and decision-making. The proliferating transportation system, large scale industrial and economic growth, conflicts in emerging patterns of land use, the fragmentation of governmental entities exercising land use planning powers, and the increased size, scale and impact of private actions have created a situation in which land use management decisions of national, regional and statewide concern are being made on the basis of expediency, tradition, short term economic considerations, and other factors which are often unrelated to the real concerns of a sound land use policy.

Across the nation, a failure to conduct sound land use planning has required public and private enterprise to delay, litigate, and cancel proposed public utility and industrial and commercial developments because of unresolved land use questions, thereby causing an unnecessary waste of human and economic resources and a threat to public services, often resulting in decisions to locate utilities and industrial and commercial activities in the area of least public and political resistance, but without regard to relevant environmental and economic considerations.

The land use decisions of the Federal Government often have a tremendous impact upon the environment and the patterns of development in local communities; that the substance and the nature of a national land use policy ought to be formulated upon an expression of the needs and interests of State, regional, and local government, as well as those of the Federal Government. Federal land use decisions require greater participation by state and local government to insure that they are in accord with the highest and best standards of land use management and the desires and aspirations of state and local government.

The promotion of the general welfare, and to provide for the full and wise application of the resources of the Federal Government in strengthening the environmental, economic and social well-being of the people of the United States, we believe, is a continuing responsibility of the Federal Government, but should be consistent with and recognize the responsibility of state and local government for land use planning and management.

There should be undertaken the development of a national policy, to be known as the National Land-Use Policy, which shall incorporate environmental, economic, social and other appropriate factors. Such policy shall serve as a guide in making specific decisions at the national level which affect the pattern of environmental and industrial growth and development on the federal lands, and shall provide a framework for development of interstate, state and local land use policy.

The National Land Use Policy should:

1. Foster the continued economic growth of all states and regions of the United States;

2. Favor patterns of land use planning, management and development which are in accord with sound environmental principles and which offer a

range of alternative locations for specific activities and encourage the wise and balanced use of the nation's land and water resources;

3. Favorably influence patterns of population distribution in a manner such that a wide range of scenic, environmental and cultural amenities are available to the American people;

4. Contribute to carrying out the federal responsibility for revitalizing existing rural communities and encourage, where appropriate, new communities which offer diverse opportunities and diversity of living styles;

5. Assist state government to assume responsibility for major land use planning and management decisions which are of regional, interstate, and national concern;

6. Facilitate increased coordination in the administration of federal programs so as to encourage desirable patterns of environmental, recreational, and industrial land use planning; and

7. Systematize methods for the exchange of land use, environmental and economic information in order to assist all levels of government in the development and implementation of the National Land Use Policy.

Intelligent land use planning and management provides the single most important institutional device for preserving and enhancing the environment and for maintaining conditions capable of supporting a quality life while providing the material means necessary to improve the national standard of living.

FULL FUNDING AND IMPLEMENTATION OF STATE COMPREHENSIVE OUTDOOR RECREATION PLANS IS NEEDED

Remaining undespoiled natural areas of wetlands, forests, plains, deserts, and mountains are being exploited and despoiled at an alarming rate. The expenditure of outdoor recreational funds should not be diverted from the urgent need to acquire and protect these natural areas.

Crash funding programs that seek to carve urban parks in the midst of urban glut dramatic examples of inadequate planning. The overcoming of inadequate planning in the past through crash programs should not be allowed, through the monopoly of limited funds, to perpetuate inadequate planning, insufficient preservation, and too little and too late acquisition for future generations.

Full funding and implementation of state comprehensive outdoor recreation plans is the best means of solving both short-run and long-run recreational problems of megalopolis.

A REVITALIZATION OF FORESTRY BY ALL OWNERSHIPS IS NEEDED

There is an urgent need to revitalize forestry efforts nationally on all ownerships. The timber supply situation has pointed up the need for strong direction by the Administration.

The future demands for lumber and forest products will provide increased competition between the many uses of a shrinking forest land base. There are presently substantial acreages of state, private and federal lands potentially capable of producing forest products, but are in need of reforesting.

Proven timber management practices could be instituted by the Forest Service and the Bureau of Land Management, other public and private forest management agencies to promote increased or high yield timber growth on existing timber-producing lands, provided funds were made available for this purpose.

The federal and state governments need to establish a policy to encourage reforesting of denuded publicly owned commercial forest lands.

Existing programs need to be strengthened to offer greater inducements for private landowners to reforest their lands. A great number of public values would thus accrue, beyond those to the landowner individually. Such benefits as establishing and improving watersheds and water quality, arresting soil erosion, improving flood control and stream sedimentation, wildlife habitat and recreational opportunities would result. The increased fiber would contribute to the housing needs of a growing nation.

APPENDIX 4

(Other statements submitted for the record.)

STATEMENT OF LEWIS G. SMITH, WATER RESOURCES CONSULTANT, FEDERATION OF ROCKY MOUNTAIN STATES, DENVER, COLO.

I am grateful for this opportunity of speaking in favor of amending the Water Resources Planning Act to set fort ha National Regional Land-Use Policy. I wish to stress the great importance of combining considerations of regional land-use zoning with those of regional water management and with considerations of population dispersion as the most prospective means of enhancing the "human ecology" in years to come. I wish also to suggest that our planning should extend to much larger regions than is the custom, even to be continental in scope, if some of the water quality problems are to be overcome, particularly in the Great Lakes region.

Never before have the United States and Canada been so concerned as they are today over the direction our civilization on this continent is going. Will we continue the present course of amassing great concentrations of people in ever-enlarging cities with all the attendant social ills, or will a new course be taken, aimed at attracting populations to spread more evenly over the potentially habitable lands, in more pleasing living and working situations, in closer communion with their natural heritage, and in better harmony with the natural terrain from which the support of life must be drawn? Profitably trade-offs might be arranged to benefit both nations through working together. Our thinking on these matters should not stop at the border.

Population dispersion, combined with regional land-use zoning and regional water management, as new national social goals for both nations, offers a bright new promise as a means of halting the present thrust toward the ever-tightening compress of people in our mushrooming city organisms.

Based on available potentially habitable land, neither the U.S. nor Canada is in a population crisis on the whole: only a crisis of population distribution. The problem is to induce the spread. Here regional water management and land-use zoning have an essential role. The national social interests will be better served in the future by a policy encouraging the systematic conveyance of water to potentially habitable lands, many of which now lack water or will lack it in the near future, rather than planning to carry more water to areas already densely populated.

Stabilize our population in the U.S., we *must*, as a long term imperative. But, assuming eventual success in stabilization, it is not the full, easy solution to the sociological problems lying ahead. Demographers point out the fact that even if a two-child family average were to be achieved by 1975, which is most unlikely, the population of the U.S. would not stabilize for another 75 years. In the meantime we can expect well over another one hundred million persons with feet under the table. On top of this, better than one third of our present population needs a better table, in the national social interest.

Population growth is not autonomous for any *specific area* in the U.S. or Canada, and past growth histories are not necessarily good guides for projecting future population growth in the specific areas. For the nations *as a whole*, however, the population growth tends to be autonomous, depending on future success in limiting family size, since there is freedom of movement, between states, provinces and across the Canadian-U.S. border, to take advantage of some attractive living and work conditions.

Population growth within a specific area is the result of three principal factors: attractive climate, availability of water, and work opportunity—in varying weights for a given location. There are other factors such as close access to good scenery and recreational facilities. Sometimes good climate and work opportunity will attract persons even though the water is limited. In some cases a

good work opportunity will attract people even though the climate, scenery and all else leaves much to be desired. In all cases, however, there has to be water. Any population projection for a specific area inherently assumes that water is or will be made available.

The movement and control of water on a regional basis thus becomes the main instrument in the creation of conditions which can influence the movement and settlement of people, by attraction—the only way it can be done in a democratic society. By exercising good regional land-use zoning along with the regional augmentation of water in the appropriate places much can be done to bring about population dispersion through the creation of attractive living and work opportunities.

By taking large regions into consideration for regional land-use zoning, such as the Canadian Prairies, the High Plains, the Central Lowlands south of the Great Lakes, the Atlantic Coastal Plain, and many of the great intermountain valleys of the west, and locating new centers of habitation in relation to regional water management and augmentation, we can generate those attractive living and work conditions away from present population centers and away from the headwater source areas. The time has come to cease the old unrestrained custom of locating cities along natural water courses, and in the flood plains, where each city passes its pollutants successively and increasingly to the next town downstream. It is time to institute a new practice of tapping a stream fairly close to the head waters where the water is still of acceptable quality and where storage can be provided, and conveying it to a string of new cities or improved existing towns located on the topographic highs of the region. In this way, advantage could be taken on the economy of scale with a number of communities served by the same conveyance facility. Also, water from the conveyance system might be used initially for municipal and industrial purposes and secondarily for agriculture.

With the cities located on the higher sections of the region there would be a better chance for the nutritive wastes to be reused and absorbed on the surrounding terrain agriculturally rather than passed directly into a stream as in the past.

As an example of the possible regional application of the above principle of locating new cities away from natural streams we might consider the broad Central Lowlands south of the Great Lakes, involving the states of Iowa, northern Missouri, Illinois, Indiana and Ohio. If additional water could be imported to the region as a whole, a regional system of large underground aqueducts could be devised to supply water to whole strings of cities located on the relatively flat divides between the various drainage systems in the region.

New water for these Central Lowlands could be imported most likely from the Arctic flowing waters of the James Bay tributaries in the Canadian Provinces of Ontario and Quebec. Canada likely could find a genuine self interest in such water export, both because of the perpetual revenue from the sale of water, which now wastes to the Arctic, and because of her own concern for the deteriorating quality of water in the Great Lakes. Perhaps a trade-off could be arranged whereby in return for the imported water such as to enable a wide new distribution in the Central Lowlands, a policy could be established to encourage new industry and habitation on the U.S. side to locate south of the Great Lakes Drainage Basin rather than in it. The long term solution to the Great Lakes pollution problem, in addition to attempting to clean up present pollution-generating activities, is to minimize the growth of additional industry and habitation within the basin, particularly adjacent to the Lakes and within the relatively narrow land margins between the lake shores and the drainage divides, such as the section south of Lake Erie.

There have been Canadian proposals for study of diverting some of the James Bay water southward, and there are many alternative concepts which might be considered. As one alternative, the numerous streams which flow northward in generally fan-shaped drainage systems, and which tend to converge toward the bay, might be tapped progressively and systematically at poinnts where the convergence is more prominent, about half-way down the course, and lifted back over the divide on the south and into the Great Lake System in exchange for water diverted southward from the Lakes. Since not all of the flow from a given stream would be sent southward, that part which continues to flow to the bay could be used to develop hydroelectric power required for lifting the water over the south divide. Other more simple diversions into the Great Lakes might be undertaken initially, such as diverting water from Ottawa River through Lake Nipis-

sing into the Georgian Bay arm of Lake Huron. Some water from the James Bay tributaries and Ottawa River might be passed through the Great Lakes System for a number of years simply to provide additional flushing action, particularly through Lake Erie.

Another concept of water transfer on a continental scale, promising to be mutually beneficial to both Canada and the U.S., is the idea of tapping some of the abundant waters of Mackenzie River, whose flow at the mouth has been stated to be in excess of 300 million acre-feet annually, and redistributing it over the Canadian Prairies and potentially habitable areas in the whose seventeen western states, all under regional approaches to land-use zoning. Here, on a continental scale, land in the entire western half of the continent might be zoned for use in a way to minimize additional growth and development in the more mountainous headwater areas and, as a better alternative, induce habitation and growth out in the more open terrain. Could not the mountainous water source areas be more and more set aside as recreational and water supply sanctuaries, preserving, as much as possible, the water quality near the source, and enabling the water to be conveyed away from the natural courses to permit a wider dispersion of people on the open plains and broad valleys, and effecting a better separation of the good and spent waters?

It is believed that the concepts which have been devised for international transfers of water are not out of proportion to the problems we face socially if we continue the old uncontrolled massing of people in our large unwieldy cities.

Moreover, we need a new challenging long term *constructive* work opportunity for our present younger generation, and those to come—something comparable to the needs of our times and the future, as the building of the railroads was one hundred years ago. Like the ant and the honey-bee, man is a working creature and must work, not only to survive, but to maintain and strengthen his physical, mental, and moral fibre.

Today we spend much on social welfare. Could not at least some of these vast sums be better spent, in the national social interest, by creating a large-scale, long-term *work opportunity* such as would be assured under the continental water management schemes? Funds going to national welfare, the military, space, and highway programs require no benefit-cost justification, no monetary return to the treasury, and no interest on the capital spent. This is money spent in the national interest. Why could not money spent on a large national physical infrastructure whose operation would bring returns by way of improving the national future social wellbeing, as well as providing a large work opportunity in the near future, be equally exempt from monetary payback or interest charges? Could not these expenditures be exempt the same as the non-reimbursable funds which have gone into flood control and navigation?

Some will ask, would the large water transfers violate nature and her processes? Mr. E. A. Gutkind had an answer long before the present uproar over ecology, when he said:

"Man and nature are twin agents in the perennial revolution which shapes and reshapes the face of the earth and the character of man's activities. That struggle, sometimes violent and sporadic, at others gentle and consistent, yet forever demanding a new response to each new challenge, activates the potential energies of man and nature, moulding them into a grand pattern of advance or retreat, of creative interaction, or disastrous antagonism, and of promise or failure."

The *present challenge* is to work *creatively* with nature; *gently*, *consistently*, and *persistently*, to construct, through good land-use choices and water transfers, a less congested habitat, full of *promise* for a better society.

NATIONAL ASSOCIATION OF HOME BUILDERS,
Washington, D.C., July 27, 1970.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: On behalf of the National Association of Home Builders I would like to request that the comments set out herein be included in the hearing record on S. 3354.

The National Association of Home Builders represents a membership of approximately 51,000 people. These members are affiliated in 481 local and state associa-

tions throughout the country. We estimate that our members build two-thirds of all the homes and apartments constructed by professional builders.

The need for developing a national policy with respect to the use of land is a critical one. We applaud the recognition of this need as demonstrated by the introduction of S. 3354 and the hearings your committee has conducted on this legislation. Certainly, there are many examples of poor land use which have occurred in the absence of proper planning and which serve as ample testimony for the need to improve planning for the future.

However, we view with concern the absence in this legislation of a statement of national policy with respect to the use of land for housing. A housing element should, without question, be a vital part of any plan for the use of land, and in particular a national plan. Planning for housing must have top priority, for without adequate housing for all people, the preservation of lakes, streams, forests, and all the rest is meaningless.

This legislation indicates an unwillingness to continue to leave to chance—or to the whims of governments acting independently of each other—planning for environmental, recreational and industrial purposes. But these are not the only problems. Improper planning for the location of housing has been just as destructive to our environment. Far too often, land controls have encouraged the very worst in land development: urban blight, suburban sprawl, haphazard development and destruction of natural amenities.

Even more tragic, is the misuse of such controls to thwart efforts of government and private industry to provide a supply of adequate housing for all our people. Such practices as excessive large-lot zoning, unnecessarily high subdivision standards, exclusion of multi-family dwellings, excessive administrative delays in granting approvals and many others, have had a profound effect on the supply of housing. By unduly limiting the number of housing units that can be built near to centers of employment and commerce, and by thus raising the price of land and the housing thereon, access to adequate housing is denied to a large segment of our population.

A national land-use policy should recognize the responsibility of every unit of government assuming its share of the national housing goals adopted by the Congress in the 1968 Housing Act. These goals, which contemplate the provision of a decent home and a suitable living environment for every American family, can be ultimately met only through full local participation.

The importance of housing as part of land-use planning is recognized in the 701 comprehensive planning program administered by the Department of Housing and Urban Development. This program now provides grant assistance to state, regional and local bodies for the development of comprehensive land-use plans. In 1968 there was added to this program, at the urging of our Association, a requirement that each plan contain a housing element which took into consideration the present and prospective housing needs of the area. As the result of this legislative change, HUD has prescribed far-ranging and thorough regulations that recognize the importance of housing in 701-assisted planning. We commend these regulations to your attention.

A closely related matter, deserving special attention in the development of a national policy with respect to land, is the importance of fostering the prompt and orderly provision of community facilities. The nature, extent, cost, direction, and manner of land development for housing and other purposes is inseparably linked to the construction of sewers, water lines, roads, utilities, etc.

We are alarmed over provisions in this legislation which would seem to encourage states to acquire land for implementation of a state plan. While we do not quarrel with government acquisition of a reasonable amount of land for recreation, parks and conservation, or for the provision of other public facilities, we vigorously oppose the acquisition of land by government either for future commercial and residential development or to block or delay proper subdivision and development. Such practices defeat what we firmly believe should be the prime objective of any land use plan: assurance of the availability of an adequate supply of land at a reasonable price for development in an orderly manner for the needs of all people with due regard to the preservation of natural amenities. Given proper planning and enlightened regulation by all levels of government, private industry can meet the housing needs of the 1970's and at the same time preserve our most precious resource, land, for the use and enjoyment of generations to come.

In conclusion we would like to raise one further but basic point. This point relates to the possible conflict that would arise, if this legislation is enacted in its

present form, between the Land and Water Resources Council and the Department of Housing and Urban Development. As we mentioned above, HUD administers the 701 comprehensive planning grant program. Through this program HUD provides assistance to, and supervises planning by, practically every planning agency in this country from the interstate level to the village level. In addition, HUD has important responsibilities with respect to coordinating area-wide planning requirements that apply not only to its development grant programs but also to those of other departments of the Federal Government, such as, Interior and Transportation.

Unless there is an ordering of the responsibilities between the Council and HUD in this field of planning for the development of the nation's land and the establishment of an effective coordination mechanism, we are seriously concerned that there may result confusion over what their respective roles are to be. Along this line, we suggest that the Committee may wish to consult with the Banking and Currency Committee, whose Subcommittee on Housing and Urban Affairs has exercised for many years a significant role in the field of land-use planning. This Committee should be able to make an important contribution to the devising of legislation which adequately provides for the planning of the use of the nation's land especially with respect to the nation's housing needs.

Sincerely,

JOSEPH B. MCGRATH,
Legislative Counsel.

STATEMENT OF NATIONAL ASSOCIATION OF MANUFACTURERS

This statement is submitted on behalf of the National Association of Manufacturers, a voluntary association of business enterprises, large and small, located in every State and providing some three-fourths of the Nation's manufacturing employment.

The purpose of this statement is to comment on certain aspects of S. 3354, the proposed National Land Use Planning Act.

INTRODUCTION

It is obvious that land use planning can affect every aspect of human life. Land use planning can dictate where people live and in what kind of homes, where people work and how they travel between home and work. Land use planning can dictate the location and amount of land available to grow food for people, and the location and type of recreational opportunities available to people. Land use planning also can dictate restrictions on production and distribution of goods and energy which can result in tremendous costs to the consuming public.

The National Association of Manufacturers recognizes the need for sound planning. Attached is a copy of the Association's official policy position on "Urban Land Utilization Problems," which points out that "the primary failure to intelligently plan and implement the planning has historically resulted in urban problems."

The policy position further states that "We should seek solutions through imaginative efforts by business and industry in cooperation with other civic groups and local and regional authorities rather than have the community only compete for and depend on funds available from the national government. Local and regional planning must be an integral part of this effort in order to insure adequate housing, protection of public health and safety, employment opportunities, transportation facilities, open spaces and cultural and recreational opportunities within metropolitan areas, and particularly within central city areas".

Most significantly, the policy position concludes by stating:

"Appropriate state agencies should coordinate state, multi-county, metropolitan, and local planning and relate such planning to regional and national considerations".

Thus, we believe that multi-county, metropolitan and local planning should be pursued, but believe that such planning should be coordinated by appropriate state agencies and related by the state agencies to regional and national considerations.

PROVISIONS OF S. 3354

S. 3354 calls for the establishment within each State of a Statewide Environmental, Recreational and Industrial Land Use Plan to be developed and admin-

istered by a single State agency, designated by the Governor. A further requirement is that "the agency must have the authority necessary to implement the Statewide Environmental, Recreational and Industrial Land Use Plan." It is provided that the agency's authority shall include but need not be limited to, among other things, "authority, under the State police powers, to place restrictions on the type of land use activities which may take place in areas designated for a special use under the Statewide Land Use Plan."

This would appear to supersede and displace multi-county, metropolitan and local planning and zoning. There are only two stated exceptions: lands which are located within the boundaries of any incorporated city which has exercised land use planning and authority, and such other lands as the Land and Water Resources Planning Council (presently the Water Resources Council) may specify.

The State Land Use Plan, among other things, would be required to identify areas of the State where ecological, environmental, geological, and physical conditions dictate that certain types of land use activities are incompatible and undesirable; areas whose highest and best use is recreational oriented use; areas which are best suited for natural resources; heavy industrial and commercial development; areas where transportation and utility corridors are or should, in the future, be located; and areas which furnish the amenities and the basic essentials to the development of new towns and the revitalization of existing communities.

Thus, the State agency would have a very broad and sweeping zoning power. By contrast, there has been a long history of delegation of zoning power by the States to their municipal subdivisions. The intergovernmental relations aspects of this proposal should be carefully considered since some delicate problems may be involved.

The likelihood of clashes between levels of government is increased by the penalties which would be imposed on a State which fails to pass legislation setting up an agency with such powers or which fails to develop an acceptable Statewide Land Use Plan. Not only will statewide land use planning grants be terminated but also such State shall:

"(1) have its entitlement to certain additional Federal assistance programs, which shall be designated by the President, reduced at the rate of 20 percentum per year until such time as the provisions of this title are complied with; and

"(2) be denied the issuance of any right-of-way permits or other permits available under the public land laws and other Federal laws to use or cross the public domain or other Federal lands until such time as the provisions of this title are complied with."

We believe this involves a serious policy issue for the Congress as to whether such punitive measures should be employed against the States.

We note also that in S. 3354 under the heading "Federal Guidelines and Requirements" that Statewide Land Use Plans would be required to include measures such as buffer zones, scenic easements, and prohibitions against non-conforming uses. Blanket requirements for buffer zones and scenic easements could be extremely costly, particularly if such requirements were applied retroactively. In addition, zoning legislation has historically provided protection for existing non-conforming uses. We believe that any criteria laid down for Statewide Land Use Plans should avoid sweeping requirements which might result in substantial economic impacts.

MULTICOUNTY PLANNING

Some serious planning "collisions" could result if the Federal Government pushes the States into superseding multi-county, regional and local planning and zoning.

As an example of vigorous planning activities on a regional level, completion of a comprehensive plan for Nassau and Suffolk Counties on Long Island, New York is reported in the New York Times for July 13, 1970.

The plan is the result of a four-year study by the Nassau-Suffolk Regional Planning Board. This land use planning project cost $1.4 million to complete.

The plan contains proposals for major changes in the next 15 years affecting housing, transportation, parks and recreation, agriculture, and local zoning.

The plan contemplates the construction of 400,000 housing units, stating that the greatest emphasis in housing must be away from single-family detached homes, as the population trend is toward the young and the elderly.

The plan recommends a coordinated mass transportation system including not only rail service but also conversion of some rail trackage to exclusive bus lanes

and "park and ride" centers to encourage car pools, reduce traffic and act as transportation hubs.

Three new highways are also proposed, as well as short take-off and landing sites at all general aviation airports and a bridge across Long Island Sound. The plan asserts that the central corridor of Long Island should contain the major employment centers and other traffic generators.

Under recreation, the plan calls for new and enlarged State and county parks. Future growth in the eastern end of Suffolk County must be limited, the plan warns, if its provision of recreation and food for the broader region is to be saved. The plan suggests that this be accomplished through land banks, clustering and small centers.

To protect agriculture (Suffolk County is the richest agricultural county in the State of New York) the plan says that a minimum of 30,000 acres of the most productive farmland in the towns of Riverhead, Southold, and Southampton should be publicly purchased and then leased back.

The executive director of the Board stated that he expected the major opposition to the plan to be centered on its zoning sections.

While declaring that "zoning should continue to be the responsibility of local government," the plan states that "existing State legislation providing for county review should be strengthened," particularly with regard to giving each county planning commission review powers over critical areas such as the shoreline, adjacent wetlands and proposed county parks.

Local municipalities are urged not to enact zoning rules contrary to the purposes of the plan. The Nassau-Suffolk Regional Planning Board, according to the plan, should be granted review powers to resolve land-use and zoning questions affecting communities along the Nassau-Suffolk border. It also "should be notified of all proposed zoning changes in the two counties and have the privilege of appearing where necessary on behalf of the plan."

In Nassau County no residential land should be rezoned to industrial, commercial or office use "unless it appears beyond a doubt that the land is unsuitable for parks or open space or for development of multifamily units," the plan says.

Many people believe that such planning on a regional basis is ideal because it is close to local problems, opportunities and desires, but functions on a broad enough basis to achieve coordinated planning of all aspects of land use within an interrelated region.

PUBLIC LAND LAW REVIEW COMMISSION REPORT

The Public Land Law Review Commission submitted its Report to the President and to the Congress on June 20, 1970. The Commission made a 5-year study of some 6,000 laws and multitudinous regulations related to the retention, disposition and management of approximately 750 million acres of land (⅓ of the nation) owned by the Federal Government.

Although the concept of land use planning is inherent in the entire Report, the matter is most specifically discussed in Chapter 3, "Planning Future Public Land Use."

The Report points out that the implementation of policies concerning timber, minerals, outdoor recreation, maintenance of environmental quality, and all other aspects of public land law policy is vitally dependent on the planning process and how well it works. It states that the essence of land use planning is found in classification and zoning of lands for particular uses, but that there is a lack of coordination among Federal public land management agencies at the regional and local levels between Federal agencies and other units of government and between Federal agencies and owners of adjacent private lands. One of the Report's major recommendations is the management of primary use lands for secondary uses where they are compatible with the primary purpose for which the lands were designated.

Recommendation No. 2 in the Report is as follows:

"Public land agencies should be required to plan land uses to obtain the greatest net public benefit. Congress should specify the factors to be considered by the agencies in making these determinations, and an analytical system should be developed for their application."

The Report states that "We believe maximization of net public benefits to be a suitable overall objective for public land managment and disposition . . . We also note that the concept of net benefits implies a comparison of the benefits of a possible course of action with the costs of following this course . . . This standard would measure the overall primary and secondary benefits that are generated by

a particular mix of uses against the primary and secondary costs. The Federal land administering agencies do not attempt this type of analysis in public land administration today. We recognize that the term 'benefits' and 'costs' have a decidedly economic ring, but we do not intend by the use of these terms to place emphasis on economic uses in resource allocation planning to the exclusion of other uses and values. . . ."

A further recommendation is that a formal system of classifying for dominant uses keyed to the highest and best uses of particular areas be provided. The Report states "We believe those lands that, as a result of the review and classification we recommend in this chapter, remain in Federal ownership under Bureau of Land Management administration, should be managed for the broadest range of values they can produce, consistent with the goals and objectives outlined in this chapter and elsewhere in the Report . . . If the public land agencies do not develop formal zoning where values are high and conflicts are likely, the public is likely to lose confidence in land use plans. To provide the positive statutory direction and strengthening for 'multiple use' management which we now find to be seriously lacking, we recommend that Congress provide for a 'dominant use' zoning system."

Chapter 3 contains a section entitled "Regional Commissions," which states, in part: "Recognition of the regional nature of resources problems is of major importance in land use planning process. The Commission recommends that regional commissions along the lines of the river basin commissions established under the 1965 Act (the Water Resources Planning Act of 1965) be created, with the consent of the affected states, to encourage comprehensive land use planning on a regional basis."

We do not know exactly what the Commission had in mind by the use of the phrase "along the lines of" the river basin commissions established under the 1965 Act. It seems obvious that in many cases, the boundary lines of regional economics would not coincide with the boundary lines of river basins. In many cases, use of the boundary lines of counties might be desirable when multi-county planning is carried out. Just how the Commission's recommendation matches up with the provisions of S. 3354 is not clear. Although S. 3354 purports to achieve land use planning through the mechanism of the Water Resources Planning Act under which river basin commissions are created, the core of the proposal is to achieve statewide land use planning through statewide land use planning agencies. Thus, there appear to be some differences between the approach of the bill and the approach of the Public Land Law Review Commission.

Nowhere in the bill is there an expression of support for the concept of multiple use, the association of compatible secondary uses with dominant uses, and the use of cost-benefit analysis, all as recommended by the Public Land Law Review Commission.

In any event, the Commission's Report should be carefully studied in depth prior to any conclusions as to S. 3354.

SHARING THE LAND

Industry believes that in many instances there can be a sharing of public and private lands for the purposes of both economic development and recreational uses. Many times, these can be achieved compatibly in the same areas of land. In order to convey this message, the Natural Resources Committee of the National Association of Manufacturers is sponsoring the publication and distribution of "*Sharing the Land*," which tells the story of industry's efforts to provide recreational opportunities to the general public on industrial lands. A copy of "Sharing the Land" will be submitted for the files of the Committee.

CONCLUSION

We believe that the introduction of S. 3354 has served a worthwhile purpose by creating a forum for the discussion of land use planning problems. We believe S. 3354 raises serious questions as to proper approaches to be used in such planning. Before action is taken on this bill, we believe the Committee should very seriously consider the wide ranging impact of such legislation. The bill appears to have major impact on the interests of Senate Committees such as the housing and transportation interests of the Committee on Banking and Currency, and the agriculture and forestry development interests of the Committee on Agriculture and Forestry, as well as the interests of the Committee on Public

Works and the Committee on Commerce. The impact of the bill on present regional planning efforts should also be carefully considered. The Report of the Public Land Law Review Commission should be carefully studied and evaluated particularly with regard to the concepts of multiple use, association of secondary uses with dominant uses, and cost-benefit analysis. The criteria for land use planning should be carefully evaluated and carefully drawn.

We appreciate the opportunity to submit these comments.

Position of National Association of Manufacturers on Urban Land Utilization Problems

Cities have traditionally provided exceptional economic, educational and cultural opportunities. At the same time, the primary failure to intelligently plan and implement the planning has historically resulted in urban problems. Postwar movements of people and industry have accentuated some of these problems for many American cities.

American cities are possessed with sufficient vitality to cope with these problems. The most effective undertakings to solve urban problems have taken shape under creative local leadership. We should seek solutions through imaginative efforts by business and industry in cooperation with other civic groups and local and regional authorities, rather than have the community only compete for and depend on funds available from the national government. Local and regional planning must be an integral part of this effort in order to insure adequate housing, protection of public health and safety, employment opportunities, transportation facilities, open spaces and cultural and recreational opportunities within metropolitan areas, and particularly within central city areas.

Appropriate state agencies should coordinate state, multi-county, metropolitan, and local planning and relate such planning to regional and national considerations.

APPENDIX 5

The President's Message to Congress of August 10, 1970, transmitting the first annual report of the Council on Environmental Quality and chapter IX of the report.

President's Message

To the Congress of the United States:

This first report to the Congress on the state of the Nation's environment is an historic milestone. It represents the first time in the history of nations that a people has paused, consciously and systematically, to take comprehensive stock of the quality of its surroundings.

It comes not a moment too soon. The recent upsurge of public concern over environmental questions reflects a belated recognition that man has been too cavalier in his relations with nature. Unless we arrest the depredations that have been inflicted so carelessly on our natural systems—which exist in an intricate set of balances—we face the prospect of ecological disaster.

The hopeful side is that such a prospect *can* be avoided. Although recognition of the danger has come late, it has come forcefully. There still are large gaps in our environmental knowledge, but a great deal of what needs to be done can be identified. Much of this has already been begun, and much more can be started quickly if we act now.

Scope of the Council's Report

The accompanying report by the Council on Environmental Quality seeks to describe the conditions of our environment, and to identify major trends, problems, actions under way and opportunities for the future. This first report by the Council is necessarily incomplete in some respects, especially in the identification of trends. The National Environmental Policy Act, which created the Council, became law only at the beginning of this year. Existing systems for measuring and monitoring environmental conditions and trends, and for developing indicators of environmental quality, are still inadequate. There also is a great deal yet to be learned about the significance of these facts for the human condition.

However, the report will, I think, be of great value to the Congress (and also to the Executive Branch) by assembling in one comprehensive document a wealth of facts, analyses and recommendations concerning a wide range of our most pressing environmental challenges. It should also serve a major educational purpose, by clarifying for a broad public what those challenges are and where the principal dangers and opportunities lie.

Substantively as well as historically, this first report is an important document. No one can read it and remain complacent about the environmental threats we confront, or about the need both to do more and to learn more about those threats.

Getting at the Roots

"Environment" is not an abstract concern, or simply a matter of esthetics, or of personal taste—although it can and should involve these as well. Man is shaped to a great extent by his surroundings. Our physical nature, our mental health, our culture and institutions, our opportunities for challenge and fulfillment, our very survival—all of these are directly related to and affected by the environment in which we live. They depend upon the continued healthy functioning of the natural systems of the Earth.

Environmental deterioration is not a new phenomenon. But both the rate of deterioration and its critical impact have risen sharply in the years since the Second World War. Rapid population increases here and abroad, urbanization, the technology explosion and the patterns of economic growth have all contributed to our environmental crisis. While growth has brought extraordinary benefits, it has not

been accompanied by sufficiently foresighted efforts to guide its development.

At the same time, in many localities determined action has brought positive improvements in the quality of air or water—demonstrating that, if we have the will and make the effort, we can meet environmental goals. We also have made important beginnings in developing the institutions and processes upon which any fundamental, long-range environmental improvement must be based.

The basic causes of our environmental troubles are complex and deeply imbedded. They include: our past tendency to emphasize quantitative growth at the expense of qualitative growth; the failure of our economy to provide full accounting for the social costs of environmental pollution; the failure to take environmental factors into account as a normal and necessary part of our planning and decision-making; the inadequacy of our institutions for dealing with problems that cut across traditional political boundaries; our dependence on conveniences, without regard for their impact on the environment; and more fundamentally, our failure to perceive the environment as a totality and to understand and to recognize the fundamental interdependence of all its parts, including man himself.

It should be obvious that we cannot correct such deep-rooted causes overnight. Nor can we simply legislate them away. We need new knowledge, new perceptions, new attitudes—and these must extend to all levels of government and throughout the private sector as well: to industry; to the professions; to each individual citizen in his job and in his home. We must seek nothing less than a basic reform in the way our society looks at problems and makes decisions.

Our educational system has a key role to play in bringing about this reform. We must train professional environmental managers to deal with pollution, land planning, and all the other technical requirements of a high quality environment. It is also vital that our entire society develop a new understanding and a new awareness of man's relation to his environment—what might be called "environmental literacy." This will require the development and teaching of environmental concepts at every point in the educational process.

While education may provide ultimate answers to long-range environmental problems, however, we cannot afford to defer reforms which are needed now. We have already begun to provide the institutional framework for effective environmental improvement.

Organizing for Improvement

As my first official act of the decade, on January first I signed into law the National Environmental Policy Act. That Act established the Council on Environmental Quality. I have charged the Council with coordinating all environmental quality programs and with making a thorough review of all other Federal programs which affect the environment.

Federal agencies are now required to file with the Council and the public a statement setting out in detail the environmental implications of all proposals for legislation and for other major activities with a significant environmental impact. With the help of this provision, I intend to ensure that environmental considerations are taken into account at the earliest possible stage of the decision-making process.

On July 9 I sent to the Congress a reorganization plan which would establish an Environmental Protection Agency, consolidating the major environmental pollution responsibilities of the Federal Government. This reform is long overdue.

Responsibility for anti-pollution and related programs is now fragmented among several Departments and agencies, thus weakening our overall Federal effort. Air pollution, water pollution and solid wastes are different forms of a single problem, and it becomes increasingly evident that broad systems approaches are going to be needed to bring our pollution problems under control. The reorganization would give unified direction to our war on pollution and provide a stronger organizational base for our stepped-up effort.

The Council on Environmental Quality has begun the vital task of identifying indicators of environmental quality and determining the requirements for monitoring systems in order to enable us to assess environmental trends. These systems are needed to give early warning of environmental problems. They will provide data for determining environmental needs and establishing priorities, and for assessing the effectiveness of programs to improve the environment. The development of such monitoring systems is essential to effective environmental management.

There is also a need to develop new knowledge through research. We need to know far more, for example, about the effects of specific pollutants, about ecological relationships, and about human behavior in relation to environmental factors. The Environmental Protection Agency should develop an integrated research program aimed at pollution control. The Council on Environmental Quality will continue,

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in cooperation with the Office of Science and Technology, to review and coordinate our overall environmental research effort, as well as to undertake its own environmental studies and research.

These actions represent important additions to the institutional, procedural, and informational base for effective environmental management. They hold the promise of a real leap forward in the years to come. At the same time, we must move ahead now in those areas in which we already possess the knowledge and capability for effective action.

Recent Actions and Recommendations

On February 10 of this year, I sent to the Congress a special message on the environment. This presented a 37-point action program, with special emphasis on strengthening our fight against water and air pollution.

In the field of water pollution, my major legislative recommendations included:

—Authorization of $4 billion to cover the Federal share of a $10 billion program to provide treatment facilities.

—Establishment of an Environmental Financing Authority to help finance the State and local share of treatment plants.

—Reform of the method by which funds are allocated under the treatment grant programs.

—Greatly strengthened enforcement authority, including provisions for fines of up to $10,000 a day for violations.

Among my major legislative recommendations for the control of air pollution were:

—More stringent procedures for reducing pollution from motor vehicles.

—Establishment of national air quality standards.

—Establishment of national emissions standards for extremely hazardous pollutants.

—A major strengthening of enforcement procedures, including extension of Federal air pollution control authority to both inter- and intra-state situations and provision for fines of up to $10,000 a day for violators.

Other legislative actions recommended in my February 10 message included:

—Appropriation in 1971 of the full $327 million authorized under the Land and Water Conservation Fund to provide addi-

tional parks and recreation areas, with increased emphasis on locating new recreation facilities in crowded urban areas.

—Establishment of new procedures to encourage and finance the relocation of Federal facilities now occupying land that could better be turned to public recreational use.

—Authorizing the transfer of surplus real property to State and local governments for park and recreational purposes at public benefit discounts of up to 100 percent.

In addition, the message spelled out 14 separate measures I was taking by administrative action or Executive Order. These included such wide-ranging initiatives as launching an extensive Federal research and development program in unconventionally-powered, low-pollution vehicles, requiring the development of comprehensive river basin plans for water pollution control, re-directing research on solid waste management to place greater emphasis on re-cycling and re-use, and the establishment of a Property Review Board to recommend specific Federal properties for conversion to recreational use.

I again urge the Congress to act soon and favorably on the legislative proposals contained in that message. They are vital to our growing effort to protect and improve our environment.

I consider the recommendations in my February 10 message only a beginning—although an important one. I said at the time that we must do much more and that we would do more as we gained experience and knowledge. Our Administration is living up to that commitment.

Previously, on February 4, I had issued an Executive Order directing a prompt clean-up of air and water pollution caused by Federal agencies. This task is well underway. As I said then, the Federal Government should set an example for the rest of the country. We are doing so.

On April 15, I sent legislation to the Congress that will, if enacted, bring to an end the dumping of dredged spoils into the Great Lakes as soon as disposal sites are available. At the same time, I directed the Council on Environmental Quality to make a study of ocean disposal of wastes and report to me by September 1.

On May 19, I proposed enactment of a special tax on lead additives in gasoline, to encourage industry to provide low or non-leaded gasoline.

On May 20, I sent to the Congress a special message dealing with oil pollution caused by marine transportation of oil. The compre-

hensive, 10-point program set out in the message included legislative proposals, the announcement of administrative actions, and the forwarding to the Senate of two international conventions and amendments to a third for ratification. The nations of the world must take aggressive action to end the growing pollution of the oceans.

On May 23, I announced that the United States would propose a new treaty placing the natural resources of the deep sea bed beyond the 200 meter depth under international regulation.

On June 4, a revised National Contingency Plan for dealing with oil spills was announced at my direction by the Chairman of the Council on Environmental Quality.

On June 11, I sent a message to the Congress requesting the enactment of legislation cancelling twenty Federal oil leases for off-shore drilling which had been granted in 1968 in the Santa Barbara Channel and creating a Marine Sanctuary.

As I mentioned above, on July 9 I sent to the Congress a reorganization plan to create a new Environmental Protection Agency. On the same date, I sent another reorganization plan to consolidate Federal marine resource management functions in a National Oceanic and Atmospheric Administration, within the Department of Commerce. This would provide better coordination and direction of our vital ocean resource programs.

Toward A Land Use Policy

Lately, our attention as a people has repeatedly and insistently been seized by urgent concerns and immediate crises: by the sudden blanketing of cities or even whole regions with dense clouds of smog, for example, or the discovery of mercury pollution in rivers. But as we take the longer view, we find another challenge looming large: the mounting pressures of population. Both the size and the distribution of our population have critical relevance to the quality of our environment and thus to the quality of our lives.

Population growth poses an urgent problem of global dimensions. If the United States is to have an effective voice in world population policies, it must demonstrate willingness to face its own population problems at home.

The particular impact of any given level of population growth depends in large measure on patterns of land use. Three quarters of our people now live in urban areas, and if present trends continue most of them in the future will live in a few mammoth urban concen-

trations. These concentrations put enormous pressure on transportation, sanitation and other public services. They sometimes create demands that exceed the resource capacity of the region, as in the case of water supply. They can aggravate pollution, overcrowd recreation facilities, limit open space, and make the restorative world of nature ever more remote from everyday life. Yet we would be blind not to recognize that for the most part the movement of people to the cities has been the result neither of perversity nor of happenstance, but rather of natural human aspirations for the better jobs, schools, medical services, cultural opportunities and excitement that have traditionally been associated with urban life.

If the aspirations which have drawn Americans to the city in the first instance and subsequently from the city core to the suburbs are often proving illusory, the solution does not lie in seeking escape from urban life. Our challenge is to find ways to promote the amenities of life in the midst of urban development: in short, to make urban life fulfilling rather than frustrating. Along with the essentials of jobs and housing, we must also provide open spaces and outdoor recreation opportunities, maintain acceptable levels of air and water quality, reduce noise and litter, and develop cityscapes that delight the eye and uplift the spirit.

By the same token, it is essential that we also make rural life itself more attractive, thus encouraging orderly growth in rural areas. The creation of greater economic, social, cultural, and recreational opportunities in rural parts of the country will lead to the strengthening of small cities and towns, contributing to the establishment of new growth centers in the nation's heartland region.

Throughout the nation there is a critical need for more effective land use planning, and for better controls over use of the land and the living systems that depend on it. Throughout our history, our greatest resource has been our land—forests and plains, mountains and marshlands, rivers and lakes. Our land has sustained us. It has given us a love of freedom, a sense of security, and courage to test the unknown.

We have treated our land as if it were a limitless resource. Traditionally, Americans have felt that what they do with their own land is their own business. This attitude has been a natural outgrowth of the pioneer spirit. Today, we are coming to realize that our land is finite, while our population is growing. The uses to which our generation puts the land can either expand or severely limit the choices our children will have. The time has come when we must accept the idea that none of us has a right to abuse the land, and that on the contrary society as a

whole has a legitimate interest in proper land use. There is a national interest in effective land use planning all across the nation.

I believe that the problems of urbanization which I have described, of resource management, and of land and water use generally can only be met by comprehensive approaches which take into account the widest range of social, economic, and ecological concerns. I believe we must work toward development of a National Land Use Policy to be carried out by an effective partnership of Federal, State and local governments together, and, where appropriate, with new regional institutional arrangements.

Recycling of Wastes

The prospect of increasing population density adds urgency to the need for greater emphasis on recycling of "waste" products. More people means greater consumption—and thus more rapid depletion—of scarce natural resources; greater consumption means more "waste" to dispose of—whether in the form of solid wastes, or of the pollutants that foul our air and water.

Yet much of this waste is unnecessary. Essentially, waste is a human invention: Natural systems are generally "closed" systems. Energy is transformed into vegetation, vegetation into animal life, and the latter returns to the air and soil to be recycled once again. Man, on the other hand, has developed "open" systems—ending all too often in an open sewer or an open dump.

We can no longer afford the indiscriminate waste of our natural resources; neither should we accept as inevitable the mounting costs of waste removal. We must move increasingly toward closed systems that recycle what now are considered wastes back into useful and productive purposes. This poses a major challenge—and a major opportunity—for private industry. The Council on Environmental Quality is working to foster development of such systems. Establishment of the proposed Environmental Protection Agency would greatly increase our ability to address this need systematically and creatively.

Everyone's Task

As our government has moved ahead to improve our environmental management, it has been greatly heartening to me to see the extent and effectiveness of citizen concern and activity, and especially the

commitment of young people to the task. The job of building a better environment is not one for government alone. It must engage the enthusiasm and commitment of our entire society. Citizen organizations have been in the forefront of action to support strengthened environmental programs. The Citizens Advisory Committee on Environmental Quality, under the chairmanship of Laurance S. Rockefeller, has provided an important link between the Federal Government's effort and this broad-ranging citizen activity.

Similarly, the active participation of the business community is essential. The government's regulation and enforcement activities will continue to be strengthened. Performance standards must be upgraded as rapidly as feasible. But regulation cannot do the whole job. Forward-looking initiatives by business itself are also vital—in research, in the development of new products and processes, in continuing and increased investment in pollution abatement equipment.

On the international front, the level of environmental concern and action has been rapidly rising. Many of our most pressing environmental problems know no political boundaries. Environmental monitoring and pollution of the seas are examples of major needs that require international cooperation, and that also provide an opportunity for the world's nations to work together for their common benefit.

In dealing with the environment we must learn not how to master nature but how to master ourselves, our institutions, and our technology. We must achieve a new awareness of our dependence on our surroundings and on the natural systems which support all life, but awareness must be coupled with a full realization of our enormous capability to alter these surroundings. Nowhere is this capability greater than in the United States, and this country must lead the way in showing that our human and technological resources can be devoted to a better life and an improved environment for ourselves and our inheritors on this planet.

Our environmental problems are very serious, indeed urgent, but they do not justify either panic or hysteria. The problems are highly complex, and their resolution will require rational, systematic approaches, hard work and patience. There must be a *national* commitment and a *rational* commitment.

The accompanying report by the Council describes the principal problems we face now and can expect to face in the future, and it provides us with perceptive guidelines for meeting them. These deserve the most careful consideration. They point the directions in which we must move as rapidly as circumstances permit.

The newly aroused concern with our natural environment embraces old and young alike, in all walks of life. For the young, it has a special urgency. They know that it involves not only our own lives now but the future of mankind. For their parents, it has a special poignancy—because ours is the first generation to feel the pangs of concern for the environmental legacy we leave to our children.

At the heart of this concern for the environment lies our concern for the human condition: for the welfare of man himself, now and in the future. As we look ahead to the end of this new decade of heightened environmental awareness, therefore, we should set ourselves a higher goal than merely remedying the damage wrought in decades past. We should strive for an environment that not only sustains life but enriches life, harmonizing the works of man and nature for the greater good of all.

Richard Nixon

THE WHITE HOUSE, *August 1970.*

IX

Land Use

The first men upon this land, the American Indians, treated it with reverence, blended with it, used it, but left hardly a trace upon it. Those who followed have been less kind. They brought with them a different creed which called on man to conquer nature and harness it for his own use and profit.

Now more than halfway into the 20th century what they have done is being turned back upon them. Misuse of the land is now one of the most serious and difficult challenges to environmental quality, because it is the most out-of-hand, and irreversible. Air and water pollution are serious, hard to manage problems, too. But they are worked at with standards, with enforcement tools, and by institutions set up for those specific antipollution purposes. Land use is still not guided by any agreed upon standards. It is instead influenced by a welter of sometimes competing, overlapping government institutions and programs, private and public attitudes and biases, and distorted economic incentives.

The 50 States comprise about 2.3 billion acres of land. Of that, 1.9 billion acres lie in the contiguous 48 States. Nearly 58 percent of the land area is used for crops and livestock. More than 22 percent is ungrazed forest land. Less than 3 percent is in urban and transportation uses, although it is increasing. Areas designated primarily for parks, recreation, wildlife refuges, and public installations and facilities account for about 5 percent. The rest—12 percent—is mainly desert, swamp, tundra, and other lands presently of limited use by man.

Almost 59 percent of the land is in private hands. Thirty-four percent is owned by the Federal Government. Some 94 percent of all Federal lands lie in the westernmost States—about half in Alaska alone. About 2 percent of the Nation's land is held by Indians. The rest—about 5 percent—is State, city, or county owned.

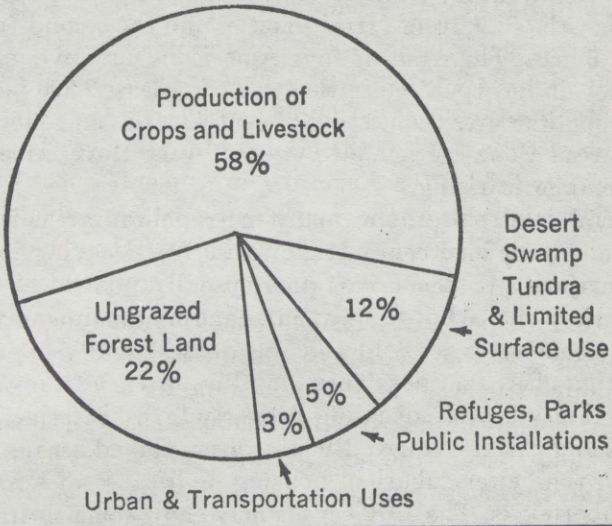
But land is not just acreage. Land embraces the complex biological systems of the soil and the plants and animals which are all part of a continuing life cycle. Man's understanding of these biological processes, particularly of the permanent damage that begins subtly with piecemeal alterations of the land, is still limited. Yet his dependence upon its stability is enormous.

In the Nation's early history, easy availability of land prodded millions to join the massive migrations west and along the major river basins. The wilderness was to be tamed, the trees cleared, and the soil put to crops. Much of the wilderness is now gone, and most of what is left is far distant from the three-quarters of the Nation that lives in the cities and the suburbs. The landscape visible to most Americans is cluttered with traffic, neon signs, powerlines, and sprawl. Flood plains are not just for the river but are subjected to intense development. Open space, the elbow room for urban man, continues to dwindle. Unfortunately, traditions of land use have derived from an assumption that land is a limitless commodity—not a finite biological community.

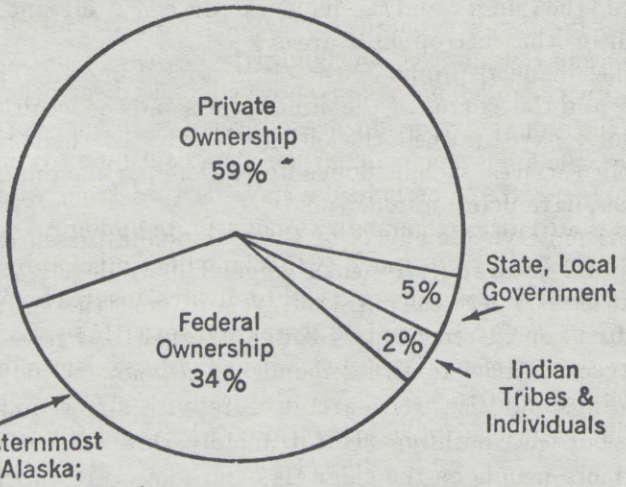
Government spurs much of this land development by where it locates and how it designs airports and highways, insures home loans, permits filling of wetlands, and lays water and sewer lines. Local governments exercise the primary authority over land use. But effective public influence is hampered by a lack of agreement on objectives, by misplaced economic incentives, and by failure of local governments to harmonize land use.

Land Use in the United States

Total Acres 50 States—2.3 Billion



Land Ownership in the United States



Source: Department of Agriculture.

THE STATUS OF THE LAND

The Urban Environment

Twentieth-century America has known two great population displacements—the first from farms to cities and the second from the cities to the suburbs. Three out of four Americans now live in urban environments—in incorporated settlements of at least 2,500 population and in metropolitan areas consisting of central cities and suburbs. Metropolitan areas alone are home to two of every three Americans, and the percentage is rising.

Residential patterns in many metropolitan areas resemble a series of sharply defined concentric circles. The decaying inner city houses the majority of the urban poor, usually nonwhites who ordinarily have little choice but to stay. Surrounding the inner city are neighborhoods commonly less old and less dense, usually populated by white working-class families. These families often lean toward leaving the central city because of rising property taxes, deteriorating school systems, and racial changes. But they have stayed because they could not afford the newer suburban housing or because of strong ties to their neighborhoods. The 1970 census may show some shifts from this pattern. Beyond the city is suburbia. The suburbs are a magnet for those seeking escape from the burdens of urban life while retaining some of its advantages. (In some areas the pattern is different; the poor often live on the fringes, and the affluent in the city itself, and mixed patterns occur in other metropolitan areas.)

The financial plight of the cities is well known. The influx of the poor and the exodus of the middle class and the wealthy, among other factors, have drained the cities of many of their revenue sources. Public services, such as police protection, park maintenance and sanitation, have deteriorated.

The most visible effects of these economic pressures are the rapid pace and nature of physical change. This is clearly evident in downtown areas where the constant cycle of construction and demolition is often considered a city's badge of growth. Pressed for revenues, many cities bow to the demands of developers to replace historic buildings and distinctive architecture with almost uniform steel and glass box office buildings. Unfortunately, this construction may simply put more people on the sidewalks and more cars on the streets, more monotonous skyscrapers towering above, and more noise and congestion below. Much downtown rebuilding has furthered the trend

toward daytime cities with facilities such as offices and banks, which have no nighttime uses. Cities lose their uniqueness as their historic buildings and neighborhoods are replaced by the dullest in modern architecture. The result is often a dreary sameness in the appearance and character of downtown areas.

Physical deterioration is overtaking the housing in many areas of central cities. The oldest housing traditionally filters down to the poorest families as previous occupants better their lot and move to new apartments or suburban homes. Of the 1.7 million substandard housing units in urban areas, nearly all lie in central cities. In slum neighborhoods of some large cities, the amount of abandoned housing is as high as 15 percent.

With the well-known reliance of the suburbanite on the automobile, often to commute to the center city, many downtown and other urban centers have gradually become auto dominated. Much of the change and reconstruction in downtown areas is for freeways, parking garages, and lots—lavish users of space. However, the alternative, public transportation, is constantly frustrated by rising costs, the sprawling nature of the suburbs, and dependence on the automobile.

Many cities have lost the spirit to attract people downtown. With the growing number of shops and other services locating in the suburbs and with crime threatening many local businesses and frightening people from the streets, much of the vitality is missing from the central cities. Many city officials, however, are trying to bring people and excitement back. Apartments in downtown areas, sidewalk cafes, outdoor concerts, bicycle routes, even saving the cable cars in San Francisco—all are small but key efforts to recapture this lost spirit. Rehabilitation, successfully carried out in Philadelphia, and a few other cities signals that the character of the urban environment can be revitalized.

Few cities have kept pace with parkland needs. Trees have not been planted to shade busy avenues at the same rate that they have been felled for street widening. Too often only a few species are planted, and they are often blighted by disease and insect invasions so common to unstable ecosytems. In the Midwest, Dutch elm disease has decimated row on row of beautiful elms.

The immediate economic pressure on a city to permit a parking lot or building on what might remain open space, or to use parklands as part of a freeway route, is often insurmountable. Nevertheless, the accelerating cost of land acquisition and the growing need to preserve open space in a crowded urban environment make the purchase of open

areas a sound long-range economic practice, which continues to pay immeasurable dividends. The Boston Common, New York's Central Park, Washington's Rock Creek Park, San Francisco's Golden Gate Park, and many other city parks are tributes to the foresight of early planners in saving large open areas. The protection of streams, ponds, and marshes within cities permits the survival there of numerous species of wildlife, including small animals, birds, and waterfowl which adapt surprisingly well to the urban environment.

Man requires a feeling of permanence to attain a sense of place, importance, and identity. For many persons in the city, the presence of nature is the harmonizing thread in an environment otherwise of man's own making.

The Suburban Environment

Although rural to urban migration was primarily economically motivated, the suburban impulse is largely a matter of social preference. Because of economic and social obstacles, these population shifts have affected the races unequally. Eighty percent of the blacks in metropolitan areas now live in central cities, while 60 percent of the metropolitan whites live in the suburbs. Zoning practices, subdivision controls, and the higher costs of suburban living have made it difficult for lower income minority groups to move from the city to the suburbs.

From 1950 to 1969, while the population of central cities increased only 12 percent, the population of suburban areas soared 91 percent. By 1969, there were 71 million suburbanites and 59 million central city residents.

The suburban tide—Since the late 1800's a blend of town and country has stood for the optimum residential environment. The suburb is thought to offer the best of both worlds. Besides enjoying ready access to the large city with its concentrated economic and cultural facilities, the suburban resident seeks a crime-free neighborhood amid clean air, open lawns, and quiet and uncrowded living. Streetcar and occasional subway lines started what at first was but a trickle of people from the central cities to the outskirts of town. The Federal Government quickened the outward flow after World War II by providing mortgage assistance, which enabled many central city residents to become suburban homeowners. Later the vast urban freeway systems turned the flow into a flood. The automobile now controls suburban life.

To the couple living in an apartment downtown, the birth of a second child is a common signal to abandon the city. And often families with school-age children leave for the better educational systems of the suburbs. As industries convert to modern, single-flow assembly production processes, manufacturers also forego the city for rambling suburban plants. Since World War II, space needs per industrial worker have quadrupled, and three of every four new manufacturing jobs have been created in suburbs.

Each year, expanding urban areas consume an estimated 420,000 acres of land in an undiscriminating outward push. Development moves out from the city along transportation corridors, branching out from the highways and expressway interchanges. Extension of water and sewer services generates whole new developments on quickly divided farms. After outlying areas are built up at moderate densities, developers often return to land which was passed over as undesirable or too costly in the first wave.

Many suburban communities zone to assure that house lots are large and apartment houses few, a practice that assumes that land is abundant. This zoning practice, in seeking to attract moderate to high income families, tends to exclude those in greatest need of the jobs opening in the suburbs. Excluding them deepens the concentration of poverty and unemployment in the central city ghettos.

Highways and freeways become congested as the tide of suburban commuters to the city grows. This congestion, together with the lengthening distances from suburban homes to downtown offices produces tension and robs the typical suburbanite of time with his family.

The impact of growth—Although the impact of the rural-to-suburban shift of land use varies greatly throughout the country, certain effects tend to be common to this change. Open space is continuously eaten up by housing, which, with most present subdivision practices, provides few parks but instead only offers each family its individual front and back yard. Space is likewise diminished by other facilities required by suburban development. Shopping centers and highway interchanges, made necessary by dependence on the automobile and truck, consume large portions of land. Airports, commonly constructed in suburban or exurban areas and constantly growing in size and number, pose similar problems on an even larger scale, attracting a vast conglomeration of light industry and housing. Consequently, the growing suburban population finds less and less public open space.

Building and construction practices, together with the quickened pace of development and complementary zoning, often end in severe abuse of the land and are ultimately costly to the public. The popular practice of stripping subdivisions of all cover before commencing construction destroys tree and plant cover and can trigger heavy soil runoff. Sedimentation from this runoff in urbanizing areas loads nearby streambeds and ultimately river channels. This can cause costly downstream dredging, upstream flood control and destruction of the esthetic quality of lakes and rivers.

Public pressure for flood control projects is often spurred by suburban development along flood plains, which usually contain fertile soil supporting an abundant variety of native plant and animal life. Construction over aquifer recharge areas, where the groundwater is normally replenished, accelerates rapid runoff, increases flooding, and contributes to water shortages.

Suburban development often spreads across ridges and slopes which should be left alone because of their beauty and because their trees and plant cover absorb rain and inhibit flooding. Trees are not only important for their esthetic qualities and as habitat for birds and wildlife, but they affect temperature and air pollution as well. Building on steep slopes can affect soil stability, causing severe erosion which then undermines foundations. Nevertheless, few cities or counties adequately control development of flood plains, steep slopes, or land above aquifer recharge areas. Important data concerning aquifers, subsoil composition, cover, wetlands, and wildlife are not considered by many planning and most zoning boards.

Esthetically, this current pattern of growth triggers at least three adverse consequences. First, much commercial development along roads and highways through suburbs is of cheap and unimaginative construction. Gaudy neon signs, billboards, powerlines, and clutter characterize this development. Second, many residential subdivisions are visually boring—block after block of treeless lawns, uniform setbacks, and repetitious housing designs and street layouts. Finally, wooded streambeds, slopes, and ridges, which could help break the monotony of uniform housing developments, are often destroyed.

The future—Many local governments and developers are learning that careful site planning can forestall abuse of the natural environment and help meet both housing and environmental goals.

The combination of open space with cluster zoning or planned unit development lowers the initial community service costs because of

smaller networks of roads and utilities, and it makes a more livable environment for the long term. These developments can vary from new satellite communities like Columbia, Md., to small, sensitively designed clusters of townhouses around a common green. The challenge is to change traditional ways of building and development and to break down the economic and institutional barriers that obstruct widespread use of these innovations.

The Rural Environment

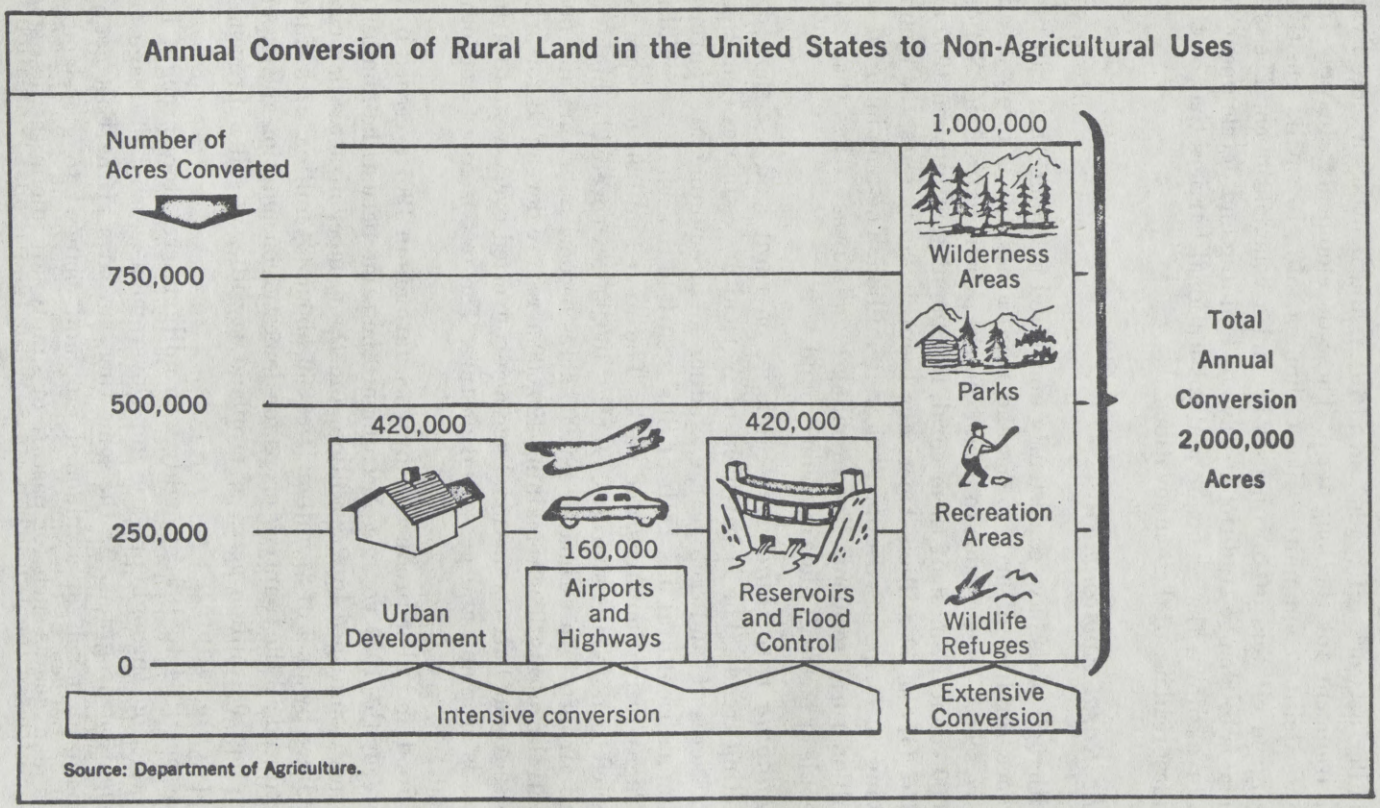
Although polls have consistently uncovered a strong American preference for life in small towns and rural areas, the last few decades have seen a huge exodus to urban centers. About half of the Nation's 3,000 counties, most of them rural, lost population between 1960 and 1970. Of the 53 million Americans living in rural areas, the number living on farms has dropped below 10 million. The remaining 40-odd million rural residents live in villages and towns of less than 2,500 people or on small plots of country land.

Changing rural land use—Statistics on rural land use show conflicting trends. The Department of Agriculture estimates that 2 million acres of land each year, excluding surface mining, are converted to nonagricultural use. Half of this is shifted to such uses as wildlife refuges, recreation areas, and parks. The other 1 million acres are converted to more intensive uses. Of that, 160,000 are covered by highways and airports. An estimated 420,000 acres become reservoirs and flood control projects. The remaining 420,000 acres are developed for urban uses. About half the national acreage converted every year to urban uses is cropland and grassland pasture. The rest is forest and other land.

Food and fiber production by U.S. farmers in 1967 exceeded by 38 percent the 1950 volume. Yet during the same period the number of farms diminished by 2.5 million, and the number of acres harvested declined by a net of 34 million. In 1969, about 334 million acres of land produced all the country's crops for domestic consumption and export. Another 98 million acres of cropland lay idle, in soil improvement crops or in pasture.

From 1944 to 1964, roughly 22.5 million acres were brought into production through private and Government-assisted drainage and irrigation programs. At the same time, in parts of the East not yet urbanized, much of abandoned cropland changed to grassland. It was managed as such for pasture or simply left idle in the first stage

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Annual Conversion of Rural Land in the United States to Non-Agricultural Uses
Number of Acres Converted
1,000,000
750,000
500,000
250,000
0
420,000
160,000
420,000
Urban Development
Airports and Highways
Reservoirs and Flood Control
Wilderness Areas
Parks
Recreation Areas
Wildlife Refuges
Intensive conversion
Extensive Conversion
Total Annual Conversion 2,000,000 Acres
Source: Department of Agriculture.

of natural revegetation. Some of this land now is undergoing or has passed through grass and brush stages to a final forest state.

Effects—The agricultural land use pattern today reflects a highly technical, mechanized, and product-specialized food and fiber industry. It has used the most productive land in the Nation, and it has altered other lands for crop production through vast Government expenditures—often at the expense of marshes, swamps, and bottom lands needed as waterfowl and wildlife habitat. The impact that this highly intensive use of land has on the preservation and diversity of our wildlife and on the integrity of our soils is just beginning to be understood.

Much of the character of farming today is dominated by monoculture, the production of single cash crops. Monoculture has increased production efficiency but has reduced the plant and wildlife diversity essential to a stable ecosystem. These less complex ecosystems are highly susceptible to attack by insects and diseases which can devastate a standing crop or single species regionwide. Moreover, monoculture has forced a heavy dependence on pesticides and fertilizers.

Farmland near cities is increasingly disappearing into suburban development. The scenery of diversified rural landscapes—with their fields and hedgerows and woodlots—is an important esthetic resource, particularly to urban populations. Although not entirely comparable, much of the charm and beauty of European countrysides derives from such landscapes. Unfortunately, insufficient effort has been made to keep the most attractive rural lands near cities from being consumed in the massive conversion to urban life.

The Coastal Environment

In the land and water areas of the American coasts lie some of the most fertile parts of the environment. The coastal zones, which include beaches, estuaries, tidal flats, bays, marshlands, lagoons, and sounds, with their adjacent lands, comprise areas of great biological diversity and productivity. The coastal zone includes urban, suburban, rural, and natural areas and faces all the problems of each. It is, however, a unique system which has important national significance and is subject to intense and conflicting manmade pressures.

Its surface is relatively small—only 15 percent of the U.S. land area. But 33 percent of the Nation's people are concentrated on the coasts, four-fifths of them in urban areas. While the national population in-

creased 46 percent from 1930 to 1960, the population in coastal counties increased by 78 percent.

Life at the edge—Because of the natural mixing of fresh and salt waters, the estuarine environment produces a wide variety of living organisms, from microscopic species to large numbers of fish and shellfish, birds, and mammals. Many species, such as clams and oysters, spend their entire life cycles in the estuaries. Others, particularly shrimp, migrate from the sea to estuarine nursery areas. In these rich waters, they grow to sub-adult size before returning to the sea to complete their life cycles. The anadromous species, such as salmon and striped bass, pass through the estuaries to their spawning grounds farther upstream, and the young return through the estuaries to the ocean. At least two-thirds of the animal populations in the oceans spend an essential portion of their life cycle in estuarine waters or are dependent on species that do. Innumerable waterfowl and shorebirds depend on the plant and animal organisms of the coastal zone for their food. Many winter and nest in these waters.

The base for all animal life in estuaries is the abundant variety of plant growth, from mangroves to eelgrass and algae. They are supported by the mixing and flushing action of the tides and the organic nutrients which collect to produce the rich bottoms and wetlands. While estuarine zones are physically varied, they all share the slow mixing action of the seaward flow of fresh water with the landward tides of the sea. Because of the concentration of people within the coastal zone, the estuaries receive large volumes of all kinds of waste, which are thereby trapped and concentrated. When estuarine waters are polluted, vast numbers of important fish and shellfish are affected as well as the numerous birds, reptiles, and other wildlife which are part of this food chain.

The conflicts—Competition for the use of the limited coastal zone is intense. Shipping activities are increasing, with larger vessels needing deeper channels. Mining and oil drilling in coastal waters grows daily. Urban areas expanding throughout the coastal zone continue to enlarge their influence over these waters. Industrial and residential developments compete to fill wetlands for building sites. Airport and highway construction follows and further directs growth patterns in the coastal zone. Recreation—from enjoyment of the surf and beaches to fishing, hunting, and pleasure boating—becomes more congested as available areas diminish. Since over 90 percent of U.S. fishery yields come from

coastal waters, the dependence of the commercial fisheries industry on a stable estuarine system is obvious.

Although some uses of coastal areas are undoubtedly necessary, many are not. Much industry, housing, and transportation could be sited elsewhere.

Dredging and filling—Besides water pollution, the major adverse effect on the coastal lands and waters stems from physical alteration of submerged and adjacent land and habitat—particularly the shallow marshes and wetlands. The major alterations of wet and submerged coastal lands comes from draining, dredging, and filling. Cumulatively these actions can entail the disappearance of the essential food base for practically all organisms in these waters.

The consequences of dredging and filling, because they often represent a series of incremental activities, do not usually become apparent until much of the permanent damage is done. Some 2 million to 3 million waterfowl used to nest and feed in San Francisco Bay before a large part of it was gradually filled. Their numbers are now down to less than 600,000. The State of California, with support from citizens and communities in the Bay area, has now formed the Bay Conservation and Development Commission to provide regional control over that irreplaceable estuary.

To the developer with little appreciation of the biological importance of estuaries, wetlands represent attractive waterfront acreage in particular demand by industrial and commercial concerns and home buyers. Relatively inexpensive to dredge, fill, and bulkhead for building sites, shallow wetlands attract many industries which are not dependent on waterfront sites but which find an economic advantage in developing these low-priced lands. Too often local governments acquiesce, anticipating the increased tax revenues. Consequently, natural coastal areas are being nibbled away. The long-range economic and ecological costs of this process are borne not just by the particular local community but by the people of the State and the region, and no less by the rest of the Nation.

The vacation industry—A growing part of the development pattern spreading throughout the coastal zone is the growth of vacation homes. The Department of the Interior has estimated that over 68 percent of the total recreational property values along the coasts and Great Lakes are accounted for by shorefront homes. They occupy over 90 percent of the recreational lands on developed coasts.

Only 6 percent of the land that can be classed as recreation shoreline is in public ownership, and not all of that is accessible to the public, particularly the many miles of Department of Defense holdings.

Management—Ownership of the wetlands in many States is a confusing tangle of State, local, and private claims, and in some coastal States valuable State-owned wetlands have been transferred to private interests for the specific purpose of development. Likewise, restrictions on development of the contiguous lands and wetlands are, with some exceptions, inadequate. Only a few States, notably Massachusetts, Connecticut, and North Carolina, have wetlands protection laws which require permits or other controls before alterations can be made to private coastal lands. Even fewer States have exercised any statewide powers over the contiguous dry lands. Hawaii, Wisconsin, and to some extent, Oregon, are among the exceptions.

The most important Federal permit authority affecting coastal zones is held by the Army Corps of Engineers. Dredging, filling, and all other structural changes in navigable waters require Corps permits under the Rivers and Harbors Act of 1899. The Fish and Wildlife Coordination Act and an interagency agreement also provide for review of all Corps permit applications by the Department of the Interior and State fish and game agencies. Their role is to review fish and wildlife, water pollution, recreation, and other environmental considerations. The National Environmental Policy Act of 1969 bolstered the authority of the Corps to consider all environmental aspects of a particular permit application. And the Water Quality Improvement Act of 1970, as a condition to granting permits, now requires State certification that the particular activity will not violate State water quality standards.

The Administration has recommended legislation to Congress to assist the Great Lakes and coastal State governments to manage and protect their coastal resources. The proposed legislation seeks to encourage these States, in cooperation with local units of government, to prepare and implement comprehensive land use plans for their coastal zones. To be eligible for Federal grants, the States would be required to assume regulatory and eminent domain powers. At a minimum, this would assure that local zoning actions would comply with statewide plans. Further, public notice, public hearings, and review of all Federal and federally assisted State and local projects would be conditions of grant eligibility.

The Natural Environment

Natural plant and animal communities—besides satisfying man's yearnings for beauty and recreation—perform indispensable roles in his welfare. Wild areas are part of man's past and essential to his future. The biological rhythms of modern man, which shape his life, are often tied to the natural forces beyond his urban surroundings. And yet wild areas are not fully free from man's influence. Some—for instance, where man is present for short periods and leaves hardly a trace—are little influenced. Others—lands actively mined, logged, or grazed—are heavily influenced.

For many years, the American people have realized that the most unique and spectacular of these natural areas should be protected and saved by Government.

The Federal lands—Management of most Federal natural lands falls under four agencies:

	Million acres
Department of the Interior:	
Bureau of Land Management	470.4
Fish and Wildlife Service	30.5
National Park Service	27.1
Department of Agriculture: Forest Service	186.9

Many other forests, parks, and recreation and conservation areas have also been set aside by State and local governments and by citizens' groups with an interest in the natural environment.

Their management varies from protective preservation to multiple use. Most of the Federal lands are managed to combine outdoor recreation, range, timber, watershed, and fish and wildlife uses. Many of the management programs permit the extraction of oil, gas, and other minerals; others aim primarily at esthetic values. Although Federal land management is meant to maximize public benefit and not to reflect only economic gain, land management agencies have been criticized for policies that overemphasize developmental values.

As other natural areas are staked out for intensive resource development, they are bound to come into even more serious conflict with preservation and recreational interests. Statutory resolution of many of these potential conflicts may be necessary, as may administrative reforms by the Executive Branch. The report of the Public Land Law Review Commission will serve as a focus for the debates that will shape such changes. The report has just been published at the time of this writing; consequently, a review of its findings and recommendations is not attempted here.

Federal lands managed primarily for the protection of their natural characteristics and the preservation of their fish and wildlife can take only so much use by man. Allowing people to enter these areas in large numbers must be weighed against their impact on the region's ecology. Protected areas must be managed so that constraints are placed on certain uses, including recreational uses requiring motorized transport.

The wilderness system—Some large areas under Federal control are expressly set aside as wilderness. The Wilderness Act of 1964 already protects approximately 10 million acres, although less than one percent of this is east of the Mississippi River. The Wilderness Act requires the Secretaries of Agriculture and the Interior to submit plans to Congress for including in the National Wilderness Preservation System additional natural areas having substantial wilderness qualities and presentlymanaged by the Forest Service, the National Park Service, and the Fish and Wildlife Service. These areas are to be of sufficient size, permanently roadless, and without commercial development.

Delays in setting aside wilderness areas, especially those within national parks, have stirred a public controversy. Sixty Forest Service areas have already been designated by Congress in accordance with a 10-year plan to have all wilderness areas set aside by 1974. But not a single National Park area and only one small area in a National Wildlife Refuge have been officially designated. The process of designating wilderness areas requires surveys and master planning by the lead agency, followed by public hearings, before the proposals go to Congress. Conservation groups have complained that the Federal agencies are not adequately staffed to complete the planning and hearing procedures. Conservation leaders also have criticized Forest Service and Park Service proposals for not including some additional areas with outstanding wilderness qualities in their recommendations for Wilderness Act protection.

Scattered throughout the Federal lands under various agencies are 336 "research natural areas"—a specific classification for lands left undisturbed for purposes of research and education. A number of ecosystems, however, such as the tall grass prairie of the Central Lowlands, are sparsely represented or are not included at all. Plans are now under consideration to add approximately 300 areas so that all major ecosystems will be represented.

Acquisition of natural areas—The major source of funds to purchase most Federal natural areas is the Land and Water Conservation Fund. Revenues for it come primarily from a tax on motorboat fuel, sale of

surplus Federal property, Treasury appropriations, user fees from Federal recreation areas, and—to bring the total to $200 million each year—Outer Continental Shelf mineral receipts. For the first time, the full authorization of $200 million is being requested by the President for appropriation in fiscal year 1971. The President has also asked that the unappropriated balance from past years be tapped to increase funding for 1971 to $327 million, compared to $124 million in the 1970 budget. Finally, the Administration has recommended raising the $200 million annual authorization of the Fund to $300 million. This would take effect in fiscal year 1972.

Over half the allotment from the Fund this year will go to the States and through the States to local governments. These funds are matched dollar-for-dollar by the States for the planning, acquisition, and development of outdoor recreation areas. The remaining funds are budgeted for land acquisition by the Federal Government to the National Park Service, the Forest Service, and the Bureau of Sport Fisheries and Wildlife (for rare and endangered species' habitat and for recreation lands adjacent to wildlife refuges). Major recent Federal purchases have been made from the Fund, notably the Redwood National Park in California and land within the national seashores. The new funding requested by the Administration will permit the Government to consolidate and protect many other important natural areas, including Point Reyes National Seashore in California.

The Migratory Bird Conservation Act of 1929 authorizes the Government to purchase additions to the 30-million acre National Wildlife Refuge System. Funds for this come mostly from the Migratory Bird Hunting Stamp Act of 1934, which requires all waterfowl hunters to purchase a Federal hunting stamp. Although about 25 million acres in the present 328-unit system are Federal lands which were withdrawn for refuge purposes, most of the national wildlife refuges acquired in the past 15 years have been bought with funds from sale of these "duckstamps."

Crowding—Natural areas under the direction of the National Park Service have become immensely popular with the millions who visit them each year. Yet the enjoyment diminishes as the number of tourists rises. Some of the more popular natural areas in our parklands have become clogged with traffic, noise, litter, smog, and most of the other elements of our technological society from which the visitors are trying to escape.

Identifying the best mix of uses for natural areas is difficult because scales for measuring esthetic value and natural phenomena are elusive. In the future, limits on use may have to be set at crowded parks or in ecologically fragile areas. California has attempted a system of advance reservations in some of its crowded camping areas in State parks. Some national parks may soon follow suit. Control of auto traffic will be forced upon many areas to preserve the values that the park or forest seeks to maintain. Alternative modes of transportation may be necessary. Yosemite National Park, long threatened by overcrowding, has excluded cars from the eastern part of the valley and converted other roads to one-way traffic. Where traffic is prohibited, access is provided by small buses. As Americans are more frequently attracted by their natural heritage to places where they can know nature firsthand, controls of these kinds will become more common.

Exploitation—Timber is cut and sold from the national forests, and to a lesser extent, from lands administered by the Bureau of Land Management. This use is a growing one. Cattle and sheep are permitted to graze on approximately 273 million acres of Federal land. Mineral leasing, mostly oil and gas, now uses over 64 million acres. Most of the public lands are open for recreation in one form or another. Across all these lands are spread diverse habitats which support varied species of wildlife.

Overgrazing, widely practiced during the latter part of the 19th and early parts of the 20th century—and still a problem today—has dramatically affected these lands. The semiarid and arid climate of the West has added to the destruction. Dry years have usually coincided with falling market prices. And when that has happened, cattle and sheep ranchers short of cash have often overstocked already depleted ranges. Much of this land, particularly the vast public domain, remains today in desperate condition, as wind, rain, and drought have swept over them and eroded their exposed soils. Although the effects of overgrazing in rich pastures or prairie farmland can be quickly corrected, the process is often irreversible on the limited soils and arid climate of much of the public lands.

What overgrazing does to the soils and habitat of the vast range lands, poor lumbering practices do to the forests. Mismanagement of timber cutting, in addition to being an eyesore, can also damage natural systems far beyond the forests. Debris and erosion of the limited soils of the forested West often choke streambeds far downstream. The tendency toward monoculture for the benefit of lumber and

pulp has its environmental results. Not the least of these is the loss of many native species. The greatest loss of timber is not from fire and disease but from insects, which can devastate large forests of single species. Widespread application of insecticides often follows.

Wildlife—Ultimately these and other uses of the Federal lands fall most harshly upon things wild and free, for protecting and improving habitat is the key to saving wild species.

Wildlife protection in the United States today paints a complex picture. The populations of most game species are high, and their status constantly improves, particularly deer, elk, and various game birds. However, until recently, nongame species of wildlife have been largely ignored and their condition is less well known.

Wildlife in the United States has long been equated with "game" and most public attention, research and management efforts have been directed towards species of sport value. However, trends indicate that persons wanting only to observe wildlife are likely in the future to outnumber hunters. Unfortunately, this change in public attitude has not yet been reflected in increased funds for nongame species. In 1969, total funding from all sources—Federal, State, and private—aimed at wildlife research, management, and habitat protection was about $142 million. Only $6 million of that was clearly related to nongame species.

Nevertheless, sportsmen in this country have contributed impressively to wildlife preservation through the Government use of duck stamp revenues, and tax revenues on sporting arms and ammunition to heavily support State fish and game agencies. Numerous outdoor organizations have also helped conserve land and teach wildlife conservation to their members and the public.

As a group, the large predators stand in greatest danger of extinction. The belief that most predators should be exterminated was central to the early days of ranching and wildlife management. In some areas this unfortunate belief endures. There are still strong pressures on State and Federal wildlife agencies to continue predator control programs for certain bird and mammal species, despite their diminishing numbers and their importance in making room for young, vigorous animals by killing off the old, the weak, and the sick. Nonetheless, most States are making progress in providing legislative protection for the large predators. Some notable exceptions are Arizona, where mountain lion hunting is not controlled, and Alaska, where bounties are still paid for wolves.

Threatened species are getting more attention at Federal and State levels, but limited funds still restrict effective management and research. The new Endangered Species Act should strengthen control over marketing illegally obtained species. It also will place the United States in a better position to cooperate with other governments in the protection of their threatened wildlife. Its effect is already visible in the diminished poaching of alligators in the Everglades. Their numbers have increased because of it.

The emphasis here is on wildlife. Fish are dealt with in the water pollution chapter and in the foregoing section on the coastal zone. Unfortunately, the status of fish and shellfish species is less known than that of terrestrial wildlife.

Epilog—These pages have tended to emphasize the worst effects of grazing, lumbering, recreation, and other uses. The point is that many uses can be compatible and often are. Many modern timber practices can improve forest conditions, and increasing numbers of stockmen are sensitive to range conditions. It is the excess, promoted by overemphasis of the short-term economic gain, which needs curbing. The lesson of man, of land, and of wild things is hard to learn. Aldo Leopold put it well: "A land ethic of course cannot prevent the alteration, management, and use of these resources, but it does affirm their right to continued existence, and at least in spots, their continued existence in a natural state."

THE INFLUENCE OF GOVERNMENT

As the Nation has grown, so have the number of local agencies empowered to decide how land is used. But because of their limited geographic scope, they cannot provide anything resembling a land use system. The narrow authority of each permits it to ignore what the decisions of all will do to the natural and human systems regionwide.

Land Use Controls

Public officials can now call upon a growing inventory of sophisticated land use tools at local, regional, and State levels. But often these devices are little used, and seldom in a way that rationally shapes or directs development.

A wise mix of land use techniques and powers can often balance private economic interest and public benefit. However, the relative importance of particular devices depends on the degree and nature of the control desired at a specific time in a given community.

Conflicts among the rights of an individual landowner, his neighbors, and the community should be resolved by the unit of government best able to take into account broad regional interests. Urban growth has outstripped the ability of small government units to handle environmental decisions that have metropolitan, regional, or even statewide impact. To offset this, many State governments have begun taking back some of the land use powers that they had delegated to municipalities. Although it has been long in coming, Americans are recognizing the need to examine carefully what government can do to assure that land is treated as a resource to be managed and not merely as a commodity to be marketed.

The police power—This term covers a wide array of land use devices designed to protect the welfare of the general public. They limit the free use of property rights in return for protecting the general community. All exercises of the police power have a common characteristic—they are subject to easy change. This is a disadvantage of the power as a land use tool—although flexible, its exercise may be only temporary.

Zoning—Zoning is the major police power employed to control land use. It classifies and segregates the land according to the permitted uses. It can curb those uses up to the point of taking private property without compensation. Within each classification, zoning can set limits on the nature, extent, and improvement of land. Although it has worked in well-established communities where there is little land speculation or pressure for new commercial facilities, it has had less success preserving open space or channeling growth in developing areas. While ideally zoning should implement sound land use plans, it does not necessarily do so. It is usually honored in the breach by the granting of variances or amendments once the pressure of development is on.

The close relationship between the land developers and members of zoning boards in many jurisdictions often jades public confidence in zoning as a tool for sensitive land planning.

In many suburbs zoning has become a device to exclude less desirable residential, commercial, and industrial newcomers. In such communities, it is used primarily to discourage the kind of development that will cost more in municipal spending than it will pay in property

taxes. This often means that apartment houses which accommodate large families, public housing, and even one-family homes on small lots are outlawed because they raise the tab for schools, parks, and other public facilities without bringing in commensurate revenues. Zoning accomplishes this by limiting construction to single family homes on large lots with large side yards and setbacks.

Subdivision controls—Subdivision controls embody some of the most promising tools for regulating urban growth. They comprise all the local ordinances and regulations that tell the landowner what he can and cannot do in dividing his land into lots and selling them or developing them. Where controls are used solely to benefit the developer economically, they can lead to tedious and unattractive developments with uniform setback and lot size, unimaginative street patterns, and little provision for open space or for commercial facilities within walking distance of homes. On the other hand, when subdivision controls permit cluster development, open space preservation, planned unit development, and other imaginative innovations, they can bring a sense of community and vitality. The flexibility of subdivision controls allows increased sophistication in the development of urban and suburban areas. For example, by the proper use of timed development, a community places all of its expenditures for new public utilities and services in one geographic area at a time, allowing for ordered growth at lowest public cost.

Sewer and water permits—Before water and sewer service may be extended to new housing and other facilities, most communities require certification that public capacities are adequate to supply the services and that equipment and other facilities on the property meet local specifications. When combined with adequate control over the use of wells and septic tanks, these permits can dictate the pace and direction of urban growth. Nevertheless, sewer and water lines today more often are installed in response to already uncoordinated and poorly thought-out development.

Suburban and regional shortsightedness has left some towns with inadequate water supplies and sewage treatment facilities for new residential, commercial, and industrial growth. Because of stricter enforcement of water quality standards, it has been necessary for regional and State authorities to prohibit further sewer hookups in large parts of several metropolitan areas, including Washington, D.C., Cleveland, and the northern New Jersey urban region. The disruptive conditions which led to these recent decisions dramatize the need for proper land use planning techniques to assure a predictable rate and

direction of growth and development and to prevent economic hardship for builders, businessmen, industrial concerns, and homebuyers.

Eminent domain—Eminent domain gives to government the right to acquire lands. It is an outgrowth of the old English common law principle that the Crown held ultimate power to buy any lands in the realm and, the landholder unwilling, to seize them and pay compensation. The right of eminent domain in this country likewise may be invoked in the case of a reluctant seller, provided the property is used for the public benefit and there is just compensation. Urban renewal and highway construction projects have used eminent domain to purchase vast numbers of properties. But eminent domain is also available for smaller public benefits—such as purchasing an easement for access to a public beach or preserving an historic building.

Land purchase or acquisition of limited land rights by a public body is, in theory, an effective way to control urban sprawl. But so far, little of this has been done, either to assemble large parcels for proper development or to preserve open spaces. For financial and political reasons, local governments in rural areas have not acted while prices are still low and unaffected by urban pressure. Once an area starts urbanizing, local governments are unwilling and often unable to pay the inflated land prices. By that time, it is also too late to purchase limited rights, such as scenic easements to preserve the land, because they often cost nearly as much as full purchase.

The planning function—Comprehensive urban planning is a commitment by government to help foresee and direct growth and change within its borders. With it development decisions can be made more knowledgeably. Planning is a natural extension of the traditional goals of police power and eminent domain power to promote public welfare. When planning determinations affect private property, they require the same standards of reasonableness and fairness to the owner.

Planning has often been misunderstood. The public often fails to understand that a comprehensive plan is a living, changing mechanism and not a static set of maps. Many citizens believe that the planning process has ended when the municipality approves a master plan. The long period of time required to prepare land use, public facilities, and transportation plans for large metropolitan regions has caused many citizens to regard planning as an academic exercise. Often this feeling is only strengthened by those planners who ignore the opinions of local residents. However, growing numbers of cities, metropolitan areas, and regions adhere to and implement their plans. As planners

begin to take greater cognizance of public attitudes, the value of planning as a predictive and directive tool may be better understood.

Planning has been criticized because it has often been unable to influence important land use decisions. This is not necessarily the fault of the planning process, although in many communities the planning organization is often pressured to conform its plan to unwise developments. It may be due instead to inadequate institutional arrangements that have been made to implement the plan. In many localities, the planning bodies are distinct from the action agencies. Consequently, the planning function becomes little more than advisory, and the planning office spends inordinate time and resources inside city hall lobbying the departments possessing the large budgets and the authority.

Finally, planning efforts to direct all development forces in a rational manner are often inadequate. What should be "comprehensive" sometimes deteriorates into a complementary set of specific functional planning goals for transportation, open space, schools, or some other single goal. In the process perspective is lost. Economic growth and efficiency become design criteria. Environmental aspects are often neglected for short-term economic gain. Planning that is not comprehensive and long range cannot hope to evaluate ecological factors properly.

The role of private agreements—Covenants, conditions, easements, and like restrictions on property use comprise a special set of land use devices which traditionally have been employed by neighboring property owners. Recently they have also been invoked by government and private groups to protect land. For example, citizens of several towns in Massachusetts have executed agreements with local conservation trusts, funded in part by the towns, to protect their wetlands from further development. Covenants, conditions, and easements can be tailored to carry out specific purposes. They are well established in the law and continue in their effect even if the property is sold.

Permits—The Federal and sometimes State Governments require permits for a range of activities on land and submerged lands. Although the control of individual land use decisions regarding private land is primarily local and varies widely, these permits may influence major growth patterns and economic development.

Federal permits are issued when public lands are involved. Leases, use permits, and licenses are granted to extract oil, gas, coal, and certain other minerals, and for grazing, recreation, and timbering. These

permits affect not only the public lands, but also may influence the use of nearby privately owned land.

The permit authority of the Army Corps of Engineers is a significant tool in land use decisions affecting navigable waters in the United States. These permits are discussed in this chapter in the section on the coastal environment. Some States have enacted legislation requiring permits for alteration of wetlands, bottomlands, and in some cases adjacent land areas. The trend is toward stronger State controls on dredging, draining, and filling of coastal areas.

Tax Policy

Tax policy is a vital cog in deciding income and profit for land investors, suburban developers, urban developers, and landlords—the big influencers of land use. Taxation therefore is an essential tool in shaping the manmade environment and preserving the natural environment.

Local property tax—A major cause of the decline of services in some core cities is the loss of actual and potential tax revenue when residential, commercial, and industrial development spreads to the suburbs. With strict zoning and subdivision controls, many suburban communities exclude all but those who will add more to the tax rolls than they will require in municipal expenditures. Rather than finance government activity for the benefit of all people in an interrelated urban complex, the property tax has abetted local isolation from regional land use problems.

Assessment procedures have improved in many municipalities, but more reform is necessary for a fair spread of the tax burden. At present, land in urban areas tends to be undervalued and the improvements on land overvalued for tax purposes. Consequently landowners in urban areas are discourged from restoring structurally sound buildings or replacing deteriorated ones with new structures, since such improvements will raise the taxes disproportionately. On the developing fringe of urban areas, low taxes on raw land have encouraged speculative purchase and leapfrog development.

As mentioned earlier, an increasingly serious problem in city cores is property abandonment. There are delinquent taxes on some of these vacant lots and buildings, but little is done to collect them. Even less

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often are such properties confiscated by the city and turned to public use or sold to redevelopers.

The threatened loss of the tax base in urban areas has forced some cities to offer concessions to keep industries from moving to the suburbs, often including failure to enforce air and water pollution standards and other controls of industrial activities damaging to the environment.

Finally, few communities have constructively exploited the interrelationships of zoning, subdivision controls, and other land use devices with property tax policy. The local property tax could be a useful device, particularly in encouraging cluster development and open space preservation where no such options exist. Special tax treatment for commonly owned open space and community facilities also encourages protection or enhancement of the environment by subdivision developers.

The Federal income tax—Some aspects of the Federal income tax deliberately encourage specific types of land development. Other aspects cause inadvertent effects. The Council, with the aid of its task force on tax policy, has undertaken to examine many of the leveled criticisms. Some are outlined below.

An important land use impact of the Federal income tax stems from the deductibility of local property taxes. The intent of this provision is to relieve the homeowner from paying a tax on a tax. Often, however, major benefactors of the deduction are slum landlords and land speculators. The latter are said to be relieved by this provision from the burden of local taxation as pressures of urbanization increase the value of their holdings.

Although tightened by the Tax Reform Act of 1969, depreciation provisions of Federal income tax laws are still in need of study to determine whether they adversely affect land use decisions. Accelerated depreciation and redepreciation of buildings may foster high numbers of substandard rental housing units in core cities. Such provisions have encouraged ownership of rental property for a limited number of years, then a selloff rather than improvement of the property. These so-called fast writeoffs encourage poor quality construction in new rental units since the first owner seldom plans to own the property more than a few years.

Tax laws benefit the homeowner by allowing him to deduct mortgage interest. But they do not permit rent payments to be deducted. Much has been done recently to determine to what extent present living and

land ownership patterns of the slums, the central city, and the suburbs are traceable to these tax policies.

There is growing interest by private citizens in preserving forest and woodland, protecting additional animal and fish habitat, and preventing further deterioration of their own and nearby landscapes. Some landholders have sold or donated development and other rights on their land to public bodies or private conservation groups for permanent preservation. Recent Internal Revenue Service rulings have attempted to establish the value of these gifts in light of general tax rules by basing it on the fair market value of the land as restricted compared to its value previously. Some have argued that greater certainty and more liberal treatment should be provided in establishing the value of what was given in order to encourage conservation easements and similar devices for environmental protection.

The Impact of Federal Activities

A myriad of Federal loans, grants, projects, and other programs enacted for specific public purposes often has direct impact on the use of land. Because of the interrelationships of these programs with those of other levels of government and the private sector, it is difficult to assess the degree of Federal influence. The most significant Federal activities include the highway, airport, and mass transit programs, the sewer and water grant programs, home mortgage assistance, open space funding, agriculture subsidies, planning assistance, the location of major Federal facilities, and water resource projects. A brief discussion of these programs and their land use consequences is included in the Addendum following the section "What Needs to be Done."

WHAT NEEDS TO BE DONE

Land use influences, trends, practices, and controls in the United States are complex. While by no means an exhaustive survey of all the environmental problems that are land related, the above summary does indicate the need for developing standards to evaluate what is happening to this basic resource and to develop policies that will guarantee its continued integrity. In short, there is a need to begin shaping a national land use policy.

The reforms in Government activity needed to institute a national land use policy are undeveloped at this time. It will be necessary first to determine which levels of government must assume which specific responsibilities and to identify the appropriate mechanism at each level to achieve such a policy. However, this chapter has identified certain aspects of a strategy which the Council feels merit special consideration:

- The Federal Government should encourage, through project approval under existing programs, widespread use of devices such as cluster zoning and timed development.
- Although a number of Federal programs exist to preserve buildings and neighborhoods of architectural quality and historical significance, there is a need for increased attention and a comprehensive strategy if significant progress is to be achieved.
- Comprehensive metropolitan planning should identify flood plains, wetlands, aquifer recharge areas, unstable surface and subsurface characteristics, and areas of value for scenic, wildlife, and recreational purposes. Development in these areas should be controlled.
- Federal grants for sewer and water projects and open space acquisition should be directed toward communities or project areas which will use them to control development rather than to those which merely respond to uncontrolled growth.
- Home mortgage and interest subsidy programs should be used to encourage the proper siting and environmental compatibility of the subdivisions in which new housing is constructed.
- Congress should act to reverse the degradation of the coastal zones by enacting the Administration's recommended legislation, S. 3183 and H.R. 14845.
- National wilderness areas should be designated as quickly as possible; the appropriate Federal agencies should comply with the intent of the Wilderness Act even if substantial temporary reassignment of personnel is required.
- The National Park Service should accelerate its control systems experiments to prevent overcrowding and traffic congestion in the National Parks.
- Greater emphasis should be given through existing programs to acquire small parks and natural areas near cities.
- Additional areas of special ecological significance should be protected, and the Federal Government should identify and establish a national registry for research natural areas.

Addendum

THE LAND USE IMPACT OF FEDERAL ACTIVITIES

Major Federal Installations

The Federal Government is responsible for constructing installations throughout the country for research, national defense, and other purposes. The largest such facilities are frequently placed in remote areas where the impact on surrounding natural values can be severe. Until recently little was done to assure full consideration of these impacts, particularly as they relate to the environment.

The construction of facilities by NASA at Cape Kennedy, Fla., is a case in point. The massive needs of this complex for men and materiel brought an entire county of Florida under severe development pressures. Brevard County was engulfed overnight by residential subdivisions, commercial strips, and highway corridors. Large areas were cleared of vegetation, wetlands were filled, and stream systems were altered. Recent cutbacks in space exploration have brought the county quickly from boom to economic decline, contrasting the short-term economic benefits with the long-range ecological costs resulting from development, federally encouraged or otherwise, without adequate planning and control.

Equally important are the large Federal properties, mostly Department of Defense holdings, in and near urban areas which are being underutilized by Federal agencies. The President has ordered a survey of all such Federal real property. The aim is to identify those lands which could be better used, especially for public recreation.

Water Control Projects

The Federal Government also spends heavily on resource development. Every year as much land in the United States is converted to reservoirs and flood control use as for urban and suburban development. Most of the development is undertaken by four Federal agencies with responsibilities for water resources. The Army Corps of Engineers, with an annual development budget of $1.36 billion, is active throughout the Nation with heavy emphasis on flood control and navigation improvement projects. The Bureau of Reclamation of the Department of the Interior, with its $300 million budget, operates in 13 Western States developing irrigation and municipal and industrial water supply and electric power. The Tennessee Valley Authority spends $10 million a year on multipurpose water resource projects, with the emphasis on flood control, water quality control, recreation, and economic development. The Soil Conservation Service of the Department of Agriculture spends approximately $100 million annually on its small watershed and flood prevention programs.

The primary rationale for these vast Federal outlays is to supply water for agricultural, industrial, and domestic use and to prevent floods. However, the environmental implication argues for a reevaluation of certain programs. Although the concern has been to produce water for growth and expansion, the decline of the quality of the natural and human habitat, which too often results

from such projects, requires a broader perspective. Alternatives are now more seriously considered, along with the potential loss of environmental values. When the public outcry has been strongest, it has prevented the inundation of beautiful stream valleys and canyons.

But understanding of the proper balance of water resources and environmental needs is only in its infancy. The number of free-flowing streams and rivers declines yearly as new dams, canals, or channels impound and divert the waters. Although extensive recreation areas are often created from such projects, they often irreversibly destroy the natural systems of land and water in addition to recreation uses of free-flowing streams and rivers. While millions of fertile acres are being abandoned in some areas, millions of dollars are spent in others to irrigate deserts and to dike wetlands for farming. Although some shifts in agricultural land use are clearly necessary, there is no coherent policy to assure that environmentally damaging projects are kept to a minimum. We continue to develop flood plains, then spend millions to protect man's use of them from natural flooding cycles. We continue to view the provision of water resources as a challenge to our engineering ability rather than as a challenge to weigh against man's ecological obligations.

Aids to Other Government Bodies

Although major Federal grant programs to State, regional, and local governments require compliance with numerous criteria, the criteria are rarely environmental. Stronger enforcement of the procedures outlined in Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 and greater consideration of environmental planning criteria are logical first steps toward developing a national land use policy.

Highways—Aid to States for highway construction is a major Federal outlay. The Federal authorization for fiscal year 1971 will total $5.4 billion. Four billion dollars is for work on routes of the interstate system. Seventy percent of this 42,500-mile network of high-speed, limited-access highways was complete as of January 1, 1970. Since 1956, $39 billion has been spent on the interstate program.

One and two-tenths billion dollars in Federal funds for fiscal year 1971 have been apportioned for the continuing Federal-State program to improve primary and secondary highway systems. This program predates the interstate system, has expended a total of $27 billion over the years, and has aided in upgrading over 250,000 miles of highways.

Both of these major construction programs are funded exclusively from the Highway Trust Fund created by 1956 legislation. Revenue paid into the Fund in fiscal year 1969 totaled $4.67 billion. About 68 percent of this total comes from the 4 cent per gallon Federal tax on motor fuel; the rest is collected from various taxes on automotive products, trucks, and trailers.

Federally assisted highway construction has been the major determinant of growth patterns and development in this country since 1956. The program has given the American people a degree of mobility never before known. But the momentum of construction and the economic importance of new road building have raised obstacles to thoughtful long-range planning for the environment. Urban expressways have relieved congestion on our city streets but sometimes in the process have disrupted established neighborhood patterns,

consumed urban parklands, and raised noise levels in residential areas. In some cases, expressways have abetted the conversion of downtown commercial districts into places that live only from 9 to 5. Construction of suburban arteries can easily be justified as a short-range solution to pressing problems of congestion. Yet it can also spur new development far from the city core, reward land speculators, create a need for more public services, destroy natural areas, dump more cars into the central city and promote a pattern of suburban settlement that nearly precludes mass transit.

Mass transit—Mass transit services have declined in many cities as riders turned to the automobile for the commute to and from work. However, failure to maintain and expand city bus, subway and commuter rail systems will lead to further congestion of expressways. And it will necessitate giving over more of the downtown areas to more expressways, parking lots, and garages. Mass transit legislation would award up to $3.1 billion over the next 5 years to State and local governments to help finance acquisition, construction, reconstruction, and improvement of mass transportation equipment and facilities. This legislation contemplates a full Federal commitment to the program of $10 billion over a 12-year period. It would permit State and local long-range public transportation planning to proceed in an orderly fashion, assured of uninterrupted Federal assistance.

Airports—The President's Budget for 1971 asks for $220 million in grants-in-aid for airport development and expansion. Available to burgeoning airports on a 50–50 matching basis, this money is for land acquisition, runway and ramp construction, and other airfield costs. The new Airport and Airway Development Act of 1970 envisions annual Federal appropriations over the next 5 years of $280 million.

But airports also have significant environmental impact. They bring high noise levels, new access highways, air pollution from automobiles and aircraft, and sewage and solid waste disposal problems. Airport construction requires that large land areas be cleared and leveled. This often means draining wetlands and other natural habitat areas to remove birds, small mammals, and other wildlife. Even more important, residential, commercial, and industrial activity cluster around airports, intensifying environmental threats manyfold. A proposed airport in the Dallas-Fort Worth area may attract support activities equal to a city of 80,000 people. Construction of a mammoth 39-square mile jetport just north of the Everglades National Park in Florida has been blocked by the Administration. If completed, it would have significantly disrupted the natural systems of the National Park and, worse, stimulated development already threatening the surrounding Big Cypress Swamp. The draining and filling of that swamp, the last natural flow of water to the western third of the park, would disrupt the hydrologic cycle and ecosystem of southern Florida and destroy the Everglades National Park.

Planning—Major Federal Government grants to fund comprehensive planning are distributed through three principal programs. Other specific functional planning grants are available from dozens of Federal programs. The Department of Housing and Urban Development (HUD) is the most important source. Its "701" program expends $50 million a year in direct aid to metropolitan areas and regions and in indirect aid to counties and smaller urban units. One and one-half percent of Federal Highway Trust Fund spending is earmarked for planning, although

much of the $60 million available from this source is expended on transportation-related planning activities. HUD's Community Renewal Program also sets aside $12 million for planning.

Comprehensive regional planning can control the pace and direction of development. As such, it can be an important protector of environmental values. It also helps State and local officials coordinate various policies and programs and develop the framework to guide functional planning for schools, transportation, public utilities, or other specific purposes. There is a temptation at the Federal level and in many communities to use HUD funds for functional instead of comprehensive planning, thus losing the "glue" to hold together the disparate planning activities.

Sewer and water lines—A considerable block of Federal assistance—more than $500 million—is devoted annually to sewer and water projects that often affect land use.

The involved Federal agencies, particularly the Department of Housing and Urban Development, believe that past administration of these programs has augmented suburban sprawl and misdirected development. Builders and landowners know that they can develop lands far from built-up areas and use septic tanks and wells with the hope that funds will ultimately be available to extend sewer and water lines. Meanwhile, local officials delay construction of facilities in expectation of Federal funding. These outdated practices are undergoing challenge and change. And as new criteria are developed, Federal sewer and water grants can become useful to better direct the pace and pattern of growth.

There are three important Federal programs. The Department of Housing and Urban Development has a programming level of $150 million for 1970. Last year, three hundred and sixty five communities benefited from the program; most were suburban jurisdictions. The funds are not available for interceptor sewers or treatment plants. The Department of Agriculture has available for fiscal 1970 $190 million for water and sewer projects in communities of less than 5,500 persons; $64 million of this is for direct loans, and $80 million for insured loans; the remainder is grant monies. The Economic Development Administration of the Department of Commerce also funds construction of sewer and water facilities within its areas of jurisdiction. Expenditures for 1970 of $119 million are allocated primarily to economically depressed rural areas.

Open space—Acquisition of open spaces for recreation and conservation attracts growing public interest and government response. There are two major Federal grant programs. As described in the previous section on the natural environment, over half of the appropriations from the Land and Water Conservation Fund are available to States on a matching basis each year. Many States make a share of these funds available to local governments for purchase of small parks and recreation areas. The States have already used the Fund to purchase thousands of acres of recreation and conservation lands.

The other major open space grant program is operated by the Department of Housing and Urban Development under title 7 of the Housing Act of 1961. In the last 9 years, this program has spent $350 million in matching grants to acquire 350,000 acres of urban land for recreation, conservation, and historic preservation.

The combined impact of these two grant programs has significantly increased the land available in urban areas for recreation. Thousands of acres of urban open space have been preserved. But at the same time many thousands more were converted to residential, commercial, and industrial use by urban expansion. Some suburban communities have been among the most irresponsible in failing to provide adequate open space; many others have found their best efforts frustrated by soaring land costs.

Aids and Inducements to Individuals

The Federal Government over the years has loaned and granted money to individuals—among them homeowners and farmers. These programs have had noticeable side effects on the way the country has developed its land.

FHA-VA home mortgage programs—Buyers of 17 percent of the new housing units in the United States still choose Federally insured (FHA) and guaranteed (VA) loans to finance their homes. These programs were first implemented on a wide scale after World War II. Policies of low down payments and readily available low-interest loans provided financing for millions of families who otherwise would have been unable to buy new homes.

At the same time, by encouraging suburban home construction, these programs helped to form the concentric circles of racial and economic separation that persist in many metropolitan areas. Federal Housing Administration and Veterans' Administration examiners have traditionally favored new homes over restoration or renovation, and suburban communities over the urban core.

Agricultural programs—Farmers aid programs of the Department of Agriculture are a second set of significant inducements to individuals. Price support programs of the Commodity Credit Corporation are budgeted at $3.5 to $3.8 billion per year. These funds go to keep land out of production, prop agricultural prices, and provide farmers with loans against their crops. Each year the Farmers Home Administration provides $775 million in direct and insured loans for rural housing. Its Operating Loan Program furnishes $275 million annually for short-term purchases such as feed and equipment. The Farm Ownership Loan Program provides $225 million of direct and insured loans for the purchase of lands to expand or establish farms. And individual erosion control projects funded by the Agricultural Conservation Program amount to $200 million each year.

The original purpose of this aid was to protect the family farm and to encourage proper practices of agricultural conservation. Today intensive farming and modern methods of raising livestock often strain the capabilities of our lands and waters. Extensive use of pesticides and vast amounts of concentrated animal wastes are just two of the changes which have had profound environmental effects.

APPENDIX 6

Published editorials, articles and other materials pertinent to the subject of a national land use policy.

[From the Anchorage (Alaska) Daily Times, Dec. 23, 1968]

The Use of Land

The tempest over Gov. Walter J. Hickel's conservation views appears to be of the teapot variety because the president of the mighty Sierra Club agrees with him.

Criticism has come from some minor luminaries in the conservation groups because the governor, who will soon be Secretary of the Interior, said publicly that land should not be conserved merely for the sake of conservation.

While the minor personalities threw verbal darts at the governor, the president of the Sierra Club said that he, too, doesn't believe in conservation merely for the sake of conservation.

This ought to be enough to quit down this issue for the time being.

Some variance of emphasis must be expected to differentiate the statements of Alaskans, who live in a land that is almost entirely wilderness, and conservation leaders who live in areas that are almost all urban, paved, industrialized and densely populated.

It is natural that there should be great emphasis upon the preservation of open spaces in a state like California. Little untouched open space left.

But in Alaska the situation is the reverse. The untouched open spaces—wilderness—constitute more than 99 per cent of the entire state. And it's a huge state. The primary effort of man is to find a foothold for life, methods of overcoming the natural obstacles and means of bringing into use for the benefit of the nation the vast latent resources that now lie valueless in this wilderness.

The fact that Alaskans emphasize development does not mean that they are opposed to conservation.

The tempest that was stirred up by Governor Hickel's remarks points up the need for a national land use policy. It is shocking that this nation has gone without such a policy for so many years.

Until there is a national policy there will be continual collisions of various groups. There will be suspicions, accusations and widespread distrust by the timber interests, miners, cattlemen, power companies, irrigation groups, wilderness enthusiasts, park and recreational buffs. Each group feels compelled to grab whatever land it can before the land is grabbed by another group.

A national policy for land use would serve to guide the special interests so that their efforts could be channeled into what is best for the public in general instead of for any particular group or activity.

If the new secretary of the interior can develop a policy that will return maximum benefits to all the people, all the time, he will be great in the history of this nation.

[From the Washington (D.C.) Post, Jan. 27, 1970]

New Cities and Old Ones

The President's advocacy, in his State of the Union address, of a "national growth policy" to govern the course of urban settlement and growth makes sense. And one cannot argue with the statement that "the violent and decayed central cities of our great metropolitan complexes are the most conspicuous areas of failure of American life." So therefore, the federal government must help "in the building of new cities and the rebuilding of old ones." We agree.

The National Committee on Urban Growth Policy headed by former Congressman Albert Rains suggested last spring that the nation must begin to prepare for 100 million additional persons in the nevt 30 years, a growth of nearly 50 percent above present population levels. The growth committee called on the federal government to help with the construction of 100 new cities of 100,000 each and 10 others of one million each to take care of 20 percent of the population increase. There is no question that many new cities will be built before the year 2000. Still unanswered is whether they will be planned or unplanned, whether they will be successful new centers or replicas of the old failures. And the nation will need to decide whether to put them in the midst of corn and wheat fields, away from existing big cities or whether to create rings of satellite cities which would draw on available resources. The President seemed to be suggesting that there should be an upper limit on the size of major cities when he urged that "balanced growth" be made a clear objective of our land use policies. Along that line was his call for creation of "a new rural environment that will not only stem the migration to urban centers, but reverse it." Actually, there has been a slowing down of the migration to the central cities, although suburban areas continue to expand. As for the older cities, the address lacked clues on how they should be rebuilt. Here, of course, the nation does not need plans as much as it needs the capability of carrying out the plans that have been made.

The call for action to preserve open spaces and parklands, particularly near urban areas, is important for both old and new cities. We await with interest the promised presentation of proposals for "innovative financing methods" on how these open spaces will be acquired. The Year 2000 Plan for the Washington area envisaged wedges of green space separating corridors of intensive development, but not much has been done to carry out this plan because of the reluctance of government at all levels—local, state, and national—to spend the money that would be required.

Previous efforts to do national planning have not gotten very far because of a national unwillingness to accept limits on how our vast resources may be used. But the point of the President's call for development of a national growth policy is that we can no longer afford the luxury of permitting our cities to grow and die and be reborn on the old haphazard basis.

[From the Washington (D.C.) Post, Mar. 26, 1970]

National Land Policy

Wise use of land is the essence of a sound policy of protecting our environment. Because we have had plenty of land for all purposes in the past, Americans have tended to think that how it is used is the business of only the owner, except for some zoning in the cities to promote orderly growth and protect property values. That sense of luxury is now rapidly passing. New concern over what man is doing to his environment has brought pressing demands for a national land-use policy.

Chairman Henry M. Jackson of the Senate Interior and Insular Affairs Committee, the author of the Environmental Policy Act of 1970, is now taking the initiative in the land-use planning sphere. Hearings on his bill to stimulate the states to inventory their land and safeguard its use began yesterday. The senator would offer the states grants for the creation of regional planning bodies and ultimately penalize them if they do not act. His bill would also create a federal Land and Water Resources Planning Council headed by the Secretary of the Interior to shepherd the program.

Planning for proper use of all the land in all the states would be a truly mammoth undertaking. It must ultimately come, however, and a beginning now would doubtless ease many problems of the future. The country cannot afford to let its best farm and recreational lands be gobbled up for factories and super-highways. On the other hand, it is estimated that 15 million acres will be needed to house an additional 100 million people by the turn of the century. Suitable locations must be found for many new power plants, industrial complexes, modern highways, airports, new cities and so forth. Many millions of acres of land now unused ought to be growing timber for future building operations.

Senator Jackson has thus launched an undertaking of enormous potential importance to the future of the country. His hastily drafted bill may not be the full answer or even the best approach. But it looks in the right direction. Our national heritage in land must not continue to be recklessly squandered.

In Search of a Formula for Land Use

(By James Craig, *American Forests*, November 1968)

With many people living in cities and suburbs, lumbermen are hard put to it to come up with an understandable formula of land use that will convince urbanities of the need for growing and harvesting trees for purely economic purposes.

The problem faced by the lumbermen, and most everyone else, is that of using the land to its greatest advantage in the face of growing people pressures on a fixed land base. Increasingly some of this land is being allocated for single purpose recreational use because recreationists are numerous and can bring more pressure on the powers that be than anyone else. Lumbermen don't say this is all bad but they are reminding the pubic that a growing population will have to have houses to live in and products to live with as well as more land to admire for its beauty.

Gene C. Brewer, president of U.S. Plywood-Champion Papers, Inc., has come as close to a desirable formula as anyone. First of all, he agrees no one wants to launch out on the conquests that have characterized the actions of past great powers when they first experienced pressure on their own land. The actions we take, he agrees, must be taken as regards the opportunities presented by our own fixed land base.

Next, Brewer keeps it positive. He believes in "live and let live" and the need for land for purely esthetic purposes. But he also knows that even outdoor people seldom like to "live in wigwams" and he has his eye on the needs of people living in our slums as well as people in more fortunate circumstances—all who desire and have a right in America to a good life.

Again, unlike so many, he does not apologize for or defend his industry—he plays up the good things it does. On June 24 at Portland, Oregon, he told the Institute of Architects, "Ours is one industry that takes beauty from nature, converts it into products of beauty and, through reforestation, returns beauty to the forest."

Typically, Mr. Brewer's appearance on this occasion found him on the same platform with Whitney Floyd as they talked about "the total city problem." Needless to say, trees, both vertical and horizontal, will be needed to cope with that problem.

September found the National Forest Products Association, of which Mr. Brewer is a past president, taking their search for a formula one step further. With representatives of 50 other commercial users of land present, NFPA Chairman of the Board Russell H. Ells said this was a seminar on "geopolitics," not in the bad sense but in the good sense—a study of internal problems having to do with land and its use. Mr. Ells wrote in the foreword of the program, "it is the earnest hope of the National Forest Products Association that discussion of the compelling need for a *national land use policy* will stimulate participation by all interested elements of our society. . . ."

Right there was where an element of misunderstanding entered the picture as regards aims and objectives. Last May the NFPA published a 17-page green-backed brochure containing two papers that in a sense set up the platform for the September seminar. Both papers were carefully read by many people. The first, by Mr. Brewer, was entitled, "Forging An Enlightened *Public* Land Use Policy for the Nation." The second, by Mortimer B. Doyle, was entitled, "The Need for a *National* Land Use Policy." Mr. Doyle recently resigned as executive vice president of NFPA to become executive vice president of Southwest Forest Industries at Phoenix.

Public lands or *all* lands? People usually are much more impressed by what they read than what they hear. One of these is Milton A. Pearl, Director of the Public Land Law Review Commission. At the seminar, he suggested the NFPA might mean a study of "public" land rather than all land. If the former, the PLLRC is already engaged in such activity and lumbermen can help. If the latter, the findings of the PLLRC and its 34 framework studies on public land laws and policies can be of assistance to the larger study contemplated by the lumbermen.

CRUCIAL QUESTION

"Let me raise one more, but what may be your crucial questions," Mr. Pearl said. "Are you prepared to invite Government regulation for the assignment of privately owned land so that its sale on the market for a more profitable use

would be prohibited? And for that matter, are you as users of land prepared to invite Federal regulation that would require approval before you could change the nature of the use of your land?"

Why does it necessarily follow that there would be more regulation in the wake of a total land use study, this reporter asked Mr. Pearl following the conference. Suppose you own forestland adjacent to a growing city, Mr. Pearl said. Suppose you decide to make one final cut and sell out to realtors in view of a most attractive offer. If the nation has a land use policy with teeth in it you, as an owner, might be told you couldn't do that. You might be told that growing trees was the higher use for that property and that you must go on growing trees. More highways and the scenery adjacent to them, more recreation, plus the need for more trees for lumber all enter into this equation too, he suggested.

Mr. Pearl, like some others, wasn't sure just what the exploratory study by the commercial users had in mind but he suggested they probably mean study of public land use and the continuing movement of private forest land into various forms of public use.

Do you mean *both* public and private land, this reporter asked a spokesman for the forest industry? Yes, he replied. The thinking of the industry has been changing since it first took up this subject. Despite the admitted hazards, they feel the time has come to face up to the need for a sort of charter for land use—or a Constitution for Land Use as one official put it. With pressures on land growing with the needs of people growing, and with the land base fixed, the time has come to explore the whole land base, the spokesman said. And industry should not back away from it.

Whether such a study is needed, how broad and elaborate it should be, and what it would cost are questions NFPA has placed before 50 commercial users of public land in America. While there have been no definitive answers as yet, the lumbermen have been cheered by the interests of such organizations as the American Farm Bureau and the National Association of Counties. They intend to pursue the subject and they have invited the lumber people to work with them.

Needless to say, a national study of all land goes beyond anything the PLLRC is undertaking. It would cost much. One lumberman, who admits his people need facts, told AMERICAN FOREST he doubted they had time to make such a study before public reaction to the findings of the PLLRC, due in two years, begins to be heard. Others say they have sufficient time and they intend to use it.

Another possibility, either with a national study or without it, was broached by Mr. Pearl at the seminar. That is the possible establishment of a National Land Use Institute—a combined effort in which the public interest would be supported by the government and the commercial aspects of public land use supported by the commercial users. Full use of all communications media was also recommended. The proposal was endorsed on the spot by Mr. Doyle, of NFPA—another indication lumbermen are completely absorbed in the land use subject.

CONFERENCE QUOTES

Some conference quotes follow:

Russell Ells, Chairman, NFPA—"There has been a revolution in the American attitude toward the land . . . the land has become more prized by many for its non-productive qualities than for its treasure of benefits which can be derived for all the people."

James D. Bronson, President, NFPA—"Our national land base is an entity—it must be studied as a whole."

Dr. Lynton K. Caldwell, professor of government, Indiana University—"To an increasing number of people, and to many economic enterprises, *usage* is more important than *ownership*. Lumbering and mining operations are not contingent to actual ownership of land, and neither are many forms of occupancy. . . . In fact, ownership as a legal proposition may be a declining social value, discouraged by the rapidity of product obsolescence and the burdens imposed by taxation, public liability, and insurance practices, as well as by the difficulties of maintaining any kind of property in a high cost, full employment economy.

"One way to obtain control without personal ownership is through public ownership—provided that the desired control may be obtained through political means. . . . The United States has been the greatest real estate subdividing enterprise in human history."

Dr. Caldwell outlined three lines of "strategy" for the industry—a broadened context of the issues of land use, a need for realistic assessment of the "possible

and probable" with industry prepared to play a "creative, constructive, and public-minded role," and "constructive innovation" with industries creating their own scenic roads and rivers programs. "Many have not—and I have recently observed some glaring examples of post-lumbering carnage on inholdings surrounded by national forset lands." Of all the speakers present, Dr. Caldwell was foremost in urging creative programs on the part of industry and warned that the next general election will see a younger generation taking over with decidedly different ideas and approaches both on the type of candidates they will support and the programs they will recommend.

Milton A. Pearl, Director, PLLRC (speaking of the Public Lands)— ". . . Two essential facts to keep in mind are first that approximately half of our public lands are in the State of Alaska and that the great bulk of the other half—91 percent—is located in the 11 western states which, except for California, are rather sparsely populated outside of their urban centers. A third fact is the type and quality of land remaining as part of the public domain, being those lands that have never been in private ownership."

R. D. Hodges, Jr., and H. P. Newson, both vice presidents of NFPA, suggested that the time may be here to prepare a "Constitution for Land Use" much in the same manner the Employment Act of 1946 became a "Constitution for Labor." Aim would be to promote free enterprise, maximum employment, improve purchasing power and have the President give an economic report to the nation every year.

Bernard L. Orell, vice president, Weyerhaeuser, charged his panel to consider four basic questions: 1) Is a public land use study a private or public responsibility? 2) Is it possible for an industry to carry on its management responsibilites without the development of facts needed to interpret the future? 3) Can we (the commercial users and presumably others) get together for once to obtain necessary objectives and work with the public? 4) Can we obtain a balance in this country with the realization that while man cannot live by bread alone, he must have bread?

After addressing itself to this topic, the seminar was concluded by Chairman Ells who said that, while not all the questions raised by Mr. Brewer and others had been answered, a start on a dialogue had been made. The need, he said, is a Constitution for Land Use and the problem is not that of forest industry alone. But it does seem certain that to obtain the necessary facts the land base must be studied as a whole.

Needed: A New Homestead Act

(By William H. Crook,[1] *Saturday Review*, Sept. 14, 1968)

America is hung up on its cities. More than 70 per cent of all Americans live in only 2 per cent of the space, crowded together into the narrow confines of urban America. Today, we spend billions for welfare to support the millions who have streamed into our cities in search of opportunity and found none. Tomorrow, we are planning to spend hundreds of billions in an effort to make our cities fit for continued human habitation. We go right on piling floor on floor and family on family in a futile effort to provide living room for tens of millions in our cities—where the land alone costs hundreds of thousands of dollars a front foot.

We continue to concentrate almost all our attention on patching up our cities; almost no thought at all has been given to an alternative. We persistently overlook areas where the land can be purchased for $100 an acre and where economic and human development is possible. More than 400 million acres in the public domain now stand idle.

Our enormous urban concentration, beset by poverty and de facto segregation, has created living conditions beyond sufferance and belief for the millions jammed into our urban slums. A strong statistical case can be made that these primarily black peoples, trapped in our urban ghettos, are materially better off than their rural cousins. But the price they pay in loss of human dignity makes the statistics of one more toilet per hundred, or two more dollars per welfare family, utterly meaningless. Nowhere does the human spirit suffer more from the enervating effects of poverty than within the packed confines of the urban ghetto.

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[1] William H. Crook is U.S. Ambassador to Australia and former assistant director of the Office of Economic Opportunity and director of VISTA.

It is no answer to say that significant help has been brought to millions of people in the war against poverty. For the answer, when fully probed, serves only to dramatize the many millions more who are not being adequately helped. More important, relief help is no enduring answer. The total resources of the nation must be brought to bear on the problem of poverty.

Capital, labor, land, and the management of technology are recognized as the principal factors governing productivity. Yet we try to fight poverty with only two of these resources: capital and labor. The vast technological advances of recent years have all but been ignored. We are overlooking the resources of the land altogether in our single-minded concentration on urban America. Rapid advances in communication, transportation, farming techniques, irrigation and desalinization processes, processing techniques, and in the methods and speed of shipping mean that millions of acres of land that were once written off as isolated, non-arable, and, therefore, worthless no longer need to be considered as without utility.

To our planners, the millions of acres in the Southwest that can be had—quite literaly—for the asking are apparently as remote, geographically and conceptually, as any of the undeveloped regions of northern Asia or central Africa.

Let us examine these wasted acres in the light of twenty-first century technology—and in the light of the billions that it will take to make our ghettos fit to live in. Let's take a look at the possibility of a gigantic twenty-first century Homestead Act.

We need to give the poor of the nation a vested interest in America. They should be given an opportunity to share in the growth of the American gross national product; to profit from continued development of our natural resources; to benefit from ever increasing prices, instead of only suffering from inflation. A share in the 454 million acres (a land area larger than all of Mexico) that now stand barren as a part of the public domain would give them that opportunity.

This proposal does not suggest that we give every poor American 40 acres and a mule as we did in the last century. A great deal of the rush to the cities has been triggered by the very fact that a family, their 40 acres, and their mule are no longer an economically viable unit of production. Nor is this a proposal for a grandiose "virgin lands" scheme which would suddenly move millions of urban dwellers into agricultural roles. Available lands cannot be easily or quickly or inexpensively converted to usefulness. The millions of Americans who now live in poverty—who now live outside the mainstream of American life—cannot be transformed *overnight* and without expense into useful and productive citizens, able to cope successfully with the technology of our civilization. But substantial progress can be made if we are equal to the prodigious effort required. And it can be done for less money than will be needed to rehabilitate the cities.

Most of history's recorded failures at rural relocation of population have one thing in common: They have consistently confused rural with agricultural, decentralization of population with country life, and non-urban employment with farming. This first task is to make a thorough study of the wisest possible utilization of the hundreds of millions of acres in the public domain. These acres are now listed as non-arable in the sense of being currently unsuited and unprofitable for farming. Considered, however, in light of massive projected technological advance and massive future demand for food, much of this acreage is "arable" in the sense that it can be profitably "cultivated."

Let's look at the possibility of the decentralization of economically viable units of production of all types into these lands through the formation and/or relocation of the widest possible variety of income-producing units of industrial, commercial, and agricultural activity. We should not just think of new farms, but of new factories and new stores, of new towns and new cities, of new communities with new needs, and new productivity and new opportunities generating new demand—and new profit.

This land need not be given away. Rather, it should be sold at today's prices to the poor and to industries that will hire the poor. Such sales can be made with nothing down and with fifty-year, interest-free, federal loans to cover the cost of the land and of the improvements needed to make that land habitable and profitable. Tax benefits could be offered to industries which would relocate—or new industries that might be formed—to aid them in the recruitment, relocation, and training of the millions of poor Americans who have indicated a willingness to desert the urban ghettos in search of the opportunity that has eluded them there. Assurance would be provided for the federal loans, profitably would be

guaranteed for industry, and prosperity insured for the poor through the natural appreciation of land values.

In the past fifty years there has been an increase of 246 percent—from an average of $48 per acre to an average of $166 per acre in the cost of agricultural land, with dollars held constant. According to the Department of Interior's Bureau of Land Management, the value of land in the public domain has increased by more than 180 percent—from $5.34 per acre to $14.03 per acre in the past ten years, again with dollars held constant. While projections of this growth rate are not available, officials of the Bureau offer the estimate that there is no reason to assume that the rate of growth will not continue and accelerate during the years ahead.

Projections of the rapid increase in the world demand for food and of the equally rapid decline in workable U.S. deposits of raw materials outside the public domain support the logic of the Bureau's projections. As deposits of raw material are depleted and new techniques for rendering these raw materials are developed, now-marginal deposits of oil, iron, coal, and other raw materials on lands in the public domain will pass from their present marginal state into profitability.

Today, 6 percent of our citizens are responsible for feeding 200 million Americans and 700 million in other lands. But even this tremendous productivity will come nowhere near meeting the future needs of the world. Population biologists estimate that some time between 1970 and 1985 the world will undergo vast famine—that hundreds of millions of people will starve.

The United States has all but exhausted her store of surplus grain. Last year we shipped one-quarter of our wheat crop—9,000,000 tons to India. A massive famine was averted. But every month the Indian population alone increases by an estimated 1,500,000. In another ten years, it would take our entire wheat crop just to save India from famine.

The world population now stands at 3.4 billion. By 1980, it will increase by nearly 40 percent to more than 4.6 billion. By the year 2030, the world population will have increased by geometric progressions to 14 billion. Mass starvation will be the inevitable result unless the United States moves today to do something about it. Much more must be done, in terms of a massive expansion of activities permitted under Public Law 480 and other measures, than just irrigating our public lands. When 300 million fat Americans face 14 billion starving Africans and Asians, we will have to find a way to share our plenty—or they will find a way to share it for us. The effect of this geometric increase in demand for food and in the profitability of now-marginal deposits of raw material on the future price of this land is obvious.

As a corollary to this proposition, it should be noted that most of the billions we intend to pour into our cities will be consumed almost entirely in the leveling of current structures, in the construction of vastly complex and vastly expensive intra-urban transportation networks, and in the rehabilitation—and shortly thereafter in the re-rehabilitation—of residential areas. Very little of the money would go into the creation of facilities of production that provide economic opportunity, that will become self-supporting and profit-producing, or that will enhance our gross national product.

Similar expenditures for the reclamation of lands in the public domain through desalinization and irrigation would, in exactly the opposite manner, create facilities and systems of productivity which would become self-sustaining and income-producing and that would add immeasurably to the total product of the nation in future years. And when that happens, we can be sure that the public lands will go. They will go in a rush. And, unless something is done now to insure against it, we can be sure that history will repeat itself. The then profitable lands will go to the vested interests—to big business, big agriculture, to the oil interests, to the mining interests, to the lumber interests. It will be "Teapot Dome" all over again. And we can be sure that the poor will continue to live as they always have, jammed into the crowded ghettos (old or new) of huge cities and into the out-of-the-way crevices and crannies of rural America.

This must not be allowed to happen. An enlightened America is now moving to share its present plenty with its poor. But this is not enough. The poor of the nation—as well as the rest of us—are entitled to a share, an ownership share, in the nation's future. I do not propose that this scheme (for that is perhaps how, at this stage of its development, it should be characterized) will cure the social ills of the nation. But a great deal of national breast-beating is today being wasted on the lack of responsibility of those who loot and burn. Yet what sense

of responsibility can we really expect from a man who has never had any responsibility? What respect for property values can we realistically expect from children who grow up in a world where the only real property they ever see is owned by absentee slum lords?

We should look closely at the advantages to all of society of giving the poor a vested interest in their nation; of giving them the dignity—and the responsibility—of ownership.

Alternative Forms of Future Urban Growth in the United States

(By Anthony Downs,* *Journal of the American Institute of Planners*, January 1970)

Analysis of alarmist demands for vast amounts of new urban facilities, new cities, and new national urban policy points up some areas of possible exaggeration, as well as the need for an accepted framework for discussing future urban growth. After proposing such a framework, this article develops the policy implications of attempted public intervention into future U.S. development.

The prospect of further large-scale urban growth in the United States has evoked cries of alarm from many observers. One such cry (the "Columbus Challenge") warns that we will have to build as many new homes, roads, schools, shopping centers, and the like from 1960 to 2000 as we did from the time of Columbus up to 1960. A second demands that we build a large number of completely new, freestanding cities to cope with population growth and avoid continuing the supposedly chaotic horrors of urban sprawl. Another commonly heard exhortation urges the U.S. to develop a "national urban policy" or a "national land policy" before we become submerged in "megalopolis."

In my opinion, these and other similar views lack an adequate framework for viewing future urban growth and development as a whole. Such a framework should allow us to explore alternative ways in which future growth might occur and to design one or more effective strategies for shaping it.

This article sets forth a classification of alternative future forms of urban growth, some factors relevant to deciding which are most likely and which are most desirable, and some policy implications for influencing this growth. Limited space permits me to present only an overview and basic conclusions, rather than any detailed analysis justifying the many admittedly arbitrary judgments involved.

Classification of Growth Forms

Defining the most likely forms of future urban growth requires an inherently subjective and arbitrary selection of a few combinations of key factors out of thousands of possibilities. Urban development involves dozens of important variables, each of which could reasonably take on several different future values. Some of these variables are:

1. Location of new growth in relation to existing metropolitan areas.
2. Contiguity of new growth to smaller existing communities located beyond the continuously built-up portions of metropolitan areas (including outside such areas).
3. Type of planning control (such as unplanned and highly fragmented, planned-unit development, or citywide).
4. Level of quality standards required in new construction.
5. Degree of public control over new urban development.
6. Degree of public subsidy for new urban development.
7. Distribution of housing subsidies among various income groups.
8. Degree of social class integration.
9. Degree and nature of racial integration.
10. Mixture of transportation modes.

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Just considering these ten variables, and several arbitrarily chosen values for each one, yields at least 93,312 logically possible combinations—each representing a potential form of future urban growth! Clearly, it is impossible to formulate practical policy analysis on the basis of so many alternatives; drastic narrowing down must occur.

I accomplished this by using only variables 1, 2, and 3 to form possible future growth alternatives, thereby shifting consideration of the remaining seven to other parts of the analysis. I further reduced the many possible combinations of values for these three variables by eliminating those which seemed either internally inconsistent, or unlikely to accommodate large-scale new growth. The remaining ten combinations form my candidates for a standard classification of alternative forms of future urban growth in the United States:

1. *Redevelopment* of older neighborhoods in central cities or older suburbs through clearance and rebuilding. It has two forms:
   a. *Unplanned redevelopment* (by individual parcel-owners with resulting highly fragmented patterns).
   b. *Planned redevelopment* (under planned-unit-development type of control).
2. *Peripheral sprawl* with unplanned development control, either on the edges of the continuously built-up portions of metropolitan areas, or beyond those edges but still within commuting range.[1]
3. *Planned peripheral growth* on the edges of the continuously built-up portions of existing metropolitan areas. It has two forms:
   a. *Peripheral planned-unit-development* (under planned-unit-development type of control).
   b. *Peripheral new cities* (under comprehensively planned, citywide type of control).
4. *Satellite growth* beyond the continuously built-up portions of existing metropolitan areas but within commuting range of them. It has three forms:
   a. *Scattered satellites* (under planned-unit-development type of control).
   b. *Satellite new cities* (under citywide type of control but not contiguous to existing smaller communities).
   c. *Satellite expanded cities* (under citywide type of control but contiguous to existing smaller communities).
5. *Nonmetropolitan growth* beyond commuting range from any existing metropolitan areas. It has two forms:
   a. *Nonmetropolitan new cities* (under citywide type of control and not contiguous to any existing communities).
   b. *Expanded nonmetropolitan communities* (under citywide type of control but contiguous to existing communities).

Admittedly, it might be desirable to modify this scheme under some circumstances. For example, scattered development along interstate highways outside of metropolitan areas might be considered "nonmetropolitan sprawl." However, I believe the ten basic forms of urban growth set forth above will form an adequate framework for most analyses of future urban development.

Two important aspects of these alternatives should be emphasized. First, they are not mutually exclusive. All of them could occur simultaneously within a single state, and the first eight could even occur simultaneously within a single metropolitan area. Second, these alternatives are not equally probable. In fact, far more future urban growth is likely to be peripheral sprawl than all the others combined. Public policies can influence the relative likelihood of these alternatives, but they hardly start with even odds.

KEY FACTORS FOR URBAN GROWTH

Before any policy conclusions can be drawn concerning these alternative forms of future urban growth, it is necessary to understand certain key factors related to such growth. These factors form the basis for my later policy implications.

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[1] The second form of growth I have called *peripheral sprawl* includes another form that might be more logically called *satellite sprawl*. It is not on the edge of existing cities (hence peripheral) but away from that edge (hence satellite). Yet the term *satellite* implies a cluster of some type, rather than more scattered development. Moreover *peripheral sprawl* is used by many observers to refer to *all* scattered development outside existing built-up areas, both on the edge and farther out but within commuting range. Thus, I have adopted this dual definition.

Size of the "urban" explosion

Among urban futurists, a prevalent cause of alarm is the "explosion" of urban population they foresee. Extreme estimates indicate that total U.S. population will *double* from 1960 to 2000, rising from 180.7 million to 361.4 million. This gain of 180.7 million in forty years is derived from the U.S. Census Bureau's highest-fertility projection (Series A), which assumes fertility rates typical of the peak postwar years.[2] But, since 1957, U.S. fertility rates have plummeted 30 percent. Hence, they are already down to the level assumed by the Census Bureau's lowest-fertility projection (Series D), which indicates a gain of 101.9 million from 1960 to 2000.[3] If fertility rates keep on falling (as I believe they will), then even this projection may be too high.

For comparison, I have made a crude calculation based on the assumption that fertility rates will continue to fall steeply for another decade, then level off until 2000. My rough approximation shows this would reduce the total population gain between 1960 and 2000 to 68.8 million. This would result in a total U.S. population in the year 2000 of about 250 million. Lacking a really precise cohort analysis, I do not contend my estimate is terribly reliable, but it certainly convinces me that most current estimates of future U.S. population are far too high.[4] This error has caused most urban observers to grossly exaggerate the magnitude, or at least the rate, of future urban population growth.

Another consideration centers on the definition of "urban." The Census Bureau officially considers any place containing 2,500 or more inhabitants as "urban." I believe the word "urban" as used in popular and expert parlance really should be defined as "pertaining to metropolitan areas." In 1960, about 63 percent of all Americans lived in metropolitan areas. However, those areas captured about 80 percent of total U.S. population growth from 1950 to 1960, 83 percent from 1960 to 1966, and somewhat less than that from 1966 to 1969. Assuming that such areas receive about 80 percent of future U.S. population growth, Table 1 indicates future "urban" growth defined in terms of these metropolitan areas. The table shows why believers in Census Series A are still reciting the "Columbus Challenge." According to their estimate, metropolitan areas will more than double in population from 1970 to 2000. However, I think they are wrong—and by a huge amount. Even so, future urban growth will hardly be trivial. A gain of 55 million people in metropolitan areas is just about *double* the gain experienced from 1950 to 1960—the great decade of suburbanization, and future growth after the year 2000 will probably make even the Series A projection for 2000 come true several decades later. But, the *rate* of such growth will clearly slow down. That fact has critical implications for the strain on our economy likely to result from meeting urban expansion needs.

Linking the two "urban frontiers"

It is useful to simplify the incredibly complex welter of urban problems by viewing them as clustered around what I call two "urban frontiers." One is the *Frontier of Deterioration* in older central cities and suburbs, especially in ghetto areas. The other is the *Frontier of Growth* on the periphery of built-up portions of our metropolitan areas.

TABLE 1.—"URBAN" GROWTH, 1960 TO 2000

U.S. population projection used	Millions	As percent gain over 1960
My estimate	55.0	49.2
Census Series D	80.5	71.7
HUD estimate	96.4	85.8
Census Series A	144.6	128.8

[2] All data on official population projections are derived from U.S. Bureau of the Census, *Statistical Abstract of the United States: 1968* (89th Edition, Washington, D.C.: GPO, 1968), pp. 7–9.

[3] *Ibid.*

[4] This also means that many *local* estimates of future population growth are far too high. A common technique for making local estimates (such as for a given metropolitan area) is to estimate what percentage of future total U.S. population the local area will contain as of a given date. This percentage is derived from past proportions of the U.S. population (or its growth) located in the local area. Hence, if the future estimate used for the entire nation is way too high, then any subarea estimates derived from it will likewise be too high.

At present, most public policies theat these frontiers as completely separate from and totally unrelated to each other. One set of policies focuses almost entirely on improving central cities and ghettos as though they were hermetically sealed off from the suburbs. This includes most public housing, most urban anti-poverty programs, most urban job training programs, most housing code enforcement programs, a great deal of the urban Aid-to-Families-with-Dependent-Children, and even many mass transit grants. The one apparent exception is the federal highway-aid program. Yet, even its effect has been mainly to link downtowns and suburbs more closely, thereby making it even easier to bypass deteriorating areas within central cities.

On the other hand, plans for further suburban development deliberately exclude ways to use such expansion to help solve inner-city problems. Low-income housing is systematically blocked out of growth areas, even though suburban industrial firms are desperately short of unskilled labor. Only token efforts are made to introduce minority group workers into suburban building trades, in spite of critical shortages of construction workers in many areas. Thus, "natural" ways to simultaneously alleviate inner-city unemployment and suburban labor shortages are ignored. Metropolitanwide plans drawn up by federally supported regional planning agencies almost never contain any explicit consideration of where minority group members—especially Negroes—will live in the future. Yet the expansion of such groups provides the single most important dynamic force in many big central city housing markets. But it is "too hot to handle" for politically powerless metropolitan planning agencies, who are often fearful of their segregationist suburban constituencies.

We continue to ignore the need to use the dynamic economic expansion of suburban growth as a major input to solving inner-city problems. This bifurcation can only perpetuate the two racially separate societies properly condemned by the Kerner Commission, and the myriad of fiscally separate communities rightly criticized by the Douglas Commission. I realize that the present institutional structure of metropolitan areas makes linking these two frontiers extremely difficult in practice, yet some movements toward significant institutional change have already begun. HUD is beginning to push for regional housing strategies and programs run by state agencies, and the President has proposed a revenue sharing plan that could ultimately overcome the key fiscal barriers to "opening up the suburbs" for low-income housing. These efforts and other attempts to link the two urban frontiers so they can reinforce each other must be a vital part of any policy concerning future U.S. urban growth.

"Extra" costs in new cities

Accommodating future urban growth in new cities involves several real costs larger than the costs of alternative forms of development. These "extra" costs result from the following key characteristics which differentiate new cities from other forms of urban growth.

Comprehensive planning at a citywide scale

This requires centralized control over land use and development in a very large area *before* anything is created on that land, so it generates the following added costs (as compared to growth at lesser scales of planning control) :

a. The added costs of assembling a large enough site to accommodate 100,000 people (or whatever number is considered to be "city-sized") and holding parts of that site vacant during the first stages of development—which may last years.

b. The cost of developing and operating new institutions for centralized planning and control of such a large-scale activity.

c. The cost of overcoming the obstacles to new city development created by existing fragmented landownership and government institutions. A great deal of extra lobbying skill, waiting time, and money is needed to wrest comprehensive planning opportunities from them.

Distance from existing metropolitan facilities

In nonmetropolitan new cities or expanded cities, where residents are beyond range of existing facilities, the following extra costs arise :

a. The *initial* loss of return on, or initially inefficient operation of, facilities that must be built immediately with a capacity to handle a large population long before that population itself arrives. These facilities include public infrastructure (such as roads, sewer and water facilities, high schools, and public buildings) and private enterprises (such as shopping centers and industrial plants).

b. The *total* costs of duplicating elements of existing metropolitan areas that now have enough excess capacity to serve many more people. Examples are some museums, universities, libraries, concert halls, public buildings, theaters, and business firms. No new facilities like these would be required if growth occurred peripherally or in satellites not too far from existing central cities.

Housing everyone and everything in brandnew quarters

Not all households, business firms, or other institutions can afford brandnew quarters. But in a new city, everything is brandnew. Yet society cannot operate a large community without the services of many low-income households and many low-cost business firms. To enable these entities to survive in a new city, some form of public subsidy must be extended to cover the higher cost of their occupying new structures. This subsidy would not be required by peripheral growth. Then, such households and firms could occupy older quarters in the existing inventory of structures in each metropolitan area. Some subsidy for such entities might be required by satellite growth, but some low-income workers could commute from lower cost housing existing elsewhere. Moreover, these are not trivial costs. Housing costs are now so high that over one-half the households in the U.S. cannot afford even to *rent* newly built, modestly designed, appropriately sized apartments without spending an inordinate fraction of their incomes on housing. So unless almost all residents of a new city are relatively affluent—which is impossible if the city is to operate efficiently—a large fraction of its residents will need subsidies to live there. The same is true of many businesses.

Some proponents of new cities argue that these costs should not be considered "extra." Either they are offset by extra benefits (such as lower air pollution), or we "ought" to bear them in *any* future growth (in particular, we "ought" to replace substandard housing with new units). Hence, they regard paying for these extra costs as a form of *social investment* that will pay off handsomely in the long run.

Measuring the net total costs of alternative ways to accommodate future urban growth is an extremedly complex task beyond the scope of this article. Nevertheless, I believe there are three reasons why building new cities—especially nonmetropolitan ones—would definitely require extra public subsidies unnecessary if future growth occurred through peripheral or even satellite expansion. First, some of the extra costs cited above produce no offsetting benefits or reductions in other costs. This is true of duplicating existing facilities that now have excess capacity. Second, most of the benefits resulting from the extra costs cited above would be of the type for which no direct revenues could be collected. They are what economists call "external benefits" or "public goods." Hence, they are received directly by consumers without going through any market, so no prices can be charged for their use. Examples are reduced air pollution, lower traffic congestion, and improved aesthetic conditions. The private sector—including the beneficiaries themselves—will not voluntarily pay the extra costs of producing these benefits; therefore, the government would have to incur much larger expenditures for urban growth in new cities—especially nonmetropolitan ones—than in other forms. Third, it is not true that society would have to pay for upgrading many low-income households or businesses into brandnew quarters if peripheral urban growth occurred. We could continue our traditional strategy of upgrading the poor by building new housing at the high-cost end of the market and relying on "filtering down" to open up adequate quarters for the poor in the older existing inventory. In part, this strategy has failed in the past because we did not build enough new units of any kind; but even if we decided to use large-scale housing subsidies to overcome this failure, the per unit subsidy cost would be lower if we still focused new subsidized construction on middle income and upper income households, rather than requiring *all* households to pay the high costs of new quarters—as in nonmetropolitan new cities.

Thus, to the extent that any future urban growth strategy emphasizes new cities, it compels society, early in the development process, to pay extra public expenditures as compared to peripheral or satellite growth. True, if those extra public expenditures are eventually offset by extra benefits and if public authorities own most of the land in new cities, then they may eventually recapture enough profits and land value appreciation to repay this large initial investment. This appears to be happening in Great Britain. Nevertheless, public authorities will still have to make some arrangements to pay the extra initial costs of new cities in order to bring them into being.

Lessons from European experience with growth controls

For several decades, many European nations have been exerting significant controls of various types over their own urban growth. In my opinion, their experience indicates some significant conclusions relevant to future policies affecting U.S. urban growth.

Any attempt to exert significant public influence over the nature, location, magnitude or physical form of urban growth requires public ownership or other direct control of a significant part of the land in major metropolitan areas, especially on their growth peripheries. Leaving most of the control over land use in private hands, especially where private ownership is fragmented into thousands of small parcels, as in the U.S., makes it impossible to impose any real guided development policy on even one metropolitan area. This conclusion implies that creation of any overall "urban growth strategy" or "urban land policy" would involved radical *restructuring* of traditional land ownership and control arrangements in the U.S. Also, development of any significant number of nonmetropolitan new cities, or even peripheral or satellite new cities, will require *public* ownership of much of the land in those cities.

Creation of relatively independent nonmetropolitan new cities is an extraordinarily difficult achievement of dubious long-run value. In Great Britain, public agencies promoting new town development have for decades exercised financial and administrative powers vastly greater than any currently contemplated in the U.S. Yet after more than twenty years of effort, only about 2.5 percent of all new housing construction in Britain occurs in new towns. Moreover, British government planners have virtually abandoned formation of additional nonmetropolitan new cities. They now favor peripheral new cities adjoining middle sized metropolitan areas beyond commuting range from London or the big Midlands industrial centers. This policy shift is essentially an attempt to escape many of the extra costs of nonmetropolitan new city development described above. To the best of my knowledge, in Sweden and the biggest Soviet cities, all so-called new cities are either peripheral or satellite in nature.

A cruicial determinant of the physical form which publicly controlled urban growth takes is the type of transportation serving new-growth areas. The decision to plan such areas around public mass transit (as in Sweden and the Soviet Union) influences the physical form, density, and structure of the communities concerned, as does the universal decision to build them around automobiles in the U.S. Swedish peripheral new cities linked to downtown Stockholm by subway features very high-density residential areas clustered around each subway stop so that thousands of people can live within walking distance of transportation facilities. Huge shopping centers are built over each subway stop for the convenience of these pedestrian residents. This is in striking contrast to our own shopping centers built near expressway interchanges for the convenience of auto-driving residents scattered across low-density neighborhoods. Thus, public decisions about what kind of transportation systems should serve new growth areas exert profound influence over every facet of their development. Any decision to shift major emphasis to mass transit in U.S. urban growth areas would cause radical transformations in the patterns of development typical of such areas during the past twenty-five years.

Rapid construction of new urban facilities to accommodate large-scale growth cannot be achieved through clearance and redevelopment; it must be done on initially vacant land. Even in the Soviet Union, clearance and redevelopment of built-up areas takes much longer than construction of peripheral vacant land. In Paris, after ten years, the huge La Defense urban redevelopment project had finished only 600 net new housing units (in addiiton to those needed for relocation) ; while a single public housing project on suburban vacant land housed over 40,000 residents eight years after its inception. These facts simply reemphasize a conclusion long established by U.S. urban renewal experience: the average redevelopment project takes from six to nine years.

Deliberatly slowing down the growth of major urban centers—especially the national capital—is extremely difficult. With all their powers, Soviet urban authorities have been unable to prevent the Moscow area from continuing to grow rapidly. Although British authorities have had some success in shifting growth out of the center of London, there is still pressure to locate more activities within the London metropolitan region. The economic, political, cultural, and psychological advantages of being "where the action is," or at least within easy range, strongly favor peripheral or satellite expansion, rather than nonmetropolitan growth.

Undoubtedly, many other significant lessons could be drawn from European experience in trying to impose a "national strategy" upon urban growth. I think they point to two basic conclusions. *First, the focal point of public concern should be urban growth in general, not just nonmetropolitan new cities.* In fact, the latter invariably encompass only a small fraction of total urban expansion. *Second, public policies regarding urban growth are severely constrained by many forces over which public authorities concerned with urban development have little effective control.* Achieving an "optimal" pattern of urban development is almost everywhere subordinated to other public policy objectives. The latter create formidable obstacles to formation and execution of rational urban growth strategies. This suggests that changes in long-established institutional structures or behavior patterns needed to improve urban development are not likely to be undertaken solely for that purpose. The more radical such changes are, the more they need to be linked with other public policy purposes, or with powerful forces unrelated to urban development, in order to be enacted.

SPECIFIC POLICY IMPLICATIONS FOR THE UNITED STATES

In our diffused political system, creating a rational urban development strategy is extraordinarily difficult, even within a single metropolitan area. My own experience on the National Commission on Urban Problems convinces me that certain specific policy objectives must be attained before we can create any such strategies. These objectives are aimed at expanding the possible forms of future urban development beyond peripheral sprawl, which now encompasses almost all urban growth. They do not form a single urban development strategy in themselves, rather they are the foundations on which several such strategies might be built. Each of these objectives can be achieved through one or more tactics.

Increasing the quantity of new housing built

The first key objective is *building much more new housing each year than in the recent past, and subsidizing much of it to improve housing conditions among the poorest and most ill-housed citizens.* I do not believe the U.S. will come very close to the ten-year target of twenty-six million new units (including six million subsidized units) set forth in the Housing and Urban Development Act of 1968.[5] Nevertheless, it is clear that we must build more units than in the recent past if we are to prevent a worsening housing shortage. Also, since many of the households in the worst housing are very poor, they cannot possibly afford to rent or by new units.

Several specific tactics are necessary to move toward this objective. The first is creation of an *economic climate* conducive to much larger housing production than in the past. Such a climate would be marked by low interest rates, a somewhat slack economy with relatively high unemployment, and much more spending than in the past of all aspects of housing, including planning and data gathering. Thus, there is a fundamental conflict between sustained large-scale housing production and sustained high-level prosperity. When the economy is booming, demands for capital surge upward, but many alternative uses of capital have traditionally paid much higher returns than investment in housing. Housing production tends to be choked off—or at least fails to rise very high. The only way to counteract this relationship would be to raise housing to a much higher level of national priority. This would justify using various subsidies to increase the rate of return on housing investment. I believe such a shift in national priorities will occur only if the emerging housing shortage becomes bad enough to inconvenience large numbers of middle and upper income households.

The second tactic necessary to generate large-scale housing production to aid the poor is using much *greater housing subsidies than ever before.* Such subsidies would have two effects: increasing total housing production (as noted above), and making new units directly available to low-income households who otherwise could not afford them. Traditionally, we have concentrated our housing subsidies on middle income and upper income households by allowing them to deduct mortgage interest payments and local property taxes from their federally taxable incomes. This has stimulated total housing production, but has aided low-income households only indirectly, and often ineffectively, through

[5] A detailed explanation of this belief is presented in, "Moving Toward Realistic Housing Goals," Kermit Gordon (ed.), *An Agenda for the Nation* (Washington, D.C.: The Brookings Institution, 1968), pp. 141–78.

acceleration of the "filtering-down" process. Really improving access of the ill-housed poor to good housing would require providing them with direct housing subsidies. Although Congress authorized this in the 1968 Housing Act, it has never provided large-scale appropriations for low-income housing subsidies. Nor does the present political climate indicate that it soon will do so.

Yet almost all forms of urban growth would benefit from placing at least some low and moderate income households in brandnew housing. This is necessary in order to avoid continued spatial segregation of poor and low-middle income groups from wealthier Americans. The vast majority of all new housing is built on vacant land, which is normally at the edges of existing built-up areas. If only upper middle income and upper income households can afford to live in newly built units (as is now the case), then growth areas will always be occupied only by such households. This would lead to economically and socially "unbalanced" new communities, especially if new growth took the form of peripheral new cities, or satellites of any type. It would be extremely expensive to house *all* the low-income households related to a new community in brandnew quarters, as in nonmetropolitan new cities. Yet, for several reasons, at least *some* low and moderate income households ought to live in new growth areas. First, they perform vital roles in the local labor force, so if they live in the new growth areas where they work, total commuting time and traffic congestion are reduced. Second, they provide class diversity in local schools and other cultural institutions, hopefully enriching the experiences of everyone and stimulating their own upward mobility. Third, this gives them a much wider set of housing options. Thus, *the degree to which Congress provides direct housing subsidies to low and moderate income households has crucial implications for the particular forms of urban growth likely to occur in the future.* The less such subsidies are provided, the more future growth will be "locked in" to peripheral or satellite forms that will perpetuate economic class segregation. The more such subsidies are provided, the greater freedom we will have to use other forms, especially new cities and nonmetropolitan forms.

Opening up the suburbs

The second key objective needed to widen our choice among future forms of urban development is *opening up the suburbs and outlying portions of central cities to new low and moderate income housing.* This is desirable not only for all the reasons cited above, but also because we cannot build large numbers of housing units for such groups within central cities. There is not enough vacant land there, and that which exists is needed for nonresidential uses. Creating new housing through relocation and clearance is impractical. It is time-consuming, expensive, and simply defers the problem by compelling poor people to move somewhere else, and most new jobs are being created in the suburbs, So it makes sense to put housing for low and moderate income households there also.

As noted above, this would require large-scale direct subsidies so that such households could live in newly built housing. Some of these subsidies would probably take the form of a "writedown" of land costs similar to that under urban renewal, but applied to vacant land. In addition, four other tactics would help attain this objective. The first is weakening the power of small local governments to block federally assisted housing of all kinds. This could be done by eliminating the present workable program requirement for federal-aid eligibility and empowering central city and countywide housing authorities to operate outside central cities and inside suburbs.

A second tactic consists of escalating land use control powers to areas of wider jurisdiction. This would prevent small communities from blocking the entry of low-income households through large-lot zoning and other manipulations of local ordinances. It could be accomplished by shifting all zoning powers to large bodies such as counties or cities with 50,000 or more population, providing review and alteration powers over small town zoning decisions to such larger bodies or to the state itself or having the state require all communities to zone a certain amount of their buildable land so it could contain low and moderate income housing.

A third tactic for opening up suburbs is increasing the ability of state governments themselves to create low and moderate income housing. They could do so by means of state housing authorities and other organizations provided with federally financed incentives. A fourth tactic is tying many forms of federal aid to the prior provision of low-income housing by local communities. Such aid might include sewer and water assistance, highway funds, aid to education, and funds distributed under the proposed federal revenue sharing plan.

Escalating the level of planning

A third key objective relevant to future urban development is *escalation of the level of planning so that "spillover effects," now ignored by most developers, will be effectively taken into account.* Most building is done by owners of relatively small parcels. They do not, and cannot, pay much attention to how their own behavior affects their neighbors. They have very little control over their neighbors' projects except for that provided by zoning ordinances, which are vulnerable to court overthrow. This fragmentalized approach to new growth leads to "hodgepodge" development that is aesthetically disastrous and often inefficient. In order to achieve more fully integrated planning of urban growth, it is necessary to escalate the level of planning control to larger areas.

Several tactics would accomplish this. The first has already been discussed: shifting zoning and other land use control powers away from smaller communities to larger ones. No one in our fragmented system of local government simultaneously has both the overall interest of the entire metropolitan area at heart and sufficient power to influence critical decisions about the area's urban growth. Metropolitan government is seemingly unattainable. But this tactic would widen the presently parochial legal and geographic horizons of planning bodies so that their actions would exhibit far more comprehensive scope.

A second possible tactic would be forcing developers in at least some parts of each metropolitan area to undertake action only at a certain minimum geographic scale. This is a means of "internalizing" within a single plan certain land use relationships that would be "external"—and therefore largely ignored—under our present fragmented land development. If development occurred mainly in large chunks, such relations could be fully taken into account by the one plan covering everything within the boundaries of each chunk. For example, assume that in some high-growth part of a metropolitan area, the state passed a law saying that no urban development could occur at a scale less than 1,500 acres, or under a single plan encompassing such an area. This would compel individual owners to somehow get together in a cooperative plan or to sell out to larger developers. In order to avoid injustice, the state would have to develop some procedure for buying and holding the individual parcels of those owners who wanted to sell before any overall plan was developed. Such sales would occur at the price of the land before development, so this practice would not allow such owners to capture speculative land value gains.

A third tactic for escalating the scale of planning is bolstering state planning powers and creating new institutions to carry out urban development at a city-wide scale. This would involve three different kinds of institutions. The first would be a *national framework organization* charged with creating and administering national policies toward urban development. It could be part of the Department of Housing and Urban Development or an offshoot of the new Council of Urban Affairs. Its functions might include (1) developing national migration and population-growth policies; (2) coordinating all federal programs relevant to new cities; (3) coordinating land acquisition and disposition policies of all federal and some state agencies; (4) administering direct financial assstance to both state enabling organizations and actual developers of new cities; and (5) forming other national policies toward urban growth.

The second type of new institution would be *state or regional enabling organizations.* They would make it easier for private or public developers to overcome existing institutional obstacles to large-scale urban development. Possible functions for them include: (1) creating statewide plans for shaping future urban growth (including selecting sites for new cities if any are built); (2) controlling the location of major public investments like universities and highways; (3) granting franchises to developers to build new cities on specific sites; (4) establishing multipurpose taxing districts to help finance public improvements needed in urban growth; (5) using powers of eminent domain to assemble large-scale sites or create "land banks" or "buffer zones"; (6) "writing down" the cost of assembled land with federal funds so some housing on it could be occupied by low-income households; and (7) suggesting needed changes in existing zoning, subdivision, building code, and other regulations to help improve urban growth patterns.

The third type of new institution would be *operating development organizations* created to plan and build large-scale new developments. These could be fully public corporations (like New York's Urban Development Corporation), quasi-public organizations, or fully private organizations benefiting from special powers exercised by the state (as private developers benefit from the eminent domain

powers of local urban renewal agencies). They would carry out most of the initial planning, land assembly, public infrastructure construction, and some residential and other construction required for large-scale new developments. Since it is impossible to select from the menu of different possible organizations for such development any one best way applicable everywhere, national legislation should be designed to encourage formation of many different kinds of enabling and operating development organizations.

Broader financing of local governments

A fourth objective critical to expanding our choices among forms of future urban growth is widening the financial base of most local governments. We cannot expect narrowminded thinking to disappear from most small communities as long as existing local government financial structures provide strong incentives for parochialism. Suburban resistance to the entry of low-income residents is partly—perhaps even mainly—a mater of fiscal self-defense. When low-income residents move into a wealthier community, they generally bring many children. The added cost of educating them is larger than the added tax revenues produced by the housing in which the low-income families live. Thus, every new low-income family represents an instant deficit to the local government and instantly higher taxes on all existing residents. We can hardly expect rational citizens to disregard these conditions by welcoming more low-income neighbors at their own expense. Americans have also traditionally resisted mixing with "lower class elements" after having escaped from those same elements themselves, so not all suburban hostility to low-income residents is fiscally motivated. Yet, we will never reduce that hostility unless we first remove its economic causes. I believe we must shift a large part of the financial burden for key local government activities—particularly schools and welfare—away from local property tax bases to a much broader base. That base could either be much larger property taxing districts encompassing whole metropolitan areas, state funds, federal funds, or federal funds channeled through the states (as the President recently proposed).

Other objectives

Other key objectives that would expand our future choices among forms of urban growth include reducing the diversity of existing building codes, zoning rules, and other local regulations, and reducing the cost of producing housing. These are the focal points of Operation Breakthrough now being carried out by the Department of Housing and Urban Development. The first is necessary so that builders can capture more of the economies of large-scale production and marketing than in the past. At present, more than 8,000 legal entities in the United States issue building and/or housing codes. Almost all these codes are significantly different from each other. It is nearly impossible for housing developers of truly nationwide scope to come into being, since they must tailor their products to these immense local variations in requirements. We do not know what kinds of economies might possibly be achieved through mass production, and through creation of nationwide market acceptance for a single type of housing unit, or a small number of such types. If each state adopted a single building and housing code applicable everywhere within its boundaries, then there would be sufficient uniformity to encourage mass production, but sufficient diversity to test a variety of code elements. States will probably not do this unless strong federal financial incentives are available and a single national testing facility exists to verify particular building-technology innovations.

Reducing housing costs significantly would surely be desirable, but I doubt if it will happen. Most of the cost of occupying housing pays for land and financing, rather than for building the unit. In fact, technical innovations in construction will have to be incredibly significant just to keep the cost of housing from continuing to rise, given the acute shortage of skilled construction labor, rising land costs, and zooming interest rates. In my opinion, unless we drastically reduce the size and quality we require in newly built units, we will never have truly low-cost new housing. Obviously, new units for low and moderate income households will still require major subsidies.

CONCLUSIONS

The following conclusions represent what I believe are the most important implications of the foregoing analysis:

1. Future urban growth in the United States through the year 2000 will be much smaller than most official projections indicate, though it will still represent significant expansion of existing metropolitan areas.

2. Peripheral sprawl will undoubtedly be the dominant form of future urban growth throughout the United States. Whether it will be almost totally dominant or just largely dominant will depend upon the extent to which the key policy objectives set forth here are actually achieved.

3. Nonmetropolitan new cities or expanded communities are not likely to capture any significant fraction of the nation's future urban growth, in spite of their current vogue in planning literature. The extra costs of these forms of urban growth mean that peripheral or satellite alternatives to peripheral sprawl are far more likely to occur.

4. Formulation of any one "national urban strategy" or "national land policy" is neither likely nor desirable. It is not likely both because of our diffused decision-making structure and because the necessary pre-conditions for real alternatives to peripheral sprawl do not yet exist. It is not desirable because diversity both within and among metropolitan areas makes a multiplicity of "urban strategies" better than just one.

5. State governments are the best focal points for development of any overall strategies controlling future urban growth or even for increasing our choices among forms of future urban growth. They are the only institutions that combine metropolitanwide perspective, decisive powers to override local governments, and sufficient local knowledge and local political roots to make use of such powers acceptable.

6. The proper federal role in shaping future urban growth should probably be one of structuring effective financial incentives for state governments to assume major policy responsibilities, financing subsidies needed for socially and economically "balanced" new development, and continuing to sponsor innovative approaches to key urban problems.

7. Developing effective alternatives to peripheral sprawl, or even mitigating some of its socially segregating effects, will require major changes in deeply rooted existing political and other institutions. These include local control over land use and zoning, local financing for schools, fragmented planning of new development, and the ability of individual landowners to engage in real estate speculation. The traumatic nature of these changes to many citizens can hardly be overestimated. In fact, they are likely to occur only if the failings of existing arrangements become far more pressing and obvious than they are now in most areas.

8. The choices Americans make among alternative forms of future urban growth will ultimately depend on the way they resolve certain key ambiguities among their own desires. On the one hand is a widespread feeling that future urban growth could be improved through more comprehensive planning and less haphazard decision-making. On the other hand is the traditional desire of individual Americans to control their own small parcels of land and their own small local governments and to gain from speculating in land values. But more comprehensive planning and continued fragmented control over development are mutually exclusive; we cannot simultaneously enjoy the benefits of both. As Pogo said about racism, "We have met the enemy, and he is us."

State of California—Environmental Quality Study Council Progress Report, February 1970

RECOMMENDATIONS

The following recommendations were adopted by the Council. It should be noted that other recommendations developed by the various Committees were taken under advisement. These will be found in the Committee reports. In the appendix are resolutions adopted by the Council dealing with specific environmental problems.

Land Use

1. Immediate adoption, in principle, of a population-distribution policy, together with a commitment to utilize the State's ability to influence water, power, transportation and other facilities in order to implement such a policy.

2. Immediate adoption of a go-slow policy on all major public works projects whose adverse impact on the environment seems irreversible. State agencies responsible for any such project should prepare a report detailing its environmental consequences; e.g., on population density, air, water, noise, and visual pollution, loss (or gain) of open space and recreational facilities. Such reports

should be submitted promptly to the newly formed cabinet-level State Environmental Policy Committee so that it can evaluate the impact on the environment, and provide for alternative courses of action, where necessary.

3. Adoption of a strategy for developing appropriate long-range policies for establishing and implementing highest-use criteria, based on environmental quality considerations, for the State's regions and subregions. Appropriate State Administration mechanisms should be established to implement such policies. This should be accomplished by a greater utilization of full time environmentally knowledgeable personnel.

4. Preparation, in the interim, of an emergency inventory of the State's regions and sub-regions for the purpose of establishing temporary criteria, indicating their possible highest use, environmentally. In this, the help of the Nation's most respected ecologists, planners, and other environmental professionals should be sought.

5. Adoption of a set of policies, upon completion of the emergency inventory that will preserve areas from urban, commercial or industrial intrusions likely to change their character until a final "highest-use" policy has been established.

6. Immediate adoption of legislative and administrative directives to require all State and local agencies to incorporate environmental quality criteria as a part of all relevant decisions, including those of a regulatory nature.

Progress Report, Land Use Committee

(Frank J. Tysen, *Chairman*, Samuel A. Egigian, Chester Morris, Albert Pearlson, Helen B. Reynolds)

Environmental quality: A losing battle

The first six months of our in-depth study of California's environmental ills have revealed an extremely pessimistic picture.[1] Our beautiful State is in severe danger of being destroyed as a desirable place to live. Our lush orange and walnut groves, our vineyards, our primeval sagebrush country, our secluded valleys, our meandering streams, our majestic mountains, and our windswept beaches are going—and they are going fast, replaced largely by depressing urban sprawl. It is even questionable whether major portions of the State will be capable of supporting tolerable human life within several more decades.

Having been called upon for the past 25 years to accommodate one of the greatest bursts of in-migration and population growth the world has ever known, California's legendary environmental assets have been squandered in a grossly negligent fashion, and much of it obliterated beyond repair. If the present course is continued, our posterity will inherit a vast wasteland.

It is not that constructive action has been lacking to counteract the rapidly growing deterioration of our environment. The very existence of the Environmental Quality Study Council constitutes a definite recognition of the State's environmental crisis by the Legislature. Also, steps have been taken to save the integrity of the San Francisco Bay, Lake Tahoe, and Northern California's Round Valley. Tough water pollution legislation was adopted last year providing the State with its first truly regional environmental quality management system. Air pollution and pesticide controls have also been the subjects of recent progressive legislative actions.

The simple fact is that the State's population continues to burgeon, so that despite stepped-up efforts to correct the problems, we continue to lose ground in the fight to maintain the quality of our physical environment—let alone in our efforts to meet the challenge of improving the environment. From a population of 6.9 million in 1940, California has grown to 20 million. The forecast is for 50 million by the year 2000.

Population growth, per se, must be to a major extent a national concern. It is, therefore, encouraging that President Nixon has announced plans to establish a Commission on population growth, and has already issued appropriate directives to various federal agencies to implement his concern. Such efforts must be stepped up. The State of California must play an increasing role in dealing with population growth—hopefully diminished—in such a way so as not to destroy California's environmental quality.

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[1] This report is based, in part, on evidence presented at all Council and Committee hearings held to date. Membership of the Land Use Committee is represented on all Council Committees.

There is an *urgent* need for the immediate adoption in principle of a population distribution policy. Unchecked urbanization will not only lay waste to our beautiful landscape, but will result in a way of life in which personal freedom and privacy will become increasingly extinct and peace of mind and body perpetually endangered, as exemplified in the ever-increasing occurrence of mental illness and in the rapid growth of major crime in California.

Urban sprawl: No end in sight

It is now clear that the forecasters of a continuous linear sprawl from Northern California to the Mexican border are absolutely right, for there is now no mechanism which can prevent this from happening.

In the Committee's two-day hearing at Malibu on land use patterns, it became crystal clear that every buildable piece of land in this area would be urbanized in the path of both the northward expansion from Los Angeles and the southward expansion from Ventura. Once this area is filled in, this sprawl is destined to jump to the north of Ventura and on up the coast.

In a hearing held in Palmdale on the proposed international airport, a pattern emerged of another major urban sprawl city bound to fill in buildable land between the Los Angeles Basin and Palmdale, to be followed by an ultimate northward march toward Bakersfield. The hearing in Palm Springs—a city located over 100 miles from Los Angeles—left no doubt about the urbanizing pressures of the Los Angeles Basin in an eastward direction, in spite of its extreme summer heat.

To counteract this will be extremely difficult, for speculative land practices have built expectations of large gains among many. If the dehumanized, sprawling megalopolian monsters are to be prevented, the expectations of personal gains among those who have banked on such growth must inevitably be denied. Such an approach would be analogous to a set of anti-inflation policies which may deny investors in securities anticipated growth, or even decrease the value of their holdings, but which are justified as serving the common good. Nevertheless, the obstacles to such policies are clearly self-evident. It is neither easy nor pleasant to adopt policies unpopular with powerful vested interests. It will take almost superhuman political will to do so, but it is not impossible, as other countries such as Holland have already proved.

The moribund Los Angeles Basin

At the same time that the Los Angeles Basin is sprawling in all directions, the Basin itself is becoming increasingly more densely populated, which raises questions of human survival as we know it today—questions well beyond those of a desirable existence. With major new water resources on their way and numerous new power plants either planned or under construction, continued industrial and commercial expansion seems assured. This, in turn, encourages new in-migration to the Basin, and each new resident increases congestion and adds his share of pollution, particularly by his use of an internal-combustion-powered automobile.

At the Council's hearing in Huntington Beach, the question was raised as to the carrying capacity of the Basin. Stated differently: how much human life can the Basin reasonably support? At this point, the question has not been answered; but the Committee would like to pursue this subject during 1970. The evidence being compiled strongly suggests, however, that there is a limit as to how much air pollution can be generated without serious health consequences. In fact, Professor Kenneth Watt, Systems Ecologist of the University of California at Davis, who met with this Committee in study session, has already predicted that by the winter of 1975–76, air pollution in the Los Angeles Basin will be at levels where mass mortality can be expected.

An indisputable fact is that a comfortable existence in the Los Angeles Basin is already seriously endangered by smog, with State air quality standards for various kinds of pollutants exceeded numerous times a year, and the frequent warnings to school children not to exercise on certain days. Pollution by oxidants in the Basin, which is related to eye irritation, exceeds the State standards well over 200 days a year.

Dr. Arie Haagen-Smit, Chairman of the State Air Resources Board and a member of the Council, has stated that the bucket is full and it is spilling over. This is irrefutably evidenced in the dying of the Ponderosa pines on the rim of the Basin. In the Lake Arrowhead region alone—located 6,000 feet high in the mountains, some 100 miles from downtown Los Angeles—millions of trees are doomed to die of smog in the next decade. But smog is only one form of pollution. Noise pollution is rapidly becoming a serious contender.

During a hearing in Inglewood on noise abatement, it was learned how noise levels created by the operations of the Los Angeles International Airport have already forced the closing of several schools. Tapes were played to demonstrate how the noise levels in numerous other schools in the vicinity of the airport are now seriously hampering the educational process. Teachers and children are repeatedly forced to stop in the middle of a sentence as deafening aircraft noises fill the air.

Witnesses from affected neighborhoods, many of which are located as far as 20 miles from the Los Angeles International Airport, testified to their rapidly deteriorating living conditions, including loss of sleep due to ever-increasing noise levels. Already one million residents living in the vicinity of the airport are seriously affected by noise generated by airport operations. But it will get much worse, and it will affect a great many more people as population growth calls for more airports and the expansion of existing ones. Los Angeles International Airport alone is slowly but surely absorbing several once desirable neighborhoods, such as Playa del Rey and Westchester.

A recent study undertaken by graduate students of USC's Urban and Regional Planning Program has turned up some frightening predictions. Given projected population growth in the Los Angeles Basin, and the concomitant growth of air transportation, particularly VSTOL aircraft, noise levels will reach 95 pndb within twenty years throughout the Basin. Most people would consider such noise levels unbearable for normal daily living—not to speak of the undesirable impact on their health.

It is not necessary to dwell on the inability of the Los Angeles Basin freeway system to accommodate endless population growth or on the dangers inherent in a never-ending destruction of stable, established communities, and the resulting alienation. But the point should be clear. Continued growth of the Basin is sure to court disaster, or at best, considerably reduce the quality of human existence below the presently prevailing conditions.

Moratoriums: The need to buy time

Two planned extensions of power plants in the Basin have been blocked by courageous action by the Boards of Supervisors of Los Angeles and Orange Counties, who concluded that the air quality of the Basin would simply not allow the additional pollution. These actions were consistent with a resolution of the Council's Air Quality Committee calling for a moratorium on additional fossil-fuel plants in the Los Angeles Basin, which was adopted after the Huntington Beach hearing.

Assemblyman George Milias, Chairman of the Assembly Committee on Conservation and Natural Resources, has called for a similar moratorium on the State Water Project, as well as on other major environmentally questionable public works projects, especially those whose effects would be irreversible—at least until their environmental impact has been fully evaluated. Hailing from Santa Clara County, Assemblyman Milias is well aware of the potential dangers this plan poses to the ecology of Northern California, as well as to the water resources of the San Francisco Bay Delta—something the Committee hopes to study during the coming year. The impact of the State water plan on the continued population growth of the Los Angeles Basin is particularly in need of consideration.

We strongly hope that the Legislature will heed the advice of Mr. Milias, not only regarding the State Water Project, but concerning all State public works projects, for they provide the State with powerful tools to affect growth and development patterns throughout California. At Malibu it was demonstrated that the absence of a freeway had been a crucial reason for its relatively slow development. A decision to build a freeway in essence is a decision to stimulate growth along its path. The same is true for a decision to locate a major airport as was indicated at Palmdale—or for that matter to build a branch of a State university.

The unfortunate fact is that most of the State's public works projects currently under way were planned in an era when there was little, if any, environmental consciousness. This is no attempt to place the blame on anybody or any group. For this shortsightedness we are all to blame. The important question is: should we continue with these projects if they may do serious harm to our environment, or perhaps even destroy portions of the State for tolerable human habitat? As was suggested above, present policies affecting the Los Angeles area may very well lead to the death of the Basin.

Similar claims have been made for the San Francisco Bay Area. A recent report entitled *Handbook of the San Francisco Region*, by Dr. Robert H. Dreisbach,

professor at the Stanford School of Medicine, warns that an environmental catastrophe is already in process in the San Francisco Bay Area. The Council intends to hold several hearings in the Bay Area to familiarize itself with the problems of that region. Meanwhile, there seems to be every reason to slow the pace of major state public works projects until it can be determined what exactly their environmental impact will be—particularly to what extent they will foster dangerous population build-ups in already heavily congested areas of the State. The resources involved in such projects could, in fact, be redirected into activities that would enhance environmental quality. It hardly needs to be pointed out that a slowdown policy would be consistent with the current policy to control inflation. Such dislocations must be faced if we are truly serious about saving our environment. We have little choice. This is the price that must be paid for years of neglect. The time is overdue for a searching re-examination of where our present projects and plans are taking us.

Population distribution or strangulation

Concomitant with such measures, positive steps are needed to develop a well-thought-out population distribution strategy. If some areas of the State have already reached or exceeded their capacity to absorb people, where can additional people go? Where should growth be encouraged in order to alleviate the pressures on the already heavily congested areas? Directing population growth is by no means a new phenomenon in America. By the Homestead Act and the system of land grants to railroads, the Federal government played a significant role in settling this continent. Now the challenges lie in directing population growth away from congested areas.

Again, the Federal government has begun to take up this challenge with a policy of rural economic development. The Presidential Task Force on Rural Development is currently preparing recommendations for reversing migration patterns from the cities to as yet sparsely populated areas. These efforts have the full support of President Nixon, who told a recent convention of the American Farm Bureau: "There are 200 million Americans now. By the end of the century there will be 300 milion. Where are those 100 million going to be? You can't pour them into New York, Los Angeles, into Chicago, and choke those cities to death.... It is going to be necessary for America to grow toward its heartland, toward the center."

It is indeed encouraging to note that various California State legislators, including Assembly Speaker Bob Monagan, have already publicly expressed the need for such a policy in this State. As mentioned earlier, the State has substantial powers to guide population through its public works. Once a given area is provided with adequate water and power resources, transportation facilities, and perhaps even a branch of the State university, industry and commerce can take hold.

If necessary, a series of tax incentives could be established to attract industry to particular areas. People will follow. The outflow of people leaving California is sufficient evidence that many would gladly exchange life in such new town areas for their hectic existence in the crowded, sprawling metropolis where the California dream has long since been killed. But there must be decent jobs elsewhere before they can move. And California utilities currently frustrated over the opposition to building power plants in the heavily populated portions of the State, would no doubt be happy to devote their efforts to providing power in these new towns.

Flying from the State Capitol to the Los Angeles Basin along the western edge of the Sierras, it is clear that there is a great deal of beautiful country in this State for such developments. In fact, private enterprise is already showing the way by the construction of several major second-home developments in those areas, as well as in other sparsely populated portions of the State—a phenomenon the Committee intends to study during the next year.

It is not that the State's population density is so unfavorable. In fact, it compares extremely favorably with many foreign countries and other U.S. states, such as New Jersey, which has the same population density as India. The problem lies in a highly inefficient utilization of our land resources due to the total lack of official guidance. One of the world's greatest problem cities has been described as "chance-directed, chance-erected". This description fits California all too well. A population-distribution policy could change that description, *not* by greater controls to keep people away from congested areas, but rather, by incentives which stimulate growth elsewhere.

An environmental strategy for California: A must

In order to implement a population distribution policy we need to decide in some detail how to develop what is left of California. Before this can be done, the highest use of each of the regions and sub-regions that constitute the State must be determined. In this context, highest use does not necessarily mean the highest economic use, at least not in short-range economic terms, but the highest use environmentally speaking.

For example, in the Coachella Valley where Palm Springs and numerous other desert resorts are located, the highest economic use in short-range terms might be to fill that valley with heavy industry and refineries, but this would mean a severe loss to California's environmental quality.

The Coachella Valley, particularly the so-called "cove" communities such as Palm Springs, is blessed by a geography which is not only beautiful but unique. This provides the area with a clean, dry, healthful atmosphere as well as with a benevolent winter climate where temperatures are often 30 degrees higher than those of the coastal regions of metropolitan Los Angeles. Large open-space desert areas are found adjacent to the Valley's resort cities which not only provide visual relief, but help to maintain the Valley's clean air and relatively low noise levels. All this lies only two hours' driving distance from one of the world's largest metropolitan centers, containing eight million harassed city-dwellers very much in need of an occasional escape into the countryside. For those who suffer from respiratory diseases, it is an essential escape, a respite from dirty air. Moreover, the area's climate and soil conditions make possible the growing of certain "indigenous" fruits and other produce which has given it the name of "Date Capitol of the U.S."

Thus the Valley is not only a unique State—and even national—resource as a rest and recuperation spa, but it is also a unique source of certain food items. Its value for the State's environmental quality is irreplaceable, as well-known planning consultant Simon Eisner told the Council at its August Palm Springs hearings. Its highest use, environmentally speaking, is for health, leisure, and certain kinds of agriculture.

A similar argument could be put forth for California's coastline, and several other portions of the State. During our hearing in Malibu, it was suggested over and over again that most of this undeveloped coastal mountain range might have its highest environmental quality use as a close-in National Seashore to serve the recreational needs of the masses of Los Angeles as well as to provide a "lung" for the city. Our current "non-system" does not consider environmental quality in determining the future use of such areas. In fact, the continued existence of such unique areas as productive health, recreational, and agricultural resources is frightfully fragile.

During two hearings in Palm Springs the Council examined ways to maintain air quality levels in those basins which are not as yet suffering from serious air pollution. It was clear that the future of the Coachella Valley was seriously endangered by a few perfectly natural and legal acts by a small city and a small oil company. The city, located at the neck of the San Gorgonio Pass, simply wished to broaden its tax base, and this desire coincided with the intentions of a mid-Western oil company which wished to build an oil refinery in California. So, the beginnings of a petro-chemical complex were launched. The Council's Air Quality Committee, in turn, felt justified to call for a moratorium on oil-refinery building until the full impact on the Valley's air quality could be ascertained. At present it appears that the refinery will not be built, largely due to vigorous opposition by Coachella Valley residents. Yet a similar major threat could re-emerge tomorrow, and the Valley's highest environmental-quality use may be endangered all over again.

We should not be playing Russian roulette with our environment. Drastic new approaches to the development of the State are necessary. Such approaches are within the power of State government to effectuate.

Emergency measures imperative

Several local officials who testified at the Palm Springs hearings recommended that the State play a role in the location of refineries and other heavy industries. This apparently is already practiced to some extent in the Pacific Northwest States, which practice the Committee intends to investigate. The Committee also will take a closer look at Hawaii's experience in State land-use control. At this point it is not certain whether the Hawaii experience holds promise for California, but it does seem clear that the State must at once assume a greater role in protecting unique recreational and agricultural regions from undesirable

urbanization. Already available are State tools to influence the development of water, power, and transportation facilities, but obviously other tools are needed—and needed fast. Changes affecting environmental quality happen all too rapidly.

There is an immediate necessity to inventory the State's regions and subregions to establish highest-use criteria based on environmental quality, and to protect those areas which qualify as unique resources from industrial, commercial, or other intrusions likely to change their character. The help of the nation's most respected ecologists, planners, and other environmental professionals should be solicited for this task. At the same time we must begin at once to develop appropriate policies and plans to determine the ultimate highest use of each area.

The urgency and importance of implementing short- and long-range highest use criteria cannot be overstated. If California is to survive as a viable State, we must develop bold policies for sensibly and sensitively developing our natural resources, supported by substantial financial commitments and mobilization of our finest talent. Also much needed is an appropriate State administrative mechanism to implement such goals. This should be accomplished by a much greater utilization of full time environmentally knowledgeable personnel. During the coming year the Council hopes to arrive at meaningful recommendations for such a mechanism. Meanwhile, the newly formed cabinet level State Environmental Policy Committee, chaired by the Lieutenant Governor, is an important step toward such a goal. It must be as if we were preparing for a major war—a war for the survival of a great State.

An end to the growth ethic

Even if measures are taken to guide statewide growth, local growth may continue helter-skelter, and each day our environment will suffer further irreparable damage. There is a desperate need to save open space in crowded cities, where existing parks are vanishing at an alarming rate. At our Los Angeles hearing we witnessed the sacrifice of one of the last remaining park spaces in the city's crowded downtown area. City officials apparently saw nothing wrong in transforming the existing library park into a parking lot, despite the fact that an office-hotel complex is slated to soon pour an additional daily load of 50,000 office workers into that very area.

The Committee has been beseiged with calls and letters from San Diego—California's second largest city—from citizens deeply concerned with the vanishing canyons and lagoons which attracted most of them to this area in the first place. Even the prehistoric Torrey Pines are threatened by the bulldozer. It seems that nothing is sacred. The Council is scheduling a hearing in San Diego to ascertain what might be done to help growing urban areas to set aside sufficient public space for a burgeoning population. In the meantime, the legislature might well consider the adoption of emergency legislation preventing existing public parks from extinction or encroachment.

The simple truth is that, in general, public activities not only fail to recognize environmental quality as an important consideration, but they often are in direct opposition to this goal. Our whole legal system has grown up over several centuries during which the all-important consideration was development. During this period the growth ethic was born and firmly established in our values and attitudes. And this goal was necessary in a society which wanted to settle a continent that often seemed hostile and uninviting. But the continent has long since been settled. Not only is the growth ethic no longer needed, but it has become destructive to a high-quality existence, as Professor Watt illustrated so eloquently during our Malibu hearing.

The bulk of our public policies remain growth oriented: growth at any cost. This is why freeways have trampled neighborhoods and continue to do so, or at least residents of such communities as San Francisco, South Pasadena, and Santa Barbara think so. The Committee received requests from the latter two communities to hold a hearing on this subject. Transportation planning will be considered at the Council's first Northern California hearing, to be held in Livermore. Neither Santa Barbara nor South Pasadena citizens are so much in opposition to freeways, per se, but rather to the way in which the location and design of freeways threatens to damage the environmental quality of their communities.

Santa Barbara has been unsuccessfully trying to persuade the State for almost a decade—in itself an incredible fact—to provide a depressed freeway through a few blocks of its downtown area. Santa Barbarans are understandably concerned at losing their uninterrupted view of the ocean, an important amenity in that community.

In South Pasadena, opponents to the route currently favored by the State feel that despite the recent improvements in freeway planning, this route continues to simply connect two points in the shortest possible way, ignoring the quality of their community. One local urban design critic calls it a disaster. As he puts it: "This route cruelly divides a small, cohesive, long-established community, while brutalizing its urban fabric and destroying its open spaces."

During the Malibu hearing, the Malibu Community Freeway Committee reported a long battle with the Division of Highways to locate the freeway away from the ocean in West Malibu. A location close to the coast would seriously impair the unique beauty of this scenic area. The Highway Commission has under consideration new procedures which would incorporate environmental quality concerns in decision-making processes. These new procedures would also invite greater public participation. This is encouraging indeed, and it may help reduce the numerous skirmishes which aroused citizens have waged against the Division of Highways throughout the State.

Such battles have been brought against government bodies on all levels, which must seem paradoxical in a democratic society where officials are theoretically responsible to the people. This is perhaps the reason for the numerous requests to the Council to hold hearings. We must alleviate the sense of deep frustration so often found among the populace. Unmet frustrations can be a dangerous thing, as was brought out during our Inglewood hearing. At this hearing, an FAA official told the Council that in 1969 alone there had been a half dozen threats to bomb the control tower at the Los Angeles International Airport by individuals outraged by aircraft noises.

People feel too often that they really do not count. One case brought to the attention of the Committee by a group of North San Fernando Valley residents indicated an almost total unwillingness by the Los Angeles Department of Water and Power to try to work out ways in which Chatsworth Lake could be transformed into a reservoir in such a way as to harmonize with its natural surroundings. The homeowners had no intention of trying to stop the transformation of the lake into a reservoir. All they wanted was to have environmental quality considerations included in the project. They were rebuffed.

Government officials are often blamed unfairly, simply because existing laws do not allow them to take overall environmental quality into consideration. In fact, they are often specifically prohibited from doing so. This became clear at the Palmdale hearing on the proposed intercontinental airport, which has been granted a permit by the State Department of Aeronautics. Opponents have criticized the planned location because of the inadequate consideration given to the impact of noise on the existing community. Indeed, they have a valid argument, but the State Department of Aeronautics at the time it held its hearing, was not allowed by law to consider either noise or other environmental quality factors. They have since been given authority to develop airport noise regulations. Thus, the Council recommended that the Department of Aeronautics set aside its decision and schedule a rehearing to take environmental quality into consideration.

To forestall such unhappy situations and to prevent increasing damage to the State's environmental quality, administrative directives and legislative authority should be provided promptly to require all State agencies to include environmental quality considerations in their decision-making, both in their own activities and in regulatory actions. The time has come for environmental quality to have primacy over development. There is also a necessity to provide greater public participation in the actual decision-making processes. Ultimately, all existing legislation should be carefully examined and changed as necessary so as to be made consistent with environmental quality objectives. The outcome may require greater expenditures in some cases, and it may not always coincide with other so-called practical considerations. But that is what must be done if we are seriously interested in promoting environmental quality.

Traditional planning obsolete

The Committee especially recommends an early re-evaluation of the present State enabling legislation governing local planning activities. We have found local planning especially deficient in view of the new concern for the environment. It is even doubtful whether one can honestly use the term "local planning", and it is equally doubtful whether this will change without pressure from the State.

It has often been said that Houston, which lacks a zoning code, does not look any different from most cities with a zoning code. Indeed, there are many indica-

tions that local planning is sadly deficient in California. At the Los Angeles hearing on urban park space, it was learned that there is no master plan to guide the growth of the rapidly developing downtown area. Belatedly, the City has allocated $250,000 to develop such a plan, which it is asking the business community to match. Even so, it would take several years before a plan would be available. In view of this, the Land Use Committee asked the City to postpone any actions that would eliminate downtown park land until a plan for the area would have been prepared; but the City chose to ignore this recommendation. Meanwhile, all those skyscrapers are going up without either a plan, or a concept of what the downtown area should become.

The state of county planning appears to be at least equally discouraging. During the Malibu hearing, a dozen public officials were heard from, most of whom represented Los Angeles County, although some State and Federal officials were represented. It became evident that they shared no common concept of how Malibu should grow. Each agency pursues its own narrow objectives, as required by law, which, as we have seen, generally fails to consider environmental quality. Urban development, in most instances, is shaped by a series of unrelated decisions by public officials such as the county tax assessor, county engineer, the county sanitation district, etc.

Unfortunately, the role of the County Planning Department is a minimal one, and even more unfortunate, the main thrust of its activities seems to be to react to already existing problems, while satisfied to accommodate as much growth as possible. A lady testifying at the Malibu hearing on behalf of the Palos Verdes Peninsula Advisory Council described the county planning process as "stuffing a Christmas turkey and attempting to get as much stuffing in it as possible." With such a philosophy, natural features assume little value and must always yield to accommodate more people. For example, this is the basis for ordinances which allow the cutting up of our hills and mountains into building pads. It is usually not the fault of the individual planner, for he is simply following the directives given him.

There is an obvious great need to incorporate ecological values in the local planning process. Land-use decisions directly affect the quality of air and water in a given area as well as many other important factors. In fact, they determine the very quality of life in that area. A decision to plan for certain kinds of industrial growth or a higher residential density may, in fact, be a decision that results in the deterioration of the total environment.

We must plan for the overall quality of a particular environment, which means that the quality of air, water, and other environmental values must help determine our land-use decisions. This, in turn, will require an ecological inventory of an area as a prerequisite to land-use planning, an approach that the Council will study this year. Human settlements must be planned to be in harmony with their natural environment. The State should require, through its local planning enabling legislation, that such considerations be incorporated in the planning process. This might go a long way toward correcting the current "turkey stuffing" process.

A battlefield of vested interests

This report would not be complete without a brief discussion of the obstacles which will have to be overcome if, indeed, we are to have a high-quality environment. Unfortunately, despite much lip-service, not everybody is wholeheartedly in favor of environmental quality. It may require public officials to alter established procedures or habits with which they feel comfortable. Moreover, it may actually diminish their jurisdiction and powers. These are important obstacles that must be overcome. But perhaps the most important deterrents come from outside government.

Resistance from individuals holding land investments which they anticipate will increase in value has already been mentioned. It is only natural to expect them to disagree with any public policies which might upset such expectations. Yet, in some instances it may well be necessary to do so in order to preserve environmental quality for all. For instance, measures to save the Tahoe Basin by holding down growth to a level that will not destroy the lake and its environs—in other words, to keep the growth within the basin's carrying capacity—may hurt certain landowners.

If it ever came to pass that the internal combustion engine were outlawed, this would certainly not benefit automobile stocks for several years to come. Needless to say, the retooling costs would be enormous. The point is that almost every time environmental quality concerns are advanced, somebody or some group suffers. When the Council's Noise Abatement Committee helds its hearing in Palmdale on the proposed intercontinental airport, it made some people very happy and others very unhappy. Even a slight realignment of airport borders could mean substantial financial losses for those whose holdings might then be placed at a greater distance from the proposed airport.

A final call for bold leadership

At one time, when America had fewer people and the frontier seemed limitless, everyone seemed somehow to be able to pursue his own self-interest without getting into the next person's way. Unfortunately, those days are over. During a recent speech, Speaker of the California Assembly, Bob Monagan, quoted 19th Century Scottish essayist, Thomas Carlyle: "You won't have any trouble in your country as long as you have few people and much land. But when you have many people and little land, your trials will begin." Our trials have begun.

There is an increasing competition for the rapidly decreasing resources of fresh air, clean water, and open space. As time goes on, we will be forced by a set of increasingly more difficult choices: whose interests are to be sacrificed? We won't be able to please all. It is extremely important that this dilemma is recognized, as an outraged populace clamors for a quality environment. There is every indication that this clamor will grow louder. It might even become violent, as mentioned earlier. This is why tinkering with the fringes of the problem is no longer enough. We must also be careful to avoid "tokenism". Both the natural reactions, but they would only compound the problems. Instead, immediate and drastic actions are imperative. At times the task at hand will seem an almost impossible one. Wise, courageous statesmanship is of the essence.

Recommendations

In summary, the Committee's major recommendations to the Legislature and the Administration are:

1. Immediate adoption, in principle, of a population-distribution policy, together with a commitment to utilize the State's ability to influence water, power, transportation, and other facilities in order to implement such a policy.

2. Immediate adoption of a go-slow policy on all major public works projects whose adverse impact on the environment seems irreversible. State agencies responsible for any such project should prepare a report detailing its environmental consequences; e.g., on population density, and on air, water, noise, and visual pollution, loss (or gain) of open space and recreational facilities. Such reports should be submitted promptly to the newly formed cabinet level State Environmental Policy Committee so that it can evaluate the impact on the environment, and provide for alternative courses of action, where necessary.

3. Adoption of a strategy for developing appropriate long-range policies for establishing and implementing highest-use criteria—based on environmental quality considerations—for the State's regions and sub-regions. Appropriate State Administration mechanisms should be established to implement such policies. This should be accompanied by a greater utilization of full time environmentally knowledgeable personnel.

4. Preparation, in the interim, of an emergency inventory of the State's regions and sub-regions for the purpose of establishing temporary criteria, indicating their possible highest use, environmentally. In this, the help of the Nation's most respected ecologists, planners, and other environmental professionals should be sought.

5. Adoption of a set of policies—upon completion of the emergency inventory—that will preserve areas from urban commercial or industrial intrusions likely to change their character until a final "highest-use" policy has been established.

6. Immediate adoption of legislative and administrative directives to require all State and local agencies to incorporate environmental quality criteria as a part of all relevant decisions, including those of a regulatory nature. Environmental quality must have primacy over development.

State Planning in the United States

(By Louis C. Violi, chief planner, State Planning Division, Tennessee State Planning Commission)

INTRODUCTION

State Planning in the United States had its beginning back in the Conservation Movement during the latter part of the 19th Century and fostered by President Theodore Roosevelt. It was conceived as a means to promote further economic growth through the wise and efficient management of resources and the prevention of wasteful exploitation.

Through this effort a number of states established Conservation and Development Departments. They emphasized the necessity for a comprehensive view of the management of natural resources which, in turn, pointed to the need for overall planning of state programs.

The origin of what is now thought of as state planning was formulated during the twenties. In 1923, the State of New York established a Temporary Commission of Housing and Regional Planning which was broadly concerned with the economic development of the state and the need for a central state planning agency. A 1926 report by the agency is usually cited as the first comprehensive state planning report.

During the Depression, recovery programs dissolved almost overnight the belief that welfare and relief programs were economic in nature.

In 1933, the Public Works Administration appointed a National Planning Board, whose purpose it was to "stimulate city, regional, and state planning." This Board was known variously as the National Resources Board, National Resources Committee and, finally, the National Resources Planning Board before it was abolished by Act of Congress in 1943. By 1938, forty-five state planning agencies had been established.

There were problems, however, in that these agencies did not prepare state governments for the changes which would occur with the end of the World War II. However, they did provide a useful data base on physical resources.

After World War II, the state planning agencies returned to the Nineteenth Century concept of economic and industrial development. Local planning assistance which had been seriously neglected during the War was reinstated. This then is where many state planning agencies remained until 1960.

State Planning received renewed impetus in 1959 when Section 701 of the Housing Act of 1954 was expanded to include grants for planning on a statewide basis. It has been since this event that state planning agencies have been revived or reoriented.

This bibliography is limited to publications, articles, unpublished documents and government publications which are related to the nature of state planning or specifically what is being done by the states. A bibliography of specific studies that were done by the state planning agencies has not been attempted here. At the conclusion of this bibliography is a List of State Planning Agencies where information on their published reports is available. The Tennessee State Planning Commission since 1945 has periodically published an annotated bibliography of TSPC numbered publications and it is sincerely hoped that other agencies are doing or will publish bibliographies of their studies in the future.

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LIST OF STATE PLANNING AGENCIES

Director, Alabama Federal Programs Coordinating Committee, 304 Dexter Avenue, Montgomery, Alabama 36104
State-Federal Assistance Coordinator, Office of the Governor, Pouch A, State Capitol, Juneau, Alaska 99801
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Executive Director, Arkansas Planning Commission, Game and Fish Building, Capitol Mall, Little Rock, Arkansas 72201
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State Planning Coordinator, Office of the Governor, State Capitol, Denver, Colorado 80203
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Director, Delaware State Planning Office, 530 South DuPont Highway, Dover, Delaware 19901
Director of State Planning, State Planning & Budget Commission, 725 S. Bronolgh Street, Tallahassee, Florida 32304
State Planning Officer, Georgia State Planning Bureau, 116 Mitchell Street, S.W., Atlanta, Georgia 30334
Director, Hawaii Department of Planning and Economic Development, 426 Queen Street, Honolulu, Hawaii 96813
Executive Secretary, Idaho Department of Commerce and Development, State Capitol, Boise, Idaho 83701
Director, Illinois Department of Business and Economic Development, 222 South College Street, Springfield, Illinois 62706
Director, Division of Planning, Indiana Department of Commerce, State Capitol, Indianapolis, Indiana 46204
Director, Iowa Office for Plannnig and Programming, State Capitol, Des Moines, Iowa 50319
Director, State Plans Coordination, Kansas Department of Economic Development, State Office Building, Topeka, Kansas 66612
State Planning Officer, Office of the Governor, State Capitol, Frankfort, Kentucky 40601

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Commissioner, Maine Department of Economic Development, State House, Augusta, Maine 04330
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Deputy Commissioner for Central Services, Massachusetts Department of Administration and Finance, State Office Building, Boston, Massachusetts 02202
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Director, Missouri Department of Community Affairs, Jefferson Building, Jefferson City, Missouri 65101
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Director,
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Olympia, Washington 98501
Director,
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Wisconsin Department of Administration,
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Director,
State Planning Office,
West Virginia Department of Commerce,
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Director,
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Chairman,
Puerto Rico Planning Board,
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Santurce, Puerto Rico 00908
Director,
Land Management,
Government of Guam,
Agana, Guam
Executive Director,
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Virgin Islands 00802

State Planning Failure: What To Do About It

(By Kenneth E. F. Watt,* *Cry California*, Winter, 1969–70)

California, like most of the rest of the world, is plunging into the future without any planning worthy of the name, despite the fact that we have hard evidence that many decisions we make or fail to make today will literally wreck the state and, on the larger scale, the planet. Harsh language? Not at all. As a review of a few sample problems will reveal, the state-planning procedures—to the extent that we have any at all—fail utterly to take the long view, fail to consider all relevant consequences of decisions, made or not made, in both the public and private sectors, fail to consider all alternatives, and fail to figure in all costs and benefits when alternatives are considered. A few examples:

Transportation planning is almost entirely in the hands of the freeway builders who have not figured in the costs of human disease and crop damage resulting from auto-produced smog.

Urbanization of prime agricultural land proceeds without any concern for the possible future effects on food prices.

The decision-making process which sets university budgets ignores the effect of shortages in key professional groups on the future cost of living. As matters stand now, for instance, California will likely need 15,000 more physicians by the year 2000 than our schools will produce by current projections. It is difficult to see how this can lessen our current health-care cost crisis.

Decisions governing pest-control practices are made without consideration of the cost of destruction of marine resources.

In long-range aviation planning, the decision makers are proceeding on the assumption that jet kerosene fuel will be available in unlimited quantities for the life of all aircraft programs now on the drawing boards. The assumption is, on analysis, without foundation.

These are but a few of the isolated examples of the over-all planning failure. It is obvious that the state, by its action or its inaction, is allowing these things to happen and, therefore, what is happening is a true reflection of current state-planning policy.

The need for comprehensive planning must be clear to all who are concerned about the quality of the environment and the nature of the heritage we will pass on the generations to come. Where we have failed so far, to a large degree, is in understanding the fact that planning must interlock all the various elements of our society and its endeavors in order to predict the consequences of choices we can make, or fail to make, today. Only by knowing these consequences can we hope to make our decisions wisely.

Basic to comprehensive planning is the immense amount of arithmetic needed to evaluate the costs and benefits associated with the alternatives open to us. And to meet this need, we will have to depend on computer technology to handle the ocean of data and the uncountable number of calculations required to manipulate these data into comprehensible units of information. What is needed is a gigantic computer model of the state of California, a mathematical and logical framework into which data can be incorporated and linked together in a multiplicity of ways to show how the alternatives we can decide on today will affect the nature of our lives tomorrow.

Until a few years ago, it would have been virtually impossible to build and operate such a model of California, but new generations of computers are available which make such an operation entirely feasible. Our group at the University of California, Davis, has been assembled to do just this. The activity is financed by the Ford Foundation, with additional financial support coming from various federal agencies. While we do not yet have a model of the entire

*Kenneth E. F. Watt is the head of the Environmental Systems Group in the Institute of Ecology, University of California, Davis. The work reported here was done by the entire group, and will be published in a number of books and reports next year. The population growth rate-education tax simulation, based on an idea of Professor Watt's, was done by Dr. Norman Glass and Dr. Theodore Foin, who supplied the population data. The county agricultural production simulations were by John Wilson; simulations of physician supply-demand trends were by Dana Thode.

state operating, we do have models running for a sample county and for various of the phenomena operating in the state. More and more parts of the model are being built, and within five years we hope to have the whole model operational. We have already found out a number of interesting things about the state, however, which are not widely known or understood.

The aim of our model is to discover the hidden social costs which occur as a result of constantly increasing population, and because of this point of view we look at the model as four large sets of interacting causal systems triggered by density change. These parts are:

Competition for resources (land, space in transportation systems, fuel, etc.).

Direct effects of density on human beings (behavioral changes; use of medicines, drugs, alcohol, ethical pharmaceuticals; and the incidence of three types of disease: stress diseases, infectious diseases, and pollution diseases such as emphysema).

Disintegration of the social fabric (increased crime and violence resulting in increased police costs; increased taxes due to change in the age distribution of the population, and decrease in the efficiency of energy use by society).

Physical and chemical degradation of the environment (overheating of cities resulting from elimination of trees; chilling of the countryside because of increase in upper-atmosphere turbidity due to air pollution; and poisoning of the environment by such substances as nitrogen dioxide, sulphur dioxide, DDT, and heavy metals such as lead and cadmium).

The model consists of a very large set of sub-models which deal with different components of the entire California ecosystem, including agriculture, land use, demographic changes, weather, crime and violence, transportation, industrial activity, water and power (these are only a few examples). Each of these models, which is based on analysis of all available data, is then fitted together with all the other models, so that each of the necessary causal connections can be made. This can be a complicated job, because several of the components of the large model are affected by, and in turn affect, many of the other components. The following examples give an idea of the complexities involved.

EXAMPLE: AGRICULTURE

Agriculture is affected by and affects many other parts of the system. The most important resources for which men compete are land and the food grown on it. The more of us there are, the less land per person there is to grow food on. To complicate matters, the very best land in most societies is that immediately surrounding the cities, because most cities grew from agricultural villages. In California, for every person added to the population, one-fifth of an acre of agricultural land is converted to urban uses. The problem is intensified because only 6.7 percent of California's land area was in the prime agricultural class to begin with. How much land does a civilization need? If a population eats only cereal grains, it takes about a quarter of an acre of arable land per person to feed the population. If a population eats only meat, it takes a whole acre per person to feed a population. These projections assume a low rate of technological advance in agriculture over present standards. Therefore, the ratio:

$$\frac{\text{acres of prime agricultural land}}{\text{population size}}$$

has unusual significance for a population. If this ratio is below 0.25, there are five possibilities open:

1. Cultivate and irrigate marginal land (arid or semi-arid areas, for example).
2. Turn to the sea (Japan).
3. Buy the food elsewhere, in exchange for manufactured goods or services (England).
4. Emigrate (The Irish potato famine).
5. Starve (Calcutta).

California now has about a third of an acre of prime agricultural land per person, but by the year 2000 this will be down to about a seventh of an acre (a ratio of 0.14) if our present population growth rate of about 1.5 percent per year keeps up (along with the resulting subtraction of agricultural land for urban

purposes). Possibility One will raise problems, because of the competition by urban areas for agricultural water, and of course urban areas can always afford to pay more for water. Possibly Two already appears to be a slim bet, because of the rapidly declining stocks of almost all oceanic resources. Possibility Three will be less useful by the year 2000 than at present, because all parts of the country are urbanizing fast, particularly Florida, California, and Arizona, which are the most important produce-growing areas. Possibility Four is out, as the age of feasible mass migrations is long past. Possibility Five is obviously an unacceptable solution.

Furthermore, if air pollution keeps getting worse, the incident solar radiation will be significantly less by the year 2000, and agricultural productivity per acre will be lowered for that reason. For such crops as citrus, which take more than one season to ripen, increased probability of chilling frosts during the winter has grave implications for the possibility of obtaining a harvest.

EXAMPLE: FOSSIL FUELS AND THE SST

Another type of competition to which little thought is given concerns fossil fuels. The remarkable recent decision to go ahead with the SST project could leave us in the hilarious situation of being completely tooled up with a fleet of planes and long runways, just about the time it becomes widely recognized that we are running out of petroleum, and that the SST will use it faster than any other means of transportation. M. King Hubbert, a leading expert on petroleum stores, foresees the ultimate amount of oil production in the coterminous 48 states as probably less than 200 billion barrels, half of which will be gone by the end of 1975. The Alaska find will have surprisingly little effect on the whole scenario, according to our simulations, because about the time we run right out of petroleum from the 48 states, the oil consumption per capita will be rising very fast because of the increased per-capita use of jet aviation. The five-billion-barrel-per-annum use rate in the United States could use up the ten- to 100-billion barrels of North Slope petroleum in just two to 20 years. All expert predictions have grossly underestimated the rate at which jet aviation would cut into the world's fossil-fuel stores. The really important point here is that no other type of power plant has yet been shown to be a feasible substitute for aircraft engines using fossil fuels. Petroleum from trees is not a feasible substitute because predictions about trees are even more gloomy than those about fossil fuels.

EXAMPLE: HEALTH

The constantly increasing human population density has many types of direct effects on people. One of the most spectacular is emphysema, for which the California death rate has risen from 1.5 per 100,000 in 1950 to 14.1 per 100,000 in 1968. It is a difficult task to develop a mathematical model of this disease, however, because incidence of the disease appears to depend not only on pollutant concentration, but on climate, topography (hills can hold the pollution in a bowl, as in Riverside), wind direction, the relative abundance of various pollutant components, and certain other natural factors. However, it is clear from a number of careful studies that pollution really is implicated as the major factor in the incidence of emphysema in urban areas.

Many other diseases are affected by density. For example, the incidence of all infectious diseases is related to crowding, because this determines the probability of transmission; for example, the incidence of influenza outbreaks is greater in large than in small United States cities. Stress diseases (high blood-pressure and cardiovascular mortality) have been shown to be related to the occupational prestige of one's job. Thus, it is possible to predict the incidence of stress diseases by predicting the distribution of different prestige-level positions in the population. This, in turn, depends on population density, economic activity and the status of resources, among other factors.

EXAMPLE: TAXES

One of the most novel and frightening areas the group has modeled is the effect of population growth rates on social disintegration. The basic notion here is that high growth rates lead to a downward shift in the population age distribution, and

hence a higher number of people in tax-consuming ages than in a tax-producing age. The point is made clear in the following chart, one of a number which were produced by the computer.

The full significance of this chart becomes clear when we remember that in the post-World War II years, the population growth rate was very high. This has resulted in the large number of students who are now breaking the back of the taxpayer in California. This is one of a number of arguments that should be remembered when a developer tries to explain how population increase, which will result from his proposed development, will broaden the tax base and cut taxes. The fact is that increase in population and high population growth rates don't decrease the tax rate, they *increase* it.

Another reason why high density leads to higher taxes is that high density is associated with higher crime rates per capita. This represents a higher social cost for everyone in the form of increased costs of police protection per capita in larger cities.

EXAMPLE: ENVIRONMENTAL DEGRADATION

However, the most frightening subject we are dealing with in the model is the effect of population buildup on the physical and chemical degradation of the environment. California's cities are getting steadily hotter, largely because of their great asphalt and concrete surfaces, coupled with the elimination of trees and other evaporating surfaces. The countryside, on the other hand, has been reflecting the global chilling trend that set in about 1950. The prevailing view among meteorologists is that this chilling trend can only be accounted for by the constant increase in atmospheric pollution. (This is particularly worrisome, because we know that large-order, worldwide chilling effects were produced in the past when major volcanos, such as Krakatoa, Tomboro, Asamaya and Skaptar Jokull, erupted and put large quantities of fine ash into the upper atmosphere. In all such cases, the world was significantly chilled for five or more years afterward.)

Salinization of the San Joaquin Valley soil and DDT poisoning of marine life are some of the other phenomena which will be built into the model.

Given some of the frightening projections already coming out of this new planning tool for California, what action can be taken? The issues involved are tremendously important because, in fact, the model was not designed just to have implications for California; rather, California was chosen to be a model of the world because of the availability of data, the diversity of problems here, and the rapid elimination of agricultural land.

If we cannot understand that the future of the state, indeed of the nation and the world, relate to how we use our land, on which the quality of life is based, then we cannot hold much hope for resolution of both the obvious and yet-to-be-detected problems which our burgeoning population and its ever-increasing technology present. What we have considered here are examples of the kinds of analyses which a computer model of the whole state of California could produce. While these are important and compelling in their own right, they are but parts of the vast mosaic which will form the comprehensive description of the future of the state that can be produced by the full-scale computer model. This kind of information, with all of its clear implications for state land-use policy—indeed for planning in general—surely must be taken into account in current and future state-planning programs. To date, this kind of information—in fact, the process by which the data have been produced—has largely been ignored. But given the projected results of various decisions that will (or will not) be made by the state in public and private deliberations, the state administration and legislature will have the basis for the kind of planning required if California is to remain the potentially beautiful and productive land it was given us to be.

The computer will not make decisions for the future. People must. But without the kind of information the computer can yield, the comprehensive programs we need to meet the environmental challenges ahead will not be found. Our next step would clearly seem to be to hitch the immensely valuable potential of computer analysis fully to the planning function. This has not yet been done. The state should forcefully take the lead to this end.

It is a matter of life or death—and what California chooses, so can the world.

New Directions in State Planning

(By Thad L. Beyle, Sureva Seligson, and Deil S. Wright, *Journal of the American Institute of Planners*, September 1969)*

An adequate state planning function has long been part of the governmental reformer's package. Definitions vary as to the what, how, and where of state planning, yet little *evaluation* of the activities of state planning agencies has been added to the debate. This article reports several series of data on all fifty state governments and their state planning activities and indicates, in behavioral terms, how state planners and agencies have defined and carried out their roles. Some serious questions emerge about agency role fulfillment with respect to legislative relations, reduction of major obstacles to an effective state planning process, and the training of planners themselves. A stronger sense of policy, politics, and management—in both training and practice—is needed.

The state planning process is on trial. It is not yet clear to what extent planners and state planning agencies can fulfill their responsibility to contribute to more efficient and effective state government. The need for a state planning process that identifies rational and efficient uses of government resources is clear. The relevance, structure, and activities of state planning have been extensively discussed.(1) Comprehensive, coordinated long-range, broad-based integrated socioeconomic and political goals have become part of the vocabulary of state government as well as of state planning. But the jury is still out on whether they are now or will become a workable part of the state planning function.

State planning has been in flux since it became a part of the reformer's package in the series of economy and efficiency reforms suggested in the 30's. It stayed fluid in the recommendations of various "Little Hoover Commissions" in the 50's and in numerous piecemeal reform efforts during the mid-60's. As long as it is a viable function of government, planning will change, making it difficult to write a fixed definition of state planning or a static job description for a state planner. The activities of planners and agencies provide the best definition of the state planning process. At a time when states are innundated with local problems and national responsibilities, and almost every federal program calls for a state plan or an effective planning process, the general measure of "effectiveness" must be the extent to which state planners and their offices contribute to sound state government.

RECENT SURVEY FINDINGS

Two recent studies indicate that state government is not well served by state planners and state planning agencies. The first evaluation was in conjunction with "A Study of American States" conducted by former North Carolina Governor Terry Sanford.(2) In October 1965, each state's governor was asked: "What powers, both formal and informal, do you lack which could aid you significantly in effecting your programs?" (3)

Responses from thirty-nine states (thirty-two from governors and the remainder from immediate gubernatorial aides) indicated that in only two states was state planning perceived as a missing element that governors needed to carry out their programs. Governors felt most restrained in their appointive power, reorganization power, veto power, tenure potential, and legislative relations. Planning was either not perceived as lacking, or it was not considered a particularly significant tool for governors to add to their arsenals.

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This was clarified by the second study, "A Survey of the Present Status, Effectiveness and Acceptance of State Planning and Advance Programming in State Government," conducted by the Institute on State Programming for the 70's during the summer of 1967.(4) It concludes: "This survey suggests that there is an urgent need to broaden the concept of state planning and to strengthen the ability of the states to assume an aggressive, imaginative and creative role in the federal system. It indicates that the states neither view nor utilize the planning process as providing a rational basis for decision making."(5)

The Institute survey examined four central components of the state planning process: (1) gubernatorial commitment; (2) legislative intent; (3) legislative and executive branch involvement; and (4) the level of state planning agency support and performance. The major conclusions drawn from the survey findings are:

There is a strong gubernatorial commitment to state planning. Most governors are aware of the potential of the planning process and of the programs and activities of state planning agencies.

State legislatures are not consistent in defining the objectives of the state planning process or the role of state planning agencies.

The legislative branch is neither deeply involved nor firmly committed to state planning.

There is no strong commitment to state planning throughout the executive branch although many administrative agencies are involved in the planning process.

State planning agencies are not receiving strong financial or operational support. Their activities are hindered by inadequate funding and staffing, a lack of cooperation from both executive and legislative branches, and a climate of government that views planning as unnecessary or impossible.

The performance of state planning agencies is inconsistent and inadequate. Their programs and activities are not relevant to the decision-making process and do not discharge the responsibilities assigned to them by legislative and executive authority. (6)

The results of this survey not only identified the state planning agency itself as "an obstacle to effective state planning" (in seventeen states), but only twenty-three state planning agencies—less than half—were viewed as "relevant to the decision-making process."

A SHIFT IN LOCATION

Despite these readings on how those in state government view the process and impact of state planning, it still remains a visible and necessary portion of most state government reform packages. More importantly, evidence indicates that state planning agencies now have a greater opportunity, than ever before, to aid decisionmakers at the highest levels in state government, partially due to their now locations closer to the action.

Since 1960, there has been a dramatic shift in the organizational status of planning in state government. Table 1, "Location of State Planning Agencies," presents data from four recent years, 1960, 1965, 1967, and 1969. These data were obtained through a content analysis of each state's enabling legislation during the period for the Institute study.

TABLE 1.—LOCATION OF STATE PLANNING AGENCY

Location	1960	1965	1967	1969
Governor's office	3	11	18	20
Department of administration or finance	2	2	6	7
Department of community affairs	0	0	2	3
Department of commerce, development, or planning and development agencies	23	27	15	13
Independent planning agency	5	7	6	5
Other agencies	4	1	2	2
Total, State planning agencies	37	48	49	50

The table indicates that between 1960 and 1969, thirteen states added state planning agencies; thirty-one states changed the location of their agencies; and, only eleven maintained existing arrangements.

In line with current theory, the trend is to place the function as close to the governor and his fiscal and management arm as is possible. Considerable residue remains, however, from the practice of the 1940's and 1950's of placing planning in development agencies. In 1960, only five states had their planning agencies located in or close to the governor's office; by 1969, twenty-seven states had such an arrangement.

The beginnings of a corollary trend, establishing planning agencies in departments of community or urban affairs, was evident between 1965 and 1969 as three states opted for such an arrangement. These new departments are usually closely tied to the governor both in personnel, programs, style, and power, and therefore appear to be serving as key gubernatorial agencies. (7)

At the same time, the more traditional pattern of locating planning agencies in departments of commerce or development, or as independent agencies entirely, went from twenty-eight states in 1960, to thirty-four in 1965, followed by a marked shift back to eighteen by 1969. The moves were most significant in departments of commerce or development, which housed twenty-seven planning offices in 1965 and only thirteen by 1969. The rapid growth in the number of state planning agencies that are gubernatorial staff services has been accomplished by a concomitant decrease in the number of agencies located outside direct gubernatorial control.

THE LEGISLATIVE MANDATE

Table 2, "Legislative Intent and Planning Agency Activity," indicates how few agencies are meeting their legislative charge. Data are based on the Institute's analysis of state planning agency enabling legislation and reports from field interviews.

TABLE 2.—LEGISLATIVE INTENT AND PLANNING AGENCY ACTIVITIES, SUMMER 1967 (BY NUMBER OF STATES)

Activity areas	(A) Those assigned the activity by legislation	(B) Those assigned and performing the activity	(C) Those not assigned but are performing the activity	(D) Total State agencies performing the activity	(E) Those assigned but not performing the activity (A minus B)
Providing information or research services	43	22	3	25	21
Preparing a comprehensive State plan	36	18	5	23	18
Preparing State functional plans	30	12	3	15	18
Advising the Governor on policy and programs	39	22	3	25	17
Local planning assistance	40	32	3	35	8
Regional planning assistance	29	21	10	31	8
Coordinating State functional agency programs	28	22	11	33	6

[1] Figures in col. A reflect information from 46 States in 5 activity areas and from 47 States in 2 activity areas.

The gaps between those responsibilities assigned and those actually executed are especially apparent in certain areas. Despite enabling legislation mandating the activities, twenty-one state agencies are not providing information or research services, eighteen are not preparing a comprehensive state plan or state functional plans, and seventeen are not advising governors on policy and programs. Preparing state functional plans may well be too broad a charge. Less than a third of the state agencies are assigned this type of responsibility in six to fifteen functional areas, and a third are assigned the role in as many as sixteen to twenty-five areas. Sheer numbers of programs and agencies involved would seem to preclude such an effort. Yet, in some key broad functional areas such as health planning, it may be incumbent on the state planning agency to carry out the planning function.

But laxity in the other three activities—preparing a comprehensive state plan, advising the governor on policy and programs, and providing information and research services—is a serious indictment. It bodes ill for state planning agencies because: (1) these are key areas of the state planning function particularly when legally prescribed; (2) the credibility of any agency is impaired when it

fails to meet its responsibilities; and (3) failing to perform assigned functions means they have to be carried out elsewhere in state government or not at all. The many problems confronting the states suggest that these functions are not being carried out in systematic fashion.

Table 2 also supports the observation that state planning agencies find it easier to cope with coordinating activities and local (or regional) planning than with goals and policy development. The high number of agencies (thirty-three) coordinating various state line agency programs and the low number (six) ignoring that assigned responsibility indicate that planning offices are willing to make coordination a positive part of their programs. On the positive side, coordination performs a necessary service in governmental systems that are highly complex, interrelated, and frequently confusing. To the various agencies seeking to maintain their autonomy, coordination could provide the mechanism and framework that an autonomous agency needs to define its role within the larger political system. State planning agencies performing the coordinaton activity are probably aware of its practical necessity for agency survival, above and beyond its status as a "good government" reform goal. Whatever agencies' views on coordination, this activity can make a contribution to the goal of better state government. In the long run, it may not be fair to consider state planning agencies' failures to fulfill a particular set of legislative mandates as weaknesses when a larger goal is a practical possibility.

Table 2 also suggests that new trends of training and socialization in planning schools might alleviate problems for state planning agencies. The break between relatively high and low levels of nonperformance occurs between advising the governor on policy and programs and local and regional planning and assistance (columns *D* and *E*). In addition to the coordination function, the highest performance levels (column *D*) are in local and regional planning assistance, the areas in which professionally trained planners have been schooled. The new demands of providing adequate and accurate information, developing a more comprehensive view of state government activities, and advising the governor on policy and programs may well call for not only new styles in curricula, but also a different type of person to be called a planner.

SOURCES OF SUPPORT—CONTACT AND RECEPTIVITY

Two sets of data collected by the Institute help determine which parts of state government rely on the state planning agency: (1) 1967 field interviews indicated which parts of state government were most receptive to the concept of planning, and (2) a 1968 mail questionnaire to each chief state planning officer asked with whom his agency had frequent contacts. (8)

The data identify areas of receptivity and frequent contact by major areas of state government:

Area of receptivity (9) and number of states		*Area of frequent contact and number of states*	
Governor and staff	20	Governor and staff	30
Administrative agencies	9	Administrative agencies	35
Legislature	9	Legislature	17
None indicated	12	None indicated	3

Receptivity and contact with the executive branch far outweigh legislative branch involvement, underlining the basic executive branch bias of state planning agencies. The data do not disprove the often prescribed role of planning agencies as staff aids to the executive rather than the legislative branch. This, of course, accords with good planning theory—placing the planning function as close as possible to the decisionmakers in the executive branch—and with the current trend in locational patterns in the fifty states as shown in Table 1. On the other hand, it raises questions as to whether state legislatures will support agencies at these considerably lower levels of receptivity and contact.

OBSTACLES TO EFFECTIVE STATE PLANNING

Table 3, "Obstacles to Effective State Planning," categorizes obstacles reported in fifty states by Institute field interviewers and further defines the degree of reliance upon the state planning agency by segments of state government.

TABLE 3.—OBSTACLES TO EFFECTIVE STATE PLANNING, SUMMER 1967 (BY NUMBER OF STATES) [1]

Nature of obstacle	Only obstacle mentioned	1 of 2 obstacles mentioned	Total mentions
Climate of government [2]	8	12	20
State planning agency	12	5	17
Other administrative agencies	5	6	11
Legislature	3	5	8
Governor	1	6	7
Partisan conflict	0	4	4
Total	29	38	67

[1] These data were obtained by field interviews in each State during the summer of 1967. All but 2 States were identified as having obstacles to an effective State planning process: 29 were identified with 1 and 18 with 2 obstacles. Some were noted with more than 2, but only those indicated as primary obstacles were included.

[2] This category includes those States for which obsolete structure of government; lack of concern, understanding, and cooperation throughout government; a feeling that planning is unnecessary; and general antigovernment and antiplanning biases were cited as obstacles.

The climate of government and the state planning agency are clearly identified as major obstacles, comprising more than half the obstacles mentioned in the "total mention" column. While "climate of government" is a residual category used to pinpoint such items as obsolete structure of government, lack of concern, understanding, and cooperation in government, a feeling that planning is unnecessary, and a general antiplanning bias, it includes areas that effective state planning can move to combat. According to these data, state planning has a poor image; either people are ignorant of the job these agencies have done or the agencies have failed to do the job. The fact that seventeen state planning agencies themselves are cited as major obstacles to an effective state planning process strongly suggests the latter.

"Other administrative agencies," the "legislature," and the "governor," when grouped, make up 40 percent of the "total mentions" of obstacles to an effective state planning process. These are the three institutions in state government with which the state planning agency must work closely and from whom the agency must receive adequate support if the planning process is to be successful. Eighteen of twenty-six obstacles identified in this group lie in the executive branch—the specific segment of state government the planning agency is designed to serve as staff, both by intent and location.

It is interesting to note that "partisan conflict" is not identified as a major obstacle to the state planning process. It was never mentioned as the single most important obstacle and appears as one of the two obstacles mentioned in only four states.

The figures do not paint a pretty picture. When one obstacle is mentioned, that obstacle is the planning agency in 40 percent of the cases. When two obstacles are mentioned, the agency is one of them in 13 percent of the cases. In seventeen out of forty-eight states (35 percent), the state planning agency itself was a significant obstacle to an effective planning process. Either state planning agencies are not conducting activities that contribute to sound planning or too many state government officials feel this is the case. In either event, it is not an encouraging commentary on several decades of effort.

THE ROLE OF LOCATION

The location of the planning agency, a long debated question, appears to be settled by locational shifts during the 1960's. The following two tables examine the relevance, performance, and financial supports levels of state planning agencies located in and outside the governor's office or his department of administration, finance, or budget. In some cases the data were incomplete, but they represent the best available information on the agencies.

Table 4 demonstrates that while access to the governor's office does not guarantee significant levels of performance or relevance to decision-making, it does relate positively to these two indicators of effort. Less than half (twenty-three) of the state planning agencies are considered relevant to the decision-making process and fourteen of these are located under the governor's direct control. Only four of the sixteen agencies considered not relevant to the decision-making process are actually located close to the governor. The average performance

level is highest (5.0) for agencies that are close to the governor and considered relevant. Performance level is lowest (3.0) for agencies that are close to the governor but not viewed as relevant. Average performance for relevant agencies outside the governor's office is about the same as for nonrelevant agencies in the governor's office. Those outside direct gubernatorial control and judged not relevant are at the midpoint (3.9) in agency performance.

TABLE 4.—AVERAGE PERFORMANCE OF STATE PLANNING AGENCIES BY LOCATION OF AGENCY AND RELEVANCE TO THE DECISIONMAKING PROCESS [1]

State planning agency relevant to the decision-making process [2]	In Governor's office or department of administration, finance, or budget		Outside Governor's office or department of administration, finance, or budget		Totals	
	Number [3]	Average performance [4]	Number	Average performance	Number	Average performance
Yes	14	5.0	9	3.1	23	4.3
No	4	3.0	12	3.9	16	3.7
Not adequately determined	6	4.0	4	3.5	10	3.8
Total	24	4.4	25	3.6	49	4.0

[1] Data obtained from enabling legislation as of 1967. All States, except Arizona which had no legislation, are included.
[2] Data obtained from field interviews in each State during summer 1967.
[3] N=the number of States within that category.
[4] AP=average performance of the States within the particular category as measured by the State planning agencies fulfillment of legislative intent. (See also table 2.) The 7 areas in which performance was measured were: preparing State functional plans; advising Governor on policy and programs; preparing a comprehensive State plan; providing information or research services; local planning assistance; regional planning assistance; and coordinating State agency programs. The highest possible value would be 7, if the legislation assigned and the agency were fulfilling each. Data obtained from enabling legislation and field interviews.

These data suggest that there is a connection between location in the governor's office, higher level of agency performance, and greater tendency to be relevant to the decision-making process. This provides reform advocates with some tangible evidence that placing state planning agencies close to the governors can lead in the direction of desired results.

Table 5, based on thirty-one states, presents partial yet intriguing data. In this table, planning agency location is related to the judged relevancy of the agency in the decision-making process as well as to the average fiscal support of the agency. An initial suggestion is that agencies deemed relevant to the decision-making process have an expenditure support level nearly double that of other state planning agencies.

TABLE 5.—AVERAGE SUPPORT LEVEL OF STATE PLANNING AGENCIES BY LOCATION OF AGENCY AND RELEVANCE TO THE DECISIONMAKING PROCESS [1]

State planning agency relevant to the decisionmaking process [2]	In Governor's office or department of administration, finance, or budget		Outside Governor's office or department of administration, finance, or budget		Total	
	Number [3]	Average support [4]	Number	Average support [4]	Number	Average support [4]
Yes	6	0.60	4	2.00	10	1.2
No	3	.33	10	.80	13	.69
Not adequately determined	6	.66	2	.50	8	.63
Total	15	.60	16	1.06	31	.84

[1] Data obtained from enabling legislation as of 1967. All States, except Arizona which had no legislation, are included.
[2] Data obtained from field interviews in each State during summer 1967.
[3] Number of States within that category.
[4] Average support score for States within that category. Individual scores obtained by dividing total general State expenditures into State planning agency expenditures for the fiscal year 1965–66. To categorize these percentages, a 3 was assigned to the 1 State where the percentage was 0.25 percent; a 2 was assigned to 6 States where the percentage ranged between 0.15 percent and 0.25 percent; a 1 was assigned to the 11 States where it ranged between 0.05 percent and 0.14 percent; and a 0 was assigned to 13 States where it was below 0.05 percent. Data on State government expenditures were developed from U.S. Census Bureau, Government Finances in 1965–66 (Washington: U.S. Government Printing Office, 1967), chart 18; and, the data on State planning agency expenditures were developed from American Society of Planning Officials, ASPO Planning Advisory Service (Chicago: ASPO, April 1967), Rept. No. 221, table 17. Data on the latter were available on only 31 States.

Yet more to the point may be the suggestion that location outside the governor's immediate control seems to be related to a much higher expenditure support level. One interpretation of this unexpected result is that those agencies furthest removed from gubernatorial control have more freedom to develop additional expenditure support, especially under the various federal grand-in-aid programs that support state planning activities.

The implication from data in Tables 4 and 5 is that location is of paramount importance. When located in or near the governor's office, state planning agencies are more apt to carry out their legislative mandates, to be relevant to the decision-making process, and to operate at low levels of expenditure. Conversely, location outside gubernatorial control tends to be associated with a lower level of performance in fulfilling legislative mandate, a lesser degree of relevance to the decision-making process, and a higher level of expenditure.

In other words, fiscal support is less important than location and performance. This may jar those calling for higher levels of support to upgrade this function. But it is a happy finding for those advocating, both in theory and practice, that state planning is a staff function which should be close to the top decision-makers in state government.

NEW DIRECTIONS?

State planning is still young. It is maturing as a staff function, rapidly moving closer to the chief decisionmakers in the states. When it is so located, evidence indicates that the chances for the successful performance of the agency are greater than when it is located elsewhere.

Yet, there are disquieting signs. Liaison with legislatures—fulfillment of legislative intent, receptivity to planning by the legislature, legislator-planner contact—is low. At least one state planning director in a major midwestern state recognized this problem when he indicated at a 1967 meeting that, "I spend a lot of time 'working the legislature,' showing them what we are about and helping them. Sure it's politics, but I'm building support for my agency." In our opinion, this view should prevail in more state planning efforts.

We would conclude that the many obstacles to effective state planning—whether they be governors, administrative agencies, the planning agencies themselves, or the general "climate of government"—can be overcome. In fact, they must be for they form the crux of the state planning process—access and acceptability.

The key lies in state planners and agency fulfillment of its broad role. State planners should look to staff needs in the decision-making process and fill the gaps in their presently assigned responsibilities. This means creating a climate of opinion that makes the planning process not only acceptable, but an integral part of state government activities. Planners, in other words, must educate state government about their own utility.

For those who train planners, we see a call to broaden the perspectives and capabilities of their students. Special techniques and a particularistic disciplinary view of planning will no longer suffice. A sense of policy, politics, and management must become part of the curricula because it is so necessary in the practical activities of planners. As state leaders call for an increased input from state planning to their decision processes, professional planners must respond, or new sources of planning counsel will be sought.

Author's Note: *This article will also appear in Thad L. Beyle and George T. Lathrop (eds.)*, Politics and planning (*New York: The Odyssey Press, 1970*).

FOOTNOTES

1. See in particular, U.S. Natural Resources Board, *State Planning, A Review of Activities and Progress* (Washington: Government Printing Office, 1935); John E. Ivey, Jr., "State Planning: Experiments in the American Planning Process" (unpublished Ph. D. dissertation, Department of Sociology, University of North Carolina, 1945); Harvey S. Perloff, *Education for Planning: City, State, and Regional* (Baltimore: The Johns Hopkins Press for Resources for the Future, Inc., 1957); American Institute of Planners Committee on State Planning, "State Planning: Its Functions and Organization," *Journal of the American Institute of Planners*, XXV (November 1959), 207–14; and, Thomas J. Anton, "State Planning, Gubernatorial Leadership and Federal Funds: Three Cases," in *The Office of Governor* (Urbana: Institute of Government and Public Affairs, University of Illinois, May, 1963), for discussion of the history and proposed role of state planning.

2. "A Study of American States" was a two-year study (1965–1967) of the present condition and future potential of the American States. It was funded by joint grants from the Ford Foundation and the Carnegie Corporation and was headquartered at Duke

University. See, Terry Sanford, *Storm Over The States* (New York: McGraw-Hill Book Co., 1967), for the report, recommendations, and activities of the study.

3. See, Thad L. Beyle, "Gubernatorial Power: A View from the Governor's Chair," *Public Administration Review,* XXVII (November–December 1968), 540–5, for a presentation of these data.

4. The collection, tabulation, and analysis of data for the survey were supervised by the authors. The survey was conducted under a U.S. Department of Housing and Urban Development Urban Planning and Research Demonstration contract awarded under the provisions of Section 701(b) of the Housing Act of 1954, as amended. Its components included: (1) field interviews with eighteen governors and 677 persons involved in charting and reporting on the direction of all fifty state governments; (2) a detailed content analysis of enabling legislation for officially designated state planning agencies; and (3) supplementary questionnaires designed to verify and expand information supplied by state planning agency officials.

The Institute was an independent, non-profit organization created in January 1967 to strengthen state government by stimulating comprehensive, long-range planning activities in all the states. It was funded by the Carnegie Corporation of New York and headquartered at the University of North Carolina (Chapel Hill). Former Governor of New Mexico, Jack M. Campbell, served as Chairman and Phillip V. Maher as Executive Director. The views and interpretations in this article are solely those of the authors and in no way reflect upon the Institute.

5. *State Planning: A Quest for Relevance* (Chapel Hill: Institute on State Planning for the 1970's, 1969), p. ii.

6. *Ibid.,* pp. ii–iii.

7. These states are Missouri, New Jersey, and Washington. The relationship between the department and the governor is especially close in New Jersey. The political rationale for this kind of relationship is fairly evident as governors are increasingly becoming urban or metropolitan oriented. Robert C. Wood talked to this point in his 1949 doctoral dissertation. "The Metropolitan Governor" (unpublished, Department of Government, Harvard University).

8. *Frequent contacts* were defined as daily or weekly contact in carrying out official duties; *infrequent contacts* as monthly, seldom, or nonexistent.

9. This category includes the governor and his immediate staff, including heads of departments of administration, finance, and budget. The category of administration agencies includes all references to agencies with functional, line activities.

State of Hawaii Use Districts Review

(Prepared for the State of Hawaii Land Use Commission, by Eckbo, Dean, Austin and Williams, 1969)

1. STATE PLANNING AND THE LAND USE LAW

A. History

Hawaii was the first of the fifty states to have a General Plan. It was prepared by the State Planning Office, now the Department of Planning and Economic Development, in response to the State Planning Act of 1957, was submitted to the Governor in January of 1961 and subsequently approved by resolution of the Legislature. The Land Use Law is a result of this first State General Plan, perhaps its major accomplishment.

Some of the actions leading to the passage of the Land Use Law resulted from concerns and discussions predating World War II. In the post-World War II period, there was a growing awareness of the need for government action in controlling land uses because of the very limited size of the islands.

The 1957 Territorial Legislature passed three basic acts related to land use. Act 35 established a research program at the University of Hawaii, later to become known as the Land Study Bureau. This act directed the Bureau to classify all lands of the Territory in order to provide a sound basis for subsequent land use studies. Since agriculture was the primary use, the initial work of the Bureau concentrated on the classifications of agricultural land. These studies were of great value in establishing the original district boundaries and in the review.

Next the Legislature established the Territorial Planning Office and directed it to prepare a General Plan as a guide for physical and economic development. Then in 1957 the Territorial Legislature enacted a comprehensive forest and water reserve zoning law to be administered by the Board of Commissioners of Agriculture and Forestry, now the Department of Land and Natural Resources.

This act, Act 234, directed the defining of boundaries of Forest and Water Reserve Zones, the creation of subzones and the establishing and enforcing of regulations for the use of such zones. This is dealt with in some detail in Chapter 9, "Conservation District Issues." The act also granted the general powers of zoning to County Boards of Supervisors for areas of their counties that were not included in the Forest and Water Reserves.

During the preparation of the State General Plan of 1961 certain land use issues became clear, as follows:

1. Development of land for urban uses, in many cases tended to occur in areas where it was uneconomical for public agencies to provide proper and adequate service facilities, and there was a consequent lag in the provision of such facilities, to the detriment of the general welfare and convenience;
2. Development of land for urban uses, in many cases, occurred on land having a higher capacity for contributing to the basic economy of the State (meaning agriculture) than the uses which were developed thereon;
3. There was adequate land on all the islands of the State, for full development of the urban uses forecast for the next twenty years, without using the lands with high capacity for intensive cultivation;
4. Development of urban areas should be encouraged in an orderly and relatively compact manner in order to provide for economy and efficiency in public services and utilities;
5. Land not required at any given time for urban or intensive agricultural uses should receive special attention regarding land management practices and use.

B. The State general plan revision program

In 1967, the Department of Planning and Economic Development published the State General Plan Revision Program. The program is reviewed in the chapter, "State and County Interrelations in Planning and Zoning," and will be referred to throughout this report because of its relationship to land use, economic and tax issues.

C. Provisions of the Land Use Law

In order to understand the major conclusions and recommendations that follow this chapter, it is desirable that some of the provisions of the Law be briefly described.

Of the four districts provided, Urban Districts are generally defined as lands in urban use with sufficient reserve areas to accommodate foreseeable growth. Agriculture Districts include lands with a high capacity for intensive cultivation. Conservation Districts are comprised primarily of lands in the existing forest and water reserve zones. Rural Districts, the result of the amendment to the Law in 1963, are defined as lands composed primarily of small farms mixed with very low density residential lots with a minimum lot size of one-half acre.

Land uses within Urban Districts are administered solely by the counties [1] in the agriculture and rural districts land uses are administered jointly by the counties and the State Land Use Commission. In the conservation districts, land uses are administered solely by the State Department of Land and Natural Resources.

D. Administration

The administration of land use control in Hawaii in complex. The Counties of Hawaii, Maui, Kauai and the City and County of Honolulu, the Land Use Commission, the Department of Planning and Economic Development, the Department of Land and Natural Resources and the Department of Taxation are all inextricably involved. In addition, the public, in variety of different roles such as property owner, lessee developer, community participant, conservationist and responsible citizen, is also involved. Clearly there are innumerable opinions and conflicting interests to be resolved. The problems neither begin nor end with the designation of lines on maps which represent land use district boundaries.

Once established, district boundaries can be changed by the Land Use Commission through a petition and public hearing process. The procedure includes the County Planning Commission recommendation, a public hearing, and action by the Land Use Commission requiring six affirmative votes for approval. In Agriculture and Rural Districts certain uses are permitted without a change in boundary. Unusual and reasonable uses may be permitted through special permits requiring a public hearing and both county and Land Use Commission approval. Our recommendations for boundary changes as a result of this study are presented in Chapters 4 through 7.

The Rules of Practice and Procedure govern proceedings before the Land Use Commission. The State Land Use District Regulations clarify and amplify provisions of the Land Use Law. These may be amended in the same manner as the district boundaries. Recommendations for changes in these documents have

[1] Hawaii has two levels of government in addition to the Federal Government—the State and the counties. (Honolulu is officially a city and county, however.)

also been made a part of this review and will be found in Chapter 3. Both documents will be found, as amended, in the Appendix.

E. Taxation

One of the intentions of the Law is that property tax assessments are means to encourage rather than penalize those who make the best use of their lands. The Land Use Commission informs the Department of Taxation of changes in district boundaries and special permits so that the department can give consideration to the existing and permitted uses of land in making its assessments.

Another important section of the Law provides for the dedication of land for agricultural purposes, whereby a farmer who dedicates his land for a specific agricultural use for ten years may receive a reduction in his assessment on the basis of "agricultural use."

II. SCOPE OF THE STUDY

Other items of primary importance in the review program are listed below. They are dealt with in detail later in this report.

A. Analysis of studies prepared by public and private sectors regarding resources, urbanization, transportation, population, economics and tourism;

B. Analysis of the State General Plan Revision Program and County General Plans, ordinances and regulations;

C. Gathering and analysis of personal opinions about land use and the Land Use Law;

D. Analysis of previous petitions for boundary changes, special permit applications in Agriculture and Rural Districts, and use applications in the Conservation Districts;

E. Analysis of legal opinions and law suits that have been filed in relation to the Land Use Law;

F. Analysis of Regulation No. 4 of the Department of Land and Natural Resources which is used to guide land uses in the Conservation Districts;

G. A review of the effectiveness of the Land Use Law and its administration;

H. A review of the Law together with amendments to it, related legislative resolutions and unsuccessful amendments proposed in the past.

III. METHODS OF WORK

A. Objectives

An important part of the program was the review of the regulations and district boundaries. Our goal in reviewing these was to improve and clarify the criteria used in establishing district boundaries and reviewing petitions for boundary changes and special permits. The Land Use Law provides that the Commission establish standards for determining boundaries and regulations prescribing the uses in the districts. It specifically calls for the periodic review of the regulations and of the classification and districting of all lands. For the purpose of improving the ways of carrying out the intent and directives of the Law, the review, by definition, had to be made within the parameters of the Law.

The work was carried out under certain principles considered to be of primary importance to the success of the program. Underlying these principles is a philosophy that the elements of land, air and sea are resources to be managed for the welfare of present and future generations; and that when short term interests of a few are in conflict with long range interests of the majority, the long range interests should prevail.

Many resources are continually renewable if wisely managed. Some resources are permanently lost if depleted or sufficiently damaged. It is therefore desirable to find the inherent factors related to each particular resource that should place restraints or limitations on their use in order to keep them continually viable. Since we are concerned with land use for habitation, our interest is in identifying areas where settlement should and should not take place, and further defining the kinds of development that can take place without destroying the qualities of the natural resources and environment.

B. Coordination of interests

The study was related to the State and County General Plan programs and State and local goals insofar as they were not in conflict with each other, with the law, or with the principles of resource management outlined above.

Early in the work period we spent considerable time interviewing people throughout the State. Our goal was to discover and formulate a list of primary issues that could serve as a framework for subsequent research study, discussion and solution. These issues did, in fact, provide the basis for the questions contained in the attitude survey and later discussions with the Land Use Commission. These responses, in turn, led to recommendations for certain changes in the Rules of Practice and Procedure, and the Land Use District Regulations and District Boundaries.

The work was carried out in close cooperation with those concerned with the operations of the Law, specifically including State and County Planning agencies, Department of Land and Natural Resources, Department of Taxation, Land Study Bureau, conservation and civic groups, major landowners, developers, and legislators, to name but a few. For instance, all major landowners and developers were asked for specific information about future development plans so they could be evaluated. Future plans of other landowners and developers were presented during the public hearings.

Recommendations for changes in regulations and boundaries were tested in the field and reviewed with the Land Use Commission and County planning agencies in preliminary form before proceeding with the final boundary remapping.

Meetings with each County Planning Commission during the preliminary and final phases of the study in order to keep them abreast of progress and also to get their opinions, and frequent meetings with others concerned with the Land Use Law including property owners and developers prepared most parties for productive participation in the public hearings. The proposed new boundaries and regulations were presented during the late spring of 1969 at public hearings in each county. At these hearings the rationale behind the new regulations and boundaries was presented and discussed and arguments in favor of or against were received by the Land Use Commission. After the hearing in a series of action meetings. District Regulations and Rules of Practice and Procedure for another five year period were adopted by the Land Use Commission.

Chapter 2. Findings and Conclusions

I. Introduction

Undoubtedly this project has presented one of the most important recent opportunities for a land use study because it has dealt with a unique law which other states should seriously consider. Hawaii is the only state with virtually all of the tools, in law and in operation, for protection of irreplaceable land resources. It is through the wisdom of the 1961 State Legislature which passed the Law, and subsequent Legislatures which have side-tracked crippling amendments, that the people of the State can look forward to the future with hope that the great scenic and natural resources of the Islands will not be spoiled. This is certainly not to guarantee such a heavenly state, however.

There are strong economic forces at work for development of the most sought after areas of the Islands. These are influenced by the tax system, stimulated by public expenditures and ultimately controlled by the police power residing in the hands of the State Land Use Commission, the County Planning Commissions, County Councils and the Land Board of the Department of Land and Natural Resources. In the hands of the few people making up these commissions and boards rests enormous power, but along with that power goes unenviable responsibilities, hardships and often thankless public service.

It has been said that the Land Use Law was the result of a coalition between conservation forces and landowners. If this is so, it is our opinion that once the Law was passed, its supporters rapidly forgot it, for we have seen very few of them at Land Use Commission meetings except when their personal interests were at stake.

We would hazard a guess that many State Legislators do not know the basic provisions of the Law, and we cite these opinions only to point out that the members of the Land Use Commission must on many occasions, feel very alone and without support when they are trying to carry out the conservation and preservation intentions of the Law. We have observed that Landowners, developers, attorneys, architects and planners can be most persuasive. And we can hear, in our imagination, the Commissioners' telephones ringing late at night before important decision days. We have great sympathy for those who have to make these decisions.

Our job as technicians, however, was not to make the final decisions, but to present recommendations, alternatives and the consequences of decisions on these alternatives. When we failed to be convincing in what we thought was right, we had a nagging feeling that we did not fully define the consequences of the paths to be taken.

At the present time, Hawaii is certainly as difficult a place as any to make land use decisions. On one hand, there is the incredibly beautiful landscape and climate (and one of the more desirable social climates). On the other hand, there is a relatively limited supply of land in general, a *very* limited supply of prime agricultural land, a *very* limited supply of beautiful beach land, and all of it under enormous pressure for housing and resort development. The pressures are the result of population growth and shifts, the new ease of air travel, available leisure time, and easy money for travel, vacationing and investment. The State's single resource in the greatest danger of being depeleted is its natural beauty.

With an economy that could be decimated by a sudden drop in military expenditures or a blight on the cane sugar market, it is no wonder that the State is trying to build its tourist industry as a hedge. But tourism tends to displace residents, uses up the most attractive beach areas first, and in itself is often viewed as a fiickle part of the economy. The clear choice is between development and conservation.

With a burgeoning population and most of it on Oahu, the pressure on precious cane land is apparent and severe. The choice again is clear, but the solution is a difficult one because none of the solutions are satisfactory to everyone. The alternatives are: to let the urban areas expand into the countryside; to keep urban boundaries as they are and force Honolulu people into areas of higher densities; or to limit population—not a happy selection.

If our private and public goals were high enough we would have institutionalized ways of simultaneously urbanizing while protecting the essential natural environment. In other words, man and nature could theoretically live in harmony. But we do not know enough about how to do these things yet, either on the government or private development level (with few notable exceptions); so for the present, until these desires and tools are better developed, the key to the future is restraint. This is the essence of the police power. It is the method Hawaii has installed to protect its land resources and it is working. We see no alternative but to improve the present methods, and in this regard we hope our joint efforts will prove of value.

Our basic ideas for improving statewide zoning and the environment within which it functions might be summed up in the following way.

A. For land use commission action:

1. Foster as widespread agreement or objectives as possible and maintain a high level of communication with the public and related agencies.
2. Maintain District Regulations and Rules of Practice and Procedure of the highest order of clarity and equity.
3. Maintain a logical system of Land Use Districts based upon the objectives of the law and the highest principles of land use planning.
4. Develop a spirit of cooperation among the agencies involved in administering the Land Use Law.

B. For legislative action:

1. Develop a state population policy as a prerequisite to economic and land use planning.
2. Continue to support a high level of economic and land use planning as necessary prerequisites of zoning.
3. Develop well defined and more equitable tax and assessment systems to assist the implementation of state planning and zoning.

The conclusions following in this chapter, the recommendations in the next chapters and the text that appears later in this report will elucidate these and many peripheral issues and concepts.

II. GENERAL SUMMARY

A. Objectives of the land use law

In our opinion, the basic objectives of the Land Use Law, as contained in "Eection 1., Findings and Declaration of Purpose" Act 187–SLH 1961, are as important and valid today as they were when enacted eight years ago. These objectives are to preserve and protect the limited land resources of the State while

encouraging development best suited to the public welfare, and to use real property assessment methods in a complementary way. We believe that the interviews and survey of attitudes support this point of view although at the same time, they express some significant criticisms.

However, while we make this statement regarding public support for the original intent of the Law, we do not think that the matter of goals and objectives for land use control is a closed issue. For instance, we have found that people have divided opinions about the purposes of the Law. We note from personal interviews that often people do not really understand Land Use Commission actions and that this is due, in part, to not knowing the Commission's goals. Therefore, we feel that it is important that the Commission develop and circulate a statement of goals in support of the Law. We also think that a reaffirmation of the intent of the Law by the Legislature would help reinforce Commission direction and action, those of other related public agencies, and the private sector as well.

B. Economic development and growth

An understanding of the economic structure and potential of Hawaii is essential for the development of sound planning policy in general and sound land use policy in particular. Hawaii, through its Department of Planning and Economic Development, has already done imaginative work to provide this understanding. It is important to relate economic goals to other planning goals and to show this relationship in the perspective of competing demands for the use of land as a scarce, and in Hawaii perhaps the most scarce, economic resource.

Historically Hawaii has had a limited economy based on federal government expenditures and agriculture. It is trying very hard, and succeeding in a number of directions, to diversify that base. The tourist industry is receiving main support and emphasis at the present time and is in a stage of phenomenal growth. It provides special opportunities and challenges. One of the opportunities is that it can help in the development of the neighbor islands. One of the challenges is for the State to retain its freedom of action in the face of a tremendous flow of investment capital from the mainland and elsewhere. Because of the concentration of population on Oahu, there is the potential of a conscious state policy to direct tourist facility growth to the neighbor islands. This is being done to the extent that tourist destination area studies and airport, water and highway developments are all being guided to this end. But even greater efforts will be required to save both the quality of life that now exists on Oahu and build the economic and cultural life of the neighbor islands.

TABLE 1.—SELECTED ECONOMIC GROWTH INDICATORS

Year	Per capita personal income [1]	Telephones [2]	Value of all agricultural products (in thousands) [3]	Total value of construction (in millions) [4]
1955	$1,837	143,063	$297,944	[5] $174.4
1961	2,488	221,599	307,530	267.3
1967	3,337	323,894	374,417	346.8
Percent increase	81	126	26	99

[1] U.S. Department of Commerce, Survey of Current Business, August 1968.
[2] Hawaiian Telephone Co.
[3] Department of Agriculture, Crop and Livestock Reporting Service.
[4] Department of Taxation, Tax Base for Certain Taxes, Year Ending December 31.
[5] 1958.

Hawaii's population growth in dramatic. Coupled with a growing economy and full employment, it exerts demands for housing, services and new land conversions to urban purposes. The population of the State increased from 499,794 (1950 census) to 632,772 (1960 census), an increase of 26 percent. The 1968 population is estimated at 725,000 by the Department of Planning and Economic Development, an increase of 14 percent over 1960.

A number of selected economic indicators illustrate the growth of Hawaii's economy in the years preceding and following the passage of the Land Use Law in 1961, as shown on Table 1.

Employment increases have likewise been most dramatic during this period, having risen from the 1958 total on Oahu of 156,570 to a 1966 total of 220,210, a

41 percent increase. However, statistics alone may be very misleading because of the relatively high proportion of families in which more than one member is employed.

C. Attitudes

In the course of our study, many people were interviewed throughout the State, and 1500 questionnaires were sent out to interested parties from whom 570 usable returns were received. For details, refer to Chapter 16, "Attitudes Regarding Land Use and the Land Use Law".

In the interviews there was general agreement that the Law was succeeding, that it had not hurt economic development, that prime agricultural land should be preserved, that preservation of scenic and historic places was beneficial to the economy, that tourism should be encouraged, and that the Law favors large landowners and developers.

Many divided opinions were expressed on ways to improve the Law and the main points of conflict about the Law. There were numerous recommendations, but no significant consensus. Improvement of communication, a public information program and a speeding up of the petition processes were frequently recommended. The latter suggestion the Commission could experiment with; and if it proves feasible, request a change in the Law. Table 2 shows a comparison between the original and present Law and our proposal in processing time.

One significant conclusion from the interviews is that few people actually know the details of the Land Use Law, and as a result there is considerable confusion. No one envied the Commission's job. Nor did respondents who had complaints typically see simple solutions to the problems. Realtors and developers more often felt the pinch of controls than conservationists, who criticized the laxity of current regulations. There was, however, a general desire for clarification, consensus, and disciplined implementation of land use controls. The respondents were uninformed about the Law; they did not sense that the Law was the expression of an explicit set of popular goals and reliable methods; the respondents did not see the administration of the Law following a rigorous legal or ideological skelton of the popular expression.

TABLE 2.—LAND USE BOUNDARY CHANGE PETITION PROCESSING TIME

[Number of days]

	Original law	Present law as amended	Proposed experiment
Notification of county	0 to 5	0 to 5	0 to 5.
County recommendations	0 to 90	0 to 45	0 to 45.
Call for hearing	100 to 210	60 to 120	60 to 90.
Decision	45 to 90	45 to 90	30 to 60.
Total time	145 to 395	105 to 260	90 to 200.

Perhaps the most clear-cut expression of these anxieties is the widespread belief that the Commission is not free of favoritism. Many respondents indicated that the Commission was too susceptible to political and economic pressure. On the other hand, the Commission was more likely to be supported or even praised by staunch supporters of conservation goals.

This was one of a number of paradoxes. We believe they resolve themselves if one accepts the proposition that the problem of land use regulation is extremely difficult and complex. The anticipations of a growing population, and the accompanying pressures on land development, along with unresolved questions about the priorities in Hawaii's future, combined to produce a sense of futility. But the rewards of land use regulation can be economically satisfactory and can result in an environment of social and aesthetic quality. So perhaps the futility is born from unsatisfied high hopes. In fact, it is not reasonable to expect that goals will be shared by large sectors. The whole point of land use regulation is to adjust and harmonize conflicts in private objectives. The point of regulatory apparatus and incentive systems is to make the world livable in spite of persistent disagreements.

D. *The Effectiveness of the Law*

It would be interesting to speculate what would have happened in the past years, 1961–1969, if the Land Use Law had not been enacted. Processes the Law

has established have undoubtedly had a guiding effect on the location of new urban areas and a restraining effect on wasteful land use practices. Of course, the real question is how effective the Law has been.

One of the factors making it difficult to arrive at a conclusion is the knowledge that the counties are becoming more effective and are exerting more influence on land use than they did eight years ago. In the absence of the Law, they may have exerted more restraint than before the Law, but this is not measurable. There are certain measurements that can be taken into account, however.

With respect to county and Land Use Commission actions, it is possible to draw some comparisons, since the counties are required to make recommendations on the petitions for boundary changes. In the period of September 1, 1964 to September 1, 1968, on a statewide basis, out of 128 applications (9 withdrawn, leaving a net of 119) the counties voted complete approval of 95 petitions while the Land Use Commission voted partial approval of but 78. During the same period the counties voted partial approval of 9 while the Land Use Commission voted partial approval of 16. The totals of complete and partial approval are: the counties 104, the Land Use Commission 94. This indicates that the counties take a more liberal view toward total rezonings than the Land Use Commission, but are more stringent on partial approval, having denied but 12.5 percent to the Land Use Commission's 21 percent.

Growing populations and expanding economies characteristically generate real estate activity in terms of buying, selling, subdividing and building on open unurbanized land on the edges of cities. When there are no restraints this assumes a pattern that has been termed variously as leap-frogging or scatterization. It is a characteristic of fast growing mainland cities. The land ownership pattern of Hawaii, with most lands held in large ownerships, is one restraint that curbs these tendencies toward scatterization. However, the Land Use Law has also had considerable effect by its establishment of district boundaries as will be seen.

It could safely be assumed, for instance, that under the influence of a rapidly growing population, employment and economy, and without controls, there would be considerable scatterization, but this has not been the case. Instead there has been a growth into the open areas provided for in the initial establishment of Urban Districts, and little of the leap-frogging normally seen around mainland cities. The "Analysis of Administrative Actions", Chapter 17, provides county by county statistics to back up this assertion. In total, they indicate that where data were available, of 79 petitions for urban zoning approved by the Land Use Commission, 63 of these or 80 percent were adjacent to already urbanized areas.

It is estimated that there has been a population growth of approximately 153,000 persons on Oahu in the 1961–1968 period. Allowing about 9 acres per 100 persons.[2]

This would require approximately 13,770 acres. It can easily be seen that most of this growth has taken place within the original Urban Districts since only 1,616 acres have been added to them since.

The Land Study Bureau of the University of Hawaii in its reports on Urban Development on Oahu, 1946–1962 and 1962–1963, provides the following information on urbanization:

ADDITIONS OF NEW LAND TO THE URBANIZED AREAS OF OAHU, 1946–63

[In acres]

	1946–50	1951–55	1956–60	1961–63
Acreage	2,934.5	3,273.6	4,165.4	2,411.4
Average per year	587.0	655.0	833.0	602.0

Note: These are actual conversions from open to urbanized or subdivided land and do not include areas added to Urban Districts by the Land Use Commission that were not actually utilized for urban purposes.

In relation to the above figures, it is interesting to note that during the period 1964–1968 the Land Use Commission approved petitions for additions to the Urban Districts on Oahu totaling 1,616 acres, or an average of 404 acres per

[2] P. 77, Hawaii Land Use Districts, Harland Bartholomew & Associates, 1963. A standard developed for Oahu in the original land use district study, with which we concur.

year. A full understanding of this must take into account the tremendous pressures and market that exist for "a piece of Hawaii land". Obviously there are restraints at work and the Land Use Law is one of them.

On the basis of these figures alone, it would appear that the Land Use Law has had a significant restraining effect during the 1964–1968 period, after the "permanent" district boundaries were adopted in 1964. There are other factors bearing on this which should be taken into account, although it is difficult to make a measurement of the consequences of each.

First, the high cost of building because of labor, material and financing costs has had a restraining effect that has supported the maintenance of district boundaries.

Second, on April 12, 1969, the Land Use Commission approved a petition by Bishop and Austin Estates converting a total of 812 acres from Agriculture to Urban on Oahu (by the same action 728 acres were also converted from Agriculture to Conservation). Assuming, for statistical purposes only, that there are no more additions to the Urban Districts on Oahu, this rezoning will bring the 1964–1969 average up to 485 acres per year.

The following graph, which shows the numbers of residential lots in subdivisions of over 25 lots created throughout the State from 1960–1967, indicates perhaps more dramatically one of the highly speculative subdivisions of land principally on the Island of Hawaii where a runaway situation existed. It is interesting to note, however, that though these subdivisions reached low point in the 1963–1964 period, they have been steadily increasing since, and this trend would bear watching and corrective action.

It is abundantly clear that without the restraints the Law establishes, there would be enormous amounts of land wastefully subdivided, principally on the Island of Hawaii.

One of the purposes of the Law is to protect prime agricultural soils. During the period of September 1964 to September 1968, of the total number of petitions proposing to change 2,646.8 acres of prime agricultural soils to Urban Districts, only 284.8 acres or 11 percent were approved 136.8 acres on Oahu, 2.1 acres on Hawaii, 11.1 acres on Kauai and 102.8 acres on Maui). During the same period there were requests for conversion of 1,112.3 acres of Conservation District lands to Urban Districts, of which 245.8 acres or 22 percent were approved.

As stated previously, 94 requests have been approved in whole or in part throughout the State. The approved totals are 5,362 acres and the denied totals are 2,424 acres. During proceedings a total of nine petitions were withdrawn, representing 857 acres. Undoubtedly many people have not pursued a desire for boundary change owing to the possibility of failure. The land use restrictions have been a deterrent to development, but it is impossible to say how much.

Though there are many factors of a pracical nature that might come into play to spoil the wishes and time schedules of some developments, this boundary review study found that those landowners and developers contacted, plus those who made proposals at the public hearings hope to urbanize approximately the following amounts of land. For comparison, the total presently contained in Urban Districts is also shown.

County	Present U districts in acres (1968)	Requested additions in acres
Kauai	6,861	3,430
Hawaii	24,445	32,700
Maui	17,353	3,050
Honolulu	74,236	12,130
Total	122,895	51,310

In summation it would appear that the Land Use Law and its administration have succeeded in a number of ways anticipated by the Legislature:

1. The Land Use Commission has been more strict than the counties in approving petitions rezonings.

2. "In-filling" of existing Urban Districts has been encouraged and scatterization has been largely brought to an end.

3. Speculative subdivision of new lands far beyond the need for new home sites has been greatly reduced. (The counties also can take a large amount of the

credit for this by their introduction of tighter restrictions in Agriculture Districts.)

4. Prime Agriculture and Conservation District lands have been protected from urbanization by Land Use Commission denial of rezoning applications.

E. Previous actions of the land use commission

A detailed statistical analysis was made of all actions of the Land Use Commission in the period of August 1964 to September 1968. An analysis was also made of the actions of the Land Board of the Department of Land and Natural Resources, but they are not summarized here. They are dealt with in Chapter 17, "Analysis of Administrative Actions".

Of the 119 petitions for boundary changes acted upon in the four year period, 94 or 73.4 percent were approved in total or part and involved 5,361 acres. Nearly 50 percent of these received unanimous approval but there were also many close votes. For instance, on Oahu 11 out of the 34 applications voted on would have been reversed if one Commissioner had changed his mind, and six additional would have been reversed if two Commissioners had changed their minds. It is interesting to know that there was no demonstrable connection between a Commissioner's vote and his home island.

Though the interviews and questionnaires indicated the presence of considerable conflict of opinion, in only 3.33 percent of the cases did the Commission overrule both the county and the recommendation of its own staff. However, it overruled its staff in 17 out of 90 cases and the county in 11 out of 90 cases.

The major findings of the analysis, other than the statistical findings, related to the lack of information.

First, it was learned that the Commission does not adequately document the reasons for its decisions, thus making it impossible to determine the factors leading to those decisions. Answers to interviews and questionnaires indicated this also. County Planning Commissions are required to review petitions and present their recommendations to the Land Use Commission. In circumstances of agreement there are few questions, but when the Land Use Commission disagrees with the County Planning Commission or its staff without an explanation, considerable confusion is generated and this leads to lack of public confidence.

Second, a more complete outline of required minimum information is needed for each action. Although information gathering and recording has improved over the years, there is insufficient data recorded and that required is inconsistent. The amount of work required to collect necessary data for this study illustrated this need.

Third, there should be a regular followup procedure so that the status of projects is constantly recorded. In order to be able to assess the consequences of the Law, timing and rate of development, sale or lease of property, reassessment data and sales price data are all required as part of the consistent information discussed above.

F. Agriculture district issues

The protection of prime agricultural land as a basic resource is perhaps more on the way to becoming an important question than the protection of the agricultural industry insofar as the Land Use Law is concerned. The Hawaii coffee industry is in trouble, the pineapple industry is in trouble and projections indicate that the sugar cane industry may be headed for trouble. So long as agriculture is profitable, opinion is fairly firm that agricultural lands should be preserved. But when it becomes no longer profitable, opinions may change and the concept of preserving prime agricultural land may lose support.

Presently, however, sufficient sugar cane and pineapple is being grown at sustained levels to be of significant economic benefit to the State's economy. There is considerable interest and activity, but still a long way to go, in developing a largely self-sustained agricultural industry and market relationship to replace imported products. While not entirely overlooked, the value of the agricultural lands as open space and a scenic, environmental amenity is under-rated in a philosophy more oriented to immediate gain through dynamic growth and development than contemplation on the quality of life.

Although the 1969 Leigslature established a one acre minimum lot size for Agriculture Districts at the request of the Land Use Commission, the counties have varying standards that are not adequate to carry out the preservation intentions of the Land Use Law. In order to accommodate small vegetable farmers, a five acre minimum lot size may be desirable, but in many areas even larger, 25 to 100 acre, limitations may be appropriate. The State Agricultural

Plan now being prepared by the Department of Planning and Economic Development could help in this as well as other important determinations.

The present Land Use District Regulations permit uses in Agriculture Districts which we consider in conflict with the intent of the Law. These are: public institutions and buildings, county clubs, golf courses, churches and temples. These uses tend to generate urban expansion around them, and the permission to locate them without Commission review should be rescinded. For different reasons we also recommend removing from the list of permitted uses, quarries and other uses not mentioned specifically in the Law. Our reasoning in the latter case is that review of these uses should be necessary not because they are urban generating, but because they can be inimicable to good planning and public nuisances if not carefully located.

The Land Use Commission is subject to considerable criticism because of the fact that it includes considerable areas of land of little or no present agricultural value in the Agriculture Districts. This is perhaps due to a weakness in the Law that does not specifically assign residual or waste lands to either Conservation or Agriculture Districts, but this involves other issues that also need resolution as we shall see.

G. Conservation district issues

We have found that there is considerable confusion about the true purpose and meaning of the Conservation Districts and considerable apprehension and conflict over land use administration of these districts. There is also a significant lack of knowledge on the part of the public about these subjects, which contributes to the confusion and conflict. Even the daily press confuses the Land Use Commission with the Land Board of the Department of Land and Natural Resources, from time to time, by reporting the activities of one as being those of the other. These findings indicate a need for considerable public education in these areas.

A strange situation exists which finds the Department of Land and Natural Resources somewhat in conflict with itself, as well as with private owners and the counties. The department has exclusive land use control over Conservation Districts, represents the largest landowner in the district, has development goals and rights on these State lands and has no long-range general plan for conservation and development of the districts.

An analysis of the Land Use Regulations of the Department of Land and Natural Resources has led to the conclusion that there is need for a complete study of the Conservation District, and a plan for conservation and development of them together with new subzones, new regulations and recommendations for new administrative procedures that will involve the counties.

H. Urban district issues

The single major finding with respect to the determination of Urban District boundaries was a lack of up-to-date data and planning on both State and county levels. Though State planning in Hawaii has reached as high a level of sophistication as any state, and perhaps an even higher level, county planning, particularly in the neighbor islands still has a distance to go. But the main problem was not with levels of sophistication but simply with timing. Where they existed, most general plans were somewhat out of date and therefore of limited value. Where they did not exist, the Land Use Commission and consultants were required to make largely intuitive judgments, albeit with the help of the county planning agencies and other agencies of government. The next boundary review will benefit greatly if all planning agencies of the State prepare for the occasion.

Special mention should be made here of the urgent issue developing west of Honolulu between Pearl City, and Wahiawa. In spite of State policy directed toward Preservation of prime agricultural land, there is considerable pressure building up to urbanize this central area of Oahu. Four of Hawaii's largest landowners are making independent and totally unrelated plans for the development of their lands within this area. It is conceivable that population, economies and resultant political pressures will overturn State policy in this area. If this happens as a result of these pressures alone, it could well dilute the Land Use Law to the point of ineffectiveness which, we believe would be a tragedy for the future of Oahu and the State of Hawaii.

It would appear that there are two alternatives:

1. The Land Use Commission must "hold the line" against further encroachment into this area, thus preserving the prime agricultural lands and diverting urban growth to other areas, or;

2. Require that rezonings within that area be in accord with a comprehensive long range plan prepared by the State, county and landowners. This plan would establish where public services and facilities related to circulation, drainage, sewage, schools, parks, open space, public safety and amenity will be located as well as where other land uses can occur.

To do less would be to permit piece-by-piece zoning unrelated to a comprehensive plan, resulting in a disasterous situation is our opinion.

There are also urgent needs for general plans for the Kamehameha Coast of Hawaii, the conservation and utilization of the entire coastline of the State, and the Conservation Districts. Though somewhat less urgent, plans are also needed for unplanned areas, a Statewide Land Use Circulation and Public Facilities Plan and the general up-dating of existing plans previously mentioned.

The critical statewide housing stortage relates to the Land Use Law, but in what way is not presently clear. There is a theory that if the Commission zoned large areas Urban this would bring the price of land down to a point where more houses would be built, but this is unsupported by economic analysis and remains an undocumented and dangerous theory because most of the expansion would take place at the expense of agricultural lands.

Resort development is frequently coupled with a land sales or lease program to generate cash. This situation should be carefully evaluated because it carries with it all the dangers of the large scattered land sales schemes that preceded the Land Use Law. If the untested market for houses does not materialize, the State and counties will be left with great areas of largely unbuilt subdivisions and the need for providing the usual maintenance, police, fire and educational services at the usual levels of quality demanded elsewhere without an adequate tax base to pick up the area's fair share of the bill—precisely what the Land Use Law was intended to help avoid.

While many findings have resulted in recommendations, two stand out as most important. Inspection of petitions for boundary changes and past actions of the commission on very large petitions indicated that there should be a systematic methods of zoning in increments. The purpose of establishing such a method would be twofold. First, it would protect the public interest against large rezonings for projects that might fail. Second, it would protect the interests of developers who have to make large advance investments and need some guarantee that they will not suffer because of administrative caprice or change.

It was also concluded that more attention should be given to the marketability and economic feasibility or projects, and that both incremental zoning provisions and special permits should have performance time limits attached.

I. Rural district issues

The danger inherent in the Rural District is its potential for converting mile after mile of open farmland into low density residential use on one-half acre house lots mixed with small farms. Hawaii cannot afford such wasteful use of land. Fortunately Oahu, the most populated island, has no Rural Districts. The State General Plan Revision Program recommends their minimization, and we can see good reason for their elimination largely through rezoning to Agriculture and Urban Districts, thereby stopping low density sprawl and permitting more efficient land use under county guidance and control.

J. Rules of practice and procedure

The purpose of the Rules is to govern proceedings before the Commission in an orderly way to provide for prompt and fair processing and petitions for boundary changes. We found that the document was basically sound, but needed improvement in a number of technical areas. These are explained along with the recommendations in Chapter 3. In our opinion the most serious shortcoming in the Rules was the lack of a requirement that the Commission employ written majority opinions on all decisions.

K. District regulations

The Regulations are intended to clarify and implement the Land Use Law. Our findings indicated that rather large improvements could be made in both of these functions. We have recommended very extensive changes to make the criteria for establishing district boundaries more clear. Clarification of word and phrase meanings took many hours of preparation and discussion with the Land Use Commission.

The recommendations for implementing the Law included: better standards for economic feasibility reports; time limits on special permits and developments

for which boundary changes are made; and, a system of incremental zoning for very large developments. All of these recommendations are explained in more detail in Chapter 3.

L. District boundaries

The review of district boundaries was the most extensive phase of the study. All previous research was directed toward providing information that would be helpful in reviewing the rationale behind existing boundaries, in their substantiation, or to help determine where and how boundaries should be changed. Extensive mapping and field work on existing and proposed boundaries was carried on throughout the study. The assistance of many people intimately knowledgeable with various locales and land uses was also enlisted.

It was found that the original boundaries had been established with extreme care. Our recommendation to more precisely establish the differences between Agriculture and Conservation Districts, as a result of clearer definitions in the Regulations, accounted for recommendations for some of the major changes. The desire to more clearly define the shoreline of the Conservation District at some point inland from the water's edge resulted in other substantial recommendations for boundary changes. Urban and Rural District Boundary changes were recommended on the basis of need for future growth, county recommendations, owner-developer intentions and the other criteria of the Law and Regulations.

Chapters 4 through 7 summarize the specific recommendations for boundary changes for each county. The maps included with these chapters show the boundaries as adopted by the Land Use Commission.

M. State and county relations in planning and zoning

1. Communications

One of the goals of the 1967 General Plan Revision Program is, "Harmonize State and County planning". During our study we made great efforts to coordinate our activities with all State and County planning agencies. We found that considerable conflict often exists between the various levels of government. The conflict between the Land Use Commission and the Land Board of the Department of Land and Natural Resources has been touched on briefly. State and county conflicts on plans and goals seem to exist mostly because of lack of understanding of roles and sometimes appear to be more of a feeling than an objective reality.

In our opinion, these conflicts could be eased by a conscious direct and vigorous attack on what we think is the main source—lack of face-to-face and frequent communication. The Land Use Commission is one of the best agencies to lead the way in improving communication because of its contact with all levels of government.

2. The status of county planning

The present study has suffered from a lack of up-to-date county planning as the basis for zoning decisions. Following is the status of County General Plans.

Honolulu County—General Plan, 1963. Detailed land use maps have been adopted since then for many areas of Oahu.

Hawaii County—Hilo Area Plan, 1961. Hilo Development Plan, 1968. Kona District Plan, 1959.

Hamakua—Kohala District Plan, 1962.

Kauai County, General Plan, 1961. A new one in process.

Maui County—Wailuku—Kahului Planning and Development Study, 1962. Lahaina District General Plan, 1968. Maalaea, Kihei, Makua General Plan. Molokai General Plan, 1967.

Even though general plans are usually formulated for twenty year periods of time, the rapidly increasing rate of development in the State has out distanced these existing plans, resulting in general plan amendments that are little more than putting out local fires. All of the counties at the present time are involved in some sort of general or development plan revisions. However, the conclusions and results, with some exceptions, were not available to be of help in the Land Use Study.

There is, therefore, no present way of easily finding out what the long and short range demands and recommendations for land utilization are. The obvious implication of this situation is that there should be an acceleration of county planning so that all important areas will have been freshly covered by the

next boundary review to begin in 1973. There are consistent complaints that the State Land Use Commission does not adequately recognize county wishes. In all fairness we indeed must ask how the Commission can recognize that which largely does not exist!

3. The status of State planning

Where County General Plans are generally old or non-existent, the State General Plan Revision Program is incomplete. A Land Use, Circulation and Public Facilities Plan should be prepared in time for the next boundary review. The individual counties, various state departments, together with the Department of Planning and Economic Development should be looking farther into the future to determine needs and should be making coordinated decisions regarding what is feasible, possible and desirable. Past commitments of the Capital Improvement Program were the principal aids to anticipating future growth patterns. However, where land is so scarce, planning should be more advanced.

As a result of the experience of this first district boundary review, it is recommended that the State and county agencies gear their planning to the next review. The Land Use Commission can assist by giving them advance notice and asking for recommendations before the review is begun.

III. SUMMARY OF THE TAX STUDY [3]

A. State goals as a point of reference

The tax statutes of Hawaii clearly indicate a legislative intent to build into the tax system the notion that taxes can be used as tools of planning.

We observe that the effectiveness of tax policy as a tool of planning must be judged against the background of the best and most comprehensive statement of goals currently available. Even though it is partial and incomplete, and even though it has not been formally adopted as official State policy, such a statement of goals is included in the volume entitled *State of Hawaii General Plan Revision Program, Part I, Elements of the State Planning Process*, pages 8 through 16, prepared by the Department of Planning and Economic Development.

This statement of goals represents a set of interpretations of the conclusions of Citizen Advisory Committees. As such, the expression of goals is admittedly only a first step in the process of statewide goal formulation. But it does provide a useful frame of reference for an evaluation of tax legislation. In this list we count 16 statements of primary goals, with a number of secondary goals included within each category. The primary titles of these statewide goals are as follows:

1. Environment of Beauty.
2. Conserving Natural Resources.
3. Parks and Recreation.
4. Good Design.
5. Improve Public Works.
6. Long-Range Planning.
7. Harmonize State and County Planning.
8. Land Use Law.
9. Economic Development.
10. Efficient Transportation.
11. Improved Housing.
12. Health and Well-Being.
13. Public Safety.
14. Education Systems.
15. Cultural Life.
16. East-West Relations.

Each of these titles is, of course, expanded in the goals statement of the General Plan Revision Program. And each of these primary goals has public finance implications, either through the operation of the tax system or through programs of public expenditure. But only a few are of essential significance for the kind of tax policy we are exploring.

Most of the conclusions which flow from the examination of taxation in Hawaii can be embraced by the conservation goal (with incidental reference to the goal of environmental beauty); the long-range planning goal; the goal to harmonize

[3] This section was prepared by Dr. Leslie E. Carbert, Tax Economist, Palo Alto, California.

State and county planning; the goal related to the purposes of the Land Use Law; and the goal of economic development (with incidental reference to the goal of improved housing). All of the others are important. But their relevance to tax policy is, at best, somewhat tangential.

As a consequence, we will take some liberties with the planning statement—to reinterpret, reword, and rearrange the goals expressed in the General Plan Revision Program—in order to provide a more convenient set of standards for judging the effectiveness of tax policy. One goal is added—namely, that there is still some virtue to equity and to assuring that public policy does not prdouce extraordinary private gain. We feel that by these revisions we have not seriously bruised the sensitive skin of the Hawaii goals statement.

1. *The conservation goal.*—To create and maintain a program for the conservation of Hawaii's natural resource in all of their aspects, so that the benefit of these resources, in economic, aesthetic and spiritual terms, might be available to future generations.

2. *The goal of economic development.*—To encourage full employment, increased personal incomes, greater equality of income distribution (a translation of the phrase "reduction in the proportion of families in the low-income category"), and to achieve a balanced level of economic activity. Economic development should also provide low cost housing for those with low incomes, even though such results might not be achieved through normal market processes.

3. *The goals of the Land Use Law.*—To preserve agriculture as a viable economic activity in Hawaii, to blend State and county planning objectives in urban regions, and otherwise to advance the stated objectives of the present Land Use Law. (One cannot avoid the observation that this set of statements in the General Plan Revision Program needs some alteration if it is to be a meaningful expression of State goals.)

4. *The goal of long-range planning.*—To improve the information system as tool of long-range planning.

5. *The goal of harmonizing State and county planning.*—Exactly as printed, to "Maintain a comprehensive planning program as an active adjunct to the making of new government decisions, at both State and county levels, consistent with the basic goals for Hawaii."

6. *The goal of equity in public policy (not explicitly shown in the general plan revision program statement of goals).*—To assure, to the maximum extent possible, that the exercise of public policy will not produce inordinate opportunities for private speculation and private economic gain.

It seems fair to ask whether the State tax system, especially that portion which appears to have a conscious planning purpose, assists in the pursuit of these goals.

B. Taxes and State Goals

1. *Does the tax system promote the Conservation goals?*—The only major element of the Hawaii tax laws which emphasizes the conservation goal is the agricultural dedication ingredient of the real property tax law. And the language of this law is so vague and provides for such large opportunities for administrative caprice that its ultimate effects are clouded in mystery.

We do not argue that the administration of the law has been or is now capricious. We argue only that the language of the law permits the tax administrator to exercise such large discretion that an analysis of the potential effects of the law requires an analysis of the mental processes of the Director of Taxation—whoever he may be present or future. Furthermore, the law requires the Director of Taxation to perform two frequently competing functions—planning and tax administration. Governors and legislators are elected to make these sensitive decisions. Tax administrators should not be faced with such monumental problems. Nor should they be given such monumental powers.

We must conclude, therefore, that the conservation purpose is ill served by the dedication element of the Real Property Tax Law, and hence by the entire tax structure of the State of Hawaii.

2. *Does the tax system promote the goal of economic development.*—The basic thrust of the Real Property Tax is towards economic development. This is partially offset by some of the effects of the General Excise Tax, so that the net effects remain unclear.

We asked the fundamental question: "to what extent *can* the tax system of Hawaii attract overall economic development?" We have answered this question (in a tentative way, to be sure) by arguing that the resource base

and the market potential are so severely defined in the Island economy that tax burdens are likely to exercise little overall economic effect—assuming, of course, that these burdens stay somewhere in the American ballpark. Technological change might be expected to alter the significance of both resources and markets. But again, the tax system is likely to play a simple walk-on role in this historical drama.

Nevertheless, the economic structure of the State does permit the opportunity to use the tax system as a device to shape the *kind* (if not the *amount*) of economic development which will take place, shaping land uses and determining income distribution patterns. Because of the specificity of its application, the Real Property Tax is the obvious candidate to express this opportunity.

But even here the opportunities are, at present, decidedly limited, largely because the property tax already imposes a relatively small burden upon most economic enterprises in Hawaii—at least as compared with those imposed by the majority of States. It seems clear that the property tax burden is heaviest on single-family and relatively old residences, so that the tax system tends to add to Hawaii's already high cost of living.

Of course the first and second goals overlap, particularly in the general economic category of agriculture (i.e., agriculture itself and related industrial activity). To the extent that the conservation of agricultural lands preserves an economic base and supports industrial and tourist activity it might truly be said that conservation promotes a development goal.

While the Real Property Tax Law is development oriented—principally through the graded rate structure,[4] the statutes provide for administrative discretion to determine the speed with which economic inducements will be offered. We find this kind of discretionary power thoroughly admirable, in planning terms, for tax laws should not provide such severe shocks to the economic system that survival is jeopardized. But the law also provides for administrative veto power after the 70 percent level is reached in the building factor. We find this delegation of power quite unsatisfactory, if only because of the uncertainties which it creates. Uncertainty of this magnitude cannot be consistent with sound planning. Nor can it be said to produce the development results which are expected of this portion of the Law.

In terms of development needs other uncertainties exist in the Real Property Tax Law. Some of these uncertainties are generated by the statutory rules for determining assessed values when marketplace rules are consciously abandoned. This is a major fault in the law. And other uncertainties are generated by the separate valuation of land and buildings. Although this is a major fault, it is probably inevitable if the graded rate structure is to be continued. Still other uncertainties relate to special provisions such as the wasteland development law and some exemption provisions which, although not of major significance, are still worthy of note and available for alteration.

3. *Does the Tax System Promote the Goals of the Land Use Law?*—We do not find the planning laws of the State of Hawaii (including the Land Use Law, the Real Property Tax Law, and local ordinances) to be inconsistent when they adopt a conservation posture on the one hand and a development posture on the other. For it is indeed possible to conserve some kinds of resources in some places while developing other kinds of resources in other places.

We do find one major inconsistency in the relationship between the tax laws and the Land Use Law at the point where the Real Property Tax Law permits agricultural dedications within Urban Districts. We take the "Urban" designation of the Land Use Commission to mean that the area should be developed in an urban style. To be sure, urban open spaces are essential to sensitive development program. But such open spaces must be of a different character than agricultural open spaces in Agriculture Districts. In effect, dedication of agricultural lands in urban districts defeats the purposes of the Land Use Law, directly by denying opportunities for urban development, and indirectly by forcing additional pressures for development on agricultural lands in Agriculture Districts. In the long run, the latter may be more important than the former.

Many other inconsistencies exist between the Land Use Law (as an example of police power processes) and the tax laws (as examples of the inducement proc-

[4] The most controversial element of the Hawaii Real Property Tax Law—the so called "Pittsburgh Law". The purpose is to provide gradual increases in tax burdens imposed on land and gradual decreases in tax burdens imposed on buildings in districts other than Agriculture and Conservation.

ess). For the most part, however, the principal guilt for these inconsistencies must be attributed to the Land Use Law and the character of its administration—both State and local. A tax administrator cannot be expected to reflect the planning guidelines of the land use rules if the rules are vague and indistinct. As the governmental alter ego of the market place, he must reflect any market place atomsphere of confusion and speculation. The evidence is not at all clear, but it does seem that private landowners in Hawaii are willing to speculate, with very real dollars, about the potency of the land use rules at either state or county levels.

Thus, the system of taxation must be judged in terms of the way it *reflects* the goals of the Land Use Law as well as the way it *promotes* these goals. In our judgment, the reflection is cloudy and the promotion is weak.

4. *Does the tax system promote the goal of long-range planning?*—In the General Plan Revision Program the goal of long-range planning emphasizes information needs. Many vacancies in the information structure have severely inhabited the present study effort. Others are of long-run significance. We feel that much greater attention might be paid to information design so that, with relatively minor adjustment, tax information might be made more useful to the planning process. In particular, market value information prepared for the administration of the real property tax and the conveyance tax would be extremely helpful.

5. *Does the tax system promote the goal of harmonizing State and county planning?*—One should not expect too much of a state tax system for the development of a positive program to harmonize state and county planning processes. But one might at least expect the tax system to produce as little discord as possible.

We do see some elements of discord in the present tax laws. For the most part these are to be found in the Real Property Tax Law, if only because we have characterized this law as having significant planning purposes. In effect, the property tax law is an arm of State planning even though it does, of course, have other purposes.

Much of the discord between the property tax and planning activities relates to the virtual impossibility of predicting the effects of the law, at least with the kind of precision which the planning process requires. The tax administrator is obliged to follow the rules of the market place, which rules, in turn, reflect the esteem in which the planning controls are held by dealers in property and by other entrepreneurs. When a tax assessor is required by the law to make large planning decisions, discord is inevitable. And when the effects of the law are uncertain, problems are created for investors and the normal frustrations of State and local planning officials are amplified.

6. *Does the tax system promote the goal of equity in public policy?*—Perhaps the major conclusion of this portion of the study is that the structure of the law does little to protect the public interest against speculative gains directly related to public policy. The several dedication laws are, perhaps, the worst offenders. At best, the anti-speculation elements of these laws provide "penalties" which permit land owners to borrow money from the public treasury at rates which can only be described as inexpensive (5 percent). If dedication laws of this sort are to be effective, and if their purposes are descriptive of the public good, two conditions must be met: (a) the advantages must be sufficiently attractive to induce widespread adoption; and (b) the commitment of the landowner must be sincere and permanent. We feel that the first of these conditions is met by present dedication language (with a few exceptions). We feel that the second condition is by no means assured by the present laws.

The question of equity also arises in a more direct way through the conscious attempt to concentrate tax burdens on undeveloped (or slightly developed) land in Urban Districts. But we cannot blame the law for this inequity if, in fact, it is truly conscious. It has been said that "The concept of the graded tax is one of consciously using property tax rates in an 'inequitable' way to achieve social and economic goals."[5] Perhaps the geography of these effects within Urban Districts needs sharper definition to provide for the retention of some single-family residences (without excessive economic penalty). Certainly other kinds of public policy are called for to provide low-cost housing, the need for which is stimulated, in part, by the character of the Real Property Tax Law.

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[5] Tax Foundation of Hawaii, *Estimated Impact of Hawaii's Graded Real Property Tax*, October 1964, p. 1.

Chapter 3.—Recommendations

I. Introduction

Our detailed recommendations for boundary changes together with the final actions of the Land Use Commission will be found in Chapters 4 through 7. This chapter deals with recommendations for action stemming out of the review of the planning and taxation elements of the study.

The alternatives facing those who make public decisions with respect to land use and taxation in Hawaii fall within two distinct categories. First, there are the changes and improvements that are required or can be made within the existing framework of law. For instance, the review and up-dating of the district boundaries is required by law. There are also other kinds of changes that can be made administratively by the Land Use Commission and other departments and agencies—changes that are entirely within the scope of the administrative services established or left open to them by the legislative mandates under which they act.

Second, are those matters that can best, or only, be dealt with through the legislative processes. These are the possible amendments to old laws or entirely new laws to replace old ones. In some cases an "either-or" relationship exists between the alternatives. For instance, where an agency is free to make changes administratively but fails to do so (and maybe for very valid reasons from its own point of view), the door is also open for the same changes to be made by the Legislature. Action on either front could make the other unnecessary.

As a basic policy we favor legislative clarification rather than wide administrative latitude. In our inspection of the Land Use Law we see some potential for future legislation, particularly in our recommendations as a result of the tax assessment study.

II. Recommendations for Land Use Commission Action Exclusive of Boundary Changes

[Items marked with an asterisk (*) are recommendations adopted by the Land Use Commission at the action meeting held in Kauai County July 8, 1969. Filed in the Lieutenant Governor's office July 25, 1969, effective August 1969]

A. *Rules of Practice and Procedure*

1. *Documentation of findings in a written majority opinion.*—Seventy-four percent of the people responding to the questionnaire stated that the Land Use Commission should completely explain the reasons for its findings. Twenty percent stated that it should give some justification for its findings. Thus, 94 percent voted in favor of there being a statement of the reasons for the Land Use Commission's findings. We have had it pointed out to us in interviews that County Planning Commissions are concerned when their decisions are over-ruled, because they do not know the reasons. It would be helpful in their reaching future decisions if they knew the reasons. We also noted that an evalulation of the actions of the commission could not be made as part of this review because the documentation of reasons was largely absent. Therefore, this is recommended for addition to the Rules.

2. *Miscellaneous Minor Changes.**—Many changes have been recommended by our legal consultants and the Attorney General's office involving additions of phrases or words to make the Rules more clear. These will in no way alter the intent of the original meanings.

3. *Rulemaking.**—A substantial series of changes is recommended by the Attorney General's office to remove references to rulemaking in subsection C. The recommendation is to substitute the word "amendment" wherever the word "rulemaking" appears because these are the kinds of actions the Land Use Commission undertakes. In this respect, the section on "Emergency Rulemaking" should be stricken.

4. *Reconsideration of Petitions.**—A section regarding Reconsideration of Petitions should be added so that it is clear under what situations a petition may or may not be reconsidered. The reasons for establishing a foreclosure time are to promote finality in decisions and to protect the Commissioners against undue pressures to change their position.

5. *Reapplication.**—A section should be added which would clarify when a petitioner may reapply after his petition has been denied if he chooses not to appeal to a circuit court. The rationale behind this would be again to promote

finality in decisions, at least until such time has passed when there are likely to be new factors to be considered.

6. *Administrative Procedure Act.**—In order to clarify the issue that the Rules of Practice and Procedure are the governing rules pertaining to the Land Use Law, it is recommended that references to the Administrative Procedures Act be removed.

B. The State land use district regulations

1. Urban districts

(*a*) *New town and resort proposal.**—The original Regulations appear to have been written to reflect conditions existing at the time the initial boundaries were drawn, rather than in anticipation of petitions for boundary changes involving proposals. Thus there are no provisions for judging "new town" or "resort" proposals. In fact, the phrase, "proximity to centers of trading and employment facilities" would tend to rule them out if taken too literally. It is recommended that these situations be provided for.

(*b*) *Economic feasibility.**—While the original Regulations mentioned economic feasibility, it was noticed that petitioners' reports ranged from very comprehensive to extremely cursory. Because of the history of financial failures of a substantial number of "new towns" and other large developments, it is recommended that the standards for submittal and review both be improved. These should include the market analyses aspects as well as the benefits and costs to the public.

(*c*) *State and county goals and objectives.**—While the original Regulations called for considering areas of urban growth on State and county general plans, we think that stated goals and objectives of the State and county are also important considerations to be used as criteria in making boundary changes.

(*d*) *Slope limitation.**—One of the most admirable provisions of the original Regulations was in regard to areas of over 20 percent slope being properly placed in Conservation Districts. However, such a hard and fast rule is harmful in certain cases. The issues are public safety and scenic amenity. As slopes increase it becomes more difficult to build on them and slide and erosion possibilities grow. However, these exist at lower slopes and therefore a line at 20 percent is more or less meaningless in this respect. The point is really whether or not public safety is taken into account—whatever the slope.

Development of steep slopes improperly managed can create unsightly scars, and development of some hillside or mountainside areas would intrude upon publicly important views. Therefore, we recommend adjustment of the 20 percent slope limitation to take into account the existence of adequate county controls so that where they exist and where open space amenities are not violated the Commission may zone areas to urban. This change could free land for urban purposes with proper safeguards particularly on land hungry Oahu.

*2. Agriculture districts**

(*a*) The definition of Agriculture Districts should be refined by deleting some modifying sections that permit inclusion of great areas of no agricultural value and to more accurately reflect the intention of the Law to protect prime agricultural land. A section should be added making it clear that areas can be added to Agriculture Districts if technological development brings them into agriculutral use.

(*b*) Under permissible uses within the Agriculture District:*

(1) Add a qualifying phrase to relate the permitted public uses to agriculture;

(2) Clarify specification of utility uses to avoid unnecessary special permit procedures;

(3) Restate "open area" types of recreational uses as to involve the county and Land Use Commission more in the review of the location of some of these, such as golf courses, through the special permit process;

(4) Delete all uses not specifically mentioned in the Law.

*3. Conservation districts**

(*a*) Provide a more clear regulation reflecting the requirements specified in the Laws.

(*b*) Provide a more clear definition of the shoreline and include all marine waters, fishponds and tide pools within the district.

(*c*) Include all lands susceptible to tsunami and flooding in Conservation Districts unless they are more appropriately included in contiguous Urban, Rural, or Agricultural Districts.

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(*d*) Provide for the inclusion of archaeologic sites and sites of unique physiography or ecology and lands for preserving natural ecosystems.

*4. Require that performance time limits be established by the counties when issuing special permits**

*5. Develop regulations to provide for zoning in increments when petitions are for projects over 100 acres**

*6. Add a new section requiring that those granted approval of petitions for urban or rural districts make substantial progress in the development of the area within a five year period, and that if such is not done, the Commission may reclassify the area to another District**

(NOTE.—The above three recommendations are proposed to provide a set of tighter controls on development. The time limits on development will help to reduce unused urban zone land and thereby provide better opportunities for those genuinely intending to develop. The incremental zoning procedures more fully explained in the chapter, "Urban District Issues", will provide performance demands upon those requesting rezonings and at the same time provide investment security. Together these should help development and hinder land speculation.)

7. Delete the section of the regulations dealing with "dedicated lands" since these procedures are administered by the Department of Taxation

C. In general

1. Develop and publicly circulate a statement of goals and objectives based upon and elucidating section 1, "Findings and Declarations of Purpose" of act 187-SLH 1961, and also based upon the goal expressed in the State general plan revision program, "Maintain the land use law as an active instrument of State zoning"

2. Develop a statement of policies designed to assist in carrying out the objectives of the Commission. The following are suggestions:

(a) Relate all actions insofar as possible, to State and county goals and general plans.

(*b*) Seek recommendations of citizen groups and particularly those organized on a broad community basis for the purpose of studying and effectuating rational conservation and community development. (Oahu Development Conference is an example.)

(*c*) Initiate procedures that will eliminate confusion between the Commission and the other agencies involved in the administration of the Law.

(*d*) Continually strive to improve and to clarify the district regulations and district boundaries so that inconsistencies and ambiguities are removed when identified rather than waiting for the five year review program. Urge counties to petition for changes when they see improvements that can be made.

(*e*) Develop a program of public information and exposure to actions around the Land Use Law and accomplishments of the Land Use Commission.

(*f*) Provide special protection to prime agricultural land and irreplaceable natural resources such as shoreline features.

(*g*) Take special recognition of the criticism of favoritism, make every effort to deal with all petitioners in accordance with the Law, and endeavor to counteract such opinions by maximum public exposure to the actions of the Commission.

(*h*) Insist upon timely advance planning from the State and county planning agencies as the basis for State zoning.

(*i*) Recognize the special needs for development of the neighbor islands.

(*j*) Follow the State General Plan recommendations to keep the Rural Districts to a minimum.

(*k*) Cooperate with efforts to provide low-cost housing where it will not lead to sprawl, scatterization, loss of prime agricultural land, or otherwise violate the intentions of the Land Use Law.

(*l*) Make every effort to time meetings and have all Commissioners present so as to provide for fair and speedy action on petitions.

3. Act administratively to—

(*a*) Improve relations between the Land Use Commission and other agencies (particularly county planning agencies) by: defining State and county roles; establishing consistent personal communications between staffs; arranging joint meetings on an annual basis between the Commission, County Planning Commissions, the Land Board and the Tax Administrator.

(*b*) Experiment with a speeded-up petition process requiring 90 to 200 days; and if it is workable, recommend a change in the Law.

(*c*) Initiate a study by the counties, Department of Planning and Economic Development and the Department of Land and Natural Resources to determine responsibility for the technical work needed before flood and tsunami zones can be established. The study should also recommend which agencies should exercise land use controls in these zones.

4. Prepare for next five year review program

(*a*) Adopt a consistent format for recording information about all petitions and applications both to facilitate comparison between applications and to assure that all relevant information is collected. (The format developed for this review is a model that could be used.)

(*b*) Adopt procedures to assure that the status of land holdings and developments which have been the subject of petitions will be reviewed and recorded routinely in the future.

(*c*) Collect tax assessment and land sales data in significant areas on each side of district boundaries on a consistent yearly basis and in a form of value for continuous review and information about the behavior of these factors, as they may relate to boundary changes.

(*d*) Formally announce to County Planning Commissions three years, two years, and one year ahead of the five year review so that they can prepare for the review by up-dating their general plans and zoning ordinances.

III. THE LAND USE COMMISSION SHOULD URGE THE FOLLOWING ACTIONS BY THE DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

(*a*) Develop for the Land Use Commission guidelines and a format of information for petitioners to use in preparing economic feasibility reports to be used by the Department in its analysis when requested by the Commission. These guidelines and the format should relate to the marketability of the project as well as to the balance between the public benefits to be accrued and public costs to be incurred and other economic benefits to the State.

(*b*) Develop comprehensive long-range land use, circulation and public facilities plans for the entire state prior to the next five year review. Encourage the development of county general plans particularly in those areas as yet unplanned as an in-put to the statewide plan.

(*c*) Prepare long range plans for conservation and use of the Conservation Districts establishing appropriate subzones, regulation for land uses within each subzone, recommending responsibilities for adminstration of each subzone together with guidelines for county participation where appropriate in land use decisions.

(*d*) Develop the following long range master or general plans as a basis for future zoning actions.

1. Statewide agricultural master plan.
2. Central Oahu development plan.
3. Kamehameha Coast of Hawaii development plan.
4. A plan for conservation and development of the shorelines of the State together with recommendations for the administration of the shoreline conservation and use.

IV. THE LAND USE COMMISSION SHOULD URGE THE FOLLOWING ACTIONS BY THE LAND BOARD OF THE DEPARTMENT OF LAND AND NATURAL RESOURCES

A. Cooperate with the Department of Planning and Economic Development in preparation of a general plan for the Conservation Districts with a view toward extensive revision of subzones and Regulation No. 4.

B. Develop a system that provides for soliciting and hearing county and land Use Commission recommendations regarding land uses in Conservation Districts.

C. Establish a policy of holding public hearings on all applications for land uses in the Conservation Districts.

V. THE LAND USE COMMISSION SHOULD URGE THE FOLLOWING ACTIONS BY THE COUNTY PLANNING COMMISSIONS

A. Up date existing general plans and develop new plans where desirable in time for the next boundary review program to be held in fiscal 1973–74.

B. Raise the minimum lot sizes in Agriculture Districts to not less than five acres to support the intentions of the Land Use Law.

C. Develop appropriate shoreline protection, setbacks and land use controls in Urban, Rural and Agriculture Districts.

D. Develop guidelines and restrictions to control development of sloping sites, providing for both the public safety and protection of the scenic qualities of such sites.

E. Cooperate with the Land Use Commission and other state agencies to determine responsibilities for establishing and managing flood zones and tsunami zones.

F. Initiate petitions for boundary changes and changes in the district regulations when such changes are indicated by completion of general plan studies or other experience.

G. Survey existing land use in the format used by the Oahu Transportation Study to facilitate computer analysis of each island, county and State.

VI. THE LAND USE COMMISSION SHOULD URGE CONSIDERATION BY THE STATE LEGISLATURE OF THE FOLLOWING MATTERS

A. A study of the consequences of a statewide policy to purposely guide development toward the neighbor islands and thereby slow down the further concentration of development on Oahu.

B. A study of the consequences of the growing foreign control of Hawaii by penetration of foreign capital investment.

C. Authorization and funding the general plan studies previously mentioned such as:

Conservation District Plan, Central Oahu development plan, Kamehameha Coast development plan, statewide shorelines plan, flood and tsuami zones study and new county general plans where needed.

D. A study of the objectives of the Land Use Law with a view toward updating or re-affirming the "Finding and Declaration of Purpose" of As 187, SLH 1961.

VII. RECOMMENDATIONS RESULTING FROM THE TAX STUDY[1]

A. Introductory statement

The following recommendations as presented here in outline form with one minor elaboration. For the most part these are recommendations for stautory revision rather than for changes in administrative practice. However, the fact that we give relatively little attention to administrative actions should not be taken as tacit approval of these actions. Nor, of course should it be represented as automatic criticism. The simple fact is that we had found it impossible to test the adequacy of administrative practices in the time available for the study.

Almost all of the recommendations relative to the Hawaii Real Property Tax Law, although several are concerned with the interactions between tax laws and the Land Use Law.

It must also be noted that many recommendations are by no means of equal significance. For this reason, the final section of the recommendations is represented as the "urgencies." It is our feeling that the entire structure of the Real Property Tax Law is in need of sweeping revision, if only to accomplish a happier marriage of revenue purposes and planning purposes. Nevetheless, all of the recommendations are based upon the premise that the property tax is considered an available tool to advance the planning process and to promote land use planning goals.

We are also well aware of the fact that the recommendations are not of equal acceptability in political terms. Furthermore, some are clearly unacceptable if considered as isolated proposals. Different concepts of priorities would clearly attach to different arrangements of a tax revision package. To be sure, some of the proposals stand by themselves. But the basic purpose of the following proposals is the presentation of a package which will reflect our analysis and which will advance the planning process.

B. Tax recommendations for land use planning

1. *Real property tax law.*—a. The tax base—

(1) The exemption and exclusion structure

(NOTE.—The basic purpose of these proposals is to broaden the base of the property tax, with minimal effects upon the Hawaii economic condition. In this way, some of the highly specific inducements which are offered for legitimate planning purposes will have a softened effect upon such taxpayers as owners of single-family residences.)

[1] This section was prepared by Dr. Leslie E. Carbert, Tax Economist, Palo Alto, Calif.

(a) Remove the present exclusion of business inventories but preserve the exemption for selected export industries. This recommendation would obviously change the basic character of the Hawaii property tax. For example, it could no longer be called a tax on *real* property.

(b) Remove the exclusion of growing crops from the definition of taxable property, but preserve the opportunities for dedication of both land and growing crops.

(c) Remove the exemption of "fixtures . . . used in manufacturing or producing tangible personal products."

(d) Preserve the exemption of property used in the manufacture of pulp and paper from bagasse fibre, conditional upon annual review by the Department of Planning and Economic Development of the possibility of productive development.

(e) Consider other specific exemptions designed to promote diversified use of Hawaii's resources. Such consideration should include detailed examination of resource potential and market opportunities.

(f) Clarify the language of the home exemption provisions to assure that the exemption applies to *assessed* valuations and not to *market* valuations.

(g) Consider the possibility of an escalation clause in the home exemption provisions, to relate the value of the exemption to the changing value of land. A first approximation of this suggestion might be a linkage between the value of the exemption and the cost of living index, so that the value of the exemption would increase as the cost of living index increased.

(*2*) *The fair market value concept for appraisal purposes*

(NOTE.—The basic purpose of these proposals is to strengthen the hand of the Director of the Department of Taxation in applying market value rules for appraisal purposes. A subsidiary purpose is to provide a sharp delineation between the tax functions of the Director of Taxation and the planning functions of other agencies of State and local government.)

(*a*) Establish a pattern of regular (e.g., five-year independent appraisal checks, appropriately funded, to determine the actual ratio of assessed to market value for scientifically sampled properties.

(*b*) Require detailed annual reports from all property owners of sales transactions in land or changes in leasing considerations, designed to assist the tax appraisal process and to test the effectiveness of the Land Use Law and county zoning ordinances. With proper assurances of the confidentiality of the data (through use of percentages, etc.) the results should be made available for public scrutiny. The Conveyance Tax Law might serve as a useful instrument for this purpose.

(*c*) Intensify the meaning of the Land Use Law and county zoning ordinances, partly because these expressions of the police power need clarification and strengthening, and partly because these laws have meaning for the Director of Taxation in the pursuit of his assessment function.

(*d*) Remove the classification provisions of Section 128–9 (d) from Chapter 128 and place the provisions in Chapter 129. (See below.)

(*e*) Transfer the authority for classification from the Director of Taxation to the Director of Planning and Economic Development, with statutory instructions that the classification be base upon *Planning* guidelines (i.e., *desirable* land uses) rather than on principles of highest and best use. The statutes should also provide for consultative and cooperative decisions between the Department of Planning and Economic Development and county planning agencies for all properties within rural and urban districts.

(*f*) Strengthen the appeal provisions of Section 128–30 which give counties the opportunity to test the validity of the market value findings of the Department of Taxation by providing State funds to counties for the specific purposes of this Section.

(*g*) Revise the language of Section 128–9 (g) to indicate clearly that buildings (as well as land) must be valued according to market value principles. As part of this revision, delete the provisions that repairs and maintenance to buildings shall not increase the assessed valuation of the buildings. If this provision is retained, however, transfer the filing requirements from the Director of Taxation to the Director of the Department of Planning and Economic Development, with responsibility for approval resting in the latter office after consultation with county planning officials.

(3) *The agricultural dedication law*

(NOTE.—There are two basic purposes to this set of recommendations. The first is to assure the preservation of agricultural lands, particularly prime agricultural lands. The second is to prevent undue speculation in agricultural lands as a result of the dedication law. We feel that it is extremely important to make it easier to obtain dedication approval but much harder to abandon the dedication once it is granted. In effect, the law should test the sincerity of the dedicator. Here, especially, we feel that the Real Property Tax Law needs drastic revision. The following recommendations are simply minimum conditions which should be built into any such overhaul.)

(*a*) Revise the law to prohibit agricultural dedications in Urban Districts.

(*b*) Revise the law to make it clear that a dedication is in the nature of a contract, equally binding on the property owner and the State.

(*c*) Make the penalty provisions truly prohibitive by increasing the interest rate for failure to observe the dedication from five percent to at least ten percent.

(*d*) Fortify the protections against speculation by strengthening the capital gains provision of the income tax laws, to provide that capital gains realized within the dedication period be treated as ordinary income. (See below.)

(*e*) Increase the overall rate of the Conveyance Tax, with a still higher rate imposed upon conveyances of land under dedication. (See below.)

(*f*) Revise the law to make it clear that the dedication attaches to the land, as a condition of any sales agreement.

(*g*) Emphasize in the law (even if only as a preamble statement of legislative intent) that dedications must conform to land use boundaries and County zoning ordinances.

(*h*) The law should contain explicit instructions to the Director of Taxation regarding the methods to be used in valuing dedicated land according to its agricultural use. Such rules are bound to be arbitrary, but they should be designed to answer all of the questions raised in the body of the text dealing with agricultral dedications—including (but not limited to) capitalization rates, length of time for the income capitalization period, and whether the income to be capitalized is present agricultural income of potential agricultural income.

(*i*) Clarify the language which specifies the termination date of the dedication, including the responsibility of the landowner for petitioning for renewal. Clarify the concept "automatically renewable," in terms of its contractual meaning and in terms of its meaning for the appraisal chore which faces the Director of Taxation as the termination date of the dedication approaches.

(*j*) Clarify the penalty language to indicate that the penalty rate (here proposed as a minimum of 10 percent) be applied to tax liability which would have been imposed, under a reconstructed rate structure, if the land had not been dedicated.

(*k*) Change the law to assure that a 5 percent "penalty" is applied in cases where governmental action changes land use designations to "urban" and the dedication is subsequently abandoned. (Note that we do not here propose the imposition of the punitive rate of 10 percent.)

(*l*) Transfer all authority for the approval of dedication applications to the Department of Planning and Economic Development, with a requirement that advice be provided by the Department of Taxation, the Land Study Bureau, and county planning agencies.

(*m*) Provide greater inducements for dedication of agricultural lands by changing the graded rate structure of Chapter 129 to add a "land tax factor" for dedicated lands, comparable to the building tax factor now in the law. However, this provision should not be adopted unless all other recommendations for the dedication element of the law are adopted—especially those which tighten the protections against speculation. Note that the dedication itself will provide inducements through the tax base machinery. It is here suggested that additional, and highly visible, inducements be provided through the tax rate machinery. But this recommendation cannot stand alone, without the additional support of sturdier anti-speculation language. If an earlier recommendation is adopted, these provisions would apply equally to land and to growing crops.

(*n*) Provide, in the law, for annual reports of high specificity from the Department of Taxation and the Department of Planning and Economic Development showing, at the very least, market values and assessed values without dedication, taxes due without dedication (at recalculated tax rates), non-compliance, number of dedications for which renewal is sought, and the reasons for all public actions—in short, the life history of the dedication process.

(5) *The wasteland development law*

(4) *The urban dedication law*

(NOTE.—The purpose of the present set of recommendations is to imitate, as much as possible, the provisions of the agricultural dedication law (as amended under the above proposals) in terms of application procedure, designation of responsibility, penalty provisions, and the like. They are not repeated here, but they should be assumed to apply. The main difference, of course, is that we propose to retain the full exemption of dedicated lands in urban districts, and do not propose the "assessment-in-use" concept.)

(*a*) Revised the law to provide a much sharper statutory definition of the public purpose:

(i) to define the type of land available for exemption;

(ii) to establish acreage limitations;

(iii) to specify the character of necessary improvements;

(iv) to provide a clear definition of public access; and

(v) to refine the cost-benefit meaning of subsection (b) of the law.

(*b*) Provide the Director of Taxation with definite (although, of necessity, arbitrary) rules for the valuation of properties to be exempt.

(*c*) Adopt all other relevant recommendations from the agricultural dedication section (see above), including the transfer of authority for the approval of petitions from the Department of Taxation to the Department of Planning and Economic Development.

(*d*) In the event that the earlier recommendation to remove agricultural lands in Urban Districts from the agricultural dedication law is not adopted, make it clear in the urban dedication law that large acreages in agricultural use are not to be included in the exemption provisions of Section 128–21.5.

(*e*) Consider, as an alternative to the exemption, a strengthening of the zoning and setback and open space requirements of local ordinances, with appropriate surveillance by the statewide Land Use Commission.

(NOTE.—The purpose of these recommendations is to clarify the apparent purposes of the law. Many of the recommendations relating to the agricultural dedication law are applicable here, particularly those dealing with the shift of authority for planning purposes from the Director of Taxation to the Director of the Department of Planning and Economic Development. Here again, the meaning of the law is so vague that the real need is for wholesale revision and expansion.)

(*a*) Revise the law to provide a clear statutory definition of "wasteland." Any remaining uncertainties which require administrative discretion should be transferred from the Department of Taxation to the Department of Planning and Economic Development.

(*b*) Provide clear statutory language to require that wasteland dedications conform to State and county land use plans. The test should not only be the three-fold requirements of Section 128–9.35; relating to the *possibility* of development of the State, and the broadening of the tax base. The test should also include the possibility that conservation of wasteland might serve the broad public interest.

(*c*) Consider the possibility of refining the relevant sections of the Real Property Tax Law (especially the classification sections) and the Land Use Law to distinguish between prime agricultural land and marginal agricultural land. Perhaps, with proper planning protections, the wasteland development law might be extended to selected types of lands of marginal productivity.

(*d*) Reduce or remove the twenty-five acre minimum as a standard for eligibility, at least in Urban Districts.

b. The tax rate structure—

(*1*) *The classification system*

(NOTE.—The basic purpose of these recommendations is to preserve the essential elements of the classification system but to shift the emphasis from taxation to land use planning.)

Chapter 129. (See above.)

(*a*) Transfer Section 128–9(d) to Chapter 129. (See above.)

(*b*) Transfer the authority for classifying property from the Director of Taxation to the Director of the Department of Planning and Economic Development, acting with the benefit of advice from the Department of Taxation and county planning agencies.

(*c*) Abandon the requirement that properties be classified according to highest and best use and substitute clear statutory instructions that classification be fully consistent with land use districts and county zoning laws.

(NOTE.—In view of the possibility that there might still be some confusion on this important point, further elaboration might be appropriate. We feel that however land is classified for tax rate purposes, the assessor should be required to value according to standards of highest and best use (market value concepts). There would be exceptions, of course, notably in the dedication laws. But basically valuations should be made by the objective standards of the market place. In the pursuit of his assessment functions the Director of Taxation could classify properties in any way that suits his convenience. But these kinds of classifications are purely administrative tools that are useful in processes of mass appraisal. In market value appraisals classification itself should have no effect upon valuations or assessments. Thus, the policy aspect of classification would be transferred to the graded rate structure, where it belongs, and the policy responsibility for classification would be divorced from the valuation process and applied to the development purposes of the "Pittsburgh Law." It would still be possible for a particular parcel of land to be classified for rate purposes as single-family residential because of zoning restrictions and still be assessed as hotel or commercial if the assessor finds the market place unresponsive to zoning restrictions. Zoning restrictions would still have to stand on their own two feet (State and local), but at least the tax system would not be assisting at the funeral of such police power actions. The argument is developed at greater length in the text, but the conclusions are important enough to bear this repetition.)

(*d*) Consider the possibility of a further breakdown of the agricultural classification, with a "growing-crop-tax-factor" applied agricultural lands after the manner of the present building tax factor. Obviously, this possibility would be meaningful only if our earlier recommendation is adopted that the present exclusion of growing crops be abandoned. However, additional tests of this idea are clearly in order.

(2) graded rates

(NOTE.—We do not challenge the basic philosophy of the graded rate structure. As a result, the present recommendations are designed to purify the structure and to make it more amenable to the planning purpose.)

(*a*) Provide a definite schedule for the reduction of the building tax factor to a specified minimum (which may or may not be the 40 percent level of the present statutes). The reduction should have statewide uniformity.

(*b*) Remove the opportunity for county option after the 70 percent level is reached. Consequently, remove the veto power of the Governor from Section 129–2 (d) (4).

(*c*) Whatever the ultimate building tax factor, preserve the option of the Governor to delay each reduction for two year periods.

(*d*) Clarify the language of the reductions by providing increments of ten percentage *points*, rather than reductions of "ten percent."

2. *Other tax laws.*—a. Income tax law—Consideration should be given to revising the capital gains feature of the Income Tax Law (Chapter 121 to extend the definition of ordinary income to embrace sales or exchanges of property under agricultural dedication for a ten-year period. (See above).

b. Conveyance tax law—(1) Consideration should be given to increasing the overall rate imposed by the Conveyance Tax Law (Chapter 128A).

(2) Consideration should be given to classifying the rate of the tax, given the precedent of the real property tax, to provide higher rates for conveyances of property under agricultural or urban dedication laws, liability for which would be withheld until the dedication was abandoned. Such a provision would serve as an additional penalty for non-performance of the dedication provisions.

(3) Consistent with the confidentiality provisions of Section 128A–6 (f), require the Director of Taxation, in consultation with the Director of Planning and Economic Development, to prepare annual reports of sales-assessment ratios, leasehold data, and other information designed to test the effectiveness of the Land Use Law and local zoning ordinances.

3. *General recommendations.*—Following the earlier conclusion that Hawaii's property tax laws are extremely loose, and in parts almost incomprehensible, a major revision program should be undertaken to accomplish the following goals: 1. to clarify the meaning of the law, and thus to assist both taxpayer interpretation and administrative interpretation; 2. to provide, for each major element of the law, a clear statement of legislative intent; 3. to clarify the relationship

between the revenue purposes and the planning purposes of the real property tax; 4. to provide sharp administrative distinctions between the functions of the chief tax administrator and the functions of planning officials; 5. *to reduce greatly the discretionary powers granted to administrative authorities*; 6. to develop a clear set of relationships between the real property tax law, other tax laws, the Land Use Law, and local planning and zoning actions which have the effect of law; and 7. to clarify the relationships between policies of taxation and policies of public expenditure in a fully consistent public finance framework.

We propose, therefore, that the Legislature of the State of Hawaii conduct, with adequate funding, an overall exploration of public finance policies, placed within a planning context but based upon a recognition that the style of any system of public finance provides one important definition of the style of a community. Such a study should result in a report to the Legislature at least one year before the next scheduled revision of land use boundaries is due. Needless to say, important and urgent changes in the present structure should not be delayed pending the results of the major proposals.

4. *The urgencies.*—Selecting priorities for immediate action is always difficult, especially since so many tax decisions relate to the even more important decisions which relate to the kind of direct planning action embodies in the Land Use Law. Nevertheless, one or two issues stand out clearly as requiring immediate attention, in part because of the importance of the problem and in part because failure to take early action will lock the system into an uncomfortable mold and make future solution more difficult.

(*a*) Immediate attention should be given to the condition of the agricultural dedication provisions of the real property tax, as suggested in the detailed recommendations. The purpose of such action should be as suggested—to make it easier to obtain such dedications but harder to abandon dedications once they have been granted. In particular, we feel that some sense of urgency should attach to a clarification of the definition of "value in use;" to the removal of dedication opportunities for agricultural lands in urban districts; to the distribution of responsibilities between the Department of Taxation and the several planning agencies; and to the entire penalty structure.

(*b*) Immediate attention should be given to revisions in the urban dedication law. In the absence of such early attention the law might be used for purposes apparently not intended.

(*c*) Immediate attention should be given to the property classification issue, particularly with respect to the recommendations that, for purposes of applying the graded rate system, the classification be based upon land use planning criteria rather than on criteria of highest and best use.

(*d*) Immediate attention should be given to clarifying the condition of the graded rate structure of the real property tax, so that taxpayers (particularly those with investment notions) and tax administrators will have clearer expectations of the future of the building tax factor.

(*e*) Above all, of course, immediate attention should be given to strengthening the effectiveness of the Land Use Law. The recommendations for this purpose are discussed elsewhere in this study. And although the Land Use Law does not have tax effects as its central element, it has a clear potential for producing these effects. It is simply not possible to analyze either law without being conscious of the overlaps and interconnections. Indeed, this observation provides the clearest urgency of all—the need for a comprehensive view of the total Hawaii condition and a solid commitment to the planning process as it effects the entire structure of public and private action.

The Big Regions

(By Melvin R. Levin, *Journal of American Institute of Planners*, March 1969)*

Passage of Appalachian legislation and the 1965 Public Works and Economic Development Act will probably result in the creation of at least nine mammoth economic development regions covering over a third of the nation's land area and a quarter of its population. By mid-1967, six were already in existence. In theory, these new regions have been singled out for special assistance because of their economic distress. In the future, however, political and social factors rather than economic ailmens will undoubtedly become increasingly signifi-

cant in regional designation and the formulation of regional programs. Based on Appalachian experience, the new regional agencies will begin by spending the bulk of available funds on costly physical development programs, especially in transportation. Subsequently, an increasing share of their concern and funds will be devoted to human resource development and environmental improvements. The new regionalism will stimulate and contribute to moves toward comprehensive planning on a national scale.

THE BIG REGIONS AND AMERICA'S FUTURE

By the mid-1970's Americans may well take for granted a new level of government—a region covering several states, or including portions of several. In some instances these will be traditional or "natural" regions; in most, their boundaries will follow relatively predictable lines based on unifying socio-economic factors operating in a plausible geographic area.

These "big regions" will assume more and more importance in the lives of the people of the United States during the last quarter of the twentieth century. Created as a "new dimension of federalism," an entity to operate between the states and the federal government, they will gradually develop clear-cut identities based on their special problems and interests.

The new regionalism is one side of a developmental coin which, when turned over, reveals the "model cities" legislation. Both sides of this coin are aimed at helping to relieve intolerable social headaches—the persistence of gnawing poverty, stubbornly high unemployment rates, inadequate education and skills, racial and ethnic tensions, shabby housing, glaring transportation needs, and, in general, wretched misuse of human and natural resource potential. Both stress the role of planning and impatience with existing governmental inadequacies; both stress massive planned investment and new types of social and economic accounting.

TABLE 1.—APPALACHIA AND EDA REGIONS, 1967

	Area, square miles [1]	Population, 1960 [1]	Net civilian migration, 1950–60 [1]	Median family income, 1959	Families incomes below $3,000, 1960 (percent)	Median school years completed, 1960 (persons over 25)
Appalachia	165,000	15,328,000	−2,014,000	([2])	30.7	9.1
Four Corners	288,000	1,758,000	−11,000	$5,080	25.1	10.9
Atlantic Coastal Plains	79,000	4,487,000	−571,000	3,459	44.8	9.0
Ozarks	89,000	2,495,000	−431,000	3,492	44.4	9.3
Upper Great Lakes	116,000	2,694,000	−253,000	4,735	26.8	9.7
New England	67,000	10,509,000	+31,000	6,128	13.6	11.2
Total regions	804,000	37,271,000				
United States	3,549,000	179,323,000	+2,973,000	5,625	21.4	10.6

[1] Rounded to nearest thousand.
[2] Not available

Source: Economic Development Administration; from U.S. census data.

Yet clearly the new regionalism departs from the analogy in at least one major respect: it does not rest primarily on poverty. Rather, the states involved—some of which are relatively opulent—are engaged in an experiment in "creative federalism" as an expression of a new posture of cooperation. They will use their political strength within the federal government to solve the problems of backward areas within their states which reach across boundaries to neighboring states. And they will band with their neighbors to secure the federal help needed to solve problems which are beyond the unaided capacities of even the wealthiest states.

This article, therefore, explores the status of the newly evolving "regional commissions" and speculates on their future possibilities.

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THE NEW DIMENSION

From 1965 through 1967, commissions for six massive new regions embracing approximately 40 million people were formally created under federal legislation. These include Appalachia with 18 million; New England, 11 million; Ozarks, 2.5 million: Upper Great Lakes, 2.7 million; Four Corners, 1.8 million; and Atlantic Coastal Plains, 4.5 million (Table 1). Furthermore, in mid-1967, plans were under way to designate three other regions, the Upper Great Plains, Pacific Northwest, and Mississippi Delta. By 1970, perhaps a third of the nation's land area and a quarter of its population may be included within new regions. (See map.)

The primary vehicle for the establishment of the new regional agencies was the Public Works and Economic Development Act of 1965 (PL 89–136, August 26, 1965), although Appalachia, the forerunner and model for the 1965 legislation, had been established some months earlier in separate legislation. (1)

In some respects the new regions are direct descendants of the regionalism theory of the 1930's as outlined in National Resources Planning Board (NRPB) studies. (2) They continue the strong emphasis of the NRPB programs dealing with resource depletion and misuse and economic development. However, there is less attention to another, later type of regionalism, the urban regions. The latter, a child of the 1950's, represents an attempt, mostly unsuccessful, to deal with metropolitan problems.

Raising echoes of the New Deal, the new regions ostensibly are an economic response to area poverty. They are in fact, however, in the process of becoming organizations with far broader interests and concerns. In a sense they are political regions; most owe their establishment to a *quid pro quo* for the support of their congressional delegations for the designation of Appalachia. They are also political in another respect: their New Deal predecessors, operating in a climate of opinion in which violent hostility to government intervention and planning was commonplace, laid heavy stress on attempts to develop plausible proof of their profitability. In contrast, the new regions have departed both from the cost-benefit analysis of the river basin variety and the investment-job generation formulae used in securing passage of the area redevelopment legislation of the early 1960's. The new political and environmental dimensions reflect adjustments to an affluent, more sophisticated society as evidenced by the regions' substantial attention to human resources in addition to the physical environment. This redirection is not totally divorced from sound investment principles; it can be and has been explained as belated pragmatism, as an attempt to modernize their existing defective base for economic development. In the poor regions, social overhead facilities and services have remained neglected and rundown although they have been found to be indispensable prerequisites for modern economic growth.

There is clearly another assumption involved in the inclusion of public schools and public health in regional development programs which once riveted their energy on industrial parks or flood problems. The people who live in the distressed regions, like other disadvantaged segments of the society, are no longer satisfied merely with basic shelter and steady, low-wage jobs in territorial or racial enclaves. The cries for redress of grievances for the underdogs of society—the poor, the minority groups, and the backward areas—can no longer be stilled by providing unskilled jobs or freedom from periodic flooding. Their aspirations are now much more ambitious and involve rapid movement into the mainstream of society, a demand that invariably sets in motion a sequence of complex events.

Although past approaches were by no means as simple-minded as some critics have charged, they are dwarfed by the new broader focus that has cut loose from the familiar landmarks described above. It is also noteworthy that it is no longer necessary to display the beggar's sores. The underdog argument has lost much of its force compared to political considerations when applied to areas such as New England, where incomes have been higher and living conditions have been more favorable than in most parts of the nation. In short, although some of the rhetoric of the 1930's has been disinterred, the examples of Appalachia and New England suggest that in the past few years large-scale regional development programs have been profoundly altered in character and concept.

HISTORICAL ROOTS

There is no clear agreement on what constitutes regional planning and development either as a field of study or as a field of operations. To a considerable ex-

tent, Friedmann's caustic observation to the effect that regional planning has usually involved much research but little implementation in a "rather ill-defined combination of physical, economic, human resource, and natural resource concerns" is clearly correct. (3) But the field is so amorphous as to defy even the loosest parameters. Even Friedmann's extremely wide definition for regional planning as the "ordering of human activities in supra-urban space" seems too narrow to encompass all the operations of the new regions, particularly the administrative, lobbying, investment, and organizational issues that occupy much time and effort. The new regions are political entities with responsibilities that include but far transcend the economists' and planners' tasks of developing a technical framework and priorities for intraregional choices and allocations.

Another major problem in developing a suitable definition is pinning down the slippery term "region." There is, for example, a great variation in size in the already designated regions. The entire Southeast of the United States has been defined as a region in some studies, while miniscular "regions" with populations of less than 10,000 have been organized, recognized, and subsequently funded with federal assistance. Until recently, smallness seemed to be winning out: the "urban regions" of the 1950's were in most cases roughly equivalent to standard metropolitan areas; most were geographically small and had populations well under a million. The redevelopment areas of the early 1960's were even smaller; a number of designated rural and resort areas had populations of only a few thousand. This was in distinct contrast to the practice of the 1930's and 1940's when regional activity was focused on vast river basins like the Tennessee (4), the Missouri, and the Columbia. These watersheds of the depression decade were always sizable in territory if not always large in population. Similarly, the identification of the economically and physically distressed Appalachian, Ozark, and Cutover areas in the 1930's also involved boundaries encompassing parts of a number of states. However, the total population involved was smaller than in the nation's leading states.

By the end of World War II, the always loosely defined term "region" had lost almost all relevance except as a convenient geographic expression. The one experiment that seemed to point hopefully to the future (and perhaps the point is that it was a generation before its time) was the brave new world of the Tennessee Valley Authority. In original concept, this was to be the source of a great transformation for millions of America's poorest people. In fact, the central argument for support of TVA by taxpayers from Bangor to San Diego was that the growth of a market in the Tennessee Valley would benefit everybody; the rising tide of prosperity along the Tennessee would help to lift all American boats.

This has been the central feature of the argument over aid to "depressed regions" (and poor people) ever since—that they were simply bad for a prosperous society. And certainly the economic development of northern Alabama and southern Tennessee provided testimony to the significance of a pioneering experiment on this problem. But the danger with the "river basin" approach is its unsuitability for an urbanized nation in the present era. It seems questionable that a region created on the basis of natural resource needs and problems can focus adequately on urban problems.

TVA also ran into another basic problem. The realities of political survival in the 1930's and 1940's dictated an emphasis narrowed to the simple production of electric power with only limited side activities. Operating in the climate of partisan hostility toward planning which existed in the 1930's and 1940's, TVA found itself constrained within these parentheses, largely as a matter of realistic accommodation with the land grant colleges and their clientele, the area businessmen, and other components of the local establishment. As compared to the programs in Appalachia and those likely to emerge from the designated new regions, TVA's direct involvement with human resource development will seem rather minimal. Had it been otherwise, TVA might well have succumbed to its enemies and would now be remembered only as a brave wraith, extinguished in a premature, losing battle for the tenant farmer and the poor.

Although the new regions more closely resemble the regions of the 1930's in size, they have clearly been influenced by the experience of the 1940's and 1950's. Two divergent trends were apparent in the 1950's. The first involved the transformation of the state research-type "planning" agencies of the 1930's into industrial and tourist promotion organizations, usually with limited state planning responsibilities. The second was the previously mentioned focus on urban regions, reflecting the philosophy and policies of the U.S. Housing and Home Finance Agency (now the Department of Housing and Urban Development).

With the exception of weak, privately sponsored regional advisory agencies and public river basin commissions that have only a tenuous hold on political loyalties and power, the new multistate regions operate in a *tabula rasa* situation: the regional territory has not been as thoroughly staked out by strong rivals. It is likely that their confrontations and dissensions will result in internal factionalism among governors, senators, and clientele groups rather than in head-to-head battles among regional contenders with roughly similar hunting licenses. The only potential rivals on the horizon are the interstate river basin commissions being created under the Water Resources Act of 1965. However, in an urbanized society river basin agencies do not appear to have the political resources necessary to equip them for serious fratricidal battle.

APPALACHIAN PROTOTYPE

Charting the probable direction of evolution for the large EDA regions could conceivably be a difficult task, because the enabling legislation is so broad as to offer adequate authority for an enormous variety of programs. Consider, for example, the eleven research and advisory functions enumerated in Section 503 of the 1965 legislation based on the predecessor Appalachian Act. The new regions are empowered to assist regional development by undertaking research, initiating and coordinating long-range development plans, promoting increased private investment, preparing legislative recommendations, and conducting research on resources. Given this broad mandate, the limitations are so vague as to be non-existent.

Although they are kissing cousins with respect to research, there is one vital difference between Appalachia and the new regions. From an organizational standpoint, Appalachia is a relatively robust relation. From its inception, Appalachia has received federal assistance to conduct programs as well as for research and advisory activities. Thus, it has had real muscle to ensure that recommendations were carried out. Under Title II of the 1965 legislation, the Appalachian region was allocated over a billion dollars. This included $840 million for a Development Highway System, $69 million for Demonstration Health facilities, $63 million for various natural resource programs, $16 million for Vocational Education facilities, and $90 million to increase the normal federal matching share for a broad range of federal grant-in-aid programs. In combination, these funds gave the Appalachian organization substantial and sustained political leverage. Evidence of the strength was the passage in 1967 of a Congressional appropriation for the region barely smaller than the President's requests. This was somewhat unusual, coming at a time when appropriations for other Great Society programs like Model Cities were subjected to major cutbacks. The fact that Appalachia has program funds of its own to distribute helps the region to achieve budgetary immunity reflecting substantial grass roots support.

It can be predicted that the new regions will follow Appalachia's lead and not be content to remain restricted to research and advisory roles. Before much time has passed, the multistate regions will undoubtedly attempt to emulate Appalachian autonomy and move toward separate funding, independent of EDA control.

It is striking that both the nation's large autonomous regions have been established in southern or border state territory. Despite violent attacks on TVA as an allegedly socialisic venture, the Tennessee Valley Authority has been fervently embraced by area politicans, many of whom tend to be highly conservative on other domestic matters. Often elected officials in the South reserve ideological warfare for communism and the race issue and are otherwise supremely effective pragmatists, that is, lobbyists for their constituents. TVA may have looked like creeping socialism to northern conservatives, but in much of the South it has been considered an effective vehicle for pumping federal investment and payrolls into the area—a situation similar to that of the costly military installations and federal public works projects that freckle the Southland. By and large, it has been the North and Midwest that rejected, on ideological grounds, proposals to create similar regional river basin authorities on the Missouri, Columbia, and other rivers.

By the time the Appalachian region was created, much of the political controversy over TVA had dissipated, despite an occasional nostalgic flicker of hostility from private power companies. Even more important, perhaps, the Appalachian Commission from its birth was in reality the "establishment" creature that critics of TVA claimed the Authority had become by the late 1930's—an administrative vehicle closely tied to the local power structure. (5) This stance has certain political advantages. Largely controlled and operated by state governments, the

new regions do not provide a vulnerable target to a conservative opposition that has proclaimed itself the champion of states rights. Furthermore, within the states, the new regions are creatures of the governors; they in no way resemble the community action organizations that the U.S. Office of Economic Opportunity has financed to mobilize the poor and forsaken to do battle with City Hall.

Perhaps the dichotomy between the establishment and the poor is not entirely meaningful. Governors are popularly elected, and the programs that help them to achieve and retain power are directed toward securing support from all segments of the electorate, including the poor. With some exceptions, mainly in the South, the poor are making greater use of their franchise; and the difference in program orientation between underdogs, many of whom are moving out of poverty, and larger middle class electorates has become increasingly blurred. The Appalachian precedents suggest that, setting aside the continuing commitment to highway construction, that region's growing focus on human resource programs has resulted in an orientation that is probably reasonably close to the one likely to be demanded by spokesmen for the disadvantaged. This is not to say that there is complete harmony among the middle class, the "interests," and the poor in Appalachia. The administration of these programs and their efficacy in meeting the needs of the hard core poor can become the subject of bitter controversy. It is probable that a requirement of maximum feasible participation in policy-making similar to OEO legislation would result in significant revisions in administrative and program content and outlook. This raises some interesting questions. While, at first blush, the vast territory of a multistate region seems an improbable arena for the kind of protest groups that have developed in slum neighborhoods, the creation of anti-establishment organizations on a regional scale is by no means inconceivable.

Once again Appalachia may point the direction: the demand of an Appalachian citizens' group for public control of the coal mining industry (6) is an example of the kind of dissidence that could be anticipated within the regions. In New England a primary issue for dissent may be the public power question, while other regions find controversy arising from poverty or natural resource programs. Thus, Appalachia may be the prototype in experiencing the onslaught of a pioneering regional gadfly organization that attempts to enlist large segments of the population in efforts to force thhe official regional commission to give early battle to vested interests.

HUMAN RESOURCE PROGRAMS

The 1960 research study upon which much of subsequent Appalachian action was based recommended more emphasis on "portable investments" such as education and manpower training and less stress on costly highways and headwaters dams. (7) The study also suggested that primary efforts be concentrated on developing urban areas of demonstrated growth potential. In part, these recommendations were based on my research on southern Illinois, an area of marginal farming, declining employment in the coal industry, and shabby mining hamlets similar in many respects to Appalachia. (8)

Neither concept met with the complete approval of those assembled at the Governor's Conference on Appalachia called by Governor Millard Tawes of Maryland in April 1960. The governors argued that acceptance of these human resource recommendations would be tantamount to adopting a policy of accelerating depopulation of much of the region; they were not receptive to programs that called for expending much of Appalachia's limited resources on education and training activities that amounted to a subsidy of the well-off regions receiving Appalachian migrants.

An idea that found greater favor was the "development highway." As a mountain region that possessed little but coal and timber to attract outside interest, Appalachia had been bypassed by the main thrust of national economic growth, partly because of its isolation. The governors suggested that new roads would open up the region to the mainstream of the nation's economic growth. However, these new highways would have to be based on new criteria; they were to be "development highways" to generate future traffic. Current criteria for highway construction are grounded primarily on an extrapolation of present traffic volumes, a premise that usually discriminates against the underdeveloped region. The governors complained that the extensive federal interstate highway system and ABC system (9) would link the region's major urban centers with first class routes, but they were obviously not going to penetrate into many mountain areas.

The governors' orientation was fully reflected both in the 1964 report of the

President's Appalachian Study Commission (10) and in the three annual budgetary allocations of the Appalachian Regional Commission through fiscal 1968. For fiscal years 1966 and 1967, total appropriations amounted to $282 million for a start on 2,350 miles of development highways and $18 million for local access roads. (11)

While the Commission has continued its stress on highways that it regards as vital prerequisites for development despite the care that had gone into program design, some of Appalachia's other original programs did not live up to advance billing. Two notable examples are the timberland and pasture operations. There had been much needless worry on the part of western cattle interests fearful of grassy eastern valleys swarming with near-to-market beef, but for a variety of reasons neither effort produced the type of early payoff that some had anticipated. In contrast, one of Appalachia's significant successes was financial matching to help impoverished areas to take advantage of federal grant-in-aid programs. These supplementary grants-in-aid constituted a powerful weapon in helping the Commission to develop a strong local power base and enabling it to attack a variety of problems along a broad front. To cite one example, noticeable progress is being made on the desperate problem of substandard rural housing. The Commission found that it could make good use of technical assistance funds in helping farm areas to complete the complicated application forms required to qualify for grants and low interest loans available from other federal agencies.

In passing, it may be remarked that the TVA, too, claimed that its free technical assistance helped to invigorate local communities. (12) While this claim is undoubtedly accurate, it has its ironic aspects. Roughly two-thirds of the TVA area is included in the Appalachian Region, and Appalachian Commission staff allege that many of the TVA communities are a mess. The TVA, it is suggested, has remained a hydrology-oriented agency rather than evolving into a comprehensive planning operation, and Appalachia has inherited part of the consequences of TVA's failure to broaden its horizons.

Nevertheless, unmistakable signs of a change in program emphasis—if not monetary allocations—quickly became apparent. A preliminary report financed by the U.S. Office of Regional Economic Development, the EDA branch responsible for regional programs, took account of the contribution of human resource development to the growth of the economy as an "implicit" factor in the economic analysis. In accordance with the terms of the research contract that called for a delineation of subregions, the report placed much stress on the urban growth center concept. (13) A year later, in 1966, the Commission reported that it was moving "toward comprehensive programs for helping develop the Region's manpower . . . a detailed assessment of the educational needs and potentials of the region" and toward a new towns policy (14) to regroup the dispersed population living in central Appalachia. (15) The report indicated that an "overwhelming majority" of supplemental grant funds—82 percent of $13.7 million—was approved for facilities "designed to develop the region's people." These included allocations for higher education, vocational education and hospital facilities, nursing homes, mental health centers, and libraries. In early 1967, the Executive Director reported that the Commission had approved over 400 school and hospital projects, community colleges, and graduate research facilities and that plans were being completed for a series of comprehensive health services facilities in several parts of the region. (16) The Commission quickly discovered, however, that the real shortage was not bricks-and-mortar, but trained people. Programs in the health field, for example, were subsequently modified to reflect the need for augmenting the supply of qualified staff.

A central theme that runs through the Appalachian Commission's study, as indeed through the hearings conducted on the 1965 EDA legislation, is the concept of social disadvantage as reflected in indices comparing the region to the nation. The Appalachian Commission reports included data showing that the infant mortality rate in Appalachia was double the national average, that the region had a 50 percent deficiency in long-term health care faciilties compared to the nation, that the region's per capita ratio of physicians and nurses was much lower, that the proportion of high school and college graduates in the population was considerably smaller, and that housing conditions were relatively worse.

To a degree, a contributing factor to the growing emphasis on human resource problems is the fact that Appalachia contains many living ethnographic museums, cultural survivals incorporating a past that has long since disappeared in other regions. This is also true of some of the other regions: the Indians

of Four Corners, Negro enclaves in the Coastal Plains, and mountaineers in the Ozarks also provide rich material for folk singer and anthropologist as well as special difficulties for the planning agency.

In interpreting its mandate to further economic progress in this liberal fashion, the Appalachian Commission is increasingly grappling with a broad spectrum of social problems. Although the Commission's efforts in this direction would not have been possible on any substantial scale were it not for Great Society legislation and national prosperity, the Appalachian programs clearly reflect a sensitive awareness not only of the human needs of the region but also the fact that action to meet these needs has become politically advantageous.

HOW TO RUN A SURPLUS: THE CASE OF NEW ENGLAND

The designation of New England as a development region raises a number of pertinent questions. Some are related to the applicability of the Appalachian criteria used as a yardstick for delineating the new regions; others clearly suggest that, in future years, the creation of multistate organizations will not be limited to a response to poverty or alleged lag relative to the nation, but will be a pragmatic approach to resolving multistate problems. In this sense, New England, like Appalachia, is a national prototype.

For a number of years, states in the Northeast and Midwest have registered complaints concerning alleged federal favoritism toward the South and West. In New England, the southern states in particular were visualized as the beneficiaries of a vast outpouring of federal expenditures for military installations and public works because of powerful southern influence operating through the congressional committee seniority system. In effect, the federal government was believed to be highly effective in the role of equalizer, taxing wealthy states in New England and elsewhere for the benefit of the needy, politically influential South and West.

Some who believed that this federal redistribution was a reality argued that it is all a mistake; a larger share of federal funds should be channeled to expanding states rather than being poured into rural sinkholes. But others, after discovering that in reality the rich states were getting richer via a disproportionately large share of federal expenditures, suggest it as a matter for concern from that point of view. They argue that a larger share of federal aid should be given to the poor rural states, if only to help improve the health and education of future migrants.

As the focus of regional development broadens to include the better-off regions—led by New England—the problem of interregional and interstate allocation of federal funds will emerge as an increasingly crucial issue. It is useful, for this reason, to examine how the system works, especially how and why wealthy regions manage to secure a larger share of federal allocations than poor regions.

Evidence that the federal effort to channel relatively larger amounts of federal funds to poor regions was not particularly effective came to light in a study published in 1966. Analyzing the pattern of federal expendtures to states and regions between 1957 and 1963, the study concluded that "greater amounts of federal expenditures in the period of this study tend to go to states with higher levels of per capita personal income." (17) The persistence of this pattern is attributable to the fact that most of the nation's spending for defense procurement and for NASA is allocated to states that have a strong urban-industrial-research base and that these states use a substantial part of this wealth as matching money to bring in additional federal allocations.

Data for the New England region show this process in action. Between 1957 and 1963, the region increased its percentage share of per capita allocated federal expenditures. On a per capita basis, New England's 45 percent growth was slightly greater than the 43 percent national increase; its gains in federal expenditures outstripped its modest population growth. In practice, this meant that New England continued to receive about 35 percent more federal expenditures per capita than the national average. As a region it was exceeded only by the Far West, which was 44 percent per capita over the national level in 1963. (18) (In passing, the $565 in per capita federal allocations received by New England in 1963 and the $175 per capita increase between 1957 and 1963 may be compared to proposals to expend $50 to $100 per capita annually to accelerate progress in dealing with the region's unfinished business, most notably to cleanse its rivers and shore areas.)

An examination of the statistics indicates how this feat was accomplished. In 1963, New England, with 5.8 percent of the nation's population, received almost 9 percent of U.S. defense and NASA expenditures. By allocating large amounts of money to federally matchable public assistance programs, the region proceeded to secure almost 8 percent of U.S. expenditures for transfer payments. As Table 2 indicates, despite New England's smaller share of civilian military wages, the third component of the Big Three in federal expenditures, all states in the region were above the national level with the exception of Vermont. Connecticut and Massachusetts are clearly the regional leaders.

TABLE 2.—NEW ENGLAND STATES: SHARES OF MAJOR ALLOCATED FEDERAL EXPENDITURES, 1957 AND 1963

	Population 1963 (percent)	Per capita allocations		Total allocations (percent)		Civilian, military wages (percent)		Transfer payments (percent)		Defense, NASA (percent)	
		1957	1963	1957	1963	1957	1963	1957	1963	1957	1963
New England	5.8	$388	$565	6.9	7.0	5.4	5.1	7.8	7.9	8.6	8.8
Massachusetts	2.8	372	592	3.2	3.5	2.6	2.6	4.4	4.8	3.2	3.7
Rhode Island	.5	372	502	.6	.6	.9	.7	.6	.6	.2	.3
New Hampshire	.3	297	452	.3	.3	.3	.4	.4	.4	.2	.2
Connecticut	1.4	503	649	2.1	2.0	.6	.7	1.5	1.4	4.6	4.0
Vermont	.2	239	346	.2	.2	.1	.1	.2	.2	.1	.1
Maine	.5	322	403	.5	.5	.6	.6	.6	.6	.4	.2
United States		329	470								

[1] Includes almost 87 percent of total 1963 Federal allocations as follows: civilian, military wages and salaries ($23,900,000,000, 27 percent of $88,600,000,000 allocated in 1963, transfer payments $24,600,000,000, 27.8 percent of total), and defense, NASA, procurement ($28,400,000,000, 32 percent of total).

Source: "Federal Expenditures to States and Regions," Subcommittee on Intergovernmental Relations, Committee on Government Operations, U.S. Senate (Washington, D.C.: U.S. Government Printing Office, June 29, 1966).

The disparity between these two states and the remainder of the region is particularly marked with respect to the vital research and development function. An examination of 1963 allocations of the $12.7 billion spent for federal and and corporate Research and Development funds revealed that the region accounted for 8 percent of the nation's total R&D expenditures, roughly a billion dollar input to the economy. (19) The distribution within New England was uneven: Massachusetts and Connecticut accounted for virtually all R&D activity. Although the disparity is not quite as serious as it appears, since the two states contain three-fourths of New England's total population, Rhode Island and the three northern New England states are clearly not securing a proportionate regional share. This and other factors may suggest that one of the reasons for designating wealthier regions is that a regional approach may enable them to deal more effectively with their economically lagging states and subareas.

It should not be suggested that New England has adopted a cold-blooded policy of increasing its public assistance expenditures so as to maximize federal contributions. Unlike states in some parts of the nation, relative generosity to the poor in the New England states extends to all forms of public aid, including the General Assistance program for which no federal matching funds are made available. Thus, while per-person Massachusetts payments for Old Age Assistance (for which federally matching funds are available) are almost double the level in West Virginia, the average per-case payment for General Assistance (for which no federal funds are available) is more than twice that of West Virginia. (20)

CRITERIA FOR ESTABLISHING REGIONS: A BAD FIT?

The eight criteria for designation of the new EDA development regions clearly are based on the Appalachian precedent. They are: major devitations from national rates of (*a*) population growth, (*b*) income levels, (*c*) housing quality, (*d*) industrial expansion, (*e*) unemployment, (*f*) threats to the economy from automation or contractions of major industries from defense plant closings, (*g*) serious natural resource problems, and (h) a common bond of regionality. (21)

Several difficulties with the criteria as stated are obvious. They do not take into account the different stages of economic development from region to region. They fail to make sufficient allowance for variations within a region. They apply

a narrow type of slide-rule mathematics to development—a heritage of the rather questionable idea that industrial growth somehow equals healthy development. But as the five regions designated come into full operation, and if the other three presently contemplated also become realities, the criteria will doubtless be expanded and made more meaningful. The new regionalism can therefore provide a rich diversity of experinces on which to base experiments elsewhere in the country.

New England, for example, has a uniqueness that sets it apart. In terms of geography and historical tradition regional designation is particularly appropriate for the six-state New England region (although some analysts would exclude western Connecticut, or at least Fairfield County, as more logically associated with the New York metropolitan area). New England is comparable in total size and population to Illinois and other sizable states and, unlike Appalachia, which has expanded and contracted like an accordion since 1961, New England possesses a genuine demarcated, historic identity.

In recent years there has been considerable improvement in the region's economy with the result that a number of its redevelopment areas have been canceled. By mid-1967, unemployment rates in all but a few of the region's labor market areas were down 6 percent (*vs.* 3 to 4 percent for the nation) ; in Boston, Providence, and the Connecticut Valley, which contain most of the region's population, jobless rates run below or near the national level. Furthermore, New England's per capita income has remained substantially above the national level, the percentage of substandard housing is appreciably lower, and the problems posed by cutbacks in military installations are apparently being mastered.

However, although the data reveal that New England is by no means another Appalachia, the region nevertheless faces a number of significant problems demanding interstate action. Water pollution and transportation problems, especially those of the railroads, are two examples. Net outmigration of better educated young people has depleted some area labor markets and local leadership strata.

The current rosy economic picture must be viewed in historic perspective. In much of the region, the recent improvement is superimposed on decades of economic distress and neglect, which has resulted in major accumulations of rundown public buildings and antiquated schools and other difficult human resource problems. The massive urban renewal and anti-poverty programs in New Haven and Boston, which have so far gone only part way in attacking this accumulation, provide some indication of the kind of action and the scale of expenditures likely to be required to rectify past neglect, particularly in the small and medium-sized cities that have barely managed to launch renewal programs. Moreover, a realistic water pollution program and transportation improvements will call for massive expenditures far in excess of regional and local resources.

Thus, when everything has been said in favor of designation on the basis of the 1965 EDA criteria, the fact is that New England is truly a region but represents a departure from past practice in that it owes its current status primarily to factors other than economic deprivation. In a real sense this is a pioneering step. It is now possible to visualize a nationwide pattern of regions covering the Middle Atlantic, Middle West, and Far West states, designated not because they are poor and economically depressed, but because they have multistate problems, because they wish to create a regional voice to deal with these problems, and because they have the political strength to secure federal aid to support a regional organization.

OUTMIGRATION AND THE REGIONS

A principal common symptom, advanced to justify federal aid in Congressional testimony on the 1965 EDA legislation, is outmigration. On this proposition the Upper Great Lakes and New England were in full agreement—heavy net outmigration of better educated young people from certain regions constitutes an obstacle to economic growth, a drain on local resources, and a subsidy to the regions that receive the migrants.

The migration argument possesses obvious merit when applied to most of the new regions. Net outmigration occurred on a huge scale in the Ozarks, Atlantic Coastal Plains, Upper Great Lakes, and Appalachian regions. In contrast, as Table 1 indicates, the Four Corners region experienced a very small net outmigration while New England received a minor influx of migrants. However, most of New England's net gain can be attributed to suburbanization in western

Connecticut. Connecticut gained almost a quarter of a million migrants in the 1950–1960 decade, more than compensating for a 130,000 loss in Massachusetts, Maine, Vermant, and Rhode Island.

Outmigration is perhaps one of the most relaistic arguments for seeking federal aid to subsidize distressed areas. However, migration is not a simple phenomenon; consequently, arguments involving cross movements of population must be used with caution. It is true that a considerable amount of impressive data and fearsome comparisons can be developed from migration statistics. In the Senate hearings, testimony on net migration from the state of Montana suggested that, in terms of dollars, the estimated annual net loss from the migration of 5,000 high school and college graduates each year amounted to over a third of the state's combined average sales of livestock and wheat. (22)

There is no obvious method of determining how the costs and benefits of this interregional migration of young people balances out. For example, no wholly satisfactory technique has been devised to determine if the economic and social contribution of a dozen scentists and engineer in-migrants more than compensates for the losses n public and private investment accruing through the loss of one or two hundred miners and farmers; this is in fact the West Virginia pattern. To cite other examples, if migrants return "invisible imports" in the form of cash contributions to their families or if the alternative to migration was public subsidy on the welfare rolls, there is room for arguing, in the first instance, that not all of the local investment has been lost and, in the second, that the economy benefited rather than suffered from outmigration. On the other hand, if the migrants are troublesome or of marginal quality, the receiving areas can reasonably claim that they are also net losers by the transfer. In connection with the problems generated by migrants, a prominent authority on regional problems suggested, in an off-the-record talk, that northern cities would find it cheaper to subsidize his unruly, ill-educated neighbors to stay home. In short, cost-benefit calculations to determine net beneficiary areas from migrant crosscurrents are difficult to determine or to defend.

Nevertheless, even when all of these caveats are taken into consideration, the migration argument has substantial merit. Persistent poverty in migrant "sending" areas is partly attributable to the burden of child-rearing and public education on poor families and financially weak state and local governments. While it is true that past failures in family planning are partly responsible for these areas' current problems, as in the underdeveloped nations, control of conception is a complex phenomenon that tends to follow rather than precede economic progress.

Allocations of federal funds to the distressed regions can be viewed in a more realistic perspective by examining some of the pertinent migration data. A calculation of migration statistics by comparing the number of residents aged 25–29 with the number aged 15–19 a decade earlier is revealing. It is assumed that the death rate in this age bracket is extremely small, that is, consistent with national rates. (23) It is also assumed that persons aged 25–29 are not likely to be in the armed forces or attending school, so net losses of population within this cohort over ten years is indicative of drain on regional vigor.

TABLE 3.—OUTMIGRATION OF YOUTH IN NEW ENGLAND AND SELECTED STATES, 1950–60

[Nearest 1,000]

	Number of persons (age)			
	15 to 19 in 1950	25 to 29 in 1960	Net change	Percentage change
Maine	70,000	56,000	−14,000	−20
Vermont	29,000	21,000	−8,000	−28
New Hampshire	37,000	34,000	−3,000	−8
Connecticut	122,000	150,000	+28,000	+23
Massachusetts	309,000	298,000	−11,000	−4
Rhode Island	54,000	47,000	−7,000	−13
New England	621,000	607,000	−14,000	−2
Montana	41,000	39,000	−2,000	−5
West Virginia	166,000	100,000	−66,000	−40
Oklahoma	179,000	137,000	−42,000	−23
United States	10,671,000	10,869,000	+198,000	+2

Sources: U.S. Census of Population, 1960, tables 47, 52; Statistical Abstract of the United States, 1956, table 22.

Table 3 presents a comparison of the two sets of age category statistics. It reveals that New England lost only 2 percent of its young adults between the 1950 and 1960 Censuses; there were almost 621,000 residents aged 15–19 in the region in 1950 compared to 607,000 persons aged 25–29 in 1960. As might be expected, the pattern in the New England states was extremely uneven, with a substantial gain in Connecticut and significant losses in Vermont, Maine, and Rhode Island. By way of a yardstick, the loss in Oklahoma was 23 percent and in West Virginia a very high 40 percent. In Montana, a state proposed for inclusion in a new Upper Great Plains region, the figure was approximately equal to Massachusetts—4 percent.

Kraenzel's data prepared for Montana suggest that the per-person rearing cost to "parents and citizens" is $19,000 for high school graduates and $32,000 for departing college graduates. If these figures can be accepted as reasonably accurate and applicable, the loss in New England, excluding Connecticut, through net outmigration of young people was probably well in the hundreds of millions of dollars annually between 1950 and 1960. In West Virginia and Oklahoma, the annual figure probably exceeded $100 million (24).

The existence of some correlation between heavy net migration and income levels is suggested by the fact that New England's high outmigration state, Vermont, has the lowest per capita personal income in New England while Connecticut, the region's only in-migrant state, has the highest. This is a national pattern. States like California and New York which receive large numbers of migrants exhibit high per capita incomes associated with an expanding economy, while the net loss states like West Virginia and Oklahoma have lower per capita incomes. There are exceptions like Pennsylvania (high outmigration but average incomes) and Florida (large in-migration but low incomes), but the trend is clean even in these instances: Pennsylvania incomes have declined relative to the nation, while per capita income in Florida has at least kept pace with the national growth rate despite the continuous influx of retirees, many of whom have comparatively little income.

Measured against an apparent annual subsidy of human capital to other areas on the order of $100 to $200 per capita in some states located in development regions such as West Virginia, Montana, and Oklahoma, proposals to expend perhaps an extra three or four billion dollars a year in the nation's new development regions do not appear wildly out of line. Spread out over a total combined regional population of perhaps 40 million, this huge sum amounts to only $100 per capita annually. Viewed as an incremental amount over and above normal governmental expenditures, it can be seriously argued that areas that rear much of the nation's labor force at great expense and which demonstrably do not share fully in national prosperity deserve considerable assistance if only to improve the quality of the migrants they ship out each year to work in other regions. It can be noted that increased educational expenditures alone could easily absorb much of this new money. Public school per-pupil allocations in Appalachian, Southern, and Ozark states in some cases are $200 to $300 a year below levels in progressive northern states.

Where this help-for-the-deprived argument runs into trouble is in a region like New England, characterized by only pockets of poverty rather than pockets of prosperity in the midst of poverty, as is the case in the other new regions. The migration argument is most tenuous in states like Connecticut and Massachusetts, both relatively successful in exchanging young high school graduates for older executive and professional workers—although Maine and Vermont obviously share in some of the problems found in the Real McCoy regions.

CONCLUSION: THE NEW REGIONS AS NEW ARENAS

It is possible to discern the faint outlines of a national regional policy coming into focus in the late 1960's and 1970's, partly with the help of the Appalachian and New England bellwethers. It can be predicted that considerable attention will be given to problems of defining regional goals and objectives. Under the prodding of the U.S. Bureau of the Budget and the adoption of Planning-Programming-Budgeting Systems, we can anticipate embarrassing, intensive, and useful efforts to develop performance standards to measure the efficacy of the various regional programs. Much time will be devoted to identifying that elusive element, the public interest, after the regions begin to tackle (or attempt to avoid) controversial, divisive issues. A sophisticated form of technical warfare will probably develop as planers, economists, sociologists, and other professionals are mobilized to present, defend, or attack alternative plans and programs.

Unlike the urban (that is, metropolitan) regions that remain federally

sponsored clients with weak political roots, the new regions are politicalized from their inception; they will undoubtedly develop into active political arenas creating a meaningful fourth dimension in the present federal-state-local system. However, there are several foreseeable problems in playing this role effectively.

The first problem involves organization. Three southern states, the Carolinas and Georgia, are members of two regions, Appalachia and Coastal Plains. Other states with varied territory and characteristics are likely to be confronted by the same challenge. It is extremely difficult to allocate limited staff resources and gubernatorial attention to two or more regional organizations in addition to the work entailed in dealing with metropolitan areas, Economic Development Districts, and other units. Whatever the violence to economic logic, whole state membership in a single region may be highly desirable. Also, Appalachia simply may be too large. Breaking that region into at least two smaller regions may be in the cards.

A second problem concerns the level of public interest in regional problems and the activities of an interstate organization. The burning issue of the latter third of this century—violence at home and abroad—comes under the jurisdiction of the federal government in both cases; and cities, not these regions, are on the firing line of domestic disorder.

Similarly, other critical issues like taxes, schools, and employment are in the federal and local domain, although the state role has been enlarging. The regional organizations are left with significant functions in matters like air and water pollution and open space, which apparently arouse little sustained public interest; a secondary role in research; and a role as a political intermediary and financial conduit in human resource and transportation development.

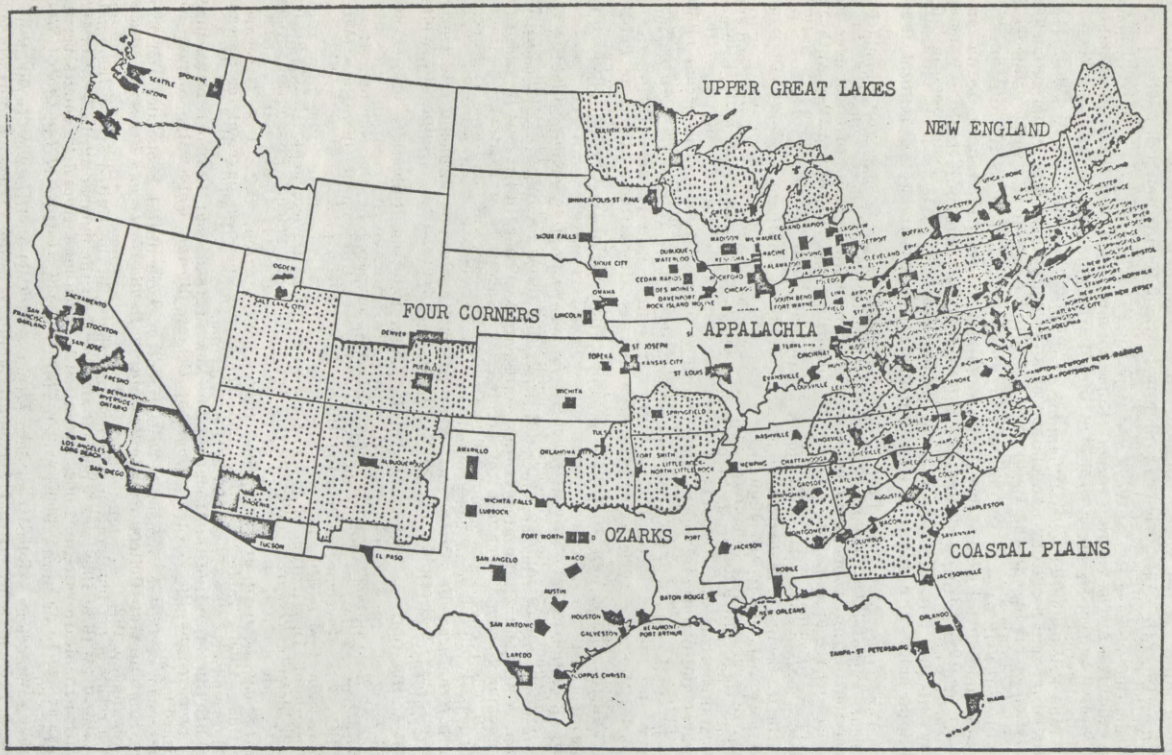
The efficacy of the new regional agencies will depend to a great extent on the quality of their staff. A well-balanced, well-led research team trusted by the states and federal agencies can play an important part in broadening the focus of government operations and making programs more meaningful. The ability to perform sound, broad-gauge, action-oriented research rapidly can be one of the great strengths.

There will obviously be some wide gulfs between a high-powered regional research team and the states that tend to lack impressive planning and research capacity, and the public whose attention is focused elsewhere and has insufficient understanding of the issues and complexities. The commissions are obviously faced by a great task in assisting the states to improve their capabilities and in helping to educate the public on their activities and decisions.

Finally, one can hazard the further prophecy that interregional clashes are likely to provide additional stimulus for national planning. The new regions can conceivably play a significant role in recapturing some of the ground lost under the ideological onslaughts of the 1930's and early 1940's which killed the National Resources Planning Board.

On the whole, however, the regional commissions will open up new roles and new challenges for the existing cast of characters rather than bringing in New Faces of 1970. Existing state and federal agencies will take on new tasks, and governors and senators will respond to new opportunities for achievement and maneuver. Finally, the road ahead is likely to be rocky: there seems to be a rule of governmental, academic, and military bureaucracy that each new coordinative mechanism further complicates the difficulties of coordination. It has been wisely said that a coordinator is a man who sits between two expediters. A remarkable quality of managerial and planning talent will be required to measure up to the challenges generated by the new regionalism. Fortunately, one obstacle will probably be removed in fairly short order: the new regions will all follow Appalachia's lead in opting for independent status. Any attempt to integrate federal interagency programs on a comprehensive basis is doomed if it is mounted by an organizational component of a weak national agency. The departure of the regional commissions from EDA's embrace may have implications for model cities in which HUD-sponsored organizations will attempt to reshape programs operated by local police departments, school boards, vocational education boards, and other agencies.

In conclusion, one thing we can count on in the 1970's and 1980's is that, while Americans commemorate the Revolution and the writing of the Constitution, they will not revolutionize their governmental structure or discard the Constitution for a new one. The states will have the same boundaries in 1988 as in 1968. But on the most sophisticated maps there will be a new feature—regions reaching across state lines, united by common economic and social interests. The experiences of TVA, Appalachia, and the New England region all point to this conclusion.



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FOOTNOTES

1. Public Law 89–4, "Appalachian Development Act of 1965," March 9, 1965.
2. See National Resources Planning Board, *Security, Work and Relief Policies* a report of the Committee on Long Range Work and Relief Policies, Washington, U.S. Government Printing Office, 1942. The cutover region (Upper Great Lakes) boundaries are similar to those delineated in the NRPB research, but the Appalachian and other EDA regions are substantially different.
3. See John Friedmann, "Regional Planning as a Field of Study," *Journal of the American Institute of Planners*, XXIX (August 1963) ; and "The Concept of a Planning Region—The Evolution of an Idea in the United States," *Land Economics* (February 1956). See also Howard W. Odum and Harry Estill Moore, *American Regionalism* (New York : Henry Holt and Company, 1938).
4. The example of the Tennessee Valley was frequently cited in the Senate and House hearings on the 1965 EDA legislation. See *Senate Hearings, Public Works and Economic Development Act of 1965* (April and May 1965), Senate and House Committees on Public Works (Washington, D.C. : U.S. Government Printing Office, 1965).
5. Philip Selznick, *TVA and the Grass Roots* (Berkeley : University of California Press, 1949).
6. *New York Times*, March 26, 1967. A new organization, The Congress for Appalachian Development, approved the summoning of an "Appalachian Peoples Congress" in the summer of 1967 to rally support for a new plan to transfer ownership of control over company-owned coal resources to a new authority modeled on the Tennessee Valley Authority.
7. David A. Grossman and Melvin R. Levin, "The Appalachian Region : A National Problem Area," *Land Economics* (May 1961), p. 140.
8. Melvin R. Levin, "The Depressed Area : A Study of Southern Illinois" (Ph.D. dissertation, University of Chicago, 1956).
9. The ABC system refers to highways financed on a 50–50 basis by the federal and state governments. The smaller, generally higher quality, interstate system is 90 percent financed by the federal government.
10. *Appalachia, A Report by the President's Appalachian Regional Commission* (1964).
11. *Executive Director's Semi-Annual Report, The Appalachian Regional Development Commission,* Table "Status of Program Funds Through Fiscal Year 1967," July 1–December 31, 1966.
12. Charles McKinley, "The Valley Authority and Its Alternatives," *American Political Science Review* (September 1950) ; included as Chapter 28 in John Friedmann and William Alonso, *Regional Development and Planning: A Reader* (Cambridge : M.I.T. Press, 1964), p. 556.
13. Litton Industries, *Preliminary Analysis for Economic Development Plan for the Appalachian Region* (Area Redevelopment Administration, November 1965), pp. 259–260.
14. A proposal for creating new towns in eastern Kentucky had been recommended in 1960. See "A Case Study Located in Eastern Kentucky," *New Towns: A Proposal for the Appalachian Region,* Department of Architecture, University of Kentucky, Lexington, July 1, 1960. The proposal was stimulated by Grady Clay, editor of *Landscape Architecture* magazine, who served on the advisory committee.
15. *Executive Director's Semi-Annual Report, The Appalachian Regional Development Commission,* July 1–December 31, 1966, "Letter of Transmittal," Ralph R. Widner, Executive Director.
16. *Senate Hearings:* see Statements of Dr. John Peterson, University of Arkansas, pp. 226–227.
17. *Federal Expenditures to States and Regions,* prepared by the Subcommittee on Intergovernmental Relations of the Senate Committee on Government Operations (Washington, D.C. : U.S. Government Printing Office, June 1966), p. 6.
18. *Ibid.,* Table C–6, p. 130.
19. "Geographic Distribution of Funds for Research and Development, 1963," *Reviews of Data on Science Resources* (Washington, D.C. : National Science Foundation, August 1965).
20. *Statistical Abstract of the United States* (Washington, D.C. : U.S. Government Printing Office, 1966), Table No. 431, p. 305. The average per-case payment for December 1965 in Massachusetts was $74 vs. $36 in West Virginia.
21. "A Brief in Support of the Designation of New England as an Economic Development Region," prepared by the Area Development Center, Boston University, August 1965 (unpublished ms.).
22. Statement of Carl F. Kraenzel, Department of Agricultural Economics and Rural Sociology, Montana State College, *Senate Hearings on Public Works and Economic Development Act of 1965,* p. 192.
23. As a result of net immigration, as noted in Table 2, in the United States, the number of persons aged 15–19 in 1950 was 2 percent smaller than the number aged 25–29 in 1960. In the nation the death rate per 1,000 population between ages 15 and 29 ranges between 0.6 percent at age 15 and 1.3 percent at age 29. *Statistical Abstract of the United States* (1965), Table 60.
24. These calculations are based on data prepared by Carl F. Kraenzel, Department of Agricultural Economics and Rural Sociology, Montana State College, as presented in Exhibit VIII, *Senate Hearings, Public Works and Economic Development Act of 1965,* p. 192. Kraenzel's figures are based on data developed by James D. Turner and Theodore Schultz. Schultz estimates the cost through completion of high school at $19,600 and $32,800 through four years of college. These are inclusive of foregone earnings in high school and college. See Theodore Schultz, "Investment in Human Capital," *American Economic Review* (March 1961) ; "Capital Formation in Education," *Journal of Political Economy* (December 1960) ; and "Education and Economic Growth," *1961 Yearbook of the National Society for the Study of Education,* Chapter 3.

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Environmental Management: Water and Related Land

(By Henry P. Caulfield, Jr., Federal Water Resources Council)

Among the major popular dissatisfactions of our times, to which our political system is responding, is a distaste for the many forms of environmental degradation that surround us. The "Quiet Crisis" identified by Secretary of the Interior Stewart L. Udall in 1963 has since become much less quiet. (1)

President Johnson articulated this dissatisfaction, and pointed the way to overcome it, in his call for a new conservation in a speech in Portland, Oregon, in October 1964. (2) He called for a conservation not just concerned with development, protection, and wise use of our natural resources within the tradition of the conservation movement, but a conservation aimed at enhancement of the quality of life generally within our total environment—of cities, coasts, and hinterland. "Its concern," he said, "is not with nature alone, but with the total relation between man and the world around him. Its object is not just man's welfare, but the dignity of his spirit. Above all we must maintain contact with beauty."

Most fundamentally, the new conservation calls for a major intellectual and cultural revolution that would affect private and public decision making generally over the long run. More immediately it has called upon the Congress to enact numerous specific pieces of legislation destined for administration by several different departments and agencies; and upon the Executive Branch, generally, to administer all on-going programs with an eye on enhancement of environmental quality.

Thus the new conservation has had to come to grips, like other broad policy thrusts of our times that logically require some centering of policy and program responsibility, with our traditional federal structure of the presidency and of separate departments and independent agencies. Secondarily our traditional system of intergovernmental relations, federal, state, and local, has had to be considered.

Management response over several years to these two problems has been a series of largely unrelated ad hoc organizational decisions. At the federal level, the conciliar device usually has been the response. The President's Council on Recreation and Natural Beauty, a cabinet-rank committee now chaired by the Vice President, provides focus upon environmental management. The Federal Advisory Council on Regional Economic Development, chaired by the Secretary of Commerce, deals with economic development of underdeveloped regions and areas in connection with the work of the Economic Development Administration and the several federal-state regional economic development commissions. These Councils were established by Executive Order. On the other hand, urban development and rural redeveopment have been assigned (also by Executive Order) for leadership and coordination to the Secretary of Housing and Urban Development and to the Secretary of Agriculture, respectively.

Established by law is the Economic Opportunity Council, with the Director of the Office of Economic Opportunity as chairman, dealing with the war on poverty. Established by PL 89–454 in 1966, a temporary National Council on Marine Resources and Engineering Development, a cabinet-rank committee chaired by the Vice President, is to develop a coordinated program with regard to oceanography, the Great Lakes, and problems of the "coastal zone." And finally, established by the Water Resources Planning Act of 1965 (PL 89–80), is the Water Resources Council, also a cabinet-rank committee, under the chairmanship of the present Secretary of the Interior, Stewart L. Udall. It focuses upon policy and planning with regard to water and related land resources generally.

As between levels of government each new federal program tends to establish its own pattern of relationships. These may or may not meaningfully involve state and local governments. In response to the President's call for a more ordered partnership approach to intergovernmental relations, the Director of the Office of Emergency Planning and the Vice President have become foci for improvement of state and local relations respectively. A more formal and definite approach to partnership are the federal-state regional economic development commissions, established under Title II of the Public Works and Economic Development Act of 1965 (PL 89–136), which were discussed in several articles in the January/February 1968 Public Administration Review; the Delaware River Basin Commission, a federal-interstate compact commission for manage-

ment of river basin operations; and the federal-state river basin planning commissions that are authorized for establishment by Title II of the Water Resources Planning Act.

Clearly, environmental management, like management of other broad governmental programs, old and new, raises questions of the adequacy of our machinery of government. These questions might be said to call for fundamental rethinking of this machinery and then the establishment of revised structural patterns that more adequately meet the functional needs of our times and of the future.

WATER AND RELATED LAND RESOURCES MANAGEMENT

Water and related land resources management is clearly a major area within the total scope of the new environmental management envisioned by the new conservation—not to mention the new regional economic development of the Public Works and Economic Development Act, and the new focus upon the "coastal zone" of the National Council on Marine Resources and Engineering Development. As a public function in substantial part, water and related land resources management has been with us since the founding of the republic, and several of that management's present basic concepts are the product of the traditional conservation movement.

In 1908 President Theodore Roosevelt's Inland Waterways Commission recommended "prompt and vigorous action" to carry out "comprehensive development of all water related resources [with] full coordination between all levels of government with a major role for non-Federal interests, comprehensive [multiple-purpose water and related land resources] planning on a basin-wide approach, and establishment of [a] National Board or Council to coordinate programs and guide continuous planning effort." The Water Resources Planning Act of 1965 did not suddenly enact the recommendations of the Inland Waterways Commission 53 years later, nor was the Commission's report much more than a remote intellectual ancestor, but the Act has opened promising paths toward broad-scale achievement of the Commission's recommendations—an achievement that was not organizationally possible during the intervening years.

The Water Resources Planning Act, in essence, is aimed at better organization, coordination, and support of comprehensive water and related land resources planning. To understand its significance and provisions, the factual context within which it operates needs to be sketched:

Natural resources are interrelated in nature, in the ecological sense, such that actions upon them necessarily ramify through interaction.

Water and related land resources have many uses (e.g. for navigation, irrigation, hydroelectric power, recreation, fish and wildlife, and as scenic and wild areas).

Uses, in most instances, have associated economic interests and their development is of importance to regional and national economic growth.

Conflicts in use, acting like a centrifugal force, occur frequently because the same resource cannot usually be used in the same place at the same time in two or more different ways.

Opportunities for complementarity of action, acting like a centripetal force, provide incentive for use of related resources for two or more purposes jointly because benefits can often be obtained at less cost than if their fulfillment were achieved separately. Because conflict breeds inaction that is detrimental to most interests, there is incentive to compromise to reach agreement.

Responsibility for water and related resource management functions (i.e., planning, construction, maintenance, finance, and regulation) resides at all levels of government and with private enterprise. Within government, the federal and local levels bear most responsibility. The states, generally, now bear the least; but they aspire to more and they are achieving more.

Responsibility for management developed, historically, use by use, with each use tending to become associated initially with separate organizations: at the federal level, starting with the inland navigation responsibilities of the Army Corps of Engineers in the early nineteenth century; then irrigation in the Bureau of Reclamation just after the turn of the century; watershed protection in the Soil Conservation Service in the 1930's, etc. The program of each organization has tended over the years to be more multiple purpose, but each organization has been retained.

In addition to this context of reality, the present federal objectives in water and related land resource planning, which anticipated the new conservation and were approved by President Kennedy on May 15, 1962, (3) are also important to understanding of the significance, value, and provisions of the Act.

FEDERAL OBJECTIVES OF PLANNING

The basic objective in federal formulation of plans is to provide the best use, or combination of uses, of water and related land resources to meet all foreseeable short- and long-term needs. (4) In pursuit of this objective, "full consideration shall be given to each of the following objectives and reasoned choices made between them when they conflict":

Development of all developmental purposes

Preservation of "open space, green space and wild areas of rivers, lakes, beaches, mountains and related lands for recreation purposes . . . and areas of unique natural beauty, historical and scientific interest . . . for the inspiration, enjoyment and education of people"; and

"Well-being of people."

"All relevant means (including nonstructural as well as structural measures) singly, in combination, or in alternative combinations reflecting different basic choice patterns . . ." are to be considered and set forth in reports for public consideration.

Further refinement or revision of these federal objectives in water and related land resources planning, and of implementing principles, standards, and procedures, is now the responsibility of the Water Resources Council.

WATER RESOURCES COUNCIL

The Water Resources Council, created by Title I of the Water Resources Planning Act of 1965, is composed of the Secretaries of Agriculture; the Army; Health, Education, and Welfare; the Interior; and Transportation, and the Chairman of the Federal Power Commission. Included by regulation as associate members are the Secretary of Commerce and the Secretary of Housing and Urban Development, and as observers are the Attorney General and the Director of the Bureau of the Budget. The chairman is designated by the President. These officials are responsible within the Executive Branch for most of the federal government's activities in water and related land resource planning and development.

Each has named a representative who functions with the executive director in the conduct of the Council's business between meetings of the members themselves. The members meet regularly every three months and on the call of the chairman and can decide issues by majority vote. The representatives, with the executive director acting as chairman and with one vote, meet almost every week. Decisions at this level can only be made by unanimous agreement. Disagreements automatically become issues for consideration by the members. Certain specified matters can only be decided by the members. (5)

The executive director is appointed by and serves at the pleasure of the members, and is assisted by a staff of 24 persons. To provide a comprehensive, independent point of view toward the work of the Council, the executive director is to be guided by the following criteria in the selection of personnel:

(*a*) Outstanding character and competence—both personal and professional.

(*b*) Spread and balance of training and experience in the several relevant professions—engineering, economics, hydrology, forestry, law, political science, landscape architecture, recreation, soil conservation, irrigation, urban and other land planning, fish and wildlife biology, etc.

(*c*) Diversity of prior Federal agency identification and experience, both planning and operating and in Washington and in the field.

(*d*) Inclusion of personnel with prior identification and experience largely with States or local government or private enterprise and university teaching and research. (6)

The functions of the Council are:

To maintain a continuing study of the adequacy of supplies of water and related land resources to meet requirements and to prepare a periodic national assessment. (The first national assessment is in the final stages of preparation and will be published in a few months.)

To appraise the adequacy of administrative and statutory means for

coordination and implementation of the water and related land resource policies and programs of the several federal agencies and to make recommendations to the President with respect to policies and programs.

To establish, after consultation with appropriate interested federal and nonfederal entities, and with the approval of the President, principles, standards, and procedures for federal participation in the preparation of comprehensive regional or river basin plans and for the formulation and evaluation of federal water and related land resource projects.

To coordinate schedules, budgets, and programs of federal agencies in comprehensive regional or river basin planning;

To carry out its responsibilities with regard to the creation, operation, and termination of federal-state river basin commissions.

To review comprehensive river basin plans prepared in the field and to transmit them, together with its recommendations, to the President for transmittal to Congress.

To assist the states financially through Title III of the Act in developing and participating in the developing of comprehensive water and related land resources plans. (Forty-nine states, the District of Columbia, and Puerto Rico are now recipients annually of 50 percent matching grants from the Council. The total appropriation for fiscal year 1968 is $2,250,000.)

Substantial progress is being made in carrying out all of these Council functions.(7)

FEDERAL-STATE RIVER BASIN COMMISSIONS

The President may establish a federal-state river basin commission for any river basin or group of basins under Title II of the Water Resources Planning Act. However, he may act only upon the request of the Council or of the governor of a state lying partially or wholly within the basin or basins in question, provided there is concurrence by at least half the states involved. Either a majority of the states *or* the Council may terminate the existence of a commission. By these basic provisions, and other provisions consistent therewith, federal-state partnership in river basin planning through a federal-state commission is fundamentally rooted in law.

With the unanimous agreement of the governors of all the states concerned, four river basin commissions have now been established and their chairmen appointed by the President. The Pacific Northwest River Basins Commission, a five-state commission with headquarters in Vancouver, Washington, was established first, on March 6, 1967. It absorbed the Columbia Basin Inter-Agency Committee. The eight-state Great Lakes Basin Commission and the three-state Souris-Red-Rainy River Basins Commission—with headquarters, respectively, in Ann Arbor, Michigan, and Moorhead, Minnesota—are also established and functioning. They operate in areas where no "interagency committee" has ever operated. The seven-state New England River Basins Commission was established by the President on September 6, 1967. It absorbed the Northeastern Resources Committee, the "interagency committee" for New England that has been functioning for some 15 years. Boston is its headquarters.

Governors of certain states within the Missouri River Basin and the Ohio River Basin have requested establishment of commissions for those basins, but the number of requests or concurrences so far, in each case, is insufficient for establishment. Discussion of the desirability of a Pacific Southwest River Basins Commission has occurred among representatives of the states concerned, but no official proposal for a commission has yet been made. Also, certain states in the Upper Mississippi River region are actively considering a possible commission as are certain others in the Southeast region.

Each commission is composed of a chairman appointed by the President, who can hold no other federal post while serving as chairman; a member from each federal department or independent agency judged by the President to have a substantial interest; a member from each participating state; and a member from any interstate compact commission having jurisdiction over waters of the area.

State members are appointed in accordance with state law or, if there is no applicable provision of state law, by the governor. Federal members are appointed by department secretaries or independent agency heads.

Each commission has its own staff who are federal-state public officials—neither federal nor state. The member states and the federal government share equally in the financial support of the commission. Appointments to the staff are

made by the chairman with the concurrence of the vice chairman, who is the elected leader of the state members.

The Act designates the commission as the principal agency for coordination of all plans—federal, state, interstate, local, and nongovernmental—for development of the resources under its jurisdiction.

The commission is directed to prepare and keep up to date a "comprehensive, coordinated, joint plan for federal, state, interstate, local and nongovernmental development of water and related resources," and this plan is to include an evaluation of all "reasonable alternative means of achieving optimum development."

Most comprehensive river basin plans in the past have included only federal projects and federally assisted small watersheds projects. Now, under the aegis of commissions, non-federal programs and projects are encouraged to be developed and included. Among other impacts, this change should result in a much broader and intensive concern with "related land" in river basin planning.

The commission, also, is to recommend long-range priorities for studies and construction and is to "foster and undertake" whatever studies are necessary to prepare its comprehensive plan.

Finally, after obtaining comments from all agencies concerned, the commission is to submit the joint comprehensive plan to the governors of the states represented on the commission and to the Water Resources Council with a view to obtaining authorizations and funds for action.

Two points stand out in respect to the commission's functions: the first is that it is a planning agency, not a construction or regulatory agency; the second, that the commission is not to do its planning in some never-never land, divorced from the realities of federal, state, and local government operations.

It was the deliberate intent of the framers of the Act that the river basin commissions, like the Water Resources Council itself, should not be composed of experts responsible only to themselves and the canons of planning, but should be made up, instead, of representatives of the states and federal agencies involved. The framers were presuaded that if partnership in planning were to eventuate in the action which alone could justify it, the planning would have to be done by direct and responsible representatives of those possessing the power to act.

The Act recognizes that meaningul partnership in planning requires consensus. In the hope of promoting it, the Act directs the presidentially appointed chairman, in addition to performing his duties as chairman, to act as coordinator of the federal members and to "represent the Federal Government in federal-state relations on the commission." The vice chairman elected by the states coordinates the state members and represents the states in federal-state relations on the commission.

This arrangement resembles that of a congressional conference committee, in which decisions are not reached by majority vote of the members, but by agreement between the two sides representing the two houses. Neither house of Congress can compel the other to act, and joint action, therefore, requires agreement. Similarly, neither the federal government nor the states can compel the other to act, and coordinated action is dependent upon agreement.

In view of that fact, the Water Resources Planning Act contains no provision for voting within the commission; and, indeed, the legislative history makes clear that it was the intention of the framers that commission decisions would *not* be determined by voting.

The requirement of ultimate consensus does not mean, however, that the river basin commission will face a choice between unanimity and deadlock. The Act provides that, in the case of failure to reach consensus, full opportunity is to be afforded each member to present his views and have them reported; and, in another provision, the commission is directed to include in its comprehensive plans an evaluation of all reasonable alternatives.

These provisions means that a commission, failing to agree, has not reached a dead end, but has the means for agreeing to disagree on a particular point or project, for continuing its activities in the hope of later reaching consensus, and for referring technically feasible alternatives to the public for its consideration and, ultimately, to the Congress and state legislatures for decision.

CONCLUSION

Much yet remains to be done in translating concepts into practice; in actualizing the traditional conservation movement's concept of "comprehensive multiple-purpose river basin planning and development" and the principles of the new

conservation's concern with the quality of our total environment. Much research needs to be done, too—both in government and in universities and other research institutions—to advance the science of ecology and other requisite disciplines and to improve the technical methods of comprehensive regional and river basin planning. Also, the public must continue to want quality in its environment not only as a general idea, but also in specific terms of time and place and of paying the cost. With continued public and official support, principled, rigorously formulated, and analyzed comprehensive plans—leading not just to volumes on a shelf but to timely alternative plans representing different value choices—will be prepared for public consideration, legislative decision, and then implementation of the chosen, hopefully the "best," alternative. To achieve this worthy result in the challenge before the Water Resources Council and all of those associated with it at all levels of government and in private enterprise.

"Government today," as William D. Carey of the U.S. Bureau of the Budget recently stated in this review, "certainly is motivated to address the problems of society more than at any time in the past. We have no shortage of objectives or enthusiasm. But there is a gap between policy design, program definition, and effective delivery that accuses us all." (8)

How true! But, as the most dissatisfied of our times say and sing: We shall overcome!

FOOTNOTES

1. Stewart L. Udall, *The Quiet Crisis* (New York: Holt, Rinehart and Winston, 1963).
2. See also President Johnson's *Message on Natural Beauty* of 1965, his *Message on Controlling Pollution and Preserving our Natural and Historical Heritage* of 1966 and subsequent messages to the Congress on the same general theme.
3. See "Policies, Standards and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources," an agreement between the Secretaries of Agriculture, the Army, the Interior, and Health, Education, and Welfare, approved by President Kennedy on May 15, 1962 (Senate Document 97, 87th Congress, 2nd Session), p. 1. See also a supplement to that document entitled "Evaluation Standards for Primary Outloor Recreation Benefits," published by the ad hoc Water Resources Council, Washington, D.C., June 4, 1964.
4. *Ibid.*
5. See *Code of Federal Regulations,* Title 18, Chapter VI, Part 701.
6. *Ibid.,* Section 701.80.
7. See annual Hearings of the Committee on Appropriations, Subcommittee on Public Works, House of Representatives and the Senate.
8. William D. Carey, "Intergovernmental Relations: Guides to Development," Public Administration Review, Vol. XXVIII, No. 1, January /February 1968, p. 23.

KEY FEATURES OF REGIONAL PLANNING

(By Harvey S. Perloff, *Journal of the American Institute of Planners,* May 1968)*

Regional planning has developed along pragmatic lines with relatively little attention to formal theory. It may be premature to expect a fully developed theory in a young and highly disparate field, but it does seem possible to generalize about the common features of regional planning as it has evolved in various countries around the world. Such generalization is not only suggestive of areas for further study but offers the possibility of illuminating a path through the confusing reality with which we must deal. The emphasis here is on problems of broad-scale regional planning, including both urban and rural activities, in developing situations.

Regional planning is concerned with the "ordering" of activities and facilities in space at a scale greater than a single community and less than a nation, or, in the case of a common market situation where a number of nations are economically integrated, less than that of the integrated totality. (1) In regional planning we must deal with a varied assortment of regions which are subsystems of a larger whole and change with the whole over time in both internal structure and external relations. (2) Such planning focuses on clarifying objectives and on designing means to influence behavior (particularly locational decisions) so as to increase the probabilities of development in desired directions in selected homogeneous or nodal areas of a nation (or a multinational complex). Since we are dealing with *both* regions and planning, it is evident that space, time, and process are core concepts.

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It is useful to distinguish between two aspects of the planning process: viewed in essentially political terms, it involves the setting of objectives, the making of choices from alternative means (or system designs) for achieving the objectives under existing contraints, and evaluation of results obtained (in substantive and political payoff coin); from the technical planning standpoint, that is, through the eyes of the technical regional planner, the key process elements can be said to involve information and analysis, regional designation, a planning and programming phase, and operations. The technical planner may relate himself to the political process in special ways. He may point to inconsistencies in multiple objectives where these appear and are particularly damaging, or suggest more operationally meaningful goal. (3) In the offering of "alternatives" he may be merely suggesting policies so unattractive as to make the preferred technical solution a natural choice politically. "Evaluation," if it exists at all, is likely to be resisted by the technical planner or used to demonstrate why more resources for the regional planning effort are required.

It is helpful to be aware of the two parallel sets of processes. Not only must there be recognition of the continuity of the planning process in both terms, including feedbacks, but also awareness of the very important *lateral* relationships between the two sets.

JOINT DEFINING OF REGIONS AND OF PLANNING OBJECTIVES

The fact that regions can be, and are, defined in various ways—which troubles so many people, some to the extent that they entirely reject the value of regional analysis and planning—can, upon reflection, be seen to stem from the very purpose for using the concept "region." Jurisdictional boundaries tend to have built-in rigidities for reasons that are both traditional and practical (particularly for administrative convenience). The hiearchial character of governmental units often puts the subnational units in a defensive position with regard to jurisdictional rights and privileges (even when they do not have the claims to "sovereignity" that American states do). Because of this, their existence as subsystems of a larger system gets lost to view and can easily interfere with the efficient execution of national policy, and particularly national development policy. Moreover, juridictions have varying degrees of power for "closing in" on themselves, or closing others out, through special duties, taxes, and regulations (such as health regulations). They have public service responsibilities, tax authority, and in most parts of the world they are bound by constitutional and other kinds of provisions to provide uniform treatment of persons and firms in services and taxes. All of these features are stiff barriers to the solution of special problems within an areal context.

Thus, the designation of regions for planning purposes (4) has as its *raison d'être* the highlighting of the open-ended, subsystemic elements important to the objectives for which the planning is undertaken. (5) Such objectives, or the priorities given to them, can be expected to change over time, and this might well cause a change in the demarcation of the planning and/or operational region.

Designating a region for planning purposes also permits differentiation of the area from national and state (or continental) norms, either to achieve an equity objective, by providing an "equalizer" for a disadvantaged group, or to exploit unusual opportunities with unusual political and administrative tools. If the region is enclosed permanently by having *jurisdictional* rights conferred on it, it is then in a position to close itself off to some degree at least, and, under some conditions, it may have to follow national norms. And, of course, it may both close itself off and follow national norms. (6) If the central purpose of region designations is not differentiation, then what is involved is administrative reorganization, which, while it might be enormously valuable, should be distinguished from region designation.

It is not surprising that a nation or supranational unit should find many objectives for which spatial and related differentiation are valuable. Their value is increased by the fact that planning objectives vary from region to region, and the priority and interpretation given to them can be expected to change over time. Planners must, in fact, deal with essentially conditional objectives and emerging localized perspectives. (7)

NATIONAL PLANS IN REGIONAL TERMS

A whole national territory can, of course, be divided into planning regions, as has been done in a number of countries, for example, Chile and Poland. Normally, the purpose is to strengthen and sharpen national planning—in particular, to test out in spatial terms the various governmental "sector" programs proposed. Such planning should be distinguished from regional planning that has a differentiated *operating* component and intent for each region. The former is essentially "simulated planning," concerned with studying the convergence of national sector programs in distinct areas, programs for agriculture, industry, education, transportation, and the like.

The facilities and services provided through sector programs must inevitably be distributed selectively, and perhaps prejudicially among the regions. If each agency, operating with relative independence of others, sets its own targets, priorities, and standards, as is usually the case, it is unlikely that all the individual programs and projects will fit together sensibly in time and space. Thus, the agriculture agency might be making a major effort to raise the output of a particular farm product in a given area in order to increase export earnings, but the plans of the transportation agency for farm-to-market roads may be *out of phase*, as may also be plans for the extension of farm credits. Much information vital to an effective national plan can be gained by *testing* national sector plans for locational coherence and by studying their convergence within regions of the country that have been established for that purpose. The decision focus in such a case should remain the national plan and its sector components. Specifically focused, differentiated objectives and programs for each region would not necessarily be part of the picture when the main purpose is the testing of national plans. (This distinction is not normally made in the literature.)

In simulated planning, as in operational regional planning, a special effort must be made to maintain the open-ended, differentiated characteristics. Otherwise, the regional designations, if kept over a long period of time without change, could increasingly become a Procrustean bed, unnecessarily stretching out or chopping off activities. Regional designations tend to take on a life of their own very quickly. Even so, simulated planning can be of great value in helping to prevent the closing in of "operational regions" on themselves by serving as a framework for overall perspective.

To optimize its evaluation (or "shadow") role, given the basic requirements of open-endedness and differentiation, simulated planning must permit *overlays* of some regions upon others, particularly the system of metropolitan regions overlaid on the homogeneous areas. (For example, Recife in northeast Brazil needs to be analyzed as part of the Brazilian national system of cities as well as in its role within the depressed northeast region.) Of greatest importance in both simulated planning and operational planning are periodic reviews of regional designations. These are necessary in order to keep up with or anticipate the socioeconomic changes under way.

THE LARGER CONTEXT OF REGIONAL PLANNING

So likely are human activities to close in on themselves that, as we have noted, special efforts continuously have to be made to prevent the destruction of the basic advantages of regional planning, that is, its open-ended and subsystemic features. The *core* features of regional planning of whatever variety is its relation to national planning (or national policy in market economies where there is no national planning). The central purpose is national welfare (8), even where an interregional equity objective is politically paramount. Obviously, it would be hard to justify a development program for a depressed region which served to weaken the national economy and to bring the other regions down toward the level of the depressed area. Nor can a nation accept the proposition that there should be no migration out of a depressed region but that jobs must be provided for everyone who happens to be living in the given region, if this course would significantly reduce the productivity of the whole nation. But there is much more to it than that. No region can solve its own problems or fully exploit its potentialities by itself. Because the region is a subsystem, the most important part of planning for it is that which guides the flows between the nation and the region of investment capital, goods and services, people, entrepreneurship, and other elements.

There are strong reasons, deeply embedded in the socioeconomic structure of the nation, why a depressed region is lagging in income growth, a frontier region

is relatively unexploited, or a metropolitan region is growing at the rate and in the form that it is. In order to alter the course of events, quite extensive changes have to be triggered, thresholds passed, and new environmental conditions established. Thus, regional planning becomes highly dependent on an understanding of location factors (9). Most of the basic concepts having a direct relevance to regional planning are brought together in the theory of "cumulative advantage." That theory views the rate and form of growth of cities and regions as determined largely by the *relative* advantages of each, that is, those advantages of the natural environment and man-made works which attract major industries and high-skill labor (10). As the requirements for economic activities change, so do the relative advantages among any given regions. Determining relative advantages is itself a critical element in understanding the kinds of measures that would be necessary to influence location decisions. However, in such an analysis, various noneconomic, as well as economic, factors have to be considered, among them attitudes and motivation, education, and political and administrative considerations.

THE SYSTEM OF CITIES

The close relationship between regional planning and national planning or policy is, as already noted, a crucial and continuous link between national objectives and regional needs. Another specific link is the system of cities, which in a variety of ways encourages and makes possible an increasing degree of specialization, a critical ingredient of economic progress. The importance of division of labor and of specialization for socioeconomc development has long been established. But there are certain important spatial concomitants that deserve attention.

A greater specialization of function implies that each specialized activity (whether farming, forestry, mining, manufacturing, or services) must extend its linkages to outside activities in order to obtain needed inputs and find markets for its products. Thus, growing specialization creates networks of activity "subsystems" that have strong functional ties growing out of complementarities. Such ties, essential to economic progress, tend to grow stronger and more complex as development proceeds. These interrelationships may extend great distances; across the whole world, in fact. However, because costs are always attached to the transport of materials and goods, economic access (which depends on the quality of the transportation and terminal system) plays a large role in determining the linkages and interrelationships between the activity subsystems.

The cities play a key hole in this process: they (*a*) represent the focal points of the transportation and communications networks, (*b*) encourage labor specialization and areal specialization in productive activities, (*c*) encourage efficiency in the provision of the service components of the economic system, and (*d*) make possible economies of scale and of agglomeration. In every case, these characteristics actually or potentially are helpful to the nonurban areas of the country which depend upon the products and services of the urban areas to increase the value of their own outputs and family incomes. The advantages of linkages, of course, flow both ways; increases in incomes in the farming and mining areas mean more purchases of urban-produced goods and services, which become inputs in the farming and mining operations as well as consumer goods.

We have long understood that the entire process encourages the growth of a hierarchy of urban centers. Those at the peak represent the most complex of the process. The smaller communities at the base are simpler agglomerations which carry out limited processing and service functions, and are generally in more direct relationship with the countryside; that is, they tend to be farm and mining centers (11).

Thus, the so-called homogeneous regions and the nodal regions are closely linked; in fact, the quality of this linkage is crucial in the socioeconomic advance of both. As development advances these linkages increase in closeness. John Friedmann has suggested, in fact, that in a highly industrialized nation these links are so close and urban life so dominates all activities that the only useful designation of regions is in terms of the metropolitan regions and their spheres of influence.

This formulation is provocative and useful, particularly since it attempts to put regional planning into a dynamic framework. Recent developments, however, suggest this stage has not yet been reached even in the most industrialized countries; in fact, most of the industrialized countries (including the United States) are only now coming to grips with the depressed areas problem. In the

United States, in addition to the program for the Appalachian region, several other multistate regions have recently been designated for special treatment as depressed areas. On the continent of Europe, in the EEC area, the depressed area rehabilitation objective is gaining momentum and programs for depressed regions are being prepared. Both in the United States and in Europe, a good bit of attention in such programs is devoted to building up urban "growth poles."

Aside from the depressed area problem, regional designations in advanced countries may follow lines other than those suggested by the metropolitan region in various situations. Thus, certain emerging problems in the economically advanced countries, such as air and water pollution, suggest the possibility of a different type of regional effort, of which the regional program to "clean up" the Ruhr Valley is an example. Likewise, large-scale land development efforts for intensive recreation purposes, as in mountain areas or along a seacoast, would call for regional planning and development along lines not directly related to metropolitan regions.

A more general formulation of the issue raised by Friedmann is that the system of cities becomes increasingly significant as a focal point of spatial planning as a country develops, that is, as the ties among the urban communities and with their hinterlands are strengthened. This means that, increasingly, regional planning must be multidimensional planning in a special sense. It must guide public and private efforts not only in terms of the homogeneous regions chosen for differentiated treatment within themselves but also in terms of the ties between the urban communities of such regions with urban communities outside the regions. At the same time, it must strengthen the complex of specializations, complementarities, and linkages to achieve optimum efficiency and self-adjusting capacity within the region.

The developmental effectiveness of the linkages among the units within the national system of cities and between the urban communities and their hinterlands is not merely a matter of good transportation and communication facilities, although these are important. It is also a matter of how sturdy is the economic base of each of the urban units, how efficient its form, and how attractive the urban environment for daily living and working. These problems are, of course, of direct interest to city planners. Thus, the interests of the regional planner and the city planner converge at the metropolitan region; the regional planner is more concerned with "urbanism writ large"—the metropolis as a functional unit within the system of cities—while the city planner is more concerned with the intrametropolitan issues—generally, the efficiency and quality of life within the urban community. Both the regional planner and the city planner are concerned with national urban policy, for such policy provides an essential part of the framework within which specific regional and city plans need to be drawn up.

DEALING WITH THE VARIOUS PHASES OF THE PLANNING PROCESS

Each phase of the total regional planning process has its own requirements so far as scope, content, and methods are concerned. This is an aspect of regional planning that has not received the attention it should have, either in the literature or in practice. Its neglect in practice has caused the unnecessary rigidity that has characterized regional planning. Regional planning is concerned with the ordering of activities and facilities in space and time, but this does not imply that regional planning is necessarily concerned with the same space and the same time in all of its phases. Thus, the notion of changing regions applies to different planning phases as well as to different objectives and problem areas.

The information-analysis phase of regional planning can, and normally should, cover the total area of the nation (or of the multination region). This is particularly important in order to understand the evolving role of each activity, industrial sector, and area within the larger national scheme. Activity, sector, and region are simply various categories in which to record the totality, each being a convenient way of describing the subsystems involved. The interrelationships of all these among themselves are important, as are the relations of each to the total.

Total national coverage also makes sense at the planning-programming phase in simulating a national plan in spatial terms, although in this case, the regions may be differently established on the criterion of programming effectiveness. Such national coverage can serve as a useful check on sector programs devised by relatively independent departments or ministries. However, sound operational planning must work from the bottom up as well as from the top down. Planning from the bottom up is achieved in *sector planning* by reliance for program and

project preparation on the bureaus or action agencies within the individual ministries. In *regional planning*, planning from the bottom up can readily pose severe problems. This can be highlighted by the experience of the U.S.S.R., where doctrine dictated that planning proposals must come up from each economic region. The results, it was found, were local proposals for resources allocation so far beyond national capacity and so subject to local political considerations that the problem of reconciling them with national "control" totals become very difficult indeed. While the trend has been toward greater decentralization of planning decisions in general, the role of regional planning within the national plan from the bottom up has been substantially diminished.

It is well to remember that, in most political systems, basic local interests are looked after through local representation in a national legislature. Each legislator, even when essentially national (or Burkean) in outlook, can be expected to seek local advantage; for many issues, after all, national interest can only be defined as the totality of local interests. Thus, with local interests generally provided for, regional planning and programming—beyond simulation purposes—can be limited to those areas where an unusually strong case for differentiation in governmental treatment exists. While this may seem fundamentally simple, actually, of course, we do not know too much yet, in spite of what seems like centuries of effort, about how to provide for local differentiation while giving up top priority to national goals.

In operational terms, the key problem is to evolve an approach which permits an effective and fair reconciliation of diverse interests. This calls for political and administrative inventiveness. The operational objectives that have to be reconciled are: (*a*) providing for meaningful participation by the people of the region so as to bring the local interests forward; (*b*) achieving flexible and hard-hitting administration, which at times may mean the establishment of a regional authority (as in the Tennessee Valley, Guayana, Southern Italy, and the Aswan Region); and (*c*) closely relating the regional planning to national policy and programs so as to protect national interests.

Other operating considerations must of course, enter into the choice of regions and the design of regional programs. As mentioned earlier, administrative as well as political capacity are certainly of primary importance. The small supply of administrative and planning personnel in developing countries, for example, can be expected to influence the number of regional development programs undertaken at any one time. Even if this particular limitation is resolved, other operational limitations can be expected. The capacity of the various departments or ministries to carry out their sectoral programs when there are many separate regional programs under way is one such limitation. The main point is that decisions as to the number, form, and function of regional planning efforts must weigh operational considerations quite heavily in the balance. Regional planning, after all, is not an end or good in itself. It should be undertaken only if it contributes clear-cut benefits that are greater than the costs involved.

A HYPOTHETICAL EXAMPLE

To obtain an overview of the features of regional planning described above, it is helpful to imagine the regional planning process at work in a given situation. Since we are concerned with normative as well as positive elements (the "ought to be" as well as the "as it is") this can best be done under hypothetical conditions. Thus, I propose to look at the problems of planning involved in making a success of a Latin American regional economic integration effort, projected some time into the future. Taking a situation to which we are not accustomed can help us to escape our traditional ways of looking at regional planning and to sharpen our awareness of the interrelationship of the basic elements.

We shall hypothesize that a Latin American common market treaty has been signed, that intraregional tariffs have been eliminated, and that there is a common external tariff (hopefully, a limited one so that Latin America is looking outward as much as inward). International movement of goods, investment, and people is free. Monetary and fiscal policies have been harmonized. A movement to achieve political integration is under way. Meanwhile, a Common Market Commission has been granted joint executive-legislative authority (of a parliamentary variety) covering certain broad, but specified, areas. The Commission members would be the top "planners," but they would have a technical regional planning unit to assist them. It is assumed

that continent-wide planning has been accepted as essential in an underdeveloped continent to turn the integration effort into a substantive success.

A host of large problems emerges at the outset. If trade among the countries is to be substantially increased, international transportation facilities will have to be greatly extended and improved, since existing facilities are largely geared to a trade pattern that involves the shipment of a limited number of basic commodities overseas rather than to significant intra-Latin American exchanges. Natural resources, potentially ready for much more extensive exploitation under the new conditions, have to be identified, and strategies for their development worked out. Provisions for special help to the poorest countries and parts of the region have to be made (for the same reasons that special arrangements were made for southern Italy in the European common market effort). The most promising "growth poles" have to be identified and further developed. Expansion of manufacturing industries producing goods for sale in a regional market has to be planned for (probably working closely with a regional promotional organization equipped to provide special inducement to such industries. (12)

THE INFORMATION-ANALYSIS PHASE

The members of our hypothetical planning agency will need a great deal of information. An early and continuing task will be the analysis of the major developmental problems and potentialities.

The planners will need information on every part of Latin America. Some information would be available within the various national planning organizations even though it initially was generated for internal planning purposes. However, the greatest part of the information needed would be transnational. While national boundaries could not, by any means, be overlooked, the main focus would be on the problems and potentialities that involve more than one nation and on the structural changes that would tie socioeconomic activities more closely together. The planners will want to have data for the more significant sections (mainly urban regions) of all of Latin America. They will want to trace the major flows among the existing centers and make estimates of future flows on the basis of the new trading conditions. Input–output matrices will probably be developed, on a from–to basis. In the same light, they will examine the existing trade patterns with nations overseas, also, on a from–to basis, and project anticipated trade patterns, recording the physical movements as well as the movements in terms of value.

A tremendous amount of information will be needed for these analyses and projections, particularly on human resources, natural resources, public and private capital resources, and institutional endowment. All of this would have to be recorded and analyzed not only in locational terms but also in dynamic (over time) terms; for example, figures of population density in the countryside and cities will have to be analyzed in accordance with expected changes in their patterns of distribution.

To achieve analytical significance relevant to the planning tasks, the information will have to be organized to highlight major features of the Latin American socio-economic-physical landscape. Regional accounts would probably be employed for this purpose. These would have to include both "stock" items (natural resources, labor force, capital resources, and the like) as well as flow items (such as product, income, trade, communications, and migration). Such accounts would have to be built up from the smallest jurisdictions for which data are collected in order to provide the maximum flexibility in spatial combinations for the analyses that will have to be made. (13)

In general, the planning analysis could be expected to focus on the requirements for achieving optimal developmental and locational leverage under Latin American conditions. Such a focus, our hypothetical planners would know from the experience of others, would involve simultaneously bringing about an increase in specialization of functions and areas and an increase in activity linkages, through improvements in access from one area to another and other means. They will want to analyze the conditions under which economic activities could increasingly achieve economies of scale and of agglomeration, as, for example, conditions associated with a growing hierarchy of urban centers. They would thus be particularly concerned with actual and potential "growth poles" and with the linkages among them. (14)

Initial interest would probably center on the "heart land regions" or "development axes" (elongated corridors along principal transportation routes linking two or more metropolitan regions) because of their great potential developmentall everage. These are the urbanized regions that have outstanding resource and locational advantages; that is, they contain, or have easy access to, various resource inputs needed for both heavy and light industry; can obtain the necessary food supplies at reasonable prices; have been able to attract a wide variety of human skills, including management skills, and have nodal characteristics with regard to transportation. (15) Latin America, like the United States and Germany, has a "manufacturing belt," in this case extending from Rio de Janeiro in an almost continuous belt of cities to Buenos Aires. (The fact that this particular economic *heartland* could extend across national boundaries, in a situation where relatively little had been done to enhance interconnections, suggests the economic power of activity-clustering for specialization and complementary linkages.) The hypothetical planners will want not only to analyze in depth the nature of the existing linkages within the heartland and how these might be enhanced throught developmental measures, but they will also want to analyze the nature of the relationship of the heartland to the food-producing areas near by (the *food-growing hinterland*) and the raw materials and specialized products of the other economic zones. The latter, in turn, can expect to experience economic progress as their sales to the heartland, as well as to more distant countries, expand, and as their own manufacturing and service industries grow.

Our planners will also be interested in the incipient heartland-type areas evolving along the coast of Venezuela and across to the major cities of Colombia, as well as the anticipated megalopolization of the Mexico City region. Such a multiple development of heartland-type areas could be expected in a region as vast as Latin America. These areas, together with the other major metropolitan regions and their clustering communities, would be the backbone of an increasingly interlocked continent for increasingly elaborate interchanges. (16)

In addition to urbanized regions, the hypothetical planning agency will be interested in regions of other types. In studying the various potentialities for increasing food supply and producing raw materials for which there are anticipated markets, the planners will probably designate a number of particularly promising producing areas as *development regions*. The international agency would make the designation either because the areas cross national boundaries or, for intranational regions, because the country itself is not equipped to exploit the full potentialities of the region without substanial exernal assisance.

The agency will undoubedly also want to study closely the various *international river basins*, such as the La Plata basin which is shared by Brazil, Argentina, Uruguay, Paraguay, and Bolivia; the Thumes basin, shared by Ecuador and Peru; and the Lake Titicaca basin, involving Bolivia, Chile, and Peru, which have been discussed as offering rich opportunities for multiple-purpose development, including irrigation, power, and transportation. Elaborate study would probably be devoted to the Amazon basin in particular in an attempt to appraise the future potential of this highly complex region and to determine whether the barrier it imposes to internal transportation within the northern par of South America can be overcome.

Other *frontier zones*, including those whose development is already under way, as in Guayana, will be studied closely to determine whether a pattern of development already in progress should be changed, given the anticipated increased intraregional trade, or whether a pattern of development might now be undertaken for the first time. Entire countries (such as Bolivia) or parts of countries (such as the Brazilian northeast) would be studied as possibilities for special treatment as depressed regions. Considering depressed regions in national units will help to provide a strong political base for successful economic integration of all of Latin America.

THE PLANNING–PROGRAMMING PHASE

The information-gathering and analytical work ideally would cover every part of Latin America and extend to trading parners overseas. Such coverage would be needed to understand the economic, social, and physical interconnections of the whole continent, as well as the problems and potentialities that deserve special attention.

When it reaches the planning-programming phase, our hypothetical agency will necessarily be much more limited in the geographic coverage of its activities. Some of the sector programs (for housing, education, health, welfare, and so

forth) will be treated largely within a national context. Only in the case of transnational programs will our planners be directly involved. Particularly important for them will be: (*a*) the design of programs for improving accessibility through transportation and communications of every type; (*b*) the working out of efficient and economical patterns of urbanization, and particularly the search for means to turn the urban regions into powerful levers for linkage and development; and (*c*) the selection of regions, such as those offering unusual potentialities for food production, for special attention and help in planning the major aspects of their development.

With only limited resources available, severe strains can be expected to develop as choices are made among areas for special treatment, between major objectives of *efficiency* (maximizing the net returns for all of Latin America), *equity* (the poorer countries would certainly make a strong case for special treatment), and regionwide *cohesion* (closer ties among the various countries in order to bind them together socially and politically). Such choices are likely to be an integral part of the continuing political dialogue. The technical planners will be interested in more operational formulations and will be concerned with probable impacts from alternative lines of action. They can, for example, estimate how much would be given up in gross regional product by public investment in depressed areas compared with investment in alternative growth areas; or, contrariwise, how much would be gained by slowing down the flood of migrants to capital cities and other major cities if development programs were initiated in selected depressed areas.

A major problem will be to achieve a truly continental point of view in evolving the general planning goals and making the specific investment decisions. It can be expected that all decisions will be shaped by conflict and the pressures of diverse interests. Every country will undoubtedly press for special consideration: In the case of the smaller ones, such as Bolivia and Paraguay, the pressure might be for special treatment for the country as a whole; in the case of the larger ones, such as Brazil, for various "deserving" (that is, special problem or special opportunity) subnational regions. Unless the advantages of special treatment are obvious, the planning agency will find itself trying to avoid designating regions for such treatment in operating terms, for its members will learn quickly that the mere designation of a special region will intensify pressures for additional public investment funds.

THE PLANNING–OPERATIONAL PHASE

The payoff of plans comes in their implementation; our hypothetical planning agency will, therefore, have to weigh operational considerations throughout the whole planning process. If the members of the planning agency have paid careful attention to past experience with national planning in Latin America as well as to the frequent and large gaps between ambitious plans and the exceedingly limited capacity for carrying them out they are likely to prepare "plans for planning." (17) The availability of adequately trained personnel for the detailed planning, for project preparation, and for the administration of proposed regional programs will certainly be a key factor in the decision as to whether or not to encourage the initiation of proposed programs. Also, the probability of having the necessary budgetary funds available on a continuing basis, including funds to meet unexpected problems that arise in the course of execution (an inevitable feature of all regional programs), will play a significant role in the initial decisions.

Once a given regional program has been initiated through the combined efforts of the supranational and national authorities and the people of the region, one of the greatest challenges to the planners will be to maintain the necessary degree of freedom for change and adjustment during the execution phase. This will be true whether the regional program is being carried out on a centralized or a decentralized basis.

Changes in supply and demand will influence not only the growth of major industries, and, consequently, the growth of the regions in which they are located, but also the rate of expansion of the linked industries and services. Job availability and related migration movements will be influenced by changes in demand and supply and, thus, such changes will have an impact on both the major urban centers and the countryside. Major changes of other kinds can also be expected to have extensive repercussions.

All this suggests not only that plans will have to be adjusted often, but also that the entire regional program must be set up on an inherently flexible basis. A good example is the amount of in-migration that should be planned for. Experience in Guayana, Brasilia, and elsewhere has demonstrated that it is extremely difficult to accurately predict the amount of in-migration, since the effects of the drawing power of a new urban growth pole and the "rejection" power of the hinterland cannot be measured precisely. This suggests that flexible programs looking toward job creation, the provision of self-help and extremely low-cost housing, and some assistance to a large number of unemployed (an inevitable concomitant of a new hopeful area) will be more valuable than highly detailed plans for land use and for construction of specific major buildings. The quality of the planning will depend not so much on the accuracy of the projections as on the ingenuity employed in creating *self-guiding* and *self-adjusting* mechanisms wherever possible.

Thus, our hypothetical planning agency can be expected to play out a unique role as far as content is concerned but to follow processes that would be familiar to regional planners, who may be working under equally unique circumstances in other parts of the world. These processes and features make up the common elements in regional planning of every type.

(Author's note: This is a revised version of a paper presented at a conference on regional development planning cosponsored by Cornell University and the University of Puerto Rico, May 29–31, 1967. It was the lead paper at the conference, outlining the "state of the art.")

FOOTNOTES

1. The latter is mentioned specifically because the paper treats a hypothetical common market situation to illustrate the regional planning features discussed.

2. The change may be extremely halting or may involve "emptying out" in the case of depressed regions, but even in such cases the impact of national (or systemwide) change tends to be critical.

3. An example would be the proposed objective of bringing new industries to a depressed region in a poor country rather than attempting "to equalize income"—which may be the language of the political objective.

4. This is contrasted with purely intellectual and analytical purposes, which may involve quite different considerations.

5. An extremely useful theoretical analysis of the region as a subsystem within a larger system and what this implies for the study and treatment of regions is provided by Edgar S. Dunn, Jr., *Regional and National Development: A Process of Social Learning.* (Forthcoming).

6. In this case, it becomes appropriate to speak of provincial (or state) planning, rather than regional planning. This contrasts with regional planning even where the same regional designation is maintained over a long period of time, as long as the open-ended and differentiation characteristics are also maintained, as demonstrated by the TVA case.

7. Edgar Dunn usefully points out: ". . . it should be clear that the development planner (as distinct from the activity manager concerned with marginal efficiency transformations) has to work with conditional objectives. He must see them as conditioned by the present state of his system and subject to modification under the influence of future states not fully discernible. He should not define his planning objectives in terms of a fixed terminal state of the system. It may be a great convenience in planning to deal with fixed state targets, but it is more than a semantic nicety to insist that they be conceived as open-ended and nonterminal. . . . An important consideration in each choice is the contribution that the current stage can make to the development options at the next stage. The temptation and the tendency to view development as a one-step process sorely needs to be resisted."

8. Hopefully, we will in the not-too-distant future be able to say *world* welfare.

9. Of great value here are the work of Lösch and the revisions and extensions of Weberian location theory by Hoover, Isard, and others. Also applicable are certain of the concepts stemming from "economic base" and interregional multiplier theory, exemplified in the work of Haig, Hoyt, Andrews, Tiebout, and others. A valuable bibliography on location theory is provided in Friedmann and Alonso, eds., *Regional Development and Planning.* Part I (Cambridge, Mass.: The M.I.T. Press, 1964), pp. 704–706.

10. Harvey S. Perloff, "Relative Regional Economic Growth," *Design of Regional Accounts,* edited by Werner Hochwald (Baltimore, Md.: The Johns Hopkins Press, 1961), pp. 38–65.

11. Again, Friedmann and Alonso contains valuable bibliographies, this time on the role of cities in economic development and on the system of cities. Note especially the articles by Brian J. L. Berry.

12. The requirements for successful regional integration in Latin America outlined here are based on the literature in the field, which includes: Victor L. Urguidi, *Free Trade and Economic Integration in Latin America* (Berkeley, Calif.: University of California Press, 1962); Felipe Herrera *et al., Proposals for the Creation of the Latin American Common Market* (1965); Miguel S. Wionczek, *Latin American Free Trade Association* (New York: Conciliation, Carnegie Endowment for International Peace, 1965); Robert T. Brown, *Transport and the Economic Integration of South America* (Washington, D.C.: Brookings Institute, 1966); Harvey S. Perloff and Raul Saez, "National Planning and Multinational Planning under the Alliance for Progress," in *Organization, Planning, and Programming for Economic Development,* VIII. Papers prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas (Washington, D.C.: Government Printing Office, 1962); and Harvey S. Perloff and Romulo Almeida, "Regional Economic Integration in the Development of Latin America," *Economica Latinoamerica,* II (November 1963).

13. Detailed analyses of the problems of developing appropriate regional accounts for planning purposes are provided in the three volumes sponsored by the Committee on Regional Accounts, Resources for the Future, Inc.: Werner Hochwald, ed., *Design of Regional Accounts* (1961); Werner Hirsch, ed., *Elements of Regional Accounts* (1964); and *Regional Accounts for Policy Decisions* (Baltimore, Md.: The Johns Hopkins Press, 1966).

14. The idea of the urban community as a developmental lever has been elaborated by Francois Perroux. *L'economie du XXe siecle* (Paris: Presses Universitaires de France, 1961). See also J-R Boudeville, *Problems of Regional Economic Planning* (Edinburgh: University Press, 1966), for a useful discussion of the "growth pole" concept as well as other concepts and methods appropriate to regional planning.

15. For an analysis of this concept, see Harvey S. Perloff *et al., Regions, Resources, and Economic Growth* (Baltimore, Md.: The Johns Hopkins Press, 1960); and Harvey S. Perloff and Lowdon Wingo, Jr., "Natural Resource Endowment and Regional Economic Growth," in Joseph J. Spengler, ed., *Natural Resources and Economic Growth* (Washington, D.C.: Resources for the Future, Inc., 1961). Also see the highly suggestive treatment of the subject by Edward L. Ullman, "Regional Development and the Geography of Concentration," *Papers and Proceedings of the Regional Science Association*, 4 (1958), pp. 179–198.

16. Brown outlines an intriguing program for the accomplishment of this objective.

17. The importance of execution in the planning process and of weighing operational consideration in laying out plans has been stressed by Albert Waterston in several publications. See especially his *Development Planning: Lessons of Experience* (Baltimore, Md.: The Johns Hopkins Press, 1966).

Planning the Federal Lands

(By Charles H. Stoddard,[1] John R. Churchill,[2] and D. Michael Harvey,[3] *Journal of the American Institute of Planners*, January 1969)

This report discusses laws and programs designed to inventory and evaluate United States public domain holdings and to develop a program for their multiple usage and disposal. In 1964 Congress created the Public Land Review Commission to recommend goals for public lands policies, provided authority for their temporary sale, and directed the Secretary of the Interior to designate lands to be retained in federal ownership. Regulations provide that "All land classifications must be consistent with State and local government programs, plans, zoning, and regulations. . . ." Wisconsin's land use planning experience was used as a model for the federal program. The Bureau of Land Management conducted a prototype classification program in the western states and concluded that participation of local residents is essential for successful classification of public domain lands.

Following a century of acquisition by homesteaders, railroaders, timber locators, prospectors, state selection agents, and forest and park conservationists, 455 million acres of federally owned land remain in the "open" public domain. Administered by the Bureau of Land Management (BLM) of the U.S. Department of the Interior, these lands, located mainly in the western states (175 million acres) and Alaska (280 million acres), vary from mountains to desert to tundra. (See Figure 1.)

The pattern of ownership falls into three main categories—fairly solid blocks, intermingled areas, scattered, isolated tracts—and is the outcome of a hodgepodge of reservations, land disposal schemes, and procedures resulting from thousands of imperfectly related land laws which were administered for almost 140 years through the General Land Office. The lands (except Alaska) were withdrawn from settlement in 1934 and 1935. The Taylor Grazing Act of 1924 provided for the establishment of grazing districts on public land "pending its final disposal," and the Grazing Service was created to carry out the management of these districts. In 1946 the Grazing Service and the General Land Office were merged to form the Bureau of Land Management, however, the future use of the lands remained legally uncertain, hindering development of long-term management plans.

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FIGURE 1 *Public Lands in the Western States Managed by BLM*

By the 1960's it was realized that these public lands had great value to a nation with an expanding urban population. In addition to being a valuable source of minerals, timber, and forage for livestock and wildlife, they served as watersheds and recreation sites for urban areas. One month after taking office, President John F. Kennedy directed the Secretary of the Interior to:

"(1) accelerate an inventory and evaluation of the Nation's public domain holdings to serve as a foundation for improved resource management"; and

"(2) develop a program of balanced usage designed to reconcile the conflicting uses—grazing, forestry, recreation, wildlife, urban development, and minerals. . . ."

This report will discuss the laws and programs which were developed to carry out this directive with special reference to their relationship to the history of cooperative land use decisions in Wisconsin.

THE 1964 LEGISLATION

In the Public Land Law Review Commission Act, the Classification and Multiple Use Act and the Public Land Sale Act, Congress adopted a three-pronged approach. First, it created a nineteen-member Public Land Review Commission (PLRC), to review laws, regulations, policies, and practices dealing with all public lands including the public domain; to determine the present and probable future demands on the lands; and to make recommendations to the President and the Congress by June 30, 1970, for modifications in laws and policies. Basically, the task facing PLRC is to recommend goals for public land policies. Second, Congress provided temporary authority for the sale of public lands "required for the orderly growth and development of a community or chiefly valuable for residential, commercial, agricultural (exclusive of lands chiefly valuable for grazing and raising forage crops), industrial, or public uses or development." Finally, and most significantly in terms of land use planning, Congress directed the Secretary of the Interior to develop criteria to determine which public lands administered by BLM should be disposed of and which should be retained in federal ownership. Both acts contain provisions designed to bring state and local governments and the general public into the decision-making process. Local zoning regulations must be enacted prior to sale of land under the Public Sale Act, and public notice must be given on all proposed classifications involving more than 2,560 acres of BLM land.

In developing a working system of land classification for the western public domain, BLM's review of rural land use planning revealed that Wisconsin had a continuous and successful experience involving its publicly owned, northern cutover lands.

THE WISCONSIN EXAMPLE

Between the Civil War and 1930, millions of acres of northern Wisconsin white pine and hardwood forests were cutover for timber, burned by forest fires, or cleared for farming. Despite the claims of land company promoters, the poorer forest soils were submarginal for farming, and many settlers failed. By the late 1920's hundreds of thousands of acres had reverted to county ownership through tax delinquency. Many termed these lands a "new public domain."

Public concern over the deterioration of northern Wisconsin's resources led to a systematic survey and zoning program. The University of Wisconsin's College of Agriculture made county studies of tax delinquency, ownership status, soils, and agriculture. Other state and federal agencies provided Township Land Use and Cover maps.

In 1929 the legislature authorized county boards to enact rural land use zoning ordinances. By the late 1930's the Bureau of Agriculture Economics of the U.S. Department of Agriculture applied its developing County Land Use Planning Committee system to northern Wisconsin. The University of Wisconsin, the State Conservation Department, and the U.S. Forest Service worked with county agricultural and forestry committees and county agricultural agents to develop land classification proposals. Zoning ordinances were enacted by county boards to ensure that the classifications would have meaning.

The key to this program's success was local government and citizen participation in land planning and classification. From the start, clear goals and local citizen involvement provided public understanding and interest. Local residents who knew the history of land use, such as farm failures and successes, were able to provide a practical viewpoint to round out studies by specialists. This resulted in support for elected county officials faced with land use choices.

The Wisconsin program began with inventory of county lands, moved into analysis and interpretation, then to planning, classification, and zoning, next to relocation of isolated settlers on nonagricultural lands, and finally to program development and management for those lands classified for permanent public ownership. A well-blocked system of county forests embracing more than two million acres is the direct result of the program.

During this same period other states carried out land use planning under the Bureau of Agricultural Economics program (Minnesota and Michigan are noteworthy), but only Wisconsin continued an active rural planning and zoning system during the post-World War II period. A major difference was the stronger Wisconsin effort to involve local citizens in the planning process.

PARTICIPATION IN CLASSIFYING

The 1964 acts provided a challenging assignment—classification of 175 million acres of land in four-and-one-half years. Implementation of the Classification and Multiple Use Act required development of a dialogue among interest groups, experts, and government officials. Oil and gas interests, recreationists, cattle interests, conservationists, and miners realized that if one interest obtained exclusive possession or use, others would be foreclosed. The objective of the classification effort was to bring together local and national interests with BLM technical knowledge to enhance the decisionmaking process. First, regulations were needed to serve as basic guidelines for classification.

DEVELOPING REGULATIONS

The usual procedure for developing regulations—issuing a proposed rulemaking, allowing time for written comments, and sometimes holding hearings—was modified to involve the people concerned. After revisions based on comments by BLM's state directors, the first draft was sent to national organizations, users, and local government leaders. This draft was discussed at sixty-five public meetings throughout the West and in informal conversations between BLM personnel and interested people. The resulting suggestions were incorporated into the proposed regulations published in the *Federal Register*. Six public hearings were held—not just the one required by the act. Every public idea that did not conflict with the law was included in the final regulations. There were more than thirty substantive changes.

The regulations, signed by Secretary Stewart Udall on October 5, 1965, required that: "All land classifications must be consistent with State and local government programs, plans, zoning, and regulations. . . ." and "Lands determined to be needed for urban or suburban purposes may be classified for disposal under any appropriate law other than the Public Land Sate Act, . . . consistent with local comprehensive plans, or . . . the views of local governmental authorities." All proposed disposal classification decisions must be sent to the "local governing board, planning commission, State coordinating committee, or other official or quasi-official body having jurisdiction over zoning" for review and comment. All formal proposals to classify land for retention for multiple use management must be sent to: "authorized users, licensees, lessees, and permittees, or their selected representatives, the head of the governing body of the political subdivision of the State, if any, having jurisdiction over zoning in the geographic area in which the lands are located, the governor of that State, the BLM multiple use advisory board in the State, and the District advisory board and to any other parties indicating interest in such classifications."

A FRAMEWORK FOR CLASSIFICATION

Under a planning framework called the Initial Analysis, all BLM lands were placed in one of four types of planning areas. The size and boundaries of these areas were based on nature of the resources, economy of the area, existing and potential land uses, and pattern of BLM land within the total planning area. The areas include:

Type I—BLM administers from 50 to 100 percent of the lands which are expected to remain primarily in federal ownership;

Type II—Scattered BLM holdings make up 30 to 50 percent of the land to be classified on a situation basis depending on present and projected land use;

Type III—Federal holdings are concentrated, but BLM shares management with other agencies, and disposals are generally barred by law;

Type IV—Areas of two kinds; (a) BLM lands needed for urban, commercial, or industrial uses, and (b) widely scattered BLM tracts which make up less than 30 percent of the lands; conflicting demands complicate land use decisions.

These areas are further subdivided into homogeneous planning units for data collection and analysis and for detailed planning for management or disposal.

PROTOTYPE PLANNING AND CLASSIFICATION EFFORTS

To help determine the best way to begin the tremendous classification job, BLM met with representatives of the National Association of Counties, the U.S. Conference of Mayors, the National League of Cities, and the Council of State Governments. As a result of these discussions, the Bureau decided to work closely with at least one county in each western state to test the classification process. BLM encouraged the eighteen counties to proceed on their own initiative with planning and zoning to determine to what extent they could participate with the Bureau of Land Management in cooperative land use planning. BLM held an Urban and Rural Land Planning Conference in 1965 to train personnel who would administer the program. This was followed by the annual meeting of the Western Region of the National Association of Counties. An important part of both programs was evaluation with county supervisors of the first stages of the classification process. The training program was developed with the aid of the American Institute of Planners.

SOME PROTOTYPE COUNTY RESULTS

Among the prototype counties there were successes and failures. A brief look at four examples—ranging from rural to urban—will show the scope of results and the central importance of participation by local residents.

Valley County, Montana, a *rural* area, was the first successful pilot classification project. (See Figure 2.) An initial assumption was that scattered lands should be classified for disposal because they would be better off in private hands or under some state or local government. However, the Valley County review revealed local feeling that scattered lands had special scenic and recreational values or provided local public use access to larger areas. Therefore, local groups urged BLM to concentrate classification on the larger blocked areas in the county. This was done, and in 1966 a proposal to classify 614,000 acres of these lands for retention in federal ownership for multiple use management was approved as the first formal classification under the new law. As a demonstration project, Valley County was an outstanding success largely because local people were involved from the beginning.

BLM manages most of the land in Clark County, Nevada, an *urban* country which includes rapidly growing Las Vegas. (See Figure 3.) Because of the number of governmental jurisdictions concerned, establishing this program for disposal of public lands required a longer and more complicated approach. To reconcile planning differences between Las Vegas, North Las Vegas, Henderson, and Clark County, the Las Vegas Valley Area Planning Council was formed. Need for the council resulted from the cities' competing annexation programs and the BLM requirement that a single comprehensive plan be developed for an area before public lands would be put up for sale. With the assistance of a planning consultant, Clark County is designing a comprehensive plan for its entire seven million acres, although the initial cooperative effort was centered on only one planning unit. A recreation committee, made up of local and state planning and recreation agencies, the League of Women Voters, Sierra Club, scouting organizations, and others, has produced a plan for the Spring Mountain area which included a natural amphitheatre, several miles of scenic one-way drives, picnic grounds, and areas of archaeological interest. This area has now been classified for retention for multiple use management and formally designated by the Secretary of the Interior as the Red Rocks Recreation Lands, the first such designation under a program instituted after passage of the Classification and Multiple Use Act.

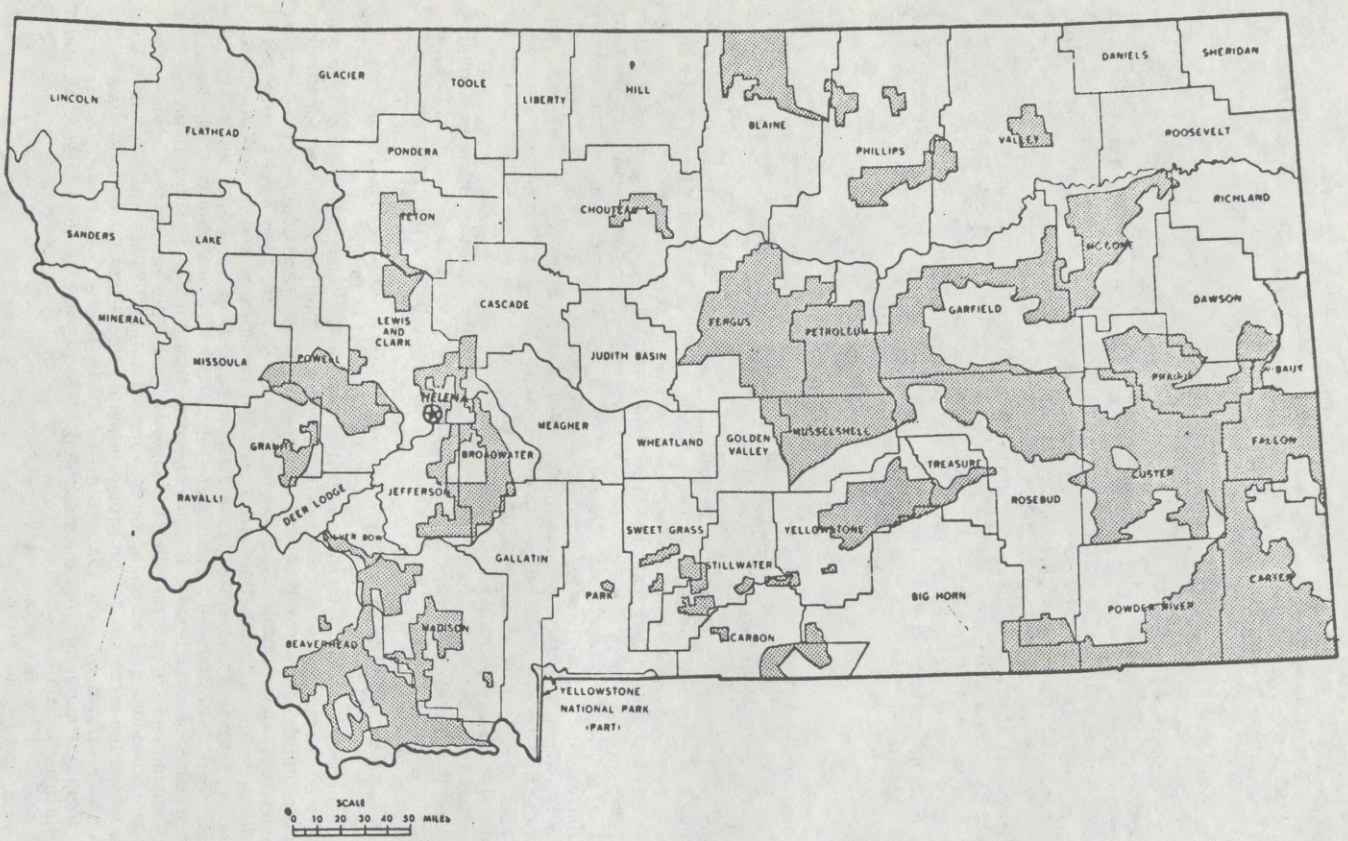


FIGURE 2 *BLM Managed Lands in Montana*

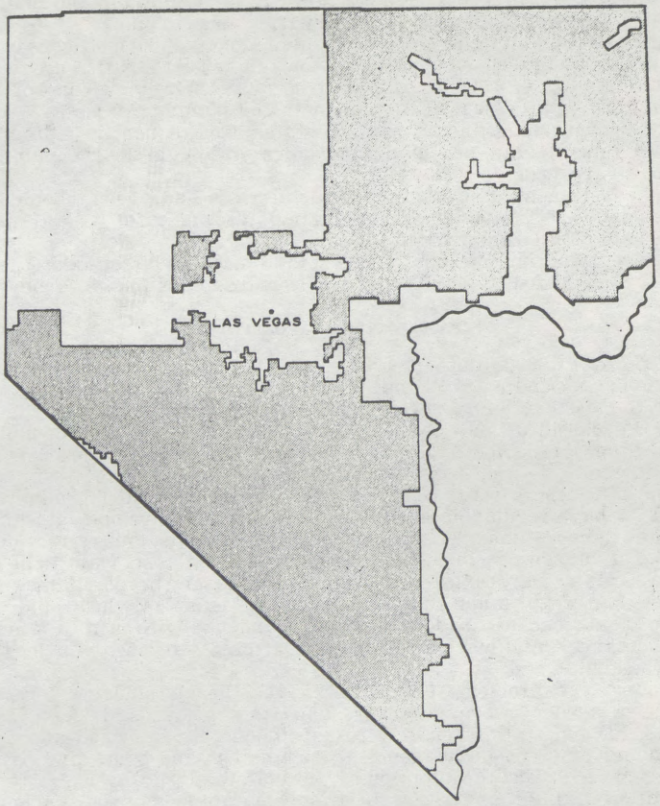


FIGURE 3 *BLM Managed Lands in Clark County, Nevada*

Sublette County, Wyoming—a developing *rural* county of 3,500 people—was selected so that a county with strong western traditions would be included in the prototype effort. One and two-tenths million of Sublette's more than six million acres are managed by the Bureau of Land Management, and 1.1 million acres are under the jurisdiction of the Forest Service. Many of the people of Sublette County have a strong desire to maintain their present way of life despite increasing pressures from vacationers, oil and gas people, and mining interests. BLM agreed to a one-year postponement of classification activity until a county master plan was developed and offered to assist by providing technical information. The county master plan developed through this process provided twenty-year guidelines for growth and development and laid the foundation for zoning and subdivision ordinances and BLM classification action.

County commissioners do not always find it easy to adopt land use planning principles. In Montrose County, Colorado, a *rural* area, the land use plan prepared by a planning consultant was overwhelmingly rejected by the public. The commissioners were threatened with recall as a result of public reaction against what was felt to be an attempt to dictate land use. The failure in Montrose County may have been due to the lack of citizen participation in the planning process. However, after appointing a land classification committee representing all present user groups, the county was able to unanimously recommend multiple use management classifications for all Type I planning units within the county.

From its experience with these and other prototypes, BLM concluded that:

1. Federal-state-local cooperation can work in land planning and management, although the degree of cooperation will vary from place to place.
2. Federal land planning programs are more effective when citizens of the area involved take part in decision-making because their participation creates greater local understanding of the program and because their knowledge of past and present land use is an essential ingredient in the planning process.
3. County governments in the western states are frequently willing and able to serve as central land use planning bodies, although their capabilities and effectiveness vary widely.
4. Local government, representing local interests and needs, should take the lead in developing effective land use planning and zoning for federal lands to be transferred out of federal ownership.
5. BLM, representing national interest and needs, should take the lead in planning for use of federal lands that will remain under federal ownership.

PROBLEMS AND PROSPECTS

As of 1968 over 100 million acres have been classified for retention; proposed classifications are pending for 25 million acres; and public discussions are underway prior to classification of several million more acres. One of the unexpected results of the classification process has been broad local support for multiple use management of large blocks of public lands. This general consensus favoring retention for multiple use seems to arise from the variety of interests now using public lands. Ranchers want continued use for their livestock; miners and oil firms wish to have regular access for exploration and development; lumbermen want to buy timber stumpage; and hunters, rock hounds, and recreationists like the absence of "no trespassing" signs. None of these interests want to be excluded from access. Many have expressed deep concern over the possibility of wholesale disposition of the lands to absentee land speculators who would use them for promotional schemes, saddle local governments with heavy service costs (and higher taxes), and leave a residue of scattered settlement for local governments to cope with.

Some interesting problems have arisen over the classification program, for example, cleavages between governors and state agencies. It has become apparent that elected state officials were not adequately informed about the program, although state resource agencies (such as fish and game, and parks) supported it. One result was the adoption by the 1967 Western Governor's Conference of a resolution urging that the classification program be stopped. Various groups have protested this resolution, including the Board of Directors of the Western Region of the National Association of Counties. There has also been a difference in response between some national associations of user groups—the American National Cattlemen's Association and the American Mining Congress—and their local affiliates. At the local level, the individual users and their representatives on BLM advisory boards have participated in and supported the classification program while at the same time their national groups were expressing opposition. Traditionally stated positions were the basis for opposition by some national associations.

One crucial test for the program will come in situations of rapid change. The oil shale areas of Colorado, Utah, and Wyoming may soon provide such a test. Will cooperative intergovernmental planning with informed and full public participation be able to control the impact of the development of the oil shale industry or will development follow the traditional helter-skelter path? The answer to this question could mean the difference between good living on the Western Slope and survival in another Appalachia.

One of the major reasons for establishing the commission was the widely held belief that Congress had not written clear guidelines for BLM and other public land management agencies and that, as Charles Reich says, "the people have lost control over these (public land) decisions to the professional management of bureaucracies." We believe that the cooperative system used by Wisconsin and further developed by BLM under the Classification and Multiple Use Act has put the public in the center of the decision-making arena.

A National Plan for Century III

(By Norman V. Petersen,[1] *Journal of the American Institute of Planners*, July 1967)

To solve the broad problems of urbanization with enduring solutions, a national plan for the next century should be developed. A Decade of National Planning is proposed; new mechanisms to promote democratic planning need to be formulated. A Decade of National Planning is seen as the minimum interval of time to establish meaningful guide lines for implementation of a National Plan for Century III—1976 to 2076. Man's greatest social engineering project—the creation and the control of a national stabilized population—should be commenced. National Congresses on New Frontiers and similar State and Regional Assemblies should be sponsored to offer to the nation a broad range of choices for further growth.

Here in America, views on socioeconomics seem to classify us according to either of two opposing rationales that are central to population growth. Most people, and many economic and business leaders, adamantly profess a nineteenth century laissez-faire economic philosophy. They conclude that more production of our present product lines will yield "full" employment for all time, and that random conduct of our affairs will solve all problems for all time. The second is the small handful of concerned, socially conscious economists, philosophers, and contributors from many other fields, typified by the authors of "The Triple Revolution," who conclude that the era of leisure and only partial employment, with numerous harmful side effects, is just around the corner.[2]

The first of these two is an ostrich-like attitude. The second is probably closer to the truth if we fail to search for the new more meaningful frontiers, to better absorb the nation's technical and physical energies. This paper attempts to straddle the fence and to signal the need to search for and implement massive new frontiers to saturate our technical talent and at the same time, apply it to meaningful problems of man.

America stands today on the edge of a frontier without parallel that dwarfs even space flight. This new frontier has two vital tasks: First, identification of solutions to stabilize national populations consistent with global resources and human needs, and second, urbanization of the entire continent of America consistent with the long range demands of this population. Crucial to achieving this national and global synergism of our human and natural resources is the importance of strengthening our interdisciplinary associations on the technical, political, and social scene.

PERSPECTIVE ON CENTURY III

The United States today stands but a single decade removed from the closing days of the nation's second century of growth. Century I, from the signing of the Declaration of Independence in 1776 to 1876, marked a vast economic expansion through an era of agricultural development. Century II, 1876 to 1976, has seen the burgeoning of American industry through the era of technological development. Century III, 1976 to 2076, is just before us. Advancing technology, industrial innovation, and scientific achievements have combined in recent decades to place the nation in transition to a new level of attainment, the era of creative development.

Century III provides, beyond the horizon of today, a vast opportunity to enrich our social fabric, to enhance our creative skills, and to encourage our intellectual understanding. Century III, as it unfolds, can reveal the evidence of a national endeavor today to effect the reasoned matching of our human and natural resources. The next ten years can serve the nation as the Decade of National Planning for the transition to Century III.

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[2] W. H. Ferry, Robert Theobald, *et al*, "The Triple Revolution: An appraisal of the Major U.S. Crises and Proposals for Action," A Memorandum to President Lyndon B. Johnson, The Majority and Minority Leaders of the Senate and House of Representatives, and the Secretary of Labor (22 March 1964); prepared by the Ad Hoc Committee on The Triple Revolution with thirty-two signatures.

The Decade of National Planning for Century III in the simplest terms describes a national endeavor to synergize our human and natural resources so as to yield an amplification of the value of these resources. This will involve the reasoned matching of our resources by democratic planning, rather than largely the devices of laissez-faire and autocratic actions employed today, as well as our national goals and policies, our governmental decision-making processes, and our individual skills, desires, and practices. Synergism of the human and natural resources equation is far more complex than only optimizing the simple economic equation, as we are prone to do. It involves drafting a socioeconomic equation that considers, in addition to the usual economic factors, other component equations modified strongly by such factors as aethetics, happiness, morality, and well-being.

Implementation of an effective national plan for Century III requires a thorough appraisal of the nation's human and natural resources. The three most important assets of the nation—nearly unlimited energy, manpower, and material resources—are not now being exploited or conserved to the extent of our capacities or needs. We have: nearly unlimited energy through nuclear, geothermal, solar, and fuel cell power systems; extensive human resources with increasing technical and physical capacities arising from a rapidly growing population, shifts in job requirements due to gains in productivity, innovation, automation, and changing demands; and the vast natural resources, extensive but always limited by contemporary technological capacity of the U.S., the surrounding ocean areas, and the proven access to those of the near regions of space.

A Decade of National Planning can be employed to identify the alternative futures or boundaries of possibilities open to America throughout Century III. Planned synergism of these three important assets must include formulation of long-range goals accomodative to evolutionary changes in technology and social needs. Further priorities must be developed through democratic processes that will yield the improved synthesis vital to these goals.

SYSTEMS MANAGEMENT AND NATIONAL PLANNING

Possibly the greatest technological spin-off from the nation's vast defense and space industry is the developed capacity for systems management of large engineering projects. This is not to imply that a major systems contractor on a ballistic missile or lunar vehicle program has the developed capacity to provide systems management of the social engineering projects that appear to be in the nation's future. But never in its prior history has the nation had such a vast capacity in trained and available talent. Yet much of the nation's two-million-man technical community is idling along, only half utilized. This talent, if released from much of its current duplicative endeavors on defense and space technology, and many other areas, could provide to the public and the appropriate legislative bodies a wide choice of feasible options for future growth.

Let me reinforce my comments on the need for systems management of our national planning on urbanization, transportation, communication, water resources, and so forth, by illustrating some of the forces that affect the rate at which we must pursue some of these activities.

What are some of the eventualities that may evolve in the nation during only the next 40 years, by 2007? One can extrapolate the key parameters that describe major facets of our national endeavor in a simple linear fashion. In doing this, it should be clear these are not projections of actual states of affairs, but rather they are meant to put into dramatic perspective the enormous changes which have occurred in the recent past. On the basis of a simple linear extrapolation:

Extending the 1960 listing of 74 million autos, there would be in excess of 200 million autos by 2007,

Extending the 1950–1960 changes in farm population, there would be practically no farm population by 1975,

Extending the 1900–1950 work week implies by 2014, the work week will be reduced to zero,

Extending the GNP to the year 2000 suggests it will grow by a factor of 10 to reach about $6 trillion by that year,

Extending the size of the labor force to the year 2000 implies an equal division between men and women, and the total unemployment would be about 10 million,

Extrapolating the federal research and development budget from 1945 to the present indicates that it will intercept the total federal budget in 1978 and will comprise the total GNP by the year 2005,

> Extending 1950–1960 authorship of technical papers and the free disclosure of technology hints that technical authorship would double by 1970 and that patent activity will diminish to insignificance.

One could indicate many other trends, only to reinforce the point that many powerful forces will be coming ito play to modify each of them. Secretary of Labor W. Willard Wirtz has stated,

> . . . what we are doing really right now is flying the most powerful economic engine in the history of mankind, and I mean to include all of our scientific and technological developments, and we are flying it by the seat of our pants. We are flying it by luck, by instinct, with almost no instruments at all in the cockpit . . . I am not sure that on this basis we are going to be able to keep up, as social engineers, flying this blind, with the amount of technological development which is being brought about.[3]

George Gallup visualizes that we now have the techniques, the technologies and understanding of human behavior to advance the new organizational machinery to work substantial improvements in our social environment. He observes:

> What has never been fully understood is that a new type of collective action is required to move society forward on many fronts. It is not enough to put thousands and thousands of people to work nibbling away at the far edges of our great problems . . . a constant temptation for all governments. Not only is a special type of collective action necessary, but it must be employed under conditions that maximize the opportunity for applying brain power and minimize the chance for individual prejudice and self-interest to interfere.[4]

TOWARD A STABILIZED POPULATION

The world has yet to make the important decision that growth in quality is an alternative to growth in numbers. Until we recognize this choice, we are stymied in our efforts to encourage the mind of man to more fully exercise its mental processes, to develop full understanding and capacities in human affairs, and to promote the advancement of man's environment.

Admittedly, it is not possible to predict the future in either the social sense or technoeconomic sense, even after the foundation or climate of the future is properly established. It can be argued as a consequence that there is no reason for an attempt to stabilize the population. But resources which can be tapped at any particular time are related to the technology of particular economic activities and less related to others. Also we are fortunately dealing here with very large magnitudes. The affluent nation's consumption borders on use rates a thousand-fold greater than those for the not so fortunate nations. Although one cannot predict it, one can make reasonable surmises or reasoned conjectures about the future.

The utopian writers of the past and present have speculated on the future with schemes for containing a mesmerized, huge, and compact human society. These plans range from great underground cities, to multilayered sky-scraper cities across every land, to floating oceanic islands and manmade continents, to hollowed-out asteroids in orbit. These are not excluded from the picture of a stabilized population, nor is the capacity for increasing the population if so desired at a future period of time.

On considering the rapid pace at which the U.S. is consuming its natural resources, we should give serious thought to considering an upper bound to our population. Because of the long time constants involved in population control, and the matching of resource utilization with advancements in technology. I propose that a national goal should be the stabilization of our population, by say, one century from now, the year 2067; and that the next 100 years should be a transitional period of growth to accommodate to this eventuality of a fixed population. The goal could be reconsidered as time goes on.

This national goal of a stabilized population should include a concerted national plan to develop the mechanisms of control, a format for national growth during this century of transition, and the capacities-seeking advancement in environmental qualities rather than in material quanities alone. An approach to advancing such a plan may well consider a decade of concentrated theoretical,

[3] Statement to the Select Committee on Government Research, House of Representatives, November 19, 1963.

[4] George Gallup, *The Miracle Ahead*, (New York: Harper & Row, Publishers, 1964), pp. 99–100.

analytical, and experimental study to establish a format for growth, a quarter century of implementing the foundation for development, and the remaining 65 years to complete the transition to a fixed national population of perhaps, say, 1 billion.

The first phase, a decade of national planning, would involve the technical community as it has never been employed before, in consort with the social scientists, the political community, the economists, the industrialists, and above all, the nation's population at large which is to a regrettable degree a silent partner in the nation's business of expansion by procreation. The dynamics of thriving metropolitan growth would be a major subject of study during this ten-year effort and the analysis used to conceptualize new metropolitan regions in rural America. This decade of national planning should further include the shaping of national policies for the development and proliferation of technological activities necessary for the needs of man and long-range goals. Value judgments, beyond just those of economics, must be made to assess the latent destructive features of technology rather than to follow the simplicity that all technologic advancement is "good."

The second phase would involve a quarter of a century of site surveying for the planned growth of the next 0.8 billion population addition, and of development and construction activities to match the slowly diminishing growth in population during the next five to seven decades.

The third phase, of 50 to 75 years duration, would involve a continued though diminishing national growth with national goals dedicated to advancements in quality rather than quantity, interrelating human and natural resources to enhance the living environment of man.

U.S. POPULATION GROWTH RATE

The U.S. population in January 1965, stood at about 193,400,000 with a growth rate of 2.55 million per year.[5] The growth rate rose rather steadily since the days of Plymouth Rock and reached a peak of 3.058 million per year in 1956. After that it remained very nearly constant for five years, and since 1961 has shown a steady decline to the 2.55 million per year cited above, the figure first reached in 1946. The decline from 1961 to 1963 was most abrupt, whereas the trend appears to be leveling off somewhat during the past two years.

Some simple assumptions give the range of population figures which we must consider as shown in the table. Thus, rough approximations indicate the spread of conceivable population levels for a 35-year period range from 238 million to 362 million, and for a 100-year time period the upper estimate is about 1.2 billion. Certainly it would require unique control mechanisms to critically damp the present 2.55 million per year growth rate to zero in 35 years, even in 100 years. Yet this is the course of action that must be implemented.

Arguments for an "unlimited population policy" derive largely from the easy and misleading conclusions that vast areas of the earth are still uninhabited; "that man can live in the ocean, underground, and in space" and failing to succeed with these dimensions for expansion can always fall back to man's newest seduction that "science will save us." If the argument in favor of stabilization is not adequately supported from the viewpoint of food or other resource shortage, then the minimal boundary constraints for a rising per capita transportation, a growing demand for added recreational accommodations, an improved urban-rural aesthetic, a broadened availability of privacy—all demand a man-to-land ratio unattainable by the year 2000, if not inadequate today.

If the 1965 growth rate prevails for 500 years, the population will reach 1.47 billion, and in 1000 years, 2.74 billion. In 1370 years, the continental U.S. would have 3.5 billion, matching today's world level.

Karl Sax of the Bussey Institution at Harvard presents some remarkable predictions of the world's population growth.[6] He observes that if the nations of the world desalted ocean water, irrigated all the deserts of the earth, built large plastic domes for farming in the Arctic and underground caverns for hydroponic farming, and even developed food synthetically, enough food probably could be produced to feed hundreds of billions of people. He notes that at the present

[5] "Big Growth Seen in U.S. Population," Population Reference Bureau, *Los Angeles Times*, August 31, 1964.

[6] Karl Sax, *"Standing Room Only—The World's Exploding Population,* (Boston: Beacon Press, New Edition, Second Printing, October 1961), Preface remarks.

growth rate a population of 100 billion would be reached in 200 years and 3000 billion in less than 500 years. In 600 years, only one square yard of land would be available per person, and in 1700 years, the weight of humanity would exceed the weight of the earth.

POPULATION ESTIMATES (IN MILLIONS)

Assumptions	2000	2065
1. Constant growth at current average rate of 2,550,000 per year	282.6	448.4
2. Constant growth at 100-year average rate of 4,800,000 per year (predicted in the Statistical Abstracts of the United States, 1964)	362.0	673.4
3. Constantly increasing rate of growth from 2,550,000 in 1965 to 4,800,000 in 2000 projected to 2065 (average rate of 9,400,000 per year)	322.0	1,200.0
4. Linear reduction of growth rate to zero by 2000	238.0	238.0
5. Linear reduction of growth rate to zero by 2065	277.2	320.9

The figures are, for various reasons, very elusive, but the need for some level of control is clearly necessary. Overpopulation historically has been a recurrent reason for the failure of peoples. The important questions are: What is the upper level of stabilized population which should be set now as a national goal in 1967? and what is the time for attainment of this target level for a stabilized population? This should be the subject of continuing debates at all levels of interest and capacity in the nation.

A REMARK ON GENETIC SHAPING

There is some discussion in America and around the world on birth control and some actions taken by individual choice and community coordination. First, it is folly to pursue the subject of national birth control as a single point of concern. It seems only sensible to consider it simultaneously with a national goal or objective—and this is some target goal for a stabilized national population. I am not advocating a fixed stabilized population for the future based only on today's technology, today's productivity, today's known reserves of resources, or even today's value judgments or sense of morality. I suggest a target level of population whose value is steadily revised upward or downward to match our foreseeable resources. We have a fair amount of discussion and research on the many facets of birth control per se but we have had almost no discussion or consideration of other direct or subtle mechanisms for population control, the dynamics of demography, and the economic ramifications of a stabilized population.

At this point it is pertinent to rephrase the trite question usually posed "Who is going to play God?" I feel the only answer to this is that our individual abilities for reasoning and our mutual capacities for achieving democratic value judgments must be so improved as to let each play this role, if that is the correct terminology.

OUR DEARTH OF NATIONAL PLANNING

If you search our local libraries, our national archives, and our documentation within the government at all levels, you will unearth sparse literature that concerns the national planning. Few books treat the subject of national purpose, or national goals and policies, in terms of more than broad generalities. Among these are a few interesting volumes, but many that make dull reading and most are concerned only with the short-range aspects of growth in the nation. An example is the report of President Eisenhower's Commission on National Goals, published in 1960. This volume, "Goals for Americans," is useful in many ways, yet lacks substantive discussions on national goals and is only concerned with the decade of the 'sixties.

On really comprehensive national planning, the literature is even more sparse, and seldom concerns the broad context of synergizing our national resources. Nearly all of the current and past attempts at selected areas of national planning concern the drafting of next year's financial plan; occasionally it may involve a commitment by Congress for a three-year funding authorization; and at four-year intervals, we hear of a new administration's cursory plan for the next four years. Short-term national planning is evidenced annually by the President's State of the Union Address. Our legislative committees and subcommittees display a sem-

blance of national planning in their continual probing of the nation's resources and endeavors, though these seldom identify long-range needs. Rarely do the plans of government extend to a decade. The Federal Highway Act of 1956, extending to 1972, is a noted exception. Next to nothing has been drafted about a national plan for the next quarter century, or on the search for options for the next 50 years. And the realm of planning for the next century is out of the question, hardly the subject of debate by the practical man and purported realist. It is the domain of the idle dreamer. Yet today we are saddled with many structural elements of the nation devised over a century ago—many even longer. Our cities and our rail transportation system are cases in point.

We have a number of governmental agencies, the Census Bureau, Internal Revenue Service, the Department of Labor, that maintain valuable statistical data on key dimensions for growth in America. Institutions like Resources for the Future, the Twentieth Century Fund, Stanford Research Institute, Brookings Institution, and a host of others, also perform valuable projections of past performance into the future. But these barely disclose only a few of the options of choice.

This proposal for a national plan for Century III might be distorted to imply the ordering of all things, all endeavors, for all time. This is usually the view offered by the supporters of laissez-faire and autocratic planning. On the other hand, national planning can concern only the basic structural elements of the nation—its arteries for transportation, communication, and certain other amenities concerning our living environment. And more importantly, national planning can be pursued by democratic principles.

NATIONAL PLANNING ACROSS AMERICA

In addition to improving the quality of our environment and the matching of human and natural resources, the well-being of the nation must also be greatly increased. This would involve the creation of a work environment which would offer second, third, and fourth options of choice for employment. Even a first option for employment does not exist for many today. Few of us have a second option, still fewer a third. And most of our technical talent is now constrained by specialism and not free for creative venturing. We need to create these second, third, and fourth options for employment. A national plan for Century III is essential to yield this boost to our national endeavor and well-being.

But who is going to execute this national plan? What should be its objectives? And what magnitude of manpower is needed for the decade of planning to produce this national plan?

President Johnson's efforts to encourage a so-called Great Society may serve as a vital force to yield an improved matching of human demand and resources, yet the concept as presently identified will likely absorb only a small percentage of available talent. A national plan by definition must be derived by a national consensus, not configured by a single administration, however meaningful. A starting point must be a national debate involving a preponderance of our citizens. This debate must be synchronized with the conceptualization and design of a broad spectrum of choices for the future as developed by technical study groups. Ample talent exists without reducing other national objectives, or resorting to shaping our living environment from behind the security guard at our defense plants. I observe that vast stockpiles of unneeded technical talent from the defense industries would be quickly available if clear-cut objectives for new national goals were identified for Century III.

Because of gains in productivity in all our manufacturing areas, a continuing growth in population, and over-staffing of technical talent within selected industries, especially defense and space, the nation has ready access to a vast body of trained talent that can be applied to planning for Century III. There are frontiers that America can explore and execute within the constraints of this available talent because of technical under-employment increasingly caused by early retirement, "featherbraining," shorter work weeks, and similar mechanisms of "unwork."

OUR TECHNOLOGICAL FRONTIERS

Transportation is certainly one of our nation's most vital frontiers. If we deepen our harbors, surface ships almost a mile long can provide ocean transport at one-third the present cost. Nuclear explosives, or other techniques, can dredge such new harbors along coast lines. Alternatively, cargo and passenger

submarines operating below the surface wave and weather effects may have a reliability and lifetime far longer than surface ships. The use of giant, jet-powered, winged catamaran-type flying boats, operating in the ground-effect, just above the ocean wave, offers the potential of passenger transport from New York to Paris at a third of the cost of today's commercial airliners.

Preliminary engineering studies support the feasibility of developing high subsonic, and even supersonic transcontinental tube trains. Their reliability of operation may well be far higher than that of any other means of transport. Only in the last year have a few of our engineering groups cast an eye to such mundane things as trains to match the 707 aircraft or the proposed supersonic transport. Professor Laithwaite of the University of Manchester is developing a test vehicle having a capacity of 250 mph. Professor Foa of Rensselaer considers it feasible to attain speeds to match the 707 and to reach even supersonic speeds. To illustrate the dearth of engineering knowledge in this important dimension for growth, William W. Seifert, Assistant Dean of MIT's School of Engineering, has stated, "Nobody knows the cost of speed."

The possibility exists that we can develop nuclear-powered automobile freeways for urban areas to give smog-free operation. The linear induction motor provides one possibility, and there are others such as curb-side recharging points or conductive strips in the road bed. The fuel cell is another potential source of power. Pipeline transport of bulk and packaged cargo is also feasible. Coal-slurry and wood pulp pipeline systems are already in operation.

The greatest requirement in the private aviation field is to increase the number of airports or terminals by a factor of 100 at least. The greatest frontier in commercial aviation is not just an improved airliner but rather expansion and the integration of present facilities into broader urban needs.

Our national water resource frontier is probably the most important. We are waging the battle of the tincup in nearly all regions of the nation in hotly contested arguments between the states over water. The Western states are embroiled in one of the fiercest battles in process. Each state wants and needs the full output of the Colorado and Columbia Rivers. Even if this were possible, it would only satisfy partial needs until about 1980.

Research and development on dual-purpose nuclear-powered plants for desalting ocean water is a promising and long-term solution to both urban water needs and electric power. A study performed by the Ralph M. Parsons Company in Los Angeles suggests probably the most desirable concept for solving very nearly the entire nation's water needs. This concept proposes building a waterway from the Yukon, Peace, and Athabasca Rivers in Alaska to a holding reservoir in the Rocky Mountain Trench in Montana and British Columbia. Distribution channels, large enough for shipping, would then transport water to Canada, the Great Lakes, throughout the Western states, and to Mexico. A total of 26 states in the U.S. would benefit. It is estimated that such a project would cost $100 billion, and would employ 40,000 engineers for a decade and 100,000 construction workers for 30 years. These are the magnitudes of the solutions we must search for.

With growing affluence and more leisure time, America must seek to expand its recreational frontier. The City of Los Angeles could use 100 Lake Arrowheads, yet it stands little hope of acquiring even one more. The per capita ratio of lakes could be greatly increased by employing nuclear explosives. Research in this technique has demonstrated only minor radiation effects, and costs are far lower than by conventional excavation. Our highways, including urban freeways and the new Federal-Aid Interstate Highways, could be designed with parallel recreational paths for motorcycles, bicycles, horses, and the golf cart.

Research and development on geothermal energy for developing electrical power offers the possibility of yielding a clean and energy-conserving source of power by tapping the heat content of subsurface rock structures. Nuclear devices, detonated deep underground, can create porous, high-temperature rock structures for generating low-cost steam to conventional power plants. Though most of the high energy level geothermal power exists in a belt from the Gulf of California to Yellowstone Park, expansion of power transmission agreements could distribute power anywhere in the country.

The ocean frontier offers the possibility of providing nearly all of our mineral resources; it is conceivable that by mining the ocean, all surface mining operations in the country can be terminated or exploited with less destructive effects in the future.

The task of handling the nation's waste products is becoming a staggering problem. Although new techniques are needed to conserve much of this waste

material, today it is believed cheaper to toss junked autos into the ocean than to reclaim them for steel. In ridding ourselves of most of our refuse by incineration, we release to the atmosphere the equivalent heat energy of 20 percent of all coal mined yearly in the U.S. New techniques are needed for sewage treatment. It appears practical to develop atmospheric processing plants in parallel with sewage processing plants. Storm drains may be coupled to freeways for collection of auto smog. It is conceivable that all the rivers of the nation can be made to run crystal clear; the use of desilting basins and collection processes may be able to remove all debris and pollution and turn our rivers into useful recreational facilities.

The use of nuclear energy may permit dredging chains of man-made islands on the continental shelf from Mexico to Miami to increase the total shoreline of the U.S. by a possible factor of ten.

Probably the most important man-made development is that of city building. Consider the urban frontier, though it hinges entirely on expansion of those frontiers just reviewed.

OUR URBAN CENTER FRONTIER

The anticipated growth of population in the U.S. during the next 35 years is expected to just double our present population of 195 million people. Our present growth rate indicates we will add the next 50 million by 1978, the second 50 million by 1988, and the next 95 million by about 2000, a subsequent 400 million by 2040. . . .

The choice is open to us now as to where these next 190 million, and subsequent 400 million, new citizens can most properly be absorbed. We can elect simply to expand the total areas of our present urban centers; we can encourage their upward expansion through high rise structures; we can build underground cities beneath the skyscrapers of today, and we can build cities beneath the sea. We can expand by further increases in the population density; we can dedicate our efforts toward a goal of "standing room only"; we can continue our plans for letting our cities grow, each like fungus, not by urban development, but by urban redevelopment.

These directions of growth, however, are not the only avenues open to us. An alternative solution, and I believe the most desirable, is the giant frontier of building entirely new, twenty-first century, urban centers in the now barren or sparsely populated areas of the nation. This new frontier would entail a mammouth effort to initiate the design, development, and construction of 50 or more new multi-million population centers. There remains ample terrain within the U.S. to build these, and they promise to markedly improve per capita environment and individual social freedoms.

NEW CITIES

On first broaching the subect of new city design and construction, one is likely to hear reference made to any of several activities under way such as bedroom communities springing up on the fringes of our metropolitan areas, large shopping centers that dot the urban perimeter, industrial parks serving a host of research or light production facilities, redevelopment projects, or a new university campus. These developments only represent the bits and pieces of a thriving city.

Even Brasilia, now six years old with over 200,000 population, still contains only a fraction of the ingredients comprising a thriving city. In its present state of development, it lacks any extensive means of production and has only limited educational and cultural facets, although this is perhaps in keeping with its objectives to function primarily as the nation's capital.

President Johnson's recommended housing legislation of 1964 included "new towns" as satellite communities to existing metropolitan areas. This legislation failed to be enacted. Opposition by home builders, real estate operators, and city mayors was due to ". . . fear that creation of attractive satellite cities would further erode the tax base of their municipalities by accelerating migration of families with above average income," and ". . . fear that creation of 'new towns' would put them at a competitive disadvantage," since mass production would permit cost savings, and so forth. I do not view these proposed satellite towns built on the periphery of existing metropolitan areas as an enduring solution. Recent legislation (The Model Cities Act of 1966) offers little hope to lighten the burden of urban man.

There are new city developments in progress in other countries. One of them, Israel, is planning a series of new desert communities. But none of these is likely to be planned as a complex urban center or planned to yield adequate dwelling

densities for a very long period of time, if ever. Few countries are blessed simultaneously with the industrial capacity, the raw materials, the available land, the technical skills, and the need for an improved urban environment as the United States.

In our country we insist on the high production of new automobiles, new color TV sets, new supersonic jet aircraft, a $5-billion space program and the waste of half our national resources on the war system yet we content ourselves with accepting an archaic city format established centuries ago. Is it not possible that the construction of new multi-million population urban centers in selected areas of the United States could provide the most powerful mechanism to do these things?

(1) Yield the required challenges to all skill levels, best absorb the technical and physical energies of the nation, and give a better match between talent and task.

(2) Absorb the entire present and future unemployment.

(3) Provide the best match for the efficiency and design of transportation and communication systems as well as power and water distribution networks.

(4) Promote increased individual social amenities by optimizing the transportation media, the green belt area ratio, the urban dwelling density, the scenic, the cultural and physical environments.

(5) Encourage a more rapid transition to an improved living environment within our older city facilities.

It is an easy chore to suggest new urban developments for the twenty-first century. But what tangible incentives will induce participation by industry and our population? What are the drawbacks, the pitfalls, the disadvantages of seeking to change the present course of our urban and rural environments?

The attraction of new industrial expansion, which is necessary to the growth of these new urban sites, would be most assured through a tax benefit and justified on the basis of industrial decentralization for reasons of national security, and improved industrial efficiency yielding reduced demands for local, state, and national governmental services. Other important incentives to industry may include lower cost land values, improved plant layout, and better integration of facilities with transportation systems. Perhaps modification of our taxing laws by providing incentives to new development rather than the maintenance of our current tax approach penalizing builders by steadily increasing property taxes would be a good starting place. Our slums and urban sprawl are both fostered by this curiously negative approach to raising public monies.

What are some of the drawbacks to this proposed urban scheme? Some of these rest with the answers to such questions as (a) Can the programmed growth of these new urban centers avoid causing present cities to be adversely affected by a mass migration? (b) Is it possible to agree upon dwelling density equations and total area limitations which would be adaptable to future growth? (c) Is it possible to assemble a set of simultaneous equations giving a reasonably good description of urban development? (d) Is it possible to develop the equations describing the dynamics of a thriving metropolitan area? (e) Is it possible to program the growth of these new urban centers so as to maintain a good balance between available talent and task? (f) Is it possible to maintain an adequate educational system and cultural facets during all phases of growth? (g) Could the federal government provide a nucleus for one of these new urban centers by transferring one or several of its departments?

Victor Gruen has set forth a cellular plan for metropolitan centers accommodating up to 3.3 million people. He has emphasized, however, that "even with the greatest national effort we will be able to take care of only an insignificant percentage of urban newcomers in new, favorably located urban places in the next forty years."[7] I do not concur with this view. On the contrary, regardless of the locale of the future population, housing accommodations will be provided, electrical power will be generated, sewage lines will be installed or extended, and more highways will be built to serve at least a part of its needs. A steadily lowering efficiency of all these mechanisms occur today because of the practice of building, tearing down, and rebuilding each component of municipal services many times before the lifetime of the system has been realized. As a consequence Gruen's conclusions that we cannot afford to build all new cities is not justifiable. In fact, building entirely new cities is the most expeditious, the most conservative of natural resources, and the most

[7] Victor Gruen, *The Heart of Our Cities* (New York: Simon and Schuster, 1964), pp. 266–296.

efficient. We have more than ample manpower to do the designing, constructing, and operating of these new urban areas as well as ample productive capacities for steel, concrete, lumber, and other components. We face no lack of human or natural resources to build these new urban environments; we only lack the decision to do so.

In lieu of quantitative proof that we can or cannot afford new cities perhaps we should simply be empirical. Perhaps it is worth an experiment at least. We think nothing of firing a multi-million dollar rocket; or building supersonic bombers that have first flight costs of $1.3 billion; or building lunar C–5 rockets that if amortized across the 10-year, $40 billion space program have average prorated costs of nearly $3 billion per shot. The city of Los Angeles has a total value of about $60 billion, the equivalent of our space program through 1975.

IMPLEMENTATION

Certainly the management structure to organize and guide such a mammoth undertaking does not now exist. Architectural and engineering groups which are sufficiently large or talented do not exist to tackle this job as independent firms. All of the data and analytical tools for synthesizing the important variables describing a thriving urban area of a million population are not available, though a large number of research institutes, foundations, and governmental agencies have been studying many facets of the characteristics of old as well as new urban areas. We do have a large resource of unemployed nonskilled, skilled, and underemployed technically trained talent which could readily be applied to all phases of this task.

Progress has already been made in the establishment of the Department of Housing and Urban Development which can establish policy, provide guidance, and seek improvements. A suggested schedule of events may take the following format:

1967: The use of a National Urban Affairs Agency to execute the diverse urban study programs and the architectural and engineering contracts for urban development and redevelopment activities.

1968–71: The award of multiple three-year contracts on Urban Center Population and Dwelling Data Surveys and Analysis. Transportation Characteristics, Power and Water Requirements, and so forth.

1971–74: The award of multiple three-year contracts on Urban Center Dynamics Analysis, Development of Metropolitan Area Population Density, Dwelling Density, or Zoning Equations specifying maximum desirable urban dwelling density limits and maximum metropolitan total area limits.

1974–77: The award of multiple three-year contracts on urban site surveying and development planning.

1977–2000: The initiation of construction of 20 to 50 new urban centers.

The writer is not so naive as to interpret this proposed urban activity as an easily accomplished task. On the contrary, the preliminary architectural and engineering efforts would call for the combined technical energies of the nation's major architectural and engineering firms working in diverse parallel directions on these problems.

Implementation of the multiple study contracts to lay a firm foundation for our metropolitan centers of the coming century would require aggressive activity during the next 10 to 20 years. Perhaps as many as five to ten parallel three-year architectural and engineering contracts should be awarded, each totaling $200 million or more with an expenditure of approximately $2–5 billion for each three-year phase. Thus, a total of $5–15 billion would be applied to this important problem prior to 1975. I believe we would be justified in even matching our annual appropriations for public works, currently scheduled at $4.5 billion.

In locating the urban centers a good starting point might be the blighted Appalachian states. Here an area of about 800 miles by 300 miles, over 150 million acres, and exceeding all land area occupied by our present cities, would contain enough room with ample spacing for perhaps 10 to 20 urban centers of 5 million population each, yet still preserving the beauty of this scenic land. The program for construction of 3300 miles of new highways into Appalachia is a good start. But with no further planning than this, these 3300 miles of roads will be little more than highways to nowhere for the next 40 years.

Many other areas exist in the Midwest, West, and South, and Alaska as desirable sites. There are the High Sierras in California, or the Rocky Mountains, sections of the Grand Canyon area, or the Dakota Bad Lands, or even a section of rolling Iowa grassland.

MECHANISMS TO ADVANCE PLANNING

There are five new mechanisms which could assist in formulation of a national plan for Century III.

1. First, implementation of a Decade of National Planning from 1967–1977 can serve the nation by setting forth the choices for future development. A preferred path for growth, as well as alternatives, can be identified with varying degrees of detail throughout Century III. The following four mechanisms would aid in executing the proposed Decade of National Planning.

2. The establishment of perhaps ten New Frontier Planning Institutes in cooperation with industry, universities, and government, with the purpose of setting before the nation the choices for future growth. These New Frontier Planning Institutes would have comprehensive capacities in technology, economics, sociology, philosophy, education, government, and the arts, with abilities to synergize the human equations as well as the technological ones. These Institutes would develop feasible possibilities of the future. They would not be implementive but would instead lay before the public, the State Legislatures, the Congress, and the President, a broad spectrum of choices.

3. The development of a format for an annual National Congress on New Frontiers could provide a constant input of new concepts for national growth from the general technical community and the public to broaden further the options of choice by the nation. These National Congresses should be reinforced by similar state and regional conferences, all of which could act as powerful catalysts to stimulate desirable technological innovation in the field of social engineering. These events should be the cooperative efforts of industry, the universities, the government, and the professional societies, as well as the general public.

4. Providing to the public the opportunity of making an improved assessment of the nation's performance and its future potential. It is of paramount importance that mechanisms be established to present to the public a ready assessment of the nation's progress and that the conscience of every American be employed in determining our national goals and policies. This would involve the development of a national network of State of the Nation Display Centers. These new facilities, democratic in function, would have the express purpose of informing the public on the state of the nation, that is, the growth trends of the past, today's potential, and tomorrow's projections. They could serve as focal points in closing the gaps of information dissemination and in turn nourish a grass-roots understanding of complex national endeavors.

5. The encouragement of the reorganization of much of our enterprise across America. We need new organizations of such technical color as to include the economist, the philosopher, the sociologist, even the poet. The degree to which we now synergize the human and natural forces in our social engineering equation is trivial. Even the university has yet to ponder the meaning of synergism and to contrive academic curricula to promote the synthesis of its separate courses. And our governmental endeavor is largely the product of autonomous departments.

These five proposed mechanisms can serve the purposes of the Decade of National Planning immediately ahead of us and can yield a plan for Century III.

[From American Forests, March 1970]

WHERE IS THE OUTDOOR RECREATION PLAN?

(By John F. Shanklin and Edwin M. Fitch)

In 1963 the Congress authorized the Secretary of the Interior to prepare, at five-year intervals, a comprehensive outdoor recreation plan for the nation, including the territories and possessions. Former Interior Secretary Stewart L. Udall promptly delegated this duty to his newly-created Bureau of Outdoor Recreation. This, and other outdoor recreation responsibilities, were placed upon the Secretary of the Interior by what has been called "The Outdoor Recreation Act of 1963".

The first nationwide plan is now two years overdue. We understand that such a plan has been formulated, that it has been subjected to review by the Office of the Secretary of the Interior, and that it has been set in type by the Government Printing Office. Even the printing of the plan does not, however, make it official.

It is still subject to Bureau of the Budget scrutiny and indeed the plan is believed to be presently stalled in that bureau. And it cannot be submitted to the Congress until it has received the approval of the President. It is entirely possible that, as a political matter, it cannot be submitted to the Governors of the States and Territories as official administration policy until it has received the approval of Congress as well.

The authors of this article are also authors of a book on *The Bureau of Outdoor Recreation* to be issued by Praeger Publishers of New York within a few months. Had the Bureau's outdoor recreation plan been released the last chapters of this book would have devoted to its evaluation. Such an evaluation is, and will continue to be, impossible until Secretary Walter Hickel, President Richard Nixon, and the Congress have given their blessing to the plan so federal agencies can be required generally to conform to its recommendations. The mere sending of the outdoor recreation plan to the printers does not constitute such official sanction and many months may still elapse before a final plan has been completed and approved.

13 PRINCIPLES

These circumstances and these actions delays suggest that there are issues and problems in federal promotion and coordination of outdoor recreation activities that have proven extremely difficult to resolve. It therefore becomes pertinent to examine carefully as to what these issues and problems might be. We have chosen to do this by giving critical consideration to *13 guideline principles* upon which, in our judgment, a comprehensive and nationwide outdoor recreation plan ought to be based. It is possible that failure to recognize some of these principles may account for administration slowness in carrying out the outdoor recreation planning function which Congress has placed upon the Department of the Interior. Our whole proposition, therefore, will be based on thirteen specific principles and we recommend them to the serious attention of all readers of AMERICAN FORESTS.

The creation of an outdoor recreation plan and its submission to the President and the Congress is required by Section 2(c) of the Act of May 28, 1963 (P.L. 88–29) which authorized the Secretary of the Interior to:

Formulate and maintain a comprehensive nationwide outdoor recreation plan, taking into consideration the plans of the various Federal agencies, States, and their political subdivisions. The plan shall set forth the needs and demands for outdoor recreation and the current and foreseeable availability in the future of outdoor recreation resources to meet those needs. The plan shall identity critical outdoor recreation problems, recommend solutions, and recommend desirable action to be taken at each level of government and by private interests. The Secretary shall transmit the initial plan, which shall be prepared as soon as practicable within five years hereafter, to the President for transmittal to the Congress. Future revisions of the plan shall be similarly transmitted at succeeding five-year intervals. When a plan or revision is transmitted to the Congress, the Secretary shall transmit copies to the Governors of the Several States.

While the above language authorizes and does not instruct. Section 3 of the same act requires the heads of federal departments and independent agencies with outdoor recreation responsibilities, to "carry out such responsibilities in general conformance with the nationwide plan." Unless the authority of Section 2(c) is exercised, the mandate of Section 3 cannot be obeyed. True and effective coordination of outdoor recreation planning within the federal government, as envisioned by the Act of May 28, 1963, cannot be initiated until after a nationwide plan has been formulated and accepted as federal policy.

PURPOSE OF THE PLAN

The purpose of a nationwide plan should be to supply guidelines to carry out public policy. Congress established the policy in the Act. According to its enactment clause:

> ** * * the Congress finds and declares it to be desirable that all American people of present and future generations be assured adequate outdoor recreation resources.*

After thus decreeing that outdoor recreation is a good thing, Congress further urges that "all levels of government and private interests" take cooperative action to ensure that the American people have adequate access to its benefits and enjoyments.

A plan designed to carry out this policy should define its goals in a reasonably detailed manner, should assemble and analyze the facts about outdoor recreation that relate to the attainment of these goals, and should recommend ways and means of translating them into adequate realities. Insofar as possible, outdoor recreation objectives, needs, and solutions should be projected into the future The futurity of planning is, after all, the justification for trying to plan.

AGENCY PARTICIPATION

There are lessons in the history of federal concern for outdoor recreation that warrant the careful study of federal decision makers. Some provide warning signs against dangers ahead. Some provide illustrations of the kind of mistakes which are certain to be repeated by those who have not taken the trouble to learn about them.

There was a time when the National Park Service aspired to be the chief coordinating force in outdoor recreation and was on the road to attaining that goal. Franklin Roosevelt's Natural Resources Board had commissioned the National Park Service to prepare a report which was in fact a national plan for the recreational use of land in the United States. Other agencies were consulted but the final report was not cleared with them, probably because it contained several recommendations that would have enhanced the outdoor recreation responsibilities of the National Park Service at the expense of these other agencies. Largely as a result of the failure to try for an agency consensus, The Park, Parkway and Recreation Survey Act of 1936 was a watered-down version of the outdoor recreation charter envisioned by the National Park Service.

This is not to imply that obtaining a consensus among outdoor recreation agencies is an easy matter. A Technical Committee on Recreation, created in 1935, chaired by a representative of the Federal Security Agency, tried for several years to obtain consensus on a federal recreation plan which would have created a separate Bureau to coordinate outdoor recreation activities. The attempt failed and the Committee disappeared. On the other hand, the Outdoor Recreation Resources Review Commission devoted a great deal of talent and energy to securing the participation of government agencies and the private sector in its outdoor recreation planning and thus laid the foundation for a large measure of success.

Therefore, Principle No. 1 is—

There should be active participation of all outdoor recreation interests, government and private, in the preparation of a nationwide outdoor recreation plan and these interests should be given an opportunity to review the final version of the plan before its release.

MACHINERY FOR COORDINATION

The many federal agencies (some 93 agency units according to the Bureau of Outdoor Recreation) that have been given outdoor recreation responsibilities by Congress make coordination necessary. In spite of the good work of the Bureau of Outdoor Recreation, the problem has by no means been solved. The history of federal participation in outdoor recreation activities, strongly suggests that coordination is most successful when there has been established some mechanism or procedure to accomplish it. Thus the Land and Water Conservation Fund Act supplied this mechanism to a limited extent for recreation land purchase by federal agencies, and for outdoor recreation planning, acquisition and development by state and local governments. The Recreation Advisory Council and the President's Council on Recreation and Natural Beauty provided coordinating mechanisms during their brief existence. The machinery of Congressional Committees also furnished major support for coordination efforts. The Interior Intradepartmental Committee provided a coordination procedure within the Interior family that languished when the Committee ceased to meet.

Therefore, Principle No. 2 is—

The nationwide outdoor recreation plan should not only provide for coordination but should establish mechanisms or procedures through which coordinating efforts can find effective expression.

NOT WANTED—A COORDINATION CZAR

A certain amount of bureaucratic jealousy between agencies—federal, state, local and private—is a natural result of human ambitions, human strengths, and human weaknesses. "Nice guys finish last" often constitutes its rationalization. On the other hand, where a great many government agencies are concerned, excessive bureaucratic competition is a sure and certain way to produce antagonisms on the part of the many toward the few, or toward a single agency. This is particularly true when agency officials try to ride roughshod to positions of greater power.

When federal responsibility for outdoor recreation is scattered among many agencies, accommodation rather than the tactics of high pressure has to be the accepted norm. By its very nature, coordination calls for persuasion rather than force. When B.O.R. tried to compel federal agencies to conform to a standardized recreation fee system, the attempt was singularly unsuccessful.

It must not be forgotten that there are limitations imposed by law on the functions of federal land and water agencies and, in many instances, recreation is a secondary function under the law. The shifting of non-recreation lands to recreation uses cannot be done by fiat but requires cooperative effort between the agency concerned and the agency given coordinating responsibilities. In some cases coordination may, in addition, require efforts to persuade Congress to alter existing law or add new provisions.

Therefore, Principle No. 3 is—

The nationwide outdoor recreation plan should not attempt to make any federal agency, and certainly not the Bureau of Outdoor Recreation, an outdoor recreation czar. Attempts of this sort are signs of frustration at coordination's slow pace rather than of executive statesmanship.

THE FLEXIBILITY OF PARTNERSHIP

The conquest of the moon was not only a thrilling chapter in history, it was also a supreme example of the worth of cooperative endeavor. Messrs. Armstrong, Aldrin and Collins naturally and properly were the central figures in the final success. But they could not have performed their feat except through the planning, the accomplishments, and the support of thousands of men and women in many branches of government and of private industry. All were united in a vast cooperative endeavor on which ideological differences had little influence. There have been a great many other examples of such joint industry-government effort. As the world of business, of politics, and of social change becomes more complex, the number of businesses that are purely private or of government enterprises that are purely socialistic become imaginary rather than real. As a result, argumentative confrontations between the proponents of public and private enterprise have become increasingly fatuous, indulged in for the most part by old-fashioned individuals who find it impossible to give up simplistic views as to how the world is run.

Outdoor recreation is, or ought to be a prime example of cooperation between many different interests, private and public, for the common good. It requires cooperation between federal agencies. It requires cooperation between the federal government and state and local governments. It requires cooperation between both federal and state agencies with the private outdoor recreation industry and the private but non-profit organizations engaged in outdoor recreation activities.

Therefore, Principle No. 4 is—

A nationwide outdoor recreation plan should provide for and be based upon good cooperative relationships, not only between government agencies, but between those agencies and private outdoor recreation enterprise, both profit and non-profit.

EMPHASIS ON THE PRIVATE SECTOR

It is too often forgotten that private businessmen have many billions of dollars invested in outdoor recreation enterprises and that government-industry cooperation calls for appropriate recognition of their outdoor recreation role. Here the questions to be resolved are practical, rather than ideological. This is not to deny that private businessmen resent government competition and sometimes resent it unreasonably. On the other hand, government agencies,

secure in the knowledge that they have the upper hand, are also capable of being unreasonable.

Extreme poistions taken by both sides are largely to blame for the inability of some government agencies and some representatives of private business to grant the benefits of cooperation. There are government men who deduce from the past sins of business that the profit motive is completely incompatible with quality outdoor recreation. There are businessmen who regard any increase in land ownership by federal, state, or local governments as a direct attack upon the free enterprise system. While some conflct of interest is inevitable, most of its adverse effects could be overcome if each side could be persuaded to abandon formulas and forget an absolutist insistence upon alleged inalienable rights.

Therefore, Principle No. 5 is—

A nationwide outdoor recreation plan should recognize the important role of private enterprise in outdoor recreation, should be accommodated to that role, and should make provision for assistance to outdoor recreationist businessmen, except in cases where it can be shown that such assistance would seriously jeopardize the public interest.

And Corollary Principle No. 6 is—

As a corollary to government-industry partnership in outdoor recreation, the nationwide plan should provide an important place for the many private associations in the outdoor recreation field. As a minimum this should include full consultation and the use of association assistance in promoting research and education.

ROLE OF THE STATES

In the light of the recommendations of the Outdoor Recreation Resources Review Commission, and the state and local operations of the Land and Water Conservation Fund Act, there is little need to argue the case for the prominent part which state and local governments should assume in outdoor recreation. It has been repeatedly said that the greatest deficiency in recreation supply exists in urban communities where development has cut off a great many citizens from immediate access to the outdoors. In simple but eloquent language the Outdoor Recreation Resources Review Commission thus described the need:

> ** * * parks and other recreation areas are only part of the answer. The most important recreation of all is the kind people find in their everyday life. Do they find enough of it now? Do the children have to be driven to school—or can they walk or cycle to it safely over wooded paths? Are their streams for an afternoon's fishing—or have they all been buried in concrete culverts? Are the stands of woods all gone—or are a few left for a picnic or a stroll?*

It may be too late to give a satisfactory answer to these questions in many cities. But states and local communities are proving that something can be done. It is up to the federal government to base its planning on the conviction that federal agencies cannot directly meet this kind of need, that state and local governments can and must try to meet it, and that federal agencies should give the utmost assistance to them in their endeavor.

Therefore, Principle No. 7 is—

A nationwide outdoor recreation plan should be based on an understanding by the federal government that state and local governments, assisted by federal agencies, constitute the main governmental reliance for bringing additional outdoor recreation opportunities to urban areas. This also means encouraging the states to work closely with private interests in a government-industry partnership for the furtherance of outdoor recreation goals.

REGIONAL PLANNING

Regional planning is both the hope and the despair of those who are most sensitive to the need for more outdoor recreation resources and the even greater needs for protecting the environment from the pollution that has destroyed much and threatens more. This kind of planning is more difficult than is the case with federal or state outdoor recreation projects, because of the problem of establishing and financing a regional authority to manage regional planning and to keep it alive against the many special interests who are out of sympathy with its purposes. River basin planning constitutes one of these regional

forms. Planning based on political boundaries constitutes another. Regional planning has had many failures of which the as yet unsuccessful attempt to restore the Potomac River to recreation usefulness is a sad example. It has also had outstanding successes, of which the Tennessee Valley Authority is the best known and, in this country, the least emulated. The importance of regional planning in maintaining and improving the quality of environment for recreational and other purposes cannot be overestimated. Nationwide outdoor recreational planning must in some way and to some degree provide for it.

Therefore, Principle No. 8 is—

A nationwide outdoor recreation plan should include provision for regional planning and should contain suggestions for mechanisms and procedures that are most likely to make it successful.

OUTDOOR RECREATION RESEARCH

The careful use of research methodology can provide comparative data on the supply and demand for recreation facilities, on the effect of recreation use on resources, and on the nature of recreation habits. Research directed to solving problems in the design, construction and operation of research facilities, can give planners new dimensions for their work. It is also of high importance to planning that research attention be given to basic aspects of American life, such as the population explosion, the technological revolution in transport and communication, the prospects of controlling pollution of air, land, and water, and the basis in human psychology for recreation needs and desires. In some of these areas, research effort directed to outdoor recreation problems may well determine whether there can be accurate planning response to future national needs.

Therefore, Principle No. 9A is—

A nationwide plan should include provision for advancing the pace of outdoor recreation research and should suggest a program by which this might be done.

EDUCATION

In a world in which farm and wilderness continue to give ground before urban development, the ability to obtain maximum benefit from outdoor recreation seems to be an acquired rather than an instinctive characteristic. To the extent that this is so, education can be called upon to balance nature against the artificialities of city life. In the past, outdoor interests were encouraged in grade schools through physical education, and in college through organized sports. More recently there has been added an emphasis upon outdoor skills, useful not only in childhood but throughout adult life. With the outdoors as a classroom, students are being taught to be better swimmers, boatsmen, skiers, fishermen, hunters and campers.

Beyond this, man's relation to his environment is beginning to be included in the curricula of grade and secondary schools. Environmental education has special relevance to America's urban populations. Nature and its mysteries can become so remote to those who spend their daily lives in crowded cities, as to lose their meaning and value unless the educational process comes to the rescue.

Therefore, Principle No. 9B is—

A nationwide plan should include provision for promoting outdoor recreation through education that begins in kindergarten, continues through college, and finds an appropriate place in programs for adults.

NATIONAL RECREATION AREAS

A widely acclaimed feature of outdoor recreation policy during the past decade has been federal emphasis upon increasing the number of National Recreation Areas, including National Lakeshores, Seashores, and Riverways. These are land and water areas where recreation constitutes the primary use, in contrast to National Parks where the preservation of unique scenic, geological, and historical elements ranks, or should rank, above current enjoyment. Nevertheless National Recreation Areas must show high qualities of natural beauty and recreation appeal and must be accessible to large numbers of people in order to meet the standards that have been established for them.

These standards should be protected and not diluted by lowering them to permit the inclusion of lands of lesser quality, smaller size, and without national significance. Such lands are more appropriate for recreation development by state, county and municipal authorities. The federal government should not compete with the states and municipalities for outdoor recreation lands that are local in character but should actively assist the states in enlarging their holdings of such lands.

Therefore, Principle No. 10 is—

A nationwide outdoor recreation plan should retain the integrity of the National Recreation Area system by supporting present high standards for their selection. The federal government should not compete with states and municipalities for the acquisition and developmnt of high quality recreation lands that are not of national significance, but should encourage the states to include such lands in their recreation planning.

TECHNICAL ASSISTANCE

Existing outdoor recreation programs, public and private, could be strengthened if their managers had greater access to the advice of experts and more opportunity to know what was going on in similar recreation situations in other parts of the country. Technical assistance of this sort has long been part of outdoor recreation planning, but it has been underfinanced and undermanned. National planning should bring new vigor to programs for technical assistance by increasing both their scope and their quality.

Therefore, Principle No. 11 is—

A nationwide plan should include measures for raising the standards of technical assistance and should widen and deepen the channels by which expert help in solving outdoor recreation problems can be made available to managers of outdoor recreation projects both public and private.

HIGHWAY PLANNING—WEAKNESSES REVEALED

Without the transportation system that has made both growth and prosperity possible, most of the outdoor recreation opportunities now available to Americans would be inaccessible. Nevertheless, the system has developed serious faults both in a partial failure to meet mass transportation needs adequately, and in an inability to resolve satisfactorily the growing number of disputes over land use. Too often highways are efficient, but ugly. Furthermore, both highway and airport requirements for land have played their parts in eroding environmental quality. Highway planning and planning for recreation and natural beauty must move together so that the enhancement of the one will not result in the destruction of the other.

Therefore, Principle No. 12 is—

A nationwide outdoor recreation plan should be based on the assumption that recreation and natural beauty can be equal partners with highway development and must include measures for making this assumption a reality.

ENVIRONMENTAL QUALITY

No sane citizen will argue in favor of filthy water, air polluted with chemicals and noise, or land soiled with the industrial waste and the vast amount of litter that seem to accompany technology and affluence. The argument extends rather to the degree of filth that can be tolerated in the interest of greater effciencies for industry and agriculture. This is not to minimize the problem. There are those who affirm that our very survival depends on our ability to understand and foresee the danger of pollution and our will to do something about it.

The issue, however, does not need to be carried as far as the question of survival. Attempts to clean and keep clean our lakes, rivers and oceans, our air, and our land resources, deserve overwhelming support even when the question of survival is not involved. Outdoor recreation is only one of many activities that are degraded by litter and pollution. The dependence of decent living upon environmental quality, therefore, determines a final principle.

Therefore, Principle No. 13 is—

A nationwide outdoor recreation plan must include provision for the initiation of anti-pollution programs and for the cooperation of outdoor recreationists with other interest groups in maintaining and improving the quality of the environment.

These, then, are the major principles which we believe should guide the Bureau of Outdoor Recreation and the Department of the Interior in the formulation of a truly national outdoor recreation plan. Does the current plan, yet unveiled, follow these guidelines? We hope so, but we suspect that adequate attention has not been given to all of them. There is one in particular that seems to us to be overriding to all the rest. This is the principle that federal agencies, whose outdoor recreation activities are affected by the nationwide plan, should participate in its formulation and should be permitted to review its provisions before they have become final. To the extent that this principle is ignored, the effectiveness of the Secretary of the Interior in carrying out the coordinating functions which Congress gave that office in 1963, will be seriously weakened and might, in the long run, be almost completely destroyed.

French Regional Planning Experience

(By Niles M. Hansen,[1] *Journal of the American Institute of Planners*, November 1969)

During the past two decades the French have developed the most comprehensive system of regional planning in Europe. This article outlines the institutions that have been created to formulate and implement regional objectives within the framework of the national plan. Problems encountered during the Fourth and Fifth Plans are discussed, along with proposals set forth for dealing with them. Among these are attempts to balance the pull of the Paris region by stimulating economic growth in the provinces, to promote growth of urban centers in the Paris Basin, and to guide the expansion of the Paris region by a comprehensive Strategic Plan. Despite a certain lack of coherency and integration among various elements in their regional policy, the French are making relatively great strides in developing institutions and policies equal to their pressing regional problems.

As governments have increased their ability to manipulate economic variables and to avoid lengthy periods of high unemployment and depressed economic activity, there has been a relative shift of interest toward regional distribution of national wealth. In many countries, policies have been formulated to promote growth of lagging regions and, in some cases, to curb growth of areas regarded as overconcentrated in terms of population and economic activity. In the United States, legislation for lagging regions has included the Area Redevelopment Act of 1961, the Appalachian Regional Development Act of 1965, and the Public Works and Economic Development Act of 1965, which created five new multistate regions [2] and the Economic Development Administration to promote economic growth in areas below the national standard. In general, however, regional planning in Europe has been ahead of that in the United States.

The most comprehensive system of regional planning has evolved in France during the past two decades, particularly during the Fourth (1961–1965) and Fifth (1966–1970) Plans. After a brief consideration of the principal institutions of French regional planning, some of the major problems and solutions of the Fifth Plan are examined. Then, the urban development programs that are in many respects the core of French regional policy are critically analyzed. Particular attention is given to the *métropoles d'équilibre* which are to provide a counterweight to the Paris region and serve as growth centers for the provinces.

INSTITUTIONAL STRUCTURE OF FRENCH REGIONAL PLANNING

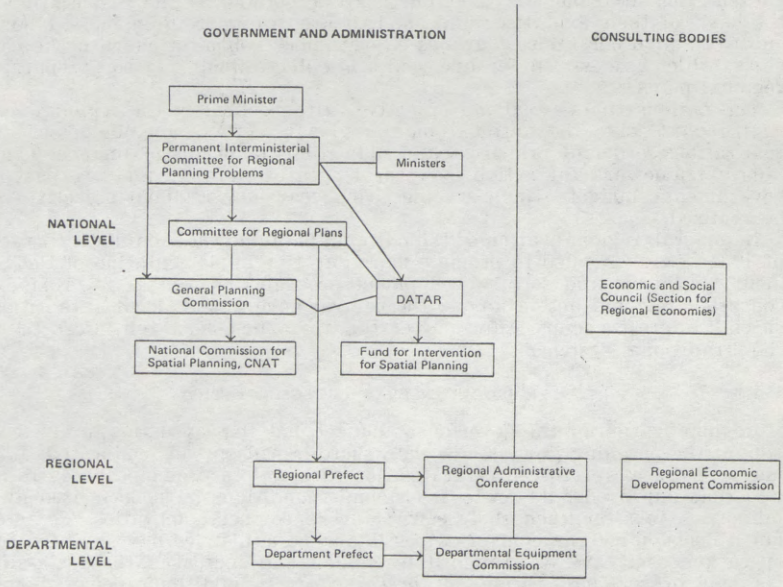
The implementation of regional planning in France is carried out by agencies at both the national and regional levels. (See Figure 1.) Coordination of planning

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[2] New regional commissions have been created for the Four Corners, the Coastal Plains, the Ozarks, the Upper Great Lakes, and New England. See Melvin R. Levin, "The Big Regions," *Journal of the American Institute of Planners*, XXXIV (March 1968), 66–80.

activities at the national level is the responsibility of the Delegation for Spatial Planning and Regional Action (*Délégation à l'aménagement du territoire et à l'action régionale*), or DATAR. This interministerial body insures that regional objectives are considered during the formulation of the national plan and that regional policy as embodied in the plan is effectively executed by government agencies. DATAR is not an administrative body in the usual sense, but in its tasks of coordination and impulsion it works in close cooperation with the General Planning Commission. Through regionalization of the government budget it watches over annual investment programs of various administrations, and through a special fund for regional action it finances particularly urgent investment projects.



Source: Adapted from Pierre Viot, "Les institutions de l'aménagement du territoire," Revue de l'action populaire (June 1965), pp. 674–91.

FIGURE 1 *Organizational Structure of Regional Planning During the Fifth Plan*

The long-term perspective within which medium term (four or five year) plans are developed is formulated by the National Commission for Spatial Planning (*Commission Nationale de l'aménagement du territoire*), or CNAT. CNAT, which is attached to the General Planning Commission, analyzes social, economic, and technical factors that will be most influential in future regional distribution of population and economic activity. Then, it attempts to identify what influence public authorities can employ to achieve regional objectives. Finally, CNAT proposes the principal orientations for regional policy by fixing a number of long-term goals consistent with more geographically balanced growth. It was actively involved in preparing the regional aspects of the Fifth Plan (1966–1970), defining the principal orientations within a perspective extending to 1985.

The implementation of regional programs has made it necessary to reform France's administrative structure, which consists of ninety-five departments divided into numerous cantons and communes. Moreover, organic links among the provincial services of various Paris ministeries have been practically nonexistent. During the 1950's, there was growing recognition that the need for more local initiative could be met only by decentralization, combined with more democratic participation and greater horizontal coordination at the regional, departmental, and local levels. In 1959 a decree was promulgated that called for harmonization

of administrative boundaries along regional lines, and in the following year France was divided into twenty-one "program regions." The Paris region was placed under the authority of the General Delegation for the District of the Region of Paris. The remaining regions, grouping from two to eight departments, were each given a prefect to oversee and coordinate regionally significant economic programs. In 1964 administrative reform was furthered by a series of decrees that strengthened the authority of regional prefects and provided regional bases for economic policy coordination. At the same time, regional administrative conferences, composed of government administrators advised by outside experts, were created to consider the consequences of alternative public investment policies for each region.

The 1964 decrees also initiated Regional Economic Development Commissions, which bring together local public officials and representatives from all socio-occupational categories for consultation on regional problems and planning needs. A commission has from twenty to fifty members. One-fourth of the members are chosen from local officials; one-fourth are appointed by the Prime Minister on the basis of their expertise; and one-half are drawn from business, labor, agriculture, and other interest groups. Government consultation with the commissions, which are named for five years, is obligatory during the preparation of regional plans.

The national plan's regional objectives are specified in the regional sections, or *tranches*. Like the national plan, regional sections, include a schedule of realizations, order of priorities, and indications of means of finance. They provide a framework for action over the length of the plan and are part of the government's budget, which specifies each year how regional objectives are to be realized.

In general, regionalization of the national plan and the administrative reforms of 1964 [3] were intended to promote more effective implementation of the government's economic and social development programs as well as to promote more concerted regional action among the central government, local authorities, and special interest groups. How successful, then, has been the effort to reform the "traditional system?"

PROBLEMS IN PLAN IMPLEMENTATION

Regionalization of the government budget, has improved the purely technical side of the planning process, however, there is widespread feeling that it has in many instances reinforced centralization rather than promoted decentralization and that improved data on local economic conditions have been used by Paris ministries to strengthen their control over provincial activities. To retain as much decision-making control as possible some ministries have reduced funding operations that are programmed by region and increased those classified as "outside of regional sections" (*horstranche*). In addition, recentralizing tendencies have been fostered by preparation in Paris of highly detailed programs (in some cases the time consumed in working out minute details has delayed the sending of instructions to regional authorities) that leave little room for genuine consultation at the regional level. Thus, the new institutions have not had the innovative effect expected when the system of traditional administrative relations was broken up. The principal officials concerned have strongly resisted changing their behavior, tending to transpose old ways of doing things into the new framework.

It was hoped that relations between department prefects and central administrations would be weakened in favor of greater responsibility and increased decisionmaking at the regional level. In reality, the regional prefect's authority over his colleagues in other departments has created strong resistance. This resistance could have been anticipated in the reform measures themselves. On the one hand, the reforms only concern the execution of new functions at the regional level. On the other hand, the role of the regional prefect carries the same authority as does the department prefect, thus they are organizational equals. In addition, the authority of regional prefects is seriously limited in practice because the plan contains no means to compel ministers to follow the prefects' suggestions. Finally, department prefects can always try to negotiate directly with Paris for public investment projects in addition to those written into the plan.[4]

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[3] For more detailed information on developments in these regards through 1966, see, Niles M. Hansen, *French Regional Planning* (Bloomington: Indiana University Press, 1968).

[4] Pierre Gremion and Jean-Pierre Worms, "La concertation régionale: innovation ou tradition," in *Aménagement du territoire et développement régional,* I (Grenoble: Institut d'Etudes Politiques, 1968), 35–60.

Thus, prefects are still not genuinely cooperative, and formulation of a hierarchy of medium term regional objectives beyond the immediate interests of each department has not yet been achieved. The regional prefect who tries to obtain unanimity among his colleagues usually finds himself engaged in a process of negotiating an "equitable distribution" of public credits among departments. In this process rationality of choice is sacrificed too often to a widespread but thin sprinkling of funds based on "distributive justice." Moreover, in many regions the regional administrative conference has become a structure for merely registering and giving legitimacy to courses of action already established by the prefects.[5]

With the possible exception of the Ministry of Finance, the administrative reforms of 1964 have not basically modified behavior of regional branches of different ministries. The central administrations themselves have not yet defined the authority that their regional branches may exercise. Chiefs of regional services are insufficiently instructed, and their roles and authority are unclear. They are generally incapable of carrying on a balanced dialogue with their respective prefects. The prefect consult with them as individuals rather than as a group, and what results is more often a simple exchange of information rather than a concerted consideration of regional alternatives. Moreover, the negotiations that do take place are based more on political than economic considerations. Thus, according to Viot: "The region lacks any latitude for genuine choices. The regional prefects want more flexibility and more directives from above at the same time. Regionalization, therefore, is tending to become more a matter of dividing given funds than of choice. This probably is a consequence of the regionalization procedure—first the Plan as a whole is drawn up and then it is divided into specific projects. Modifications of this procedure should be introduced into the next Plan."[6]

NEW REFORM PROPOSALS

In a book published in 1962, Pierre Mendès-France proposed that cooperatives, trade unions, professional associations, and similar organizations should become vehicles through which representatives would be elected to an economic council with powers to legislate in the field of economic planning. This would give the individual voter a dual franchise, partly political and partly socioeconomic.[7] Recently a number of proposals to increase decentralized participation in economic and social planning have been set forth and widely discussed in the French communications media. Indeed, it was a referendum on the reform of the Senate and regional institutions that led to the defeat of General de Gaulle.

In a press conference held in September 1968, General de Gaulle proposed a new Senate that would be competent "to advise the Republic on economic and social matters, particularly as regards the budget and the Plan."[8] At present, the agency advising the government on these matters is the Economic and Social Council, a consulting body that groups together representatives of different social and occupational categories. In de Gaulle's plan, the Economic and Social Council and the Senate would be fused into a single assembly. The reformed Senate would be a deliberative body, with legislative power remaining in the hands of the National Assembly. The question of how the Senate's members would be chosen is still open, but the leading alternative appears to be a procedure based on a kind of electoral college composed of representatives from various local, regional, and socioeconomic groups.

There is fairly widespread agreement on the need to reform the Senate and to regroup tiny rural communes into larger units. The most delicate problems concern the regions. The nature and extent of the changes made at this level will largely determine whether administrative reforms will be purely a formal matter, or, on the contrary, the beginning of a complete political, economic, social, and human reorganization of the nation. The first main point of debate concerns the number of regions, while the second concerns the election of regional assemblies.

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[5] *Ibid.*

[6] "Préparation du VI[e] Plan: nouvelle perspective pour les comités d'expansion," *Expansion régionale* (October–November 1966), p. 5.

[7] Pierre Mendès-France, *La république moderne* (Paris: Gallimard, 1962).

[8] "Seventeenth Press Conference Held by General de Gaulle as President of the French Republic in Paris at the Elysée Palace on September 9, 1968," *Ambassade de France Service de Presse et d'Information News Release No. 1128* (September 9, 1968), p. 4.

There have been a number of proposals for reducing the number of regions. The Common Market has suggested that they be reduced from twenty-one to nine, or even six, whereas the influential Club Jean-Moulin has suggested twelve.[9] It is an open secret that the General Planning Commission anticipates a reduction in the number of regions. In 1968 it published a map regrouping the twenty-one program regions into eight study zones for the preparation of the Sixth Plan.[10] (See Figure 2.) The argument for increasing the size of the regions is essentially economic. Proponents of this view maintain that the regions should be large enough to hold their own within a European context or in relation to metropolitan centers around which economic activity could most effectively be organized. On the other hand, opponents of any change fear that a small number of relatively large regions might lead to demands for federalism or to other dislocations of national unity. Their arguments are essentially political and reflect a desire for strongly centralized government.

CARTE DES REGIONS DE PROGRAMME

ET DES ZONES D'ÉTUDE D'AMÉNAGEMENT DU TERRITOIRE



FIGURE 2 *Program Regions and Study Zones*

[9] André Passeron, "Les pouvoirs et les structures des communes, des régions, et du Sénat seront sensiblement modifiés," *Le Monde*, Sélection hebdomadaire, August 8–14, 1968, p. 6.

[10] J. L. Quermonne, "Autonomie régionale et unité nationale," in *Aménagement du territoire et développement régional*, II (Grenoble: Institute d'Études Politiques, 1969), 8–9.

The reform of regional administration centers on the regional prefect and the regional assembly. Statements by the twenty-one Regional Economic Development Commissions show nearly universal agreement that the regional prefect should be freed from his responsibilities as department prefect. It is also widely believed that the Paris ministries—and particularly the Ministry of Finance—should set up decentralized regional offices over which the regional prefect would have direct control. This would imply that some relatively highly placed officials would have to be transferred to the provinces, a prospect many regard with reluctance.[11]

To complement the regional prefect's work, the present functions and composition of Regional Economic Development Commissions would be transformed. They would probably assume the title of "assembly" or "regional council." The mode of election of the assembly remains an open question, though partisans of both direct and indirect suffrage agree that it should have a strictly economic orientation. Perhaps the real test of the extent of reform will be the degree of financial powers granted to the assemblies. If they are to have a real choice, the central government will have to give them control over an important part of the plan's regional sections. The assemblies will also have to be given significant authority to tax, borrow, and perhaps manage regional agencies and enterprises.[12]

The general goal of the reform measures that have been discussed here is to increase participation in formulation and implementation of social and economic goals. The degree to which decentralized decision-making can be harmonized with the national plan remains to be seen. This picture is further clouded by ambiguities in regional policy objectives developed at the national level. In particular, policy measures for the twenty-one regions have yet to be reconciled with the Fifth Plan's urban policy.

URBAN POLICY

Although France's urban revolution is taking place later than in countries such as the United States, Great Britain, and Germany, it is moving rapidly. One French planner has pointed out that since, by the end of the century, 85 percent of the total French population will live in cities, it is increasingly difficult to distinguish between the study of urban society and society as such.[13] In order to provide a balance to the pull of the Paris region—which nearly all Frenchmen acknowledge as overcrowded—and to provide a stimulus to economic activity in provincial areas, eight *métropoles d'équilibre* have been chosen for special development aid. They are: Lyon-St. Etienne, Marseille-Aix, Bordeaux, Lille-Roubaix-Tourcoing, Toulouse, Strasbourg, Nantes-St. Nazaire, and Nancy-Metz. Concentration of projects around a relatively few special development poles permits firms to take maximum advantage of the technical and financial external economies generated by interaction of mutually interdependent activities. The locations were selected on the basis of studies of the quantity and kinds of services offered in France's principal cities, as well as of urban spheres of influence. The number of *métropoles* is relatively small because major projects such as large hospitals and airports can be justified economically only if they are assured a sufficient number of users. Nevertheless, the *métropoles* have been more broadly defined than single cities because polynuclear urban areas are beginning to form as automobile use increases.[14]

The Fifth Plan provides for decentralization of private and public tertiary activities by endowing the *métropoles* with renovated central cities and new business centers. The proportion of new housing accounted for by the *métropoles* is to be increased and a start made on subway systems for Lyon and Marseille if plans can be prepared in time. Government aid also will permit construction of a number of new towns in the vicinity of Lyon and Marseille. Fifty to 55 percent of government research investment will be allocated to the *métropoles* (plus

[11] André Passeron, "Les préparatifs de la réforme régionale," *Le Monde,* Sélection hebdomadaire, October 17–23, 1968, p. 7 and October 24–30, 1968, p. 6.

[12] *Ibid.*

[13] Jacques Antoine, "La préparation du VI[e] Plan dans sa dimension régionale," in *Aménagement du territoire et développement régional,* II, 61.

[14] See, Hansen, *French Regional Planning* pp. 228–49. See, also, *Urbanisme,* No. 89 (1965), a special number devoted to the *métropoles d'equilibre.*

Grenoble and Rennes), as contrasted with 22 percent during the Fourth Plan. The proportion for Paris will decline from 50 percent to between 35 and 40 percent. New urban agencies have been created to prepare "strategic plans" for the *métropoles* similar to the plan that presently guides the Paris region's growth:[15]

Six OREAM (*Organismes d'Etudes d'Aménagement d'Aires Metropolitaine*) have been established for the urban areas of Marseille, Lyon-St. Etienne, Metz-Nancy, the North, the Lower Seine and the Lower Lorie. The first task of the OREAM is to trace long-term development prospects and related urban planning needs, taking the year 2000 as a planning horizon. The results of these studies will be discussed by the relevant Regional Economic Development Commissions in the context of their reflections on long-term regional planning requirements. During the Sixth Plan, the OREAM will have as their principal mission the preparation of medium term modernization and investment programs for each study area. However, there remain numerous political problems, especially those concerning cooperation between the central government, which created and directs the OREAM, and local authorities whose perspective is often limited by the next municipal or legislative election.[16]

At present, studies are being made to determine how much influence the *métropole* provinces have gained in relation to Paris. In particular, demographic and employment variables are being analyzed and compared to the goals of the Fifth Plan. In the Sixth Plan less emphasis will be placed on defining an urban hierarchy, while more will be given to analyzing the interplay of functions and dependencies within the nation's urban structure (*armature urbaine*). In the continuing effort to limit growth of the Paris region, complementarities are sought among provincial cities so that social investment (housing, education, transportation, and so on) and investment in directly productive activities may be harmonized from a spatial perspective. In this regard certain *métropoles* will be favored for investment in key sectors, for example, the chemical industry in Lyon, synthetic fibers in Lille, aeronautics in Toulouse, and steel in Fos, near Marseille. The Sixth Plan will also increase efforts to expand tertiary activities in the *métropoles*, and a Planning-Programming-Budgeting System (PPBS) will be introduced for projects of national concern. Programs for the development of the *métropoles* will be formulated between the middle of 1969 and October 1970. From then until March 1971, following parliamentary approval of the Sixth Plan, the regional sections for the *métropoles* will be specified in detail, including financing by project, origin of funds, and year.

In addition to the *métropoles*, another spatial orientation has been superimposed on the twenty-one program regions. The area within a two hundred mile radius of Paris, including the city of Paris, the territory covered by the Strategic Plan (*Schéma directeur*) for the Paris region, and the remainder of the area, has been termed the Paris Basin. (See Figure 2.)

The Strategic Plan envisions creation of new urban centers around Paris as the only cure for the lack of public overhead capital in the suburbs and congestion in the heart of the city. The future growth of the region's population will be channeled along certain "preferential axes," chosen to suit the region's physical, economic, and human geography.[17] The principal axis follows the Seine west to Rouen and Le Havre, in Normandy. Secondary axes will be developed east along the Seine and the Marne. It is hoped that this scheme will break up the radial-concentric pattern that has contributed to many of the region's difficulties. Along the new axes, self-sufficient towns are planned. Each of the eight projected new towns would supply a complete range of commercial, service, and entertainment activities. It is anticipated that by the end of the century each town will be able to provide for the needs of from 300,000 to 500,000 persons, and for the more specialized needs of from one million to 1.5 million persons.[18]

For planning purposes the Paris Basin is comprised of fifteen departments surrounding the Paris region. In 1967, an interministerial planning group for the Paris Basin was established, with its own secretariat and a research team

[15] France, *Cinquième Plan de développement économique et social (1966–1970)*, I (Paris: Imprimerie des Journaux officiels, 1965), 132–3.

[16] Antoine "La préparation . . .", pp. 58–62, 74.

[17] See Figure 1 in David N. Kinsey, "The French Z.U.P. Technique of Urban Development," in this issue of the *Journal of the American Institute of Planners*, p. 370.

[18] France, *Schéma directeur d'aménagement et d'urbanisme de la Région de Paris* (Paris: Société Parisienne d'Imprimerie, 1965). For recent developments concerning the Strategic Plan, see, Pierre Trey, "Le Schéma directeur est-il remis en cause?" *Le Monde*, Sélection hebdomadaire, November 21–27, 1968, p. 12.

of economists, geographers, urbanists, and specialists from related disciplines. During 1969, general planning directives will be formulated to furnish a framework for the relevant investment choices of the Sixth Plan.

In the past the growth of Paris has checked the development of urban centers in the Paris Basin by attracting industrial and commercial activity to the capital. Thus, while the French population as a whole is about two-thirds urban, the Paris Basin is only one-half urban. Moreover, the Basin's cities do not represent a well-structured urban hierarchy. There are nine urban areas with over 1000,000 inhabitants living 100 to 200 kilometers from Paris, and numerous cities with between 20,000 and 50,000 inhabitants, but only one with a population between 50,000 and 100,000. Decentralization policies have stimulated industrial growth in the Basin; in 1962 the departments immediately surrounding the Paris region accounted for 10 percent of France's population, but 40 percent of all industrial decentralization operations. On the other hand, tertiary employment (services, commerce, and administration is relatively low; the Paris region has been a brake on these specifically urban activities that form an essential basis for regional life.[19]

To check the growth of the Paris region, the development of regional centers in the Paris Basin has been proposed as an alternative to the *métropoles d'equilibre* on the one hand, and the new towns envisaged in the Strategic Plan for the Paris region on the other.[20] Between 1954 and 1962, the Basin had a net migration loss of 82,000 persons to the Paris region, though it showed a net gain of 15,700 in relation to the rest of France. Through a major effort to build up the tertiary activities of such Basin cities as Rouen, Le Havre, Caen, Le Mans, Tours, Orléans. Troyes, Reims, and Amiens, and by continuing to support their industrial growth, it is argued that net outmigration from the Basin to Paris can be sharply reduced, and that the Basin can serve as a zone of attraction for migrants from the rest of France.[21]

CONCLUSIONS

The structure and functioning of French regional institutions clearly illustrate that it is very difficult, even with the aid of legislation, to obtain interagency cooperation at the regional level and to obtain harmony between decisionmakers in the capital and those in the respective regions. However, recent reform efforts should provide valuable insights into possibilities for securing greater cooperation and broader participation in the formulation and implementation of decentralized planning.

French experience also indicates the need for a system of regions that includes all national territory. The inclusion of the entire country in French policy promotes integrated planning for all types of regions, from underdeveloped to congested, and it facilities comprehensive evaluation of particular projects in terms of alternative locations. This may be contrasted with the lack of comprehensiveness and consistency characterizing regional planning in the United States.

Similarly, regional development agencies in the United States (most notably the regional commissions and the Economic Development Administration) make little if any attempt to relate the problems of people in lagging areas to opportunities in other areas, while French policy includes an urban dimension which, though it needs further elaboration, provides alternatives to both rural poverty and the diseconomies and social costs of the congested metropolis.[22] Hopefully, the Sixth Plan, now in initial stages of preparation, will specify relative priorities for investments to be made among (1) the new towns specified in the Strategic Plan for the Paris Region, (2) the eighth provincial *métropoles d'equilibre*, and (3) the cities of the Paris Basin.

It would also be desirable for the Sixth Plan to specify the role of urban policy in relation to other major regional planning objectives, most notably the development of both the North Sea-Mediterranean axis and lagging regions of the coun-

[19] "Vers l'aménagement du Bassin Parisien," *Expansion régionale*, No. 44 (1967), 15–27; and *La politique de l'aménagement du teritoire en 1968* (Paris: Délégation à l'aménagement du territoire et à l'action régionale, 1967), p. 31. See, also, *Urbanisme*, Nos. 96 and 97 (1966), a special issue devoted to the Paris Basin.

[20] France, *Décentralisation des activités "tertiaires"* (Paris: Délégation à l'aménagement du territoire et à l'action régionale, 1968), p. 25.

[21] "Vers l'aménagement du Bassin Parisien," pp. 17–8.

[22] The fruits of French regional policy are beginning to become evident. Between 1962 and 1968 the population of the Paris region grew by 750,000 (that of the city proper declined by 200,000), or only about two-thirds of the increase that had been officially predicted. See, *Le Monde, Sélection hebomadaire*, September 12–18, 1968, p. 9.

try. The growth of the Common Market has led to considerable interest in the creation of an unbroken waterway from Marseille to Rotterdam. Although certain variations have been proposed, the basic axis would follow the Rhone north from Marselle, join the Saône at Lyon, and then proceed by a system of canals to the Moselle Valley, which would be the final link with the Rhine and the North Sea.

The relatively lagging area south of the Loire and west of the Rhone, which includes Languedoc, Midi-Pyrénées, Aquitaine, Auvergne, Limousin, Poitou-Charentes, and most of the Center, has only two cities (Bordeaux and Toulouse) that will benefit from development programs under the new urban policies. In particular, the two most underdeveloped regions, Auvergne and Limousin, are relatively far from any vital urban area. This situation implies considerable potential conflict between urban policies that attempt to build on existing agglomeration economies and program region participation in the formulation of the national plan. All of the urban approaches assume that there will continue to be outmigration from regions with relatively low growth potential. In contrast, planning within the program region context is similar to that of development agencies in the United States in that it is place oriented; each region is concerned with its own development rather than with preparing a significant number of its residents for employment in areas with greater opportunities. What this suggests is that the program regions should be redefined (and reduced in number) so that each one includes at least one major urban growth center. This would enable lagging areas to be related to genuine growth centers within a planning framework that combines a national urban policy and decentralized participation in the planning process. Fortunately, the French experience with regional planning institutions offers a number of guidelines such as this to future regional policy approaches in the United States.

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ONE ENVIRONMENTAL YEAR

In a speech to the 1969 Swedish Social Democrat Party congress in Stockholm, Minister of Agriculture Ingemund Bengtsson, gave a survey of what measures and initiatives in environmental planning and protection had been taken in Sweden since the previous party congress one year before. On that occasion, the party had adopted a 20-point environmental action program, and in his speech, Mr. Bengtsson noted that most of those twenty points had been implemented or are well on their way toward implementation.

Points one and two in the 1968 program demanded national physical planning aiming at a properly balanced use of land. A special working group has been appointed to prepare a national physical plan. This group presented its first report a few months ago. The duties of a government committee assigned to survey present building and construction legislation include investigation of the feasibility of planning sparsely populated as well as built-up areas.

The environmental protection law that went into effect July 1, 1969, meets the demands of points three and four in the 1968 program: that new industrial installations may be established only if they would not have a detrimental effect on the environment, and that the pollution legislation should be strengthened to provide for fast and efficient countermeasures.

A special commission to prepare legislation against environmentally detrimental products has also been appointed by the Minister of Agriculture during the past year. A second assignment for the commission is to present a detailed proposal for a data center to collect and store information about such products and about other environment topics.

Mr. Bengtsson reminded his audience about Sweden's pioneer decision to ban DDT and other chlorinated hydrocarbons as of January 1, 1970. Gradual stepping-down of permissible lead contents in gasoline has reached 0.7 grammes per liter in theory and an average 0.5 grammes per liter in actual practice.

The administrative capacities for protection of the environment have also been strengthened during the past year, Mr. Bengtsson said. The National Swedish Environment Protection Board (formerly translated as the National Swedish Nature Conservancy Office) which was established July 1, 1967, has been given

increased capacity both regarding staff and budget-wise. On the regional level, the departments for environment protection within Sweden's 24 Country Administrations have also been given larger staffs.

Mr. Bengtsson then went on to describe the increasing capacities for efficient sewage treatment on the municipal level. To encourage construction of high-efficiency biological purification plants, the government gives subsidies to municipal authorities on a progressive scale: the proportion of construction costs that are covered by government subsidies is relative to the degree of efficiency of the projected installation. A remaining problem, Mr. Bengtsson pointed out, is to include the elimination of nutrient salts in sewage, mainly phosphates. This can be done by adding a third step to the treatment plants. The third step has been added in 13 cases, is being added in 19 plants under construction, and will be included in 120 projected plants.

These measures cover points five and eight in the action program. The tenth point concerns legislative restrictions on car exhaust pollution and on sulphur contents in furnace oils. All cars, beginning with the 1971 models, must be equipped with exhaust cleaning apparatus. Sulphur contents in furnace oils is so far only restricted to 2.5%, but the Environment Protection Board will shortly deliver a schedule proposal for further stepping-down. Municipal authorities may impose further restrictions, and the City of Stockholm has decided to put the present limit at 1%.

The program also demanded measures against industrial pollution. The new legislation makes it possible for the government to give financial support to industries for construction of anti-air pollution and anti-water pollution installations. Mr. Bengtsson pointed out that this primarily concerns older industrial plants.

The action program further demanded goal directed environmental research and increased research facilities. This demand has been met through the establishment of a Research Committee within the framework of the Environment Protection Board. The committee is charged with initiating and supporting goal directed environmental research, and has a special budget for the purpose ($1.9 million for the current fiscal year).

Referring to the demand for measures on the international level that was also included in the action program, Mr. Bengtsson could point to Sweden's active participation and initiatives to promote international environment protection within the framework of the United Nations, the Council of Europe, OECD, and the Nordic Council. The best known example is of course the invitation for the 1972 United Nations Conference on the Human Environment to be held in Sweden.

"Of course, you don't solve international environment problems by holding a conference", Mr. Bengtsson said. "The great advantage . . . will be that it makes so many nations aware of the grave environmental problems and of the necessity for immediate counter-measures".

In summing-up his speech at the party congress, Mr. Bengtsson said:

"If the present destruction of the environment is to be allowed to continue unheeded, it will definitely widen the gap between those who can afford to move from a bad environment and those who have to stay. We evidently cannot accept this. Our efforts to achieve equality must be directed toward preventing both the emergence of new social gaps and the widening of existing ones. This is why we must increase our stake in proper environment protection measures".

THE COUNTRYSIDE IN 1970—SECOND CONFERENCE—LONDON, NOVEMBER 10–12, 1965

(The Council for Nature, The Royal Society of Arts, The Nature Conservancy)

GENERAL REPORT OF THE CONFERENCE

In its present form, our countryside and its villages have gradually emerged from the interaction of past social and economic conditions with the processes of nature, guided largely by the creative efforts of those who own and work the land. Thus through past human care the nation has a priceless heritage of richness and variety.

2. This evolution is no longer gradual. Agriculture, forestry and rural settlements are increasingly influenced by technological processes and urban ways of thought. Industry and housing need more land. Millions of townspeople now go

into the country for holidays and leisure; many are also taking up permanent residence there.

3. It is vital that we understand the nature and extent of these sweeping changes and take urgent action to guide and control them.

4. Yet as the threats mount the strength of feeling for the countryside becomes more apparent. Most encouraging are the sense of urgency about the need to plan for the future of the countryside and a new determination to act in co-operation.

5. The first Conference on "The Countryside in 1970" brought together many people of varied backgrounds and attitudes, involved in activities affecting the countryside.[1] The second Conference points the way ahead and makes proposals for a national policy for the countryside which countrymen and townsmen alike can strive together to realise.

6. In preparation for the Conference twelve Study Groups, drawn from varied and often conflicting interests, reported on such key issues as: planning, professional training; technology; legislation; recreation; traffic; countryside treasures; reclamation of derelict land; information; life and work in the countryside; and the special issues involved in Scotland.

7. Other studies included the coast, common lands, and Broadland, and a major conference on education.

8. The proposals in these preparatory studies were critically examined by the Conference and although none of the participating organisations is committed to unqualified acceptance of all of them the Conference endorses generally the recommendations as a basis for action and, where necessary, further study.

PRINCIPLES

9. Certain principles emerge on which nation-wide policies for the countryside should be based.

9.1 The nation has inherited a fine countryside. Its care and improvements should be a permanent objective of national policy.

9.2 Britain's modernisation and economic expansion must go forward with new measures for the conservation of the countryside and with the creation of new landscapes.

9.3 The prosperity of agriculture and forestry are of primary importance in the national economy, in the management and care of the countryside, and in the creation of good landscape.

9.4 Understanding and care of the natural environment must be based on science as well as practical experience. They require systematic and continuing research into the present capacity of, and likely future demands upon, the land and natural resources.

9.5 Co-operative procedures are urgently required to guide constructive development and to help to assess the demands on the countryside, to anticipate the impacts of economic growth and technology, and to harmonise these with the needs of the countryside.

9.6 Knowledge of man's environment and of his responsibility for it should be communicated at all levels of education.

POLICIES

10. With these principles in mind, the Conference recommended that certain policies which already command widespread support should be implemented as a matter of urgency.

10.1 All organisations and professions whose activities affect the countryside should co-operate fully in a constructive approach to it.

10.2 The training and practice of all professions concerned in the use and development of the resources of land, water and wild life should include an understanding of the basic principles of conservation and their application.

10.3 All legislation affecting the environment should:

(*a*) be based upon the principles set out in paragraph 9;

(*b*) include the "conservation" and "recreation" Clauses (see page 5); and

(*c*) be explained in simple terms and widely disseminated.

10.4 The information services should be developed to create an appreciation of the countryside and its problems and an acceptance by all of personal responsibility for its conservation.

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[1] The term "countryside" includes the coast.

10.5 Planning for rural land use should, among other things, take account of

(*a*) the demands of all forms of development for appropriate sites;

(*b*) the need to reconcile the claims of all kinds of outdoor recreation, tourism and traffic in the countryside with the social and economic needs of a changing population of country-dwellers; and

(*c*) the interdependence of town and country.

10.6 All methods using or disposing of waste and by-products should have full regard to the needs of the countryside, and to the potential new uses of such products.

10.7 Imaginative new landscapes should be created through the more rapid reclamation of derelict and unsightly land. This should be done as part of a comprehensive plan to improve the environment particularly in and around our older industrial centres. Stronger measures should be taken to prevent future dereliction. The basis of grant-aid for such reclamation should be such as to enable the task to be completed within ten years.

10.8 The financing of landscape management and enhancement and of the provision of access and recreational facilities by local authorities for the benefit of a wider public should not be a disproportionate burden on country authorities but should be shared between local and national revenues.

10.9 The national economic plan should take account of the importance to any community and of the value to tourism of the countryside treasures and a high quality environment and should invest therein a proportion of the national resources.

ACTION

11. The Conference recommended that the appropriate authorities and bodies should take action now:

11.1 To create a Countryside Commission for England and Wales, embodying the functions of the present National Parks Commission, with much wider responsibilities, powers and resources. The Commission's responsibilities should include the promotion of facilities and the designation and development of recreation areas in the countryside in co-operation with local authorities and other bodies including the Sports Council and owners and occupiers of land.

11.2 To create a parallel Commission in Scotland to work in close co-operation with the Commission for England and Wales.

11.3 To establish County Countryside Committees as standing committees of County Councils to

(*a*) integrate those ownership and management functions of the Councils bearing on the maintenance and enhancement of the countryside;

(*b*) promote the registration and care of countryside treasures (see 11.4 below); and

(*c*) advise the Councils on the provision of facilities for recreation and amenity.

11.4 To promote the systematic registration and care of the nation's inheritance of countryside treasures having aesthetic, archaeological, architectural, historic, scenic, scientific, sociological or traditional interest.

11.5 To promote the study and analysis of the economic and social assets and the future development and design of villages and other rural settlements.

11.6 To simplify the operation of town and country planning, to increase the number of trained personnel engaged in it, to develop its positive character, and to encourage its more effective contacts with users of the countryside and the general public.

11.7 To encourage planning, navigation, water and river authorities to meet as far as is practicable and with the least harm to the countryside, recreational needs on coastal and inland waters. To this end it is urged that the appropriate Ministry request river authorities to set up Recreation Advisory Committees, in co-operation with voluntary bodies and other interests concerned.

11.8 To stimulate the contribution which the voluntary bodies and individuals can make in the formation and implementation of national countryside policies.

11.9 (*a*) To adopt the conclusions and recommendations of the Keele Conference on Education;

(*b*) to co-ordinate and expand national and local information facilities; and

(*c*) to ensure adequate reception and interpretive services in the countryside.

11.10 To encourage procedures for detecting, appraising and anticipating the impact of technology and industrial and other developments in the countryside and for reconciling these developments with the needs of the countryside.

11.11 To implement fully and effectively existing legislation for the prevention and cure of river pollution with especial reference to improving sewage disposal.

11.12 To develop a programme of research into the demands on the countryside, and the resources available to meet them. In particular, research embracing social investigation is required in order to determine trends of growth in recreational pursuits including field sports, and to develop the techniques of cost benefit analysis in relation to investment in the countryside.

11.13 To give full support to "Enterprise Neptune".

11.14 To take account in any legislation for implementing the Government's White Paper on Development of Agriculture of the approach, principles and policies adopted by the Conference.

11.15 To deal with the problems of motorised access to, and the passage of traffic through, the countryside on a national and regional level as an integral part of town and country planning.

11.16 To press ahead with the channelling of through traffic on a national network of high-capacity highways; to provide intensive recreation areas near to large towns; to prepare local plans for access to the countryside in order to ensure that the motoring public can enjoy the countryside without spoiling it; and thus help to reduce the pressures of traffic over the countryside.

12. Many of the problems of the countryside are matters of appearance and design. These require:

(*a*) a co-ordinated body of information about the natural environment as it affects the work of the land-linked professions;

(*b*) an adequate supply within the land-linked professions of those with special training and qualifications as designers, available for advising developers, local authorities and government departments; and

(*c*) powerful support from public authorities, land users, and industrial concerns.

13. A problem which arises specifically in Scotland is referred to in the report of Study Group 9. This is the survival of wilderness areas—a rare category of countryside still found in parts of the Highlands and islands. It is recommended that these should be specially conserved in view of their scarcity value in Great Britain as a whole.

14. The Conference is convinced that the effect of carrying out, with vigour and efficiency, the recommendations here and in the reports of the Study Groups could prove decisive in establishing a new harmony between town and country.

FINAL RESOLUTIONS OF THE CONFERENCE MOVED FROM THE CHAIR BY H.R.H. THE DUKE OF EDINBURGH ON 12TH NOVEMBER, 1965, AND ADOPTED UNANIMOUSLY

(A) that the General Report to the Conference and the reports of the twelve Study Groups on which it is based are generally endorsed and recommended for early implementation; and

(B) that a standing committee should be appointed to follow up the recommendations of the Conference and the Study Groups, and that its members should include the officers of the Conference and the Chairmen of the twelve Study Groups which have presented reports to the Conference.

ANNEX

The "Conservation" Clause

"In relation to the exercise of any functions under this Act, the Minister and any government department, local authority, public authority or board or statutory undertaker shall each have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest, and of protecting buildings and other objects of architectural or historic interest."

The "Recreational" Clause

A similar clause requiring statutory authorities to identify recreational opportunities arising from their operations and so far as practicable to provide facilities for the enjoyment of such opportunities.

A View of Terrestrial Space

(Book Review by Edward A. Ackerman, *Science*, September 1, 1967)

L'Oranisation de l'espace. Eléments de géographie volontaire. Jean Labasse. Hermann, Paris, 1966. 605 pp., illus. 75 F.

One of the remarkable success stories of the last 20 years has been the rise of France from the physical and psychological ruin of World War II. No small part of the French success has been due to carefully organized public leadership in economic planning. General Charles de Gaulle for the last ten years has so effectively upstaged everyone else on the French scene that we are apt to forget that the foundation for recent French prosperity was effectively laid by others who conceived and implemented the succession of four-year plans that commenced in 1947. Jean Labasse, a geographer, planner, and banker, is an influential member of a group of relatively young men who have provided much of the intellectual motivation for French planning.

Labasse has been interested particularly in regional organization and land-use planning. In *L'Organisation de l'espace* he presents a comprehensive account of his observations and reflections. Because the effective use of space, that is, earth-surface space, is a subject of growing importance in almost every country, and because Labasse considers problems of many countries, his book deserves attention far beyond French borders.

It is impossible to translate exactly the key phrase *géographie volontaire* that appears in the subtitle of Labasse's book. The nearest I have been able to come is "creative geography," although "man-made geography" is another possible interpretation. Creative geography as Labasse describes it is intimately concerned with land-use planning and comprehensive land management. But it is something more, for the end product of the organization of space is a healthy and well-balanced region that has a coordinate, rather than a subordinate, place within a nation. *L'Organisation de l'espace* takes the position that the needs of the whole man must be the point of departure for successful development and that the landscape, no less than factors susceptible of statistical analysis, is the measure of success in development policy. To Labasse man is at least as much an inhabitant as a producer. In this Labasse follows the tradition of the masters of French human geography, like Vidal de la Blache and Jean Brunhes, for whom history in its broadest sense is inseparable from geography. He thus takes some care to distinguish between policies promoting economic growth and those directed toward land management. He also distinguishes between sectoral planning (based on sectors of an economy or society) and spatial planning, which considers man and his natural environment in their geographical and historical associations.

Labasse classifies the nations of the world into "open-space" and "closed-space" nations. The United States and the Soviet Union are open-space nations, and France, England, and the Netherlands are examples of closed-space nations. Labasse describes with some admiration the tremendous power of the American economy, and he describes accurately some of the important characteristics of our society: its deployment in space, its economic liberalism, the mobility of people, the multiplicity of political jurisdictions, our dependence on the automobile. He notes that planning and management progress empirically in the United States and puts his finger on the confusing proliferation of special-purpose regions for planning and basic-data collection. He notes that in spite of the number of works discussing water development and the renovation of city centers, the effectiveness of American application of spatial planning is limited, for the nation as a whole distrusts planning and attaches absolute value to "natural economic laws." We keep this attachment, he says, even though we have long since found that these "laws" do not work for the agricultural sector. We have not yet admitted that there are reasons for disassociating behavior in spatial management from economic behavior. The real estate speculator still has almost complete freedom. In other words, a number of important policies and social characteristics of the United States do not favor granting man as an inhabitant a status equal to that of man as a producer. Labasse considers it safe bet that advanced techniques of spatial planning are not likely to be prevalent in the United States until we cease to be an open-space country.

Labasse casts his eye over other parts of the world with equal perception and acuteness. There are interesting sections on most of the technically advanced countries where planning programs have been attempted. There is an informative analysis of planning and techniques of development in the Soviet Union, where

man the inhabitant appears even more subordinated to man the producer than in the United States. One wishes that Labasse had been able to study the Chinese People's Republic, which seems the ultimate in emphasizing man the producer.

Quite naturally Labasse's review of national accomplishments in "creative geography" covers western European nations most fully. There is an informative section on the history of regional planning in Great Britain, considered the pioneer country in land planning, having started in the early 1930's. The Netherlands, in Labasse's view, has the most advanced land-use and regional-planning program in the world. Its program has included not only some daring land reclamation, but also carefully designed regional development to relieve pressure on the great urban centers, and meticulous land-use controls to provide a balanced environment. Labasse describes the Dutch program as "a victory of man over himself."

Some of the author's most critical glances are reserved for his own country. He is particularly disturbed about the primacy of Paris, whose metropolitan area may reach a population of 16 million within 35 years if the present rates of growth continue. Even now enterprises having their headquarters in Paris pay about 40 percent of all French salaries. Fifty-six percent of the French electrical industry and 63 percent of the automobile workers in France are in the Paris area. Labasse believes that this dominance is not a healthy thing for France and has left the provincial areas socially and economically in an unfavorable position. An important share of the responsibility for this situation can be assigned to the heavy emphasis placed on sectoral planning since 1947.

Instead of megalopolitan development, with its "extreme dilution of the habitat," Labasse favors, for France or any other country, the "bending of the national point of view toward regional needs." The appropriate unit is an "organic" region of perhaps 50,000 square kilometers, containing 5 million inhabitants supported by a "solid urban core." Effort would be directed toward making the urban core a cultural and administrative center as well as the nerve center for production and communication in the region. Full recognition would be given to man the inhabitant. Indeed, man the inhabitant would be recognized as a descendant and bearer of traditions, to which the average European is more sensitive than we of the New World realize. Special planning, Labasse says, takes the long view; that is, "the city of the year 2000 is more urgent than the city of 1970."

It is significant that the most recent description of the Fifth French Plan (1966–1970) announces that "a development plan must aim at balanced expansion between the nation's different regions" and that actions will be taken under the Plan toward that end ("The Twenty Years of Planning in France: The Fifth Plan, 1966–1970," Service de Presse et d'Information, Ambassade de France, New York, April 1967, p. 10). France thus appears to be paying attention to *l'organisation de l'espace* and to the development of a rational public policy for recognizing man as an inhabitant. But, then, France is a closed-space country. Will the United States as an open-space country be able to do as much? And when?

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LAND PLANNING PROBLEMS IN DENMARK

(Book review by Wolfgang Taubmann, Geographical Review, January 1969)

LANDSPLANLÆGNINGSPROBLEMER: Med skitse til en landsplanlaegning i Danmark. By JOHANNES HUMLUM. 671 pp.; maps, diagrs., ills., bibliogr., indexes. Munksgaards Forlag, Copenhagen, 1966. 270 kr. 12 x 8¼ inches.

The existence of two contrasting economic areas is basic to all discussions of planning in Denmark. Always one must keep in mind that the sparsely populated and economically underdeveloped districts in western and northwestern Jutland provide a sharp contrast to the eastern part of the country—the Greater Copenhagen area with 29 percent of the population (4.77 million in 1965) and 38 percent of all people occupied in manufacturing.

In 1958 the "Regional Development Act" stimulated discussion of planning problems, and many prominent engineers, architects, and journalists called for national planning. From the discipline of geography Professor Humlum emphasized the necessity of farsighted planning, and since 1959 he has contributed to the debate through his books, professional papers, and newspaper articles. Finally, in 1961 the National Planning Committee for Denmark was set up (see Knud Bidstrup and Erik Kaufmann: Danmark under forvandling [Copenhagen,

1966]). Theoretically land planning should serve to synthesize regional, local, and town planning besides correlating plans for specific activities such as airfield construction, new universities, and development of economic sectors. In practice, however, a great number of communication difficulties arise (Erik Kaufmann: 27 Slags planer: 27 Kinds of Plans [Copenhagen, 1966]).

Professor Humlum's contributions to the planning discussions are synthesized in this book on "Landplanning Problems: A Proposal for a Co-ordinated Danish Country and Regional Planning Program with a National Zone Plan." The work is predominantly retrospective, since to a great extent it is a summary of parts of his former writings and of opinions that he has presented elsewhere. At the end of each chapter he quotes press notices, statements of opinion, and reports of planning conferences by way of providing a record, which is really a reflected image of the passionate discussions of years past, and it should be noted that the selection of material is not impartial. Also, these often lively comments, and the detailed English summaries that accompany each chapter, do somewhat break up the outline and structure of the book, which depends on clarity of construction for the sucessful communication of information on an enormous number of topics. The 38 chapters follow one another in a partly unconnected way. This structural weakness, however, is a reflection of the great variety of planning problems that exist today.

The introductory chapters deal with the relationship between planning and geography, and in addition provide a survey of national-planning efforts in other European countries as these may be relevant to conditions in Denmark. Almost half of the book is devoted to a consideration of transportation problems in relation to the distribution of both population ind industry. In this context, Humlum brings up subjects such as the construction of port facilities, the sketch for a transit system in Aarhus, the motor link via the "Bird's Flight Route," proposals for bridges across both the Øresund and Great Belt, and the location of future airports. The central third of the book consists of a discursive debate on the location of a proposed Jutland motorway.

The second major part of the volume deals with the distribution of population in Denmark, the location of key industrial plants, reforms of communal and regional legislative division, agricultural problems, nature conservation, and the placement of proposed new universities. The final part of this section consists of a discussion that outlines a nationwide zoning plan that is an alternative to the one issued by the National Planning Committee in 1962 (Zoneplan 1962 for Danmark: National Zoning of Denmark [Copenhagen, 1962]).

Considering the great variety of material dealt with in this book, no reviewer can treat all the chapters in detail. Discussion will therefore focus on one main topic, namely Humlum's "Zoning Plan 1965," which can be evaluated and set within the context of existing and opposing views.

The main thesis of the Official Zoning Plan of 1962 is that the urban, industrial, and recreational land-use requirements in the coming decades must be comparatively concentrated because some tendencies toward decentralization have already appeared. The plan divides the nation into four zones. Zone 1 covers the urbanized and industrialized regions, defined in terms of urban communities with more than 1000 inhabitants that are already built up or have land allocated for urban development. In all, Zone 1 covers about 3 percent of Denmark. Zone 2 consists of areas potentially attractive for both urban and industrial development but not yet so used. About 15 percent of the nation is included here, and all further development is to be decided on by local authorities. Zone 3, which constitutes 43 percent of the country, comprises areas suitable for summer houses or slated for landscape preservation.

Most of this zone will remain farmland in the future, though land needed for national parks, recreation, or summer-house developments will come from its acreage. These last demands may be sizable; for the official plan estimates that in the year 2000 every sixth Dane will own a summer house. This will mean about one million units in contrast to the present total of about 100,000 units, or one for every fifty Danes, which is already one of the highest densities in Europe. Finally, Zone 4 is allocated entirely to agricultural purisuits. Zone 4 plus the agricultural areas of Zone 3 constitute about 65 percent of the nation's area.

Although the Official Zoning Plan does not commit itself on any specific details it clearly presupposes a continuation of the developmental and distributional characteristics of present-day population and economic activities. About a hundred institutions and associations made comments on this plan, and in most cases there was agreement on the goals as outlined, though the overly schematic

definition of Zone 2 and the questionable boundaries between Zones 3 and 4 have been criticized. Humlum himself objected to the delimitations proposed between Zones 3 and 4, which indicates his expert acquaintance with the Danish landscape.

In addition, he severely attacked the official plan as worthless because it does no more than sanction, in an unimaginative way, the developmental tendencies of the present. The zoning plan he presents, which is depicted in detail on the map at the scale of 1 : 500,000 that accompanies this volume, he regards as a feasible alternative. In connection with a Central Jutland motorway, he proposes new industrial districts, airports, and harbors, all of which are designed to divert Denmark's population overspill toward the underdeveloped west.

The most effective agency for the promotion of Humlum's decentralization is vigorous industrial development in four industrialized regions in Jutland. These regions occupy part of his Zone 2; his Zone 1 consists of the existing urban areas. He places summer houses, existing and planned, in Zone 3 and suggests that a total of 250,000 units is a more realistic figure for the year 2000. He reasons that we cannot visualize the leisure-time habits of Danes for a date thirty years hence. In all, about 16 percent of the nation falls into Zones 1 through 3. Humlum's Zone 4 comprises the forests of Denmark, together with all land lying within 300 meters of them, which is not to be built upon. Zone 5 represents areas scheduled for nature preservation, and it is intended that in this zone the natural and cultural landscapes should be kept in their present states. Old and picturesque villages would fall within Zone 5, which together with Zone 4 constitutes 41 percent of the country. The sixth and final zone covers 43 percent of Denmark and is allocated for agriculture; but he stresses the point that wherever social gain is demonstrable, construction of traffic arteries should be permitted in all zones. Apart from the questionable proposal of large-scale industrial development in western and central Jutland, Humlum's zoning plan seems in many ways to be more soundly based than the official plan. In particular, his delimitation of Zones 5 and 6 is altogether justifiable.

The reader may not be able to follow Humlum in all of his reasoning, a good deal of his argumentation is too polemical, and some of the points he makes are weakly supported by critical analysis. But it is not easy to ignore entirely what he says or to discount all of his suggestions. He is one of the spokesmen for countrywide planning in Denmark, and he has already forced many official institutions to reconsider facile decisions. Perhaps the most positive contribution made by this book is to motivate Danish geographers to provide material, critical analyses, and prognoses contributory to the taking of decisions on important future planning problems.

Planning in Rural Areas

(By Alan J. Hahn,* *Journal of the American Institute of Planners*, January 1970)

Despite its increasing importance, planning in rural areas is often unsuccessful. At least a partial cause is the lack of meaningful communication between planners and rural organizations. Planning programs in rural areas often fail to respond to the informal nature of rural government, the slower pace of change and smaller number of perceived crises, and special problems of meeting costs and demands for professional personnel in rural communities. These conditions change as rural areas urbanize, and a community's location on a continuum from completely rural to nearly urban is an important consideration for planners. In addition, various misconceptions of rural conditions, problems, and people may hamper effective planning in rural areas.

Planning in rural areas is becoming increasingly important.[1] First, there is

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[1] I will not enter the debate over exactly what "urban" and "rural" mean. A distinction based simply on population density will suffice for this paper; "rural" refers to all areas outside heavily built-up areas one would call "cities" or "suburbs." Consequently, "rural" areas range from the near suburban, through areas of scattered nonfarm residential and urban oriented recreational land uses, to areas that are clearly beyond any but the most specialized influences of large urban centers. On the latter distinction, see, John Friedmann and John Miller, "The Urban Field," *Journal of the American Institute of Planners*, XXXI (November 1965), 312–20.

the rising national concern with economic development of depressed rural areas. Second, there is recognition that urban poverty and related problems are, at least in part, a consequence of conditions in rural areas (from which great numbers have migrated to the cities). Finally, the outward scatteration of dissatisfied urbanities is extending beyond areas that can accurately be called suburban, and into countryside and jurisdictions that are quite rural.

All these trends result in demands on the planning profession for application of its methods and expertise to rural communities. These demands, however, are not being answered with great success—a major obstacle is the recalcitrance of rural citizens, leaders, and government. Their acceptance of planning as an appropriate local public activity is absent, or half-hearted at best.

The purpose of this paper is to explore reasons for this and suggest some solutions. It draws heavily on experience with a regional development educational project in the Central New York Region, a five-county area around Syracuse, New York.[2]

OBSTACLES TO PLANNING IN RURAL AREAS

Rural opposition to planning programs is clearest in attitudes toward zoning. Rural community leaders may listen politely to discussions of planning, but hackles rise when the talk moves around to zoning. Planning itself is so easily confused with zoning (in laymen's minds) that the resistance often diffuses to planning and planners in general.

It is not enough to explain away such opposition as the anachronistic ideologies of conservative and provincial people clinging to power through outmoded governmental institutions. As I shall explain later, many of these rural community decisionmakers are anxious to understand the changes they see in their communities and the forces influencing these changes. While they may still straighten up in their seats when the word "planning" is mentioned, they are nevertheless willing to alter their attitudes and decisions in response to new information.

This suggests the possibility of interactions between planners and rural leaders that are easier and more successful than most of those we have seen in the past. To accomplish this, some limitations of local leadership in rural areas and planning as it is applied in those areas must be understood.

LIMITATIONS OF LOCAL LEADERSHIP

Local government in rural areas undergoes a certain transition as its jurisdiction urbanizes. The location of any particular unit on this continuum is a critical item of information for planners. In a study of cities in the San Francisco Bay area, Eulau and Eyestone have demonstrated developmental stages empirically on the basis of expenditures on planning and on amenities such as health, libraries, and parks and recreation.[3] Cities low on both categories are "retarded" (an unfortunate term), those high on both are "advanced," while other combinations are listed at intermediate stages: "emergent," "transitional," and "maturing." Alvin Sokolow indicates similar developmental processes for rural jurisdictions in a case study of three Michigan townships.[4] Regarding land use regulation, Sokolow notes that, in the most rural township, actual impacts of land uses on one another were minimal: ". . . nuisances are absorbed in the acreage of farms and other large land-holdings."[5] Rural decisionmakers, like most public decisionmakers, do not respond to problems until they reach crisis proportions ". . . in part because of their vulnerability to electoral defeat, . . . in part because of their concern with existing programs, . . ."[6] and in part because their

[2] The MIDNY (for Mid-New York) Project was established in 1966 as a pilot project by New York State Cooperative Extension. Among the Project's objectives have been: reorientation of Extension's traditionally rural programs to urban and urbanizing environments; encouragement of planning in the more rural parts of a metropolitan region; and integration of rural and urban organizations and interests in efforts to solve regionwide problems.

While most inferences from experience in upstate New York should be generalizable to other rural and urbanizing areas in the country, readers might want to exercise caution. Areas with histories and current conditions greatly different from the general and not highly mechanized agriculture of the eastern third of the nation may present somewhat different conditions.

[3] Heinz Eulau and Robert Eyestone, "Policy Maps of City Councils and Policy Outcomes: A Developmental Analysis," *American Political Science Review*, LXII (March 1968), 124–43.

[4] Alvin D. Sokolow, *Governmental Response to Urbanization: Three Townships on the Rural-Urban Fringe*, Agricultural Economic Report No. 132, Economic Research Service, U.S. Department of Agriculture (Washington D.C.: Government Printing Office, 1968).

[5] *Ibid.*, p. 49.

[6] *Ibid.*, p. 56.

constituents make no demands until crisis is near. One result is that the impact of urbanization on most rural townships must be quite far along and quite obvious before their decisionmakers will voluntarily look for planning assistance.

In addition—and this is perhaps even more important—"Informal social pressures in the small community also serve to check land changes. In [the most rural of the three townships] the tendencies toward conformity were probably more effective than county zoning regulations in preventing nonconforming uses." [7] In completely rural jurisdictions, the homogeneity of residents, occupations, and outlooks simultaneously leads to a reluctance to use formal means of regulation and control and less objective need to use them. Sokolow notes the tendency to handle serious nuisances not by legal means but by sending someone over to talk with the responsible party. In most cases, complaints never even reach formal governmental authorities.

As a rural jurisdiction urbanizes, of course, these methods become less and less effective. First of all, people and land uses are more densely distributed and, hence, more likely to conflict. Second, change is more rapid and more obvious. And third, newcomers, who do not conform in values and needs with the original residents, grow more numerous. The first response is to cope with increasing change and complexity with new public services and administrative devices, increased expenditures, and more formalized procedures (board meetings now follow an agenda instead of resembling a rambling, informal conversation). In the early stages of transition, land use controls (especially special-purpose ordinances as opposed to zoning) may be adopted for the first time, but they are still unlikely to be formally enforced.

Later, urban oriented newcomers will disagree more and more with the farm oriented groups, who are still dominant in local decisionmaking. They may first send organized groups to local board meetings (which used to never have an audience) and then, in time, organize politically to challenge incumbent officeholders. With each step, the community becomes more urban and its government more like that of the typical urban jurisdiction.[8]

What the planner must remember, however, is that: (1) rural communities in the early stages of development (the "retarded" ones, but don't tell them that) can be very different from typical urban jurisdictions, and (2) there may be a significant lag between actual urban-related change and appropriate responses by local decisionmakers. Such lags in response cannot be blamed entirely upon rural politicians. They are probably responsive to their constituents—at least as they see them. This means that newcomers will be given less consideration than their actual numbers might justify. Furthermore, it will probably take newcomers considerable time to become locally involved and influential, especially since their jobs and most other interests will be located in cities and other communities. Like "cosmopolitans" [9] elsewhere, their chief interests will lie in the outside world; furthermore, as Ritchie Lowry has shown in a case study, the less influential they are in local decisionmaking, the stronger will be the temptation to devote their attention to nonlocal interests.[10] This lack of participation on the part of newcomers contributes further to the local decisionmakers' blindness to changes taking place around them.

Rural Opposition to Planning Programs Is Clearest in Attitudes Toward Zoning

Until the jurisdiction urbanizes—*subjectively* as well as objectively—planning will be ignored or resisted as inconsistent with traditional informal, personal ways of doing things, unnecessary, and too costly. The cost dimension, like most others, has both "real" and cultural aspects. As Ford and Hillery point out in a discussion of the capacity of rural institutions to respond to the problem of poverty,[11] median family incomes, tax bases, and other measures of ability-

[7] *Ibid.*, p. 49.

[8] See, Richard D. Duke and Gary King, *Planning in the Urban Fringe*, Technical Bulletin B–40 (East Lansing: Institute for Community Services and Development, Michigan State University, 1963); and Charles Press and Rodger Rice, *Rural Residents and Urban Expansion*, ERS–132, Economic Research Service, U.S. Department of Agriculture (Washington, D.C.: Government Printing Office, 1963).

[9] "Cosmopolitans" are local residents whose orientations are primarily to social systems outside the local community and who regard themselves as integral parts of the larger society. "Locals," by contrast, tend to confine their interests to the local community itself and are little involved in the outside world. See, Robert K. Merton, "Types of Influentials: the Local and the Cosmopolitan," in Edward C. Banfield (ed.), *Urban Government* (New York: Free Press of Glencoe, 1961), pp. 390–400.

[10] Ritchie P. Lowry, *Who's Running This Town?* (New York: Harper and Row, 1962).

[11] Thomas R. Ford and George A. Hillery, Jr., "Rural Community Institutions and Poverty. With Special Reference to Health and Education," in President's National Advisory Commission on Rural Poverty, *Rural Poverty in the United States* (Washington: Government Printing Office, 1968), pp. 74–85.

to-pay are lower in non-metropolitan than in metropolitan areas. State and federal aid tends to offset these disparities, but only partially: "The combination of a dispersed population and relatively small numbers raises costs while preventing economies of scale." [12] These objective problems are, of course, exacerbated by the traditional rural emphasis on rugged individualism, self-sufficiency, low taxes, and low public expenditures.

Ford and Hillery list another important limitation of local rural institutions. Out-migration from rural areas has tended, of course, to take the younger, better educated, more ambitious residents. One result has been loss of potential leadership, especially leadership with important technical and professional skills. Perhaps the most significant consequence for the planner is that the leadership pool that remains is least sympathetic to planning and other professional concerns and least able to "talk the same language" as planners. Pierre Clavel has described the difficulties of communication and understanding between professional planners and lay members of rural planning boards; "Inequalities of technical resources between board and expert operate as an obstacle to effective expert-board relations not simply because they exist, but because some board members find this situation embarrassing." [13]

Such resistances to costs and to experts are reduced, of course, as a jurisdiction urbanizes. Again, however, there will be lags between change and response to it. Urban oriented newcomers will desire increased public services and will be more willing than the "oldtimers" to pay for them; they will also tend to be middle class and professional people much more receptive to planning. The impact of their presence, however, must still await their success in achieving influence, which must, in turn, await their actual involvement in the local community.

In short, then, the planner attempting to work in rural areas may be faced not with a single rural environment but with a whole continuum. What the community requires from planning and the approach the planner will have to take in order to be effective will vary considerably from one end of the continuum to the other.

LIMITATIONS ON PLANNING

Whether it is true or not, planning is seen by most rural citizens and leaders as rather narrowly focused on physical development in urbanizing environments. Aside from some historical ventures in national and regional planning and some current movement toward social planning, such a narrow conception of the profession is probably quite accurate. It is especially accurate in the areas where rural people gather most of their impressions of planning—the suburban communities between their jurisdictions and the cities. Much of the knowledge local leaders possess comes from neighboring communities, and adoption of planning tends to move outward from central cities in concentric zones. The emphasis of planning programs in such places is quite naturally on ordering and controlling physical development. The tools that the planner has—zoning, subdivision regulations, and the like—are also most appropriate in such environments.

However, for more rural areas—those well beyond the influence of "urban fields" [14]—immediate needs are for something quite different. Community leaders in these jurisdictions worry about how to *attract* development, not how to *control* it. While the planning profession may have analytic techniques and other tools to deal with such situations, rural leaders and public officials are not often aware of this.

Even in rural areas closer to cities, where fingers of urbanization reach out in the form of weekend and seasonal recreational uses or scattered new housing occupied by urbanities, the problems of farm-residential conflicts, junkyards, mobile homes, and pollution of lakes, streams, and ponds by sewage tend to be perceived as spotty and isolated cases. There are likely to be pressures on local decisionmakers to do something about these perceived nuisances and the old

[12] *Ibid.*, p. 79.

[13] Pierre Clavel, "Planners and Citizen Boards: Some Findings and Interpretations," June 1966, p. 10. (Mimeographed.) See also, Clavel, "Planners and Citizen Boards: Some Applications of Social Theory to the Problem of Plan Implementation," *Journal of the American Institute of Planners*. XXXIV (May 1968), 130–9.

[14] Friedmann and Miller, "The Urban Field." Their map, Fig. 3 on p. 314, gives an excellent rough delineation of rural areas within and beyond the influence of urbanization.

"folksy," informal methods may be working less well than they used to. Traditional planning, however, tends to survey and affect the entire jurisdiction indiscriminantly, rather than to concentrate on only those places where the shoe pinches. The rural citizens realize that zoning, which they are quite sure will follow, will restrict all of them and not just those responsible for the individual nuisances. Hence, the resistance.

In addition to these rather general characteristics of planning, the profession includes other more specific tendencies that are also inconsistent with rural problems as seen by rural people. Most of these evolve from certain misconceptions—existing or previous—on the part of planners about rural areas, residents, or problems. The profession is changing, of course, and misconceptions are being cleared up. Nevertheless, while there is wide variation from agency to agency, the planning profession does have a definite urban bias. Neither "rural" nor "agriculture" nor "farming" is included in the index to the field's leading textbook.[15] The result is a number of problems stemming from from certain misconceptions about rural areas.

The Protection Myth.—Planners often propose agriculture-only land use zones. Such proposals are based on assumptions that agriculture is threatened by housing and other urban development, that the beauty of an agricultural countryside is important to many people, and that farmers will welcome protection from bulldozers and subdivisions. In most cases, however, the last assumption is not valid. What most farmers in an urbanizing situation want may include preferential tax treatment, protection from eminent domain proceedings, protection from harassment by anti-odor ordinances and other restrictions, and so on—but *not* a zoning ordinance or any other provision that prevents or restricts sale of land for urban purposes. Most farmers see urban development not as a threat, but as a promise—a possible windfall. Other factors may support an argument for the preservation of agricultural land, but agriculture-only zoning will have to be passed over the farmers' objections.[16]

Vacant as a Misleading Category.—There is also a tendency among planners to treat rural land unoccupied by structures and not obviously farmed as "vacant," thereby implying that it is open and available for development. In many parts of the country, this land tends to be former farmland that has been abandoned (because of the increasing efficiency of agriculture) and is growing up in brush. Visual impressions are betrayed, however, by actual ownership of much of this land. Affluence has prompted many urban people to buy up land withdrawn from agriculture, possibly for speculative purposes, but more often for purely recreational ones. They may plan to build a second home on it, although much of the time the land will remain "vacant" in order to be used for hunting, fishing, hiking, or just sitting and looking at it. It is not by any means vacant in the sense of "useless," and many rural residents and landowners resent the implication that it is. Additionally, a planning program that fails to consider the plans such landowners have for their property is overlooking data that might be critical for the future of many rural communities.

Lack of Natural Resource Considerations.—Perhaps the most obvious shortcoming of planning when it is applied to rural areas is its limited consideration of natural resource elements. This is certainly the most frequent complaint of agriculture college experts. While they note progress, especially in the use of soil survey results by planning programs, a survey by Carroll and Wingard found that:

> Plans . . . showed a lack of soil survey information, a failure to recognize mineral values, an absence of comprehensive water data, and a deficiency of meaningful forest and wildlife data and interpretation.[17]

A major cause of this shortcoming is the . . . lack of involvement of natural resource professional staffs, such as state and federal conservation agencies, in planning programs. Private conservation interests such as sportsmen's clubs, forest industry, water recreation and boating interests, and other natural resource citizen groups [also] have not participated effectively in formal planning efforts.[18]

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[15] F. Stuart Chapin, Jr., *Urban Land Use Planning,* (2nd ed. Urbana : University of Illinois Press, 1965).

[16] See. for example, New York State Commission on the Preservation of Agricultural Land, *Preserving Agricultural Land in New York State* (Albany : 1968) ; and Ronald J. Vogel and Alan J. Hahn, "The Preservation of Agricultural Land : A Critique of a Case Study." Paper submitted to *Land Economics* for publication.

[17] William M. Carroll and Robert G. Wingard, *Urban Planning in Rural America,* U.S. Department of Housing and Urban Development (Washington : Government Printing Office, 1967), p. 18.

[18] *Ibid.*, p. 19.

Community leaders . . . worry about how to attract development, not how to control it.

Soil scientists have pointed to erosion, pollution, flooding, and other problems associated with urban development that could have been prevented if information about soils played a greater role in planning. Other natural resource specialists have attempted to call attenton to the impacts of urbanization on agriculture, forest, mineral, and wildlife resources—which are usually overlooked in planning programs. With regard to agriculture, Howard Conklin charges that planners . . . fail almost completely to recognize the existence of farms as businesses and they fail completely to allow for the fact that a very significant part of urban activity in many areas is directly or indirectly dependent on farming.[19]

Of course, just as the planners have their "urban bias," this emphasis on natural resources reflects the nonurban interests' "rural bias." The tendency to disregard social aspects and—to a lesser extend—economic ones is common to both.

Misunderstanding Rural Values.—The transplantation of planning programs from urban to rural areas often results in misinterpretations of values held by a community's residents. While it is certainly true that often too much is made of rural-urban differences, they do exist. As noted in the previous section, in very rural areas, planners must cope with the high value placed on individualism, the frequent preference for making do for oneself, and reluctance to use collective or governmental means for resolving local problems. These values and attitudes recede, of course, as rural people themselves come under the influence of an urban-industrial society—and even more rapidly when urban oriented newcomers begin to arrive. Even with regard to these latter people, however, planners must remember that their reasons for choosing "rural living" have much to do with desires to escape from urban environments; they are seeking open space, land of their own, pastoral environments, freedom from hustle and bustle.[20] It should come as no surpise, then, when opposition is voiced to some of the planners' favorite remedies for what they label "urban sprawl": cluster developments, planned locations of sewer, water, and other utilities in order to concentrate residential development in limited areas, or agriculture-only land use zones. Extra costs and other disadvantages of scatteration cannot be denied, but—especially in rural areas—planners must also consider the advantages and help their clients weigh costs and benefits. They might still prefer sprawl.

Need for Industrial Development Criteria.—Regarding economic considerations there is still a good deal to be learned about the impact of industrial development. How large an area, for example, will be affected if a new industry is located at a certain point? Commuting ranges in rural areas are sometimes phenomenal—well over fifty miles. This is particularly true in a new plant's early years of operation (in time, some employees may move to closer locations while others quit because of excessive commuting costs).[21] For these reasons, unthinking application of rules-of-thumb applicable in urban areas may not be adequate in rural jurisdictions. It is also well-known that many industries willing to locate in small towns and rural areas are unstable, low-wage industries. Does this mean that industrial development is a poor solution for depressed rural economies, or does its chief value lie in providing a cushion for rural residents who cannot or will not leave, while the more ambitious use out-migration as a solution for their problems?[22] For many of these industries, especially recreational ones, it has been observed that many of the benefits and profits go to "outside" developers, not to local residents who presumably need them.[23] Again, a planner may need new tools and orientations when he turns from urban to rural areas.

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[19] Howard E. Conklin, "Farmers and the Planning Process," in *Papers Read at MIDNY Land Use Conference, May 17, 1967* (Syracuse: MIDNY Project, New York State Cooperative Extension, 1967), n.p.

[20] See, for example, Wade H. Andrews and J. Ross Eshleman, *The New Community: Characteristics of Migrant and Non-Migrant Residents in the Rural Fringe of a Metropolitan Area*, Research Bulletin 929 (Wooster: Ohio Agricultural Experiment Station, 1963).

[21] Roger W. Snyder, "The Description and Analysis of Two Labor Sheds in South Central New York State" (unpublished Master's thesis, Department of Geography, Syracuse University, 1967).

[22] Neal G. Lineback, "Over-Industrialization as a Limitation to Economic Development in Rural Appalachian Counties," *Southeastern Geographer*, VIII (1968), 1–10. An additional debt is owed to Richard B. Dymsza, Department of Agricultural Economics, Cornell University, for his critical remarks on "over-industrialization."

[23] Robert R. Nathan Associates, Inc., and Resource Planning Associates, *Recreation as an Industry: A Report Prepared for the Appalachian Regional Commission* (Washington: 1966).

Rural Activity Patterns.—Finally, in many rural areas new patterns and forms of social and economic relationship are emerging, but are not yet sufficiently understood. It has been obvious for quite a few years now that transportation and communication improvements have made many small town commercial centers obsolete. Rural residents drive greater distances for shopping; trade areas get larger; the lowest order centers lose their commercial functions; and successively higher order centers lose their lowest order functions. Other counter trends, however, are not so well understood. It has been shown that village and hamlet populations are generally decreasing, but are increasing where larger urban centers are close by.[24] This reflects, of course, the "suburbanization" of these settlements. Other research has indicated that newcomers stimulate village and hamlet economies by providing new markets for vendors of convenience goods.[25] In addition, Hart, Salisbury, and Smith have shown that many villages and hamlets have "outsized functions":

> Most villages make a rather poor showing when one merely tabulates the number and variety of their central place functions. . . . In many villages . . . most of these functions failed to survive the advent of the automobile; what is more important here is the fact that over large parts of the Middle West nearly every village has at least one enterprise which has not only survived, but has survived quite handsomely.[26]

These functions might be eating and drinking establishments, lumber and hardware dealers, filling stations, food stores, automobile dealers, or general merchandise stores. Rural people apparently drive to one settlement for one purpose, a second for a second purpose, a third for a third, and so on. What this and other data indicate is that rural areas are not merely areas where urban activities and artifacts are absent, but rather where they simply take different forms.

In some rural areas, urban oriented people are moving in; in all of them, the rural people themselves are becoming more "urban." The preference for loosely scattered residential patterns and the easy mobility provided by the automobile are creating patterns of living, working, and socializing that are urban in nature but not in form. The planner must, in other words, be very careful in interpreting what he finds in rural areas in terms of either traditional urban phenomena or traditional rural ones. New settlement and activity patterns are developing.[27]

Toward Solutions

Solutions for these difficulties, like most other solutions in this day and age, require cooperation and communication among individuals and organizations that have tended to specialize and work independently of one another. In this case, the primary targets are professional planners on the one hand and various rural organizations and interest groups on the other. In our own regional development education experience in Central New York, we have found that the Cooperative Extension Service can play an important role in fostering these relationships. Cooperative Extension programs are jointly carried out by the U.S. Department of Agriculture, the various states through their land-grant universities, and county governments; since 1914, they have provided informal adult education in rural areas. In recent years, the heavy traditional orientation to farm populations has been changing as farmers and farm families have become a small proportion of the total national population. Among the new focuses are community and regional planning.

Such educational programs can benefit rural areas by providing information about the content and methods of planning. In many ways, these educational

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[24] Edward Hassinger, "The Relationship of Trade Center Population Change to Distance from Larger Centers in an Agricultural Area," *Rural Sociology*, XXII (June 1957), 131–6; Jon Doerfinger, *Geographic and Residential Distribution of Iowa's Population and Change 1950–1960* (Ames: Department of Economics and Sociology, Iowa State University, 1962); and Glenn V. Fuguitt, *Growing and Declining Villages in Wisconsin, 1950–1960*, Population Series No. 8 (Madison: Department of Rural Sociology, University of Wisconsin, 1964).

[25] Gerald Hodge, "Do Villages Grow?—Some perspectives and Predictions," *Rural Sociology*, XXXI (June 1966), 183–96; and Alan J. Hahn, "Suburbanization and Economic Activity," September 1967. (Mimeographed.)

[26] John Fraser Hart, Neil E. Salisbury, and Everett G. Smith, Jr., "The Dying Village and Some Notions About Urban Growth," *Economic Geography*, XLIV (October 1968), 343–9; quotation is from p. 345.

[27] The emergence of new settlement and activity patterns has been identified before. See, for example, Melvin M. Weber, "Order in Diversity: Community Without Propinquity," in Lowdon Wingo, Jr. (ed.), *Cities and Space* (Baltimore: Johns Hopkins Press, 1963), pp. 22–54. So far, however, I do not think the special relevance of Webber's and related concepts to planning in rural areas has been clearly understood.

functions can be performed more effectively by agencies like Cooperative Extension, which are familiar with and to rural audiences, than they can by planners who may encounter resistances and communication barriers. Involvement of planners in such educational programs is also necessary. It is in this way that Extension and other rural organizations can learn from planners and, just as important planners can learn from rural organizations.

In our Central New York experience, these mutual education functions have occurred in conferences on land use outside the cities and on changes in rural and urban communities in the region; informal meetings on housing problems, rural poverty, the implementation of a state law prohibiting continued use of open dumps, and techniques for planning in rural communities; and joint activities such as a program utilizing local farmers to map commercial farm holdings in each township. In nearly all cases, the central objective has been approached obliquely; common concerns to which both planners and rural interests can make contributions have been identified and tackled in a spirit of cooperation on matters no single group understands by itself. Mutual education has been a byproduct, but a most significant one.

For rural areas in general, such an approach is far more likely to succeed than typical educational efforts by planning agencies or consultants themselves—namely, a step-by-step description of the planning process: goals and objectives, basic studies, development of plans, and implementation tools. Rural citizens and leaders are much more comfortable with a problem-solving approach—one that begins with specific local problems, as seen from the inside, rather than with solutions that local people may feel are being imposed from the outside. Our approach in Central New York has been to talk first of the changes taking place in the local community (fewer farms, the arrival of urban oriented newcomers, demands for new and expanded public services, and the like), their causes, and likely consequences. The orientation is toward helping leaders and other citizens recognize and understand local problems—not toward playing the role of an expert who tells them what their problems are and what they should do about them. Discussion of planning itself comes later. Frequently, it arises spontaneously once local people begin thinking about specific problems and the forces at work in their communities.

For planners, this paper can perhaps best be summarized by repeating my earlier conclusion that there is not *one* rural planning situation but several along a continuum. They can be conveniently broken down into no fewer than three categories:

1. In completely rural situations, most planners will be confronted with serious shortcomings in their most frequently used knowledge, skills, preconceptions, analytic techniques, and implementation tools. Perhaps most important of all is the need to develop means of adding a planning component that "fits" with the casual, informal, personal nature of local government. It will also be necessary to recognize the slower rates of development and change and the smaller number of obvious crises.

2. In urbanizing rural situations, there exists a growing group of citizens who will be more receptive than the "oldtimers" to professional planning. However, the planner must contend with the facts that newcomers are not in power and that there are significant lags between their physical presence in the community and the willingness of local leadership to respond to them. It is in these situations that initial emphasis on the community's characteristics and problems, rather than on planning in the abstract, can bring results most easily.

3. Eventually, the rural communities urbanize to the point at which they are indistinguishable from urban communities—after, for example, the urban oriented newcomers take control of local government. At this point, local government is likely to have become formal and professionalized, and the planner will be on familiar ground.

AUTHOR'S NOTE.—While the responsibility for errors rests entirely with the author, he is deeply indebted for many of the ideas expressed in this paper to his colleagues on the MIDNY Project, Lyle S. Raymond, Jr., and Martin G. Anderson; also to Gordon J. Cummings and Roger W. Snyder for helpful comments and criticism.

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URBANIZATION OF LAND IN THE WESTERN STATES

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INTRODUCTION

Additional information has been needed on amount and kinds of rural land shifting to urban uses. Such information can be useful in interagency surveys of potential water development in the Columbia-North Pacific, California, and Colorado Water Resource Regions as a basis for projecting quantities and locations of land required for urban development. 1/

DEVELOPMENT OF THE BASIC DATA

Data are not regularly compiled on acreages of land in urban use. Although general estimates have been made by measuring areas designated as urban by the decennial census of population, this procedure provides statistics only on a State basis. 2/ The most feasible way of gathering specific data appeared to be interpretation of airphotos to determine the amount of land that had changed to urban and associated uses between the population census years 1950 and 1960. These data could then be related to projected population increases to estimate land required for urban development.

Specifically, the objectives of the study were:

1. To measure acreage of land converted to urban uses in the most recent period practicable.
2. To determine prior use of land urbanized.
3. To relate quantities of land urbanized to population increases.

The Economic Research Service has over the past 15 years employed analysis of airphotos for successive time periods to measure changes in land use. 3/ In this procedure, index sheets from airphotos in the scale of 1:63,360 (1 inch to the mile), taken at two different times, are compared to detect changes in land use (fig. 1). These sheets have been prepared for all areas photographed for the Agricultural Stabilization and Conservation Service (ASCS) of the U.S. Department of Agriculture. Although airphoto index sheets are uncontrolled mosaics with some error, they do permit rapid study of a large area.

1/ These regions are comprised of the States of Washington, Oregon, California, and Arizona, and parts of Idaho, Montana, Colorado, New Mexico, Utah, and Wyoming.

2/ Frey, H. Thomas, Krause, Orville E., and Dickason, Clifford. Major Uses of Land and Water in the United States with Special Reference to Agriculture: Summary for 1964. Agr. Econ. Report No. 149. Nov. 1968, pp. 67-68.

3/ Dill, Henry W., Jr. "Use of the Comparison Method in Agricultural Airphoto Interpretation," Photogrammetric Engineering. Vol. 25, No. 1, Mar. 1959.

Selection of Counties

A preliminary study was made of the entire survey area, using airphoto index sheets from the national file of ASCS. A preliminary analysis was made of photo index sheets of counties showing urban impact. Although nearly all the counties checked in the preliminary study had some small shift of farmland to urban use—often string development along roads or in areas adjacent to villages—the study was narrowed to 48 counties showing average shifts of more than 50 acres per year. 4/ Three counties were not included because of inadequate photo coverage: Marin, Calif.; Tacoma, Wash.; and Clark (Las Vegas), Nev. Shift of farmland to urban use in San Bernardino, Calif., was measured but eliminated from further analyses because it was judged to be atypical. A number of developments had been laid out but only partially built upon (fig. 2).

Land Use Categories

The next step in the study was to determine the categories of change that could be identified and measured from analysis of airphotos. Four categories of rural land use and seven categories of urban use could be identified using airphoto index sheets with two-power magnification.

Rural Land Use

Cropland—row crops, close grown crops, hay, orchards
Grassland—managed pasture, rangeland
Idle land—unused cropland and pasture 5/
Forest—areas substantially covered by trees

Urban Land Use

Dense residential—houses on small lots, apartments, row houses (fig. 3)
Open residential—one house or less per acre (fig. 4)
Institutional—schools, hospitals, government buildings
Commercial—mainly shopping centers
Industrial—factories, storage yards, auto graveyards, gravel pits
Recreational—parks, golf course, drive-in theaters, race tracks
Airports

The urban use categories were selected to provide the most detailed classification possible using the small-scale airphotos. The classes most subject to error in identification are institutional, commercial, and industrial. While these uses could have been combined into a nonresidential category, they were treated separately to provide an estimate of land requirements for each use.

In addition, two patterns or types of distribution of urbanization were identified and measured: Suburban or "contiguous" development around a city or town (fig. 5) and isolated, unattached "noncontiguous" developments ranging from small groups to larger aggregations of houses (fig. 6).

Photo Interpretation

The counties with significant shifts of farmland were next studied in detail, using airphoto index sheets. The analysis was basically a systematic comparison of a given area for two periods to identify change. To facilitate use of the index sheets, which are generally 20 by 24 inches in size, the early coverage sheets were folded in 4-inch folds for closer inspection of any given item. Shifts of farmland to urban use were outlined on the more recent airphotos with a china marking pencil, and the previous land use (cropland, idle, grassland, and forest)

4/ See table 2 for list of counties.

5/ Includes cropland, some pasture not in production prior to shifting to urban use, and land in farms purchased for speculation and taken out of production pending development.

indicated by symbol. Areas so defined were measured by using a transparent dot grid with 100 dots per square inch. Each dot is equivalent to 6.4 acres, providing a measurement accuracy of ±3.2 acres per square mile.

In general, data obtained from the study include the major shifts of farmland to urban and associated uses. In most of the areas, there is some scattered residential development along roads. This string type of development is difficult to measure on the scale of the photographs used, and measurements were not made. However, in some areas there are substantial amounts of such development which could accommodate some increase in population.

An additional factor affecting accuracy was the use of uncontrolled airphoto mosaics with varying amounts of distortion. More precise area measurement could have been obtained with use of contact prints. However, error due to this lack of precision appears to be random. Any increase in accuracy from use of contact prints probably would not justify the additional time and expense required.

TYPE AND AMOUNT OF URBANIZATION

In the 48 counties studied, about 465,000 acres were found to have shifted to urban uses in an average span of 11+ years (table 1). The greatest amount of urbanization, of course, occurred in the metropolitan complexes of Southern California, the San Francisco Bay area, Seattle, and Portland, plus the Phoenix area (fig. 7-9). A substantial shift of acreage took place in smaller, more isolated centers such as Fresno, Calif., and Spokane, Wash. Lesser amounts of urbanization occurred in a number of counties with smaller cities (fig. 10-15).

Some differences were noted in the patterns of urbanization and the intensity of use between counties in urban complexes and those around smaller cities. To better explore these differences, the 48 counties were classified

Table 1.—Total land use shifts in study counties 1/ 2/

Prior rural use	New urban use							
	Dense residential	Open residential	Industrial	Institutional	Commercial	Recreation	Airport	Total
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Cropland	269,365	31,545	19,875	15,025	15,270	8,335	2,565	361,980
Grassland	43,170	24,200	4,715	2,075	875	1,745	790	77,570
Forest	11,830	5,160	465	---	---	135	---	17,590
Idle cropland	4,480	1,210	1,135	60	90	555	210	7,740
Total	328,845	62,115	26,190	17,160	16,235	10,770	3,565	464,880

1/ Total unweighted changes in 48 counties. Early coverage of counties ranged from 1941 to 1954. Late coverage ranged from 1958 to 1966. Average span of years was 11+.

2/ Figures rounded to nearest multiple of 5.

according to their relationship to Standard Metropolitan Statistical Areas (SMSA's). An SMSA is a county or group of counties defined by the Census Bureau as an entire area in and around a city or community of at least 50,000 in which the activities form an integrated economic and social system. The study counties were classified as (1) being within a multiple-county SMSA, (2) constituting a single-county SMSA, or (3) falling outside any SMSA. Thirteen counties fell in the first group, 11 counties in the second, and 24 in the third (table 2).

Overall, 84 percent of the land urbanized went to residential use. This proportion was fairly consistent for all three classes of counties. However, more of the residential use was of the dense residential type (houses on small lots, row houses, and apartments) for the more highly urbanized areas—80 percent, 67 percent, and 55 percent (of total urban use) for the multiple-county SMSA's, single-county SMSA's, and non-SMSA counties, respectively (table 3). Overall, for each acre going to residential use, about 0.15 acre was developed for commercial, industrial, institutional, recreational, and airport use.

Table 2.—SMSA status of study counties, by State

State	Counties in multicounty SMSA's	Single-county SMSA's	Non-SMSA counties
Arizona	---	Maricopa	Yuma
		Pima	
California	Alameda	Fresno	Imperial
	Contra Costa	Kern	Merced
	Los Angeles	Sacramento	Monterey
	Orange	San Diego	Santa Cruz
	Riverside	San Joaquin	Sonoma
	San Mateo	Santa Barbara	Stanislaus
	Solano	Santa Clara	Sutter
			Tulare
			Ventura
			Yolo
			Yuba
Colorado	---	---	La Plata
			Mesa
			Montezuma
			Montrose
Idaho	---	---	Ada
			Bannock
			Bonneville
Montana	---	---	Missoula
New Mexico	---	---	San Juan
Oregon	Clackamas	Lane	Linn
	Multnomah		Marion
	Washington		
Washington	Clark	Spokane	Yakima
	King		
	Snohomish		

Table 3.—SMSA status of land urbanized by type of urban use 1/

Type of urban use	SMSA status			
	Multicounty SMSA	Single-county SMSA	Non-SMSA	All counties
	Percent	Percent	Percent	Percent
Dense residential	80.0	67.0	54.7	71.0
Open residential	6.0	16.7	25.0	13.1
Industrial	5.3	5.7	7.6	5.8
Institutional	3.4	3.7	4.8	3.7
Commercial	3.5	3.5	2.1	3.3
Recreation	1.3	2.4	5.1	2.3
Airport	.5	1.0	.7	.8
Total	100.0	100.0	100.0	100.0

1/ See footnote 1, table 1, for period covered.

Also, contiguity of urbanization—whether it is generally aggregated or in scattered developments—appears to be related to SMSA status. In the counties found within multiple-county SMSA's, 92 percent of the urbanization was classed as contiguous, while in the non-SMSA counties only 67 percent was so classified (table 4).

PRIOR USE OF LAND

Overall, a high proportion—about three-fourths—of land urbanized was previously devoted to crop production, usually of high-valued, irrigated crops (table 5). In some California counties, all of the land came from cropland. Los Angeles, Orange, Riverside, and Santa Clara Counties used over 90 percent cropland in their expansion—averaging some 14,000 acres annually over the period covered for the four counties. Phoenix (Maricopa County) used almost 80 percent cropland (an average of over 3,000 acres per year). Conversely, in the Seattle area only about 10 percent of land urbanized was formerly cropland (fig. 16). Seattle and Portland were the only areas where significant quantities of forest land were converted to urban use. Most counties showed urbanization of some grassland, the quality varying from productive pasture to near-desert. In only a few counties, such as San Diego and San Mateo, Calif., and Pima, Ariz., did the proportion of grassland urbanized exceed 50 percent (fig. 17 and 18).

Only slightly over 2 percent of the land was idle prior to urbanization. Apparently, the highly productive irrigated cropland in the study counties is kept in production until actually converted to the new urban use.

RELATIONSHIP OF LAND URBANIZATION TO POPULATION INCREASE

In exploring relationships between population increases and urbanization of land, photos were selected to encompass as nearly as

Table 4.–SMSA status of land urbanized by contiguous or noncontiguous development pattern 1/

Development pattern	SMSA status			
	Multicounty SMSA	Single-county SMSA	Non-SMSA	All counties
	Percent	Percent	Percent	Percent
Contiguous	92.0	79.9	67.2	83.0
Noncontiguous	8.0	20.1	32.8	17.0
Total	100.0	100.0	100.0	100.0

1/ See footnote 1, table 1, for period covered.

Table 5.–SMSA status of land urbanized by prior land use 1/

Prior land use	SMSA status			
	Multicounty SMSA	Single-county SMSA	Non-SMSA	All counties
	Percent	Percent	Percent	Percent
Cropland	79.5	79.2	76.1	76.4
Grassland	10.3	24.5	21.3	17.6
Forest	7.3	1.2	1.2	3.9
Idle	2.9	1.4	1.4	2.1
Total	100.0	100.0	100.0	100.0

1/ See footnote 1, table 1, for period covered.

possible the same years as the two most recent censuses of population, 1950 and 1960. Coverage was available from ASCS for most of the counties for 1948-54 and 1956-66. Commercial airphoto coverage was obtained for a few areas where ASCS coverage was not available. In no county were photos available for the precise years 1950 and 1960. Typically, the photos bracketed more years than the censuses.

One method for measuring the degree of coincidence between the photo years and census years is to consider the total number of years spanned by either photos or censuses. For example, with photos for 1948 and 1959, a total of 12 years is involved, of which 9 were covered by either the 1950 or 1960 censuses and by photos. This could be called a 75-percent coincidence.

Using this measure, there was an overall 59-percent coincidence for the 49 counties. Of 647 total years involved, 379 were covered by both photo and census data, 167 were years with photo but not census coverage, and 101 were years with census but not photo coverage. Coincidence ranged from 29 to 91 percent, with over three-quarters of the counties showing a coincidence of over 50 percent.

As an area becomes more populous and takes on metropolitan characteristics, land is used more intensively and less additional surface area is taken for work, living, and service functions for each new person added to the population. Between 1950 and 1960, almost 60 percent of the population increase in the study counties occurred within multicounty SMSA's, while these same counties accounted for only about 40 percent of the land urbanized (table 6). Within the multicounty SMSA's, about .05 acre of land was urbanized per capita increase in population. Over twice as much per capita population increase, almost .13 acre, was urbanized in the non-SMSA counties (table 7).

Table 6.—Average annual land urbanization during study period and population increase, 1950-60, by SMSA status of land 1/

SMSA status	Counties	Average annual conversion of land to all urban uses		Average annual population increase, 1950-60	
		Amount	As a percentage of total	Amount	As a percentage of total
	Number	Acres	Percent	Number	Percent
Multicounty	13	17,550	41.1	340,665	58.9
Single county	11	18,775	43.9	187,675	32.4
Non-SMSA	24	6,410	15.0	50,090	8.7
All counties	48	42,735	100.0	578,430	100.0

1/ See footnote 1, table 1, for period covered.

Table 7.—Land urbanized per capita population increase, by SMSA status of land 1/

SMSA status	Land urbanized per capita for --	
	Residential use	All urban uses
	Acres	Acres
Multicounty SMSA's	.046	.052
Single county SMSA's	.083	.100
Non-SMSA	.102	.128
All counties	.060	.071

1/ See footnote 1, table 1, for period covered.

Variations Among Counties in Urbanization Rates

Individual counties showed substantial variation in land urbanized per capita population increase. Within the multicounty SMSA's, rates varied from .03 acre per person in Los Angeles County to .23 and .25 in Washington and Clark Counties in the Portland SMSA. Single-county SMSA's showed a narrower range—from .05 acre in Pima County (Tucson), Ariz., to .13 acre in San Diego County, Calif. The non-SMSA counties varied from .02 acre in Monterey County, Calif.,—the lowest of any county—to .35 acre in Montrose, Colo. There was also the extreme case of San Bernardino County, Calif., in a multicounty SMSA, with .43 acre urbanized per capita population increase.

Many factors affect the amount of land taken for residential use. Zoning laws and subdivision regulations affect lot sizes. Topography and soils may limit development to certain areas. Some counties have a higher proportion of their population living in apartments and row houses. Commercial, industrial, institutional, and recreational use of land is not as likely to be directly related to population within a given county as is residential use. However, in the aggregate one would expect a fairly close relationship. Business and industry either go where clientele and labor are to be found or attract people to the area after they have been established.

The types of recreational use identified in this study—such as golf courses and drive-in-movies—are oriented to resident population. Some institutional uses, such as colleges or mental institutions, may have a State or regional orientation. However, in the aggregate these factors would tend to be offsetting. For example, one county might have a State penitentiary while another hosts a university.

There is some error inherent in using airphoto interpretation to measure urbanization. As an area approaches a saturation point in the urbanizing process, previously unused lots and other small tracts of land are built upon. Houses and garden apartments are sometimes razed and replaced by high-rise apartments. Such changes can add to an area's capacity to absorb population but may not be identifiable by airphoto interpretation. Also, individual houses built at scattered intervals along rural roads cannot be measured. The houses can be identified, but the amount of land associated with each is nearly impossible to determine from airphotos.

Another source of error is lack of coincidence between census and photo years (see p. 6). Where trends remain fairly constant this probably does not distort the analysis significantly. But if rates of population growth and building increase or decrease within a few years and photo and census years do not coincide, data from the two sources may not be fully compatible.

However, despite fairly wide deviations from the average amount of land urbanized per capita increase in population, simple correlations between land urbanized and population increase were quite high—.89 for both residential use and all urban uses.

Consideration of Other Variables

Several other variables were explored as possibly explaining more of the variation among counties. In using multiple regression, the amount of land taken for residential use was best explained by two variables—absolute increase in population and percentage increase in population. Percentage increase was used to reflect stage of urbanization. As counties become more densely populated, annual percentage increase in population begins to decrease even while absolute annual increases are still large. For example, between 1940 and 1950, the population of San Diego County increased by 26,700 per year, an average annual increase of 9.2 percent. Between 1950 and 1960, the population increased by 47,600 per year but by only 8.6 percent per year (table 8).

Table 8.–Average annual population increases in selected counties, 1920-67

County	Average annual increase in population									
	1920-30		1930-40		1940-50		1950-60		1960-67	
	Amount	Percentage increase	Amount	Percentage increase	Amount	Percentage increase	Amount	Percentage increase	Amount	Percentage increase
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Los Angeles, Calif.	127,204	13.6	55,700	2.6	136,604	4.9	188,708	4.5	116,900	1.9
Alameda, Calif.	13,068	3.8	3,816	.8	26,546	5.2	16,789	2.3	19,510	2.1
San Diego, Calif.	9,741	8.7	7,969	3.8	26,746	9.2	47,620	8.6	23,580	2.3
King, Wash.	7,424	1.9	4,146	.9	22,801	4.5	20,202	2.8	15,520	1.7
Maricopa, Ariz.	6,139	6.9	3,522	2.3	14,558	7.8	33,174	10.0	27,900	4.2

Using the two variables of absolute and percentage rise in population, the following equation was established:

$$Y=123.64 + 0.035\ X_1 + 4.122\ X_2$$
$$(0.003) \quad (2.251)$$

Where: Y=acres converted to residential use (average annual)

X_1=number increase in population (average annual 1950 to 1960)

X_2=percentage increase in population 1950 to 1960.

(Standard error of each coefficient shown in parentheses.)

The coefficient of multiple determination of the equation (R^2) was 0.80. T-values of 12.9 for the X_1 variable and 1.8 for the X_2 indicate significance at the 1-percent and 10-percent levels, respectively.

A regression was also run substituting land for all urban uses as the dependent variable. The resulting equation follows:

$$Y=152.39 + 0.038\ X_1 + 5.566\ X_2$$
$$(0.004)) \quad (2.974)$$

where: Y=acres converted to all urban uses (average annual)

X_1=number increase in population (average annual 1950 to 1960)

X_2=percentage increase in population 1950 to 1960.

(Standard error of each coefficient shown in parentheses.)

The coefficent of multiple determination of the equation (R^2) was 0.74. T-values were 10.6 for the X_1 variable and 1.9 for the X_2, indicating significance at the 1-percent and 10-percent levels, respectively.

These equations help in evaluating the importance of the two variables. However, they have definite limitations for use in projecting urbanization of land at the county level. The large constant factors (123.64 and 152.39) make the equations unrealistic for projecting expected population increases that deviate greatly from the 12,000 average annual increase experienced by the 48 study counties.



Figure 1. – Shift of farmland to urban use as it shows on airphoto index sheets in the Phoenix suburban area. Airphotos on left were taken in 1954; those on right in 1964. Arrows point to the same spot on both sheets. Note the dense residential development in the general area and the golf course below the arrow in the 1964 coverage. Scale 1:63,360.

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Figure 2. – Early stage in residential development on cropland and dry rangeland in San Bernardino County, Calif. Upper picture taken in 1953; lower in 1959. Note golf course in upper edge of the 1959 photograph. Scale 1:20,000.

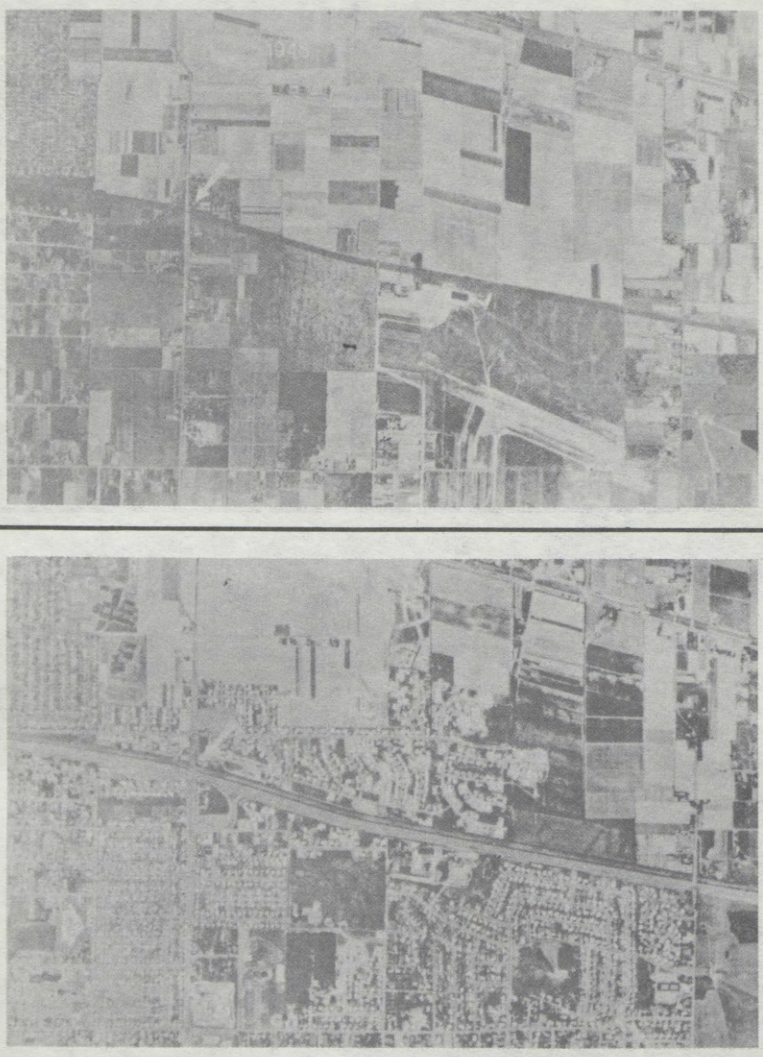


Figure 3. – Typical urban development on farmland on the outskirts of Portland, Oreg. Long arrows show the same point on the airphotos for 1948 and 1963. The broad arrow numbered "2" points at typical "dense" type residential development. Scale 1:20,000.



Figure 4. – Urban development on farmland on the edge of Spokane, Wash. The long arrows show the same point on airphotos taken in 1950 and 1957. The broad arrow points out typical open residential development. Scale 1:20,000.



Figure 5. – "Contiguous" urban development on farmland around a small city is illustrated by the above pair of airphotos taken in 1955 and 1964 of Missoula, Mont. Scale 1:20,000.

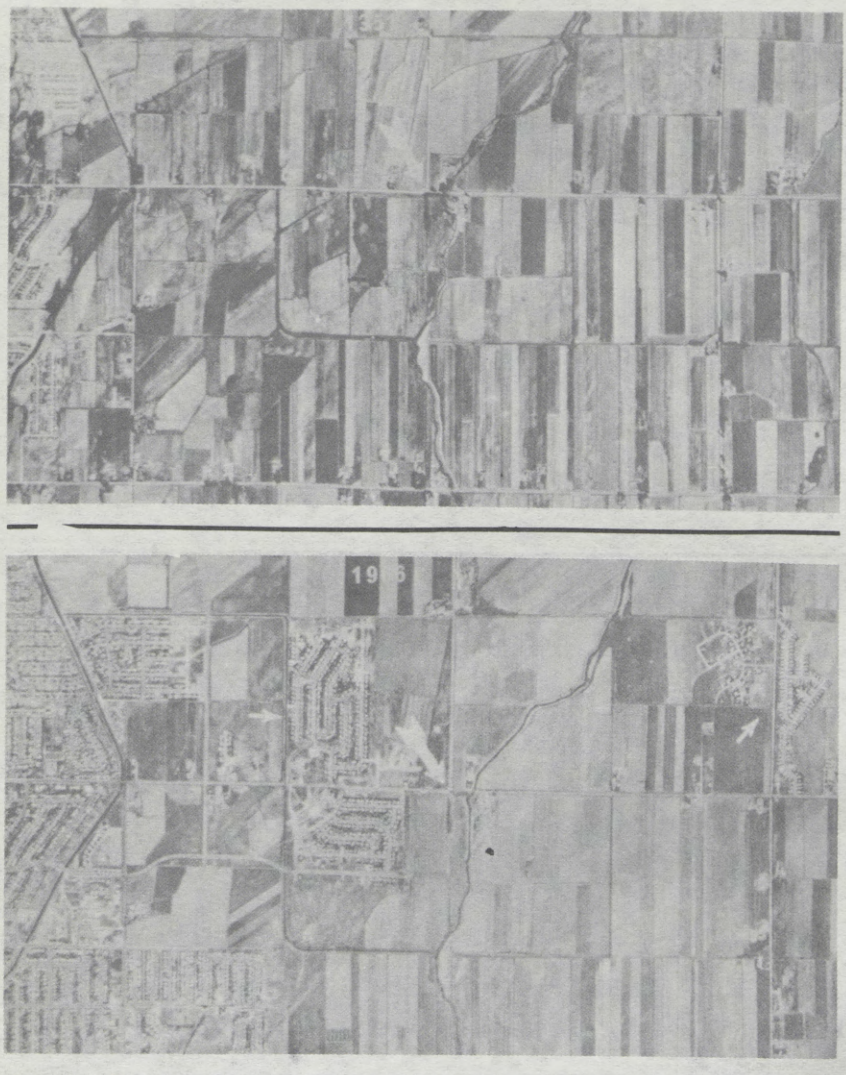


Figure 6. – The above pair of airphotos taken in 1951 and 1966 at Idaho Falls, Idaho, show urban development on farmland. The larger arrows indicate the same point on each photo. The smaller arrows show typical leapfrog or sprawl development. Scale 1:20,000.



Figure 7. – Dense residential development on good farmland in Santa Clara County, Calif., between 1950 (top) and 1963 (bottom). Arrows indicate the same points on the airphotos. Scale 1:20,000.



Figure 8. – Dense residential, institutional and commercial development on orchards in Ventura County, Calif. Upper airphoto taken in 1953; lower in 1965. Note new highway and interchange in lower part of 1965 picture. Scale 1:20,000.

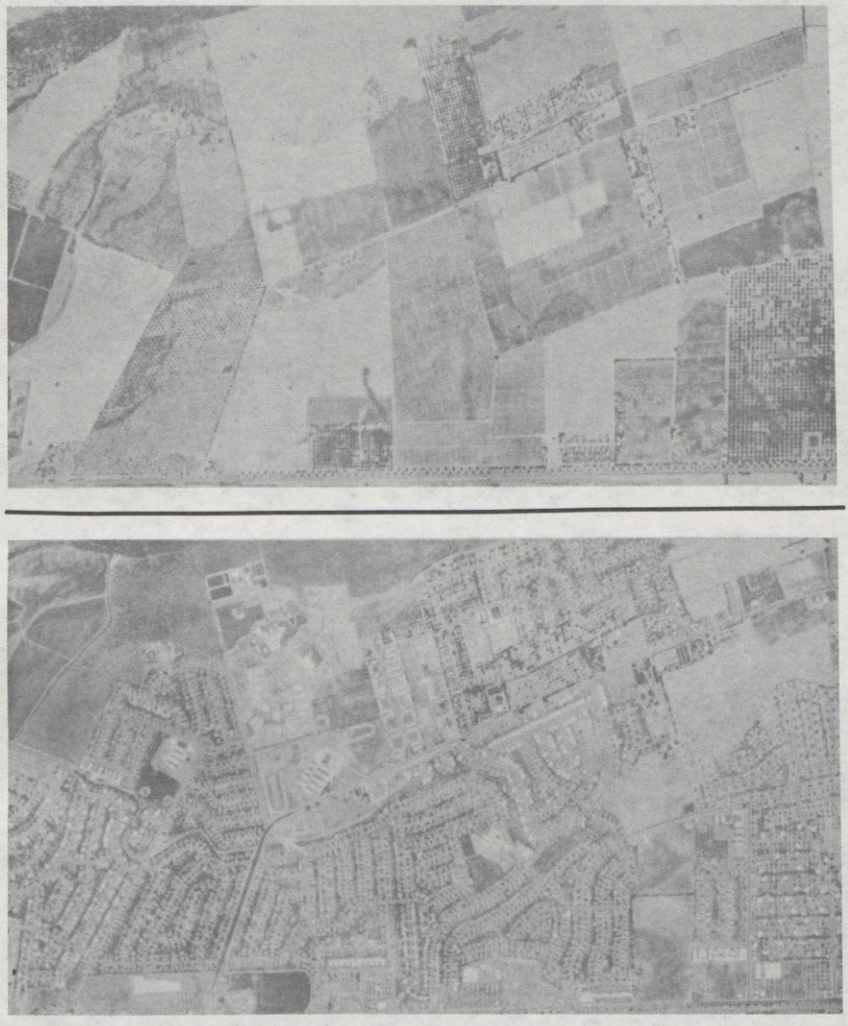


Figure 9. – Shift of cropland and orchards to residential, institutional, and commercial use is shown in the Sacramento, Calif. suburban area. Upper airphoto was taken in 1953: lower in 1964. Arrows indicate same point on both airphotos. The three white patches along the edge of the lower picture are shopping centers. Scale 1:20,000.

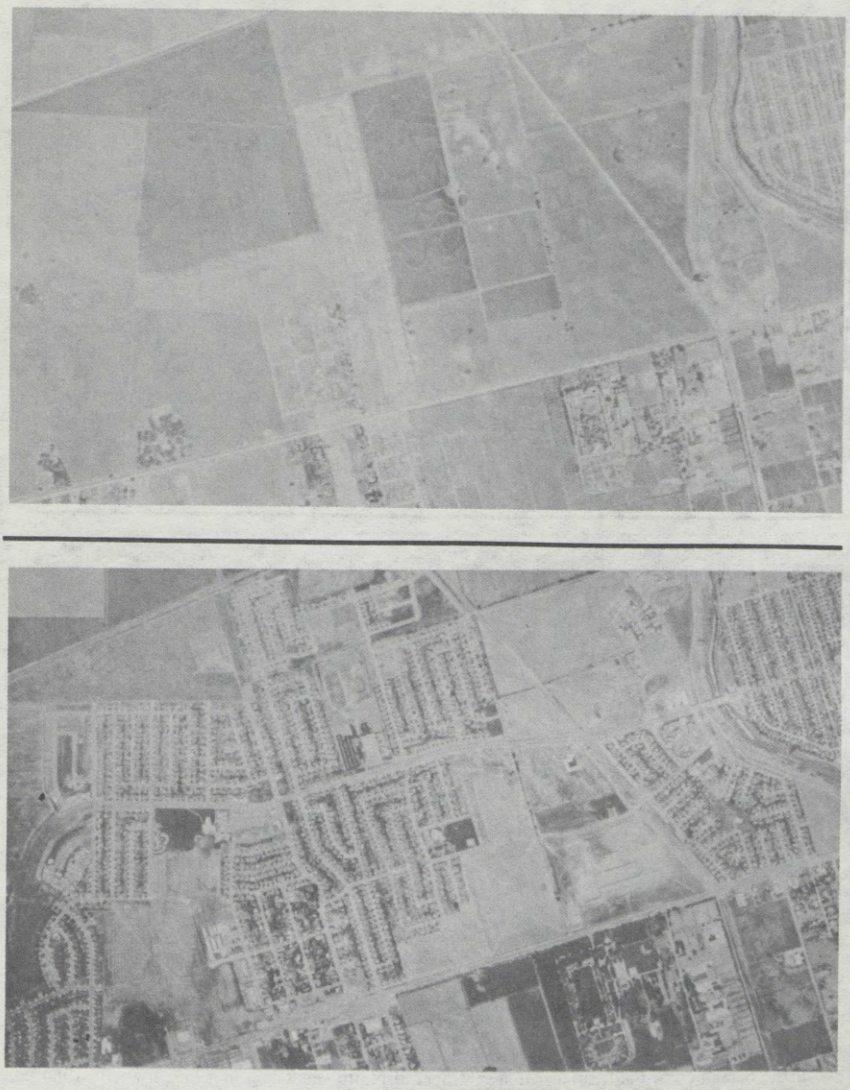


Figure 10. – Residential development on farmland around a small city is illustrated by these airphotos of Stockton in San Joaquin County, Calif. The upper picture was taken in 1952; the lower in 1963. Scale 1:20,000.

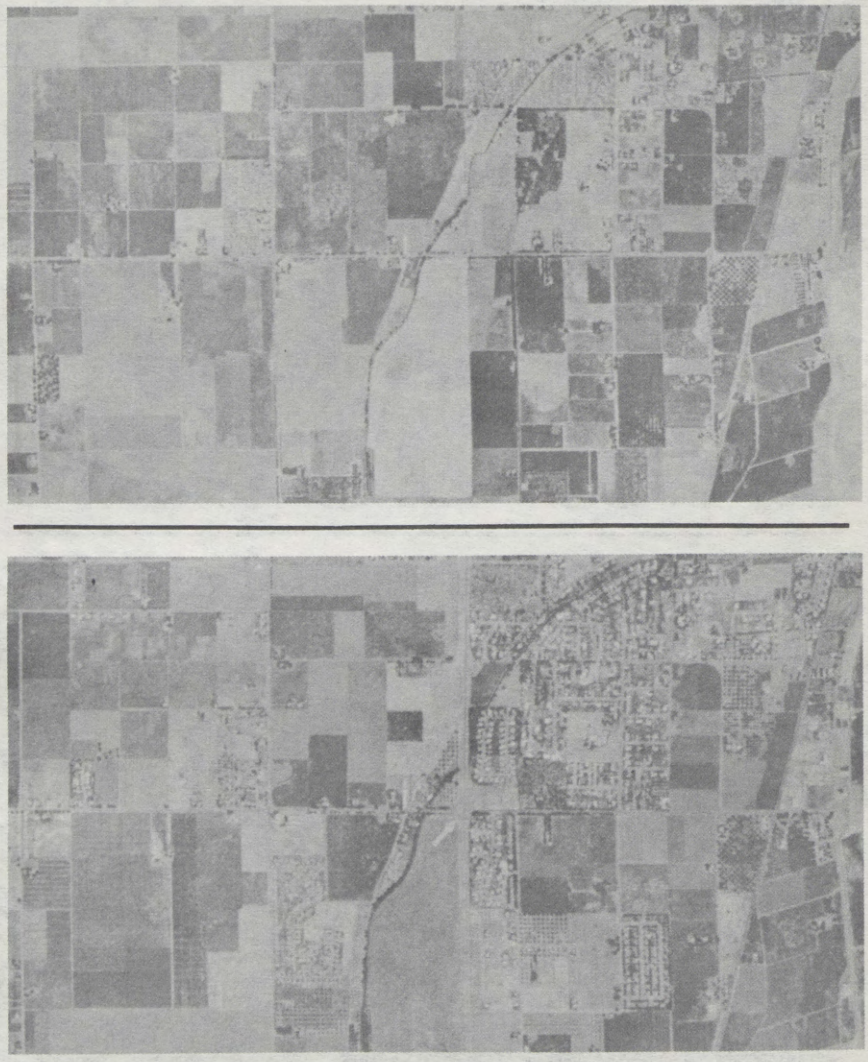


Figure 11. – Urban development on orchards and cropland around a small city, Yuba City, in Sutter County, Calif. The upper airphoto was taken in 1952 and the lower in 1964. Note the separate developed areas on either side of the arrow in the 1964 airphoto. Scale 1:20,000.



Figure 12. – Residential and commercial development on good farmland adjacent to Montrose in Montrose County, Colo. The upper airphoto was taken in 1954, the lower one in 1960. Scale 1:20,000.

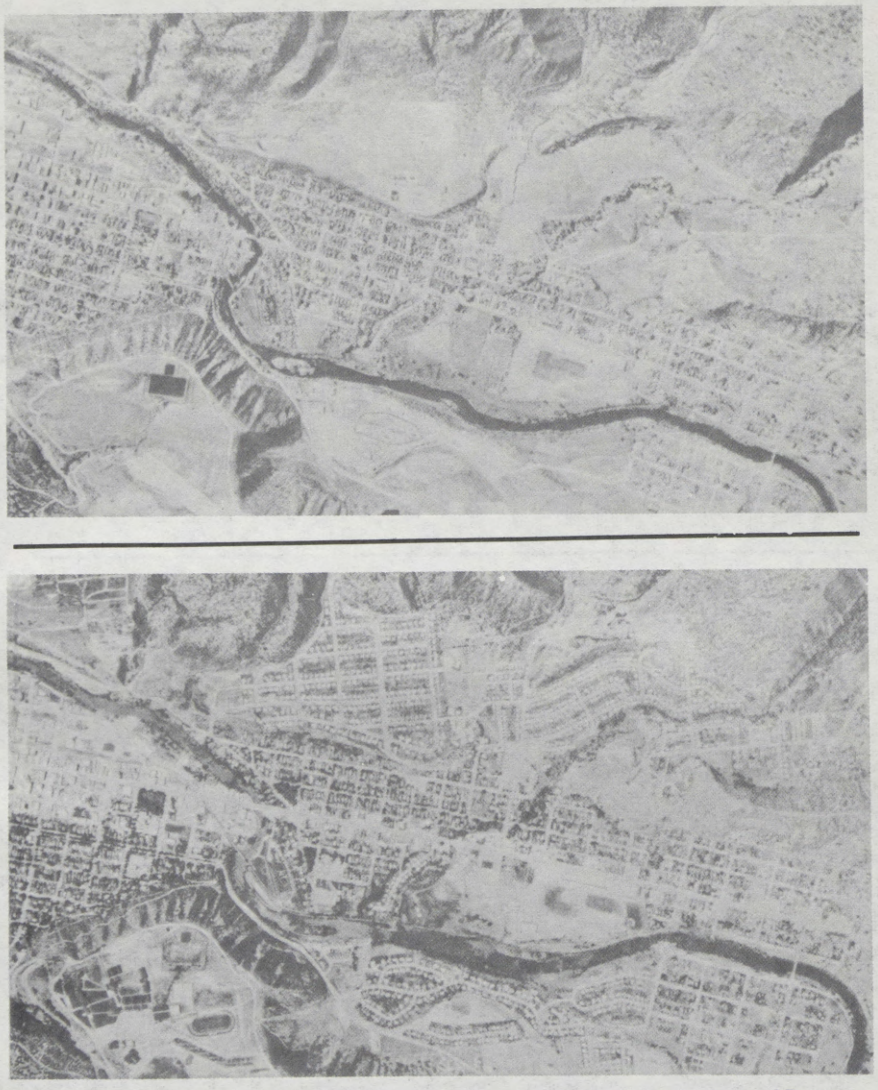


Figure 13. – Residential and institutional development on cropland and rangeland around Durango in La Plata County, Colo. The upper airphoto was taken in 1950, the lower one in 1966. Scale 1:20,000.



Figure 14. – Residential development on irrigated cropland and orchards, and dry rangeland around Farmington in San Juan County, N. Mex. The upper airphoto was taken in 1950, the lower in 1962. Scale 1:20,000. (Second photo by Soil Conservation Service, USDA.)

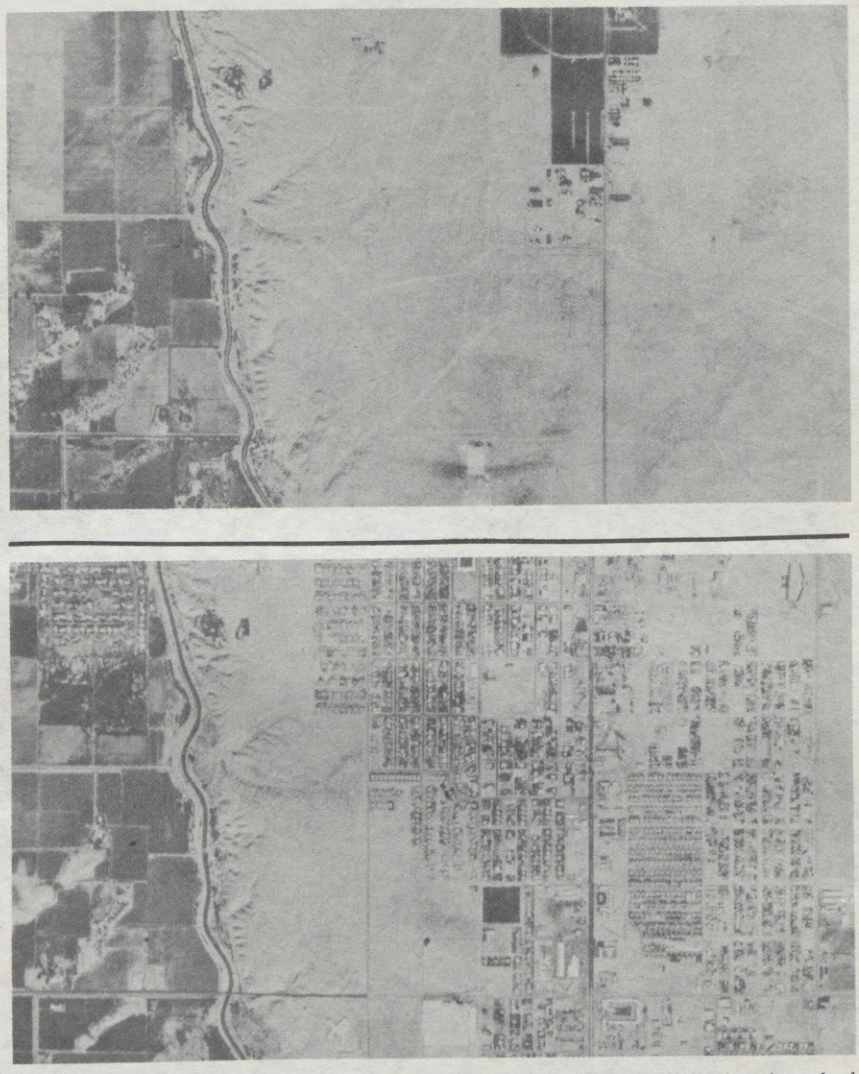


Figure 15. – Residential and commercial development on dry rangeland and irrigated cropland around Yuma in Yuma County, Ariz. The upper airphoto was taken in 1946, the lower in 1958. Scale 1:20,000.

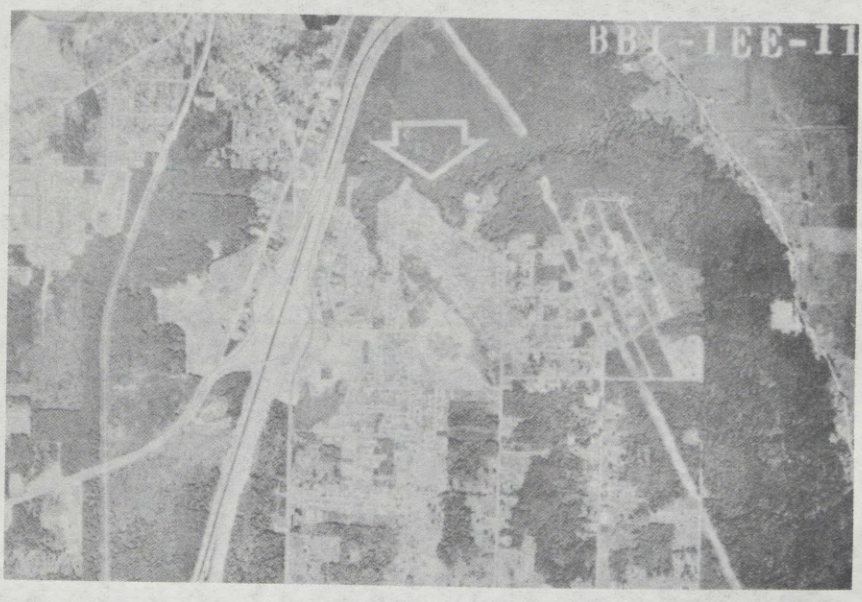


Figure 16. – Urban development on forestland is typical of the Seattle suburban area. The arrow at the top of the airphoto taken in 1964 points out recently constructed open residential development on forestland. Scale 1:20,000.

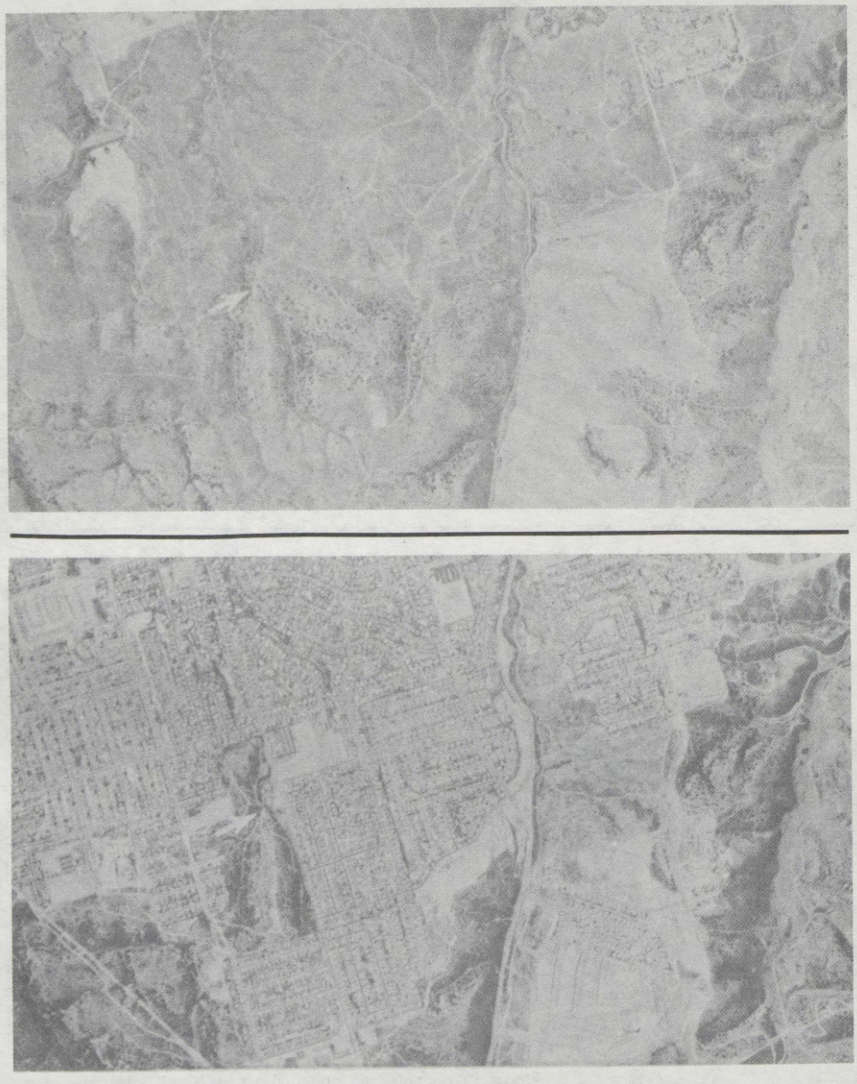


Figure 17. – Dense residential development on range and pastureland in the San Diego, Calif., suburban area. Upper airphoto taken in 1953; lower in 1964. Arrows indicate the same points on both photographs. Scale 1:20,000.

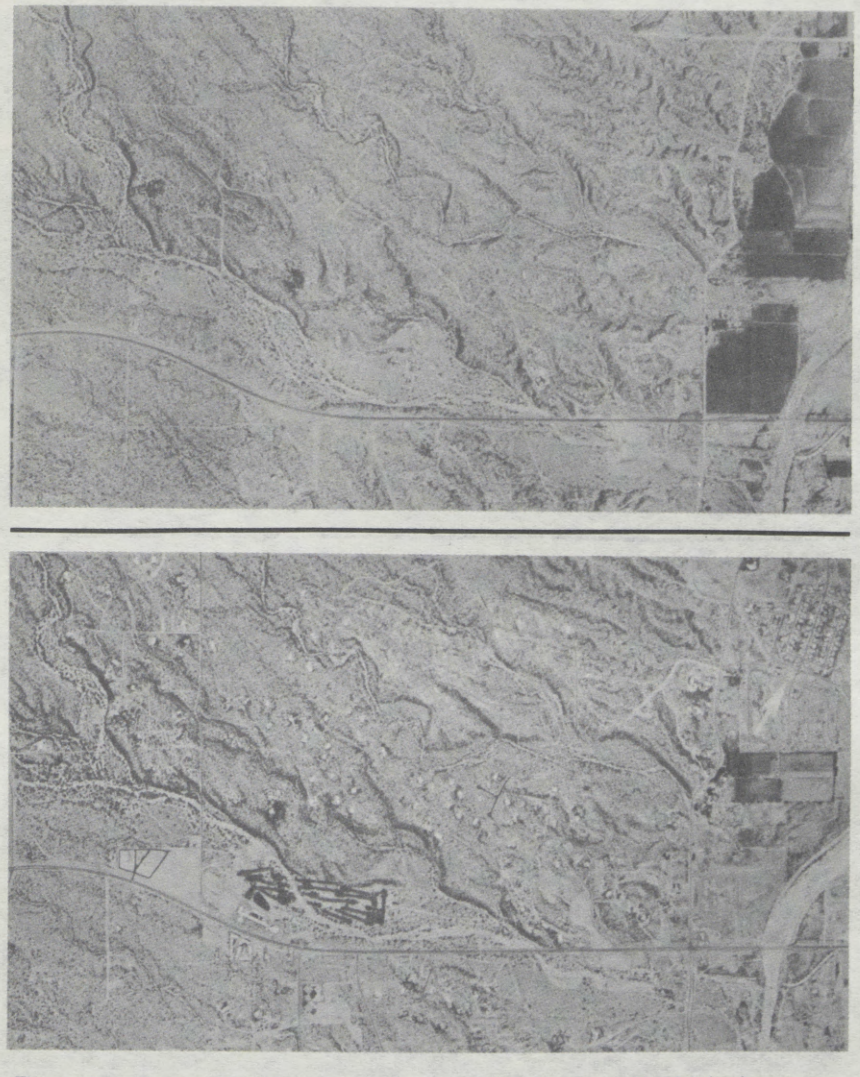


Figure 18. – Open residential development on grassland and dense residential development on cropland (see arrow) are shown on this airphoto of Tucson in Pima County, Ariz. The upper airphoto was taken in 1954, the lower one in 1964. Scale 1:20,000.

APPENDIX

Shifts of land to urban uses, by State and county, for periods of airphoto coverage

State and county	Period of airphoto coverage	Amount of land shifted	Average annual shift
		Acres	Acres
Arizona:			
Maricopa	1949-64	60,120	4,010
Pima	1954-64	6,420	640
Yuma	1941-58	3,170	185
California:			
Alameda	1950-59	9,320	1,035
Contra Costa	1950-59	7,645	845
Fresno	1950-61	10,490	1,050
Imperial	1953-65	720	60
Kern	1952-61	4,510	500
Los Angeles	1954-64	61,425	6,145
Merced	1950-61	1,405	125
Monterey	1949-64	2,105	140
Orange	1953-64	54,805	4,985
Riverside	1954-64	16,850	1,685
Sacramento	1953-64	21,610	1,920
San Bernardino	1953-59	57,750	9,625
San Diego	1953-64	41,220	3,750
San Joaquin	1952-63	3,765	340
San Mateo	1956-64	1,615	200
Santa Barbara	1954-61	4,290	610
Santa Clara	1950-63	33,150	2,550
Santa Cruz	1956-63	450	65
Solano	1952-64	4,550	380
Sonoma	1953-65	6,660	555
Stanislaus	1950-63	6,245	480
Sutter	1952-64	1,035	85
Tulare	1952-61	1,400	155
Ventura	1954-65	17,205	1,565
Yolo	1953-64	2,260	205
Yuba	1952-64	1,765	145
Colorado:			
La Plata	1950-66	1,005	65
Mesa	1954-62	990	125
Montezuma	1954-66	965	80
Montrose	1954-60	640	105

Shifts of land to urban uses, by State and county, for periods of airphoto coverage—Continued

State and county	Period of airphoto coverage	Amount of land shifted	Average annual shift
		Acres	Acres
Idaho:			
Ada	1949-64	5,635	375
Bannock	1949-64	3,220	215
Bonneville	1952-66	2,860	205
Montana:			
Missoula	1955-64	1,910	215
New Mexico:			
San Juan	1950-62	4,070	340
Oregon:			
Clackamas	1948-63	5,910	395
Lane	1952-60	1,860	230
Linn	1948-63	1,909	125
Marion	1948-63	8,320	555
Multnomah	1948-63	7,365	490
Washington	1948-63	10,735	720
Washington:			
Clark	1948-60	2,600	215
King	1954-64	11,495	1,140
Snohomish	1954-64	2,710	270
Spokane	1951-57	3,655	610
Yakima	1949-59	1,110	110

Major Uses of Land and Water in the United States With Special Reference to Agriculture Summary for 1964

(U.S. Department of Agriculture, Economic Research Service, Agricultural Economic Report No. 149)

PREFACE

This report continues the series on the major uses of land and water in the United States published at 5-year intervals by the Economic Research Service and its predecessor agencies. As in earlier publications in the series, this one brings together data from many sources to form a summary account of the extent and distribution of land used for crops, pasture and range, forest, and other purposes. Acreages irrigated and dry-farmed, acreages drained, and other information on water-use practices are also included, since land and water uses are closely related in agriculture.

Among the chief sources of data used are reports and records of the following: The Bureau of the Census, U.S. Department of Commerce; The Economic Research Service, Forest Service, Statistical Reporting Service, and Agricultural Stabilization and Conservation Service, all of USDA; and the Bureau of Land Management and the Geological Survey, U.S. Department of the Interior. Numerous other Federal and State agencies also contributed data needed to complete the land- and water-use profile of the country. The summary is based chiefly on the 1964 Census of Agriculture, but more recent information on cropland was available and was incorporated in the secton on cropland.

Although data from the various sources were classified with the objective of maintaining comparability with estimates presented in previous reports of the series, this objective was not always attained. Comparabiilty of estimates is affected by the sources, purposes, and consequently, the characteristics of the available data, which vary significantly over time. For example, data on major land uses from the Conservation Needs Inventory were used in 1959, but data required to maintain strict comparability were not available from this source in 1964. It is believed, however, that estimates in this report and those of earlier reports are reasonably comparable at the national level and generally comparable at the regional level. In some instances, the State-by-State estimates are less reliable. The reader should also keep in mind that the available data on major land uses do not fully convey the highly dispersed pattern of uses, the innumerable relationships between uses, or the wide variation in land quality and intensity of use, particularly in relatively small areas.

Concerning water use, the Water Resources Council's *National Assessment of Water and Related Land Resources* also describes current and projected agricultural water uses. In addition, it presents a much more detailed account of water uses in areas outside of agriculture than does this publication, which has special reference to agriculture. Information provided in the *National Assessment* includes an inventory of both withdrawal and nonwithdrawal uses in the 17 major water resources of the contiguous States, as well as Alaska, Hawaii, and Puerto Rico. Problems concerning water supply, water quality control, drainage, irrigation and flood protection are covered at the national level. The base year for the *National Assessment* is 1965 and the projections apply to 1980, 2000, and 2020.

It is not possible here to give adequate recognition to all State and Federal workers who aided significantly in this study. The agencies and references cited indicate to a limited extent the sources consulted. The authors would be remiss, however, if they did not acknowledge the contribution of Hugh H. Wooten, formerly Leader of Land Use Investigations in the Economic Research Service and predecessor agencies and senior author of several reports in this series. He has already performed such difficult tasks as identifying sources of information, developing methods, and solving fundamental problems associated with reconciling conflicting data. Although retired, his guidance and counsel were frequently sought as the study progressed, and his response was always gracious and helpful.

Statistics were not always kept for all 50 States. In this report, "United States" means all 50 States; where applicable, "48 States" means the 48 contiguous States.

SUMMARY

Nearly three-fifths of the land area of the United States is used to produce crops and livestock. More than one-fifth is ungrazed forest land; less than 3 percent is in urban and related intensive uses. Areas designated primarily for parks, recreational or wildlife refuges, and various public installations and facilities account for about 5 percent. The rest—12 percent—is mainly desert, swamp, tundra, and other land of limited surface use.

One-fifth of the land area is classified as cropland, but not all is used for crops each year. In 1964, the acreage used for crop production totaled 335 million acres, or 75 percent of the cropland base. The total includes 292 million acres from which crops were harvested, 6 million acres on which crops failed, and 37 million acres of cultivated summer fallow. Of the acreage harvested, 31 million were irrigated. The acreage used for crops was 23 million fewer than in 1949 and 45 million fewer than a decade earlier.

Livestock grazed on 922 million acres in 1964, or 41 percent of the land; some of this land is also used for other purposes. About 640 million acres of grassland and other nonforested areas are used primarily for grazing. The remainder consisted of 57 million acres (in 1964) of cropland used only for pasture and 225 million acres of forest land grazed. The total acreage grazed was 22 million acres less in 1964 than in 1959, due mainly to a decrease in the acreage of forest land grazed. About one-third of the feed for livestock comes from pasture and grazing land.

Including acreage used for multiple purposes, one-third of the area of the United States is forested. The size of the area has not greatly changed in recent years, but important changes in the relative proportions of forest and other major uses have occurred at regional and local levels. Reversion of cropland and pasture to forest continues in many commercial forest areas of the East and South, offset only partially by the expansion of urban and other special uses on forest land in these regions. In contrast, land clearing for pasture improvement has made substantial inroads on the noncommerical forest acreage of the West.

Special uses of land, exclusive of those classified as agricultural, occupy 164 million acres and continue to increase in importance as the Nation's population grows. One-third of the special use acreage is in urban and transportation uses. The rest is in parks and wildlife refuges, national defense and military reservation areas, flood control, and other generally extensive public uses. An additional 9 million acres, classified as agricultural, are in farmsteads and farm roads and lanes.

Each year about 1 million additional acres are occupied by urban places, transportation areas, artificial reservoirs, and miscellaneous other intensive uses. Much of the land shifting to intensive special uses is cropland, but the total includes grassland, forest land, and wasteland as well.

During 1959–64, the area in extensive public facilities, such as parks, wildlife refuges, national defense holdings, and Federal flood-control lands, increased almost 15 million acres—an average of 3 million acres annually. However, more than 10 million of the increase is attributable to the establishment of wildlife refuges on public domain land in Alaska. Apart from this unusual increase, land shifted to extensive special uses at an average annual rate approaching 1 million acres.

Three-fifths of the land area of the United States is in private ownership and two-fifths is owned by Federal, State, and local governments. More than 99 percent of the cropland, 70 percent of the grassland pasture, and 56 percent of the forest land are in private ownership. Large acreages of grassland and forest land and a large proportion of the area in special and miscellaneous uses are publicly owned.

Concerning water resources, the 48-State annual renewable supply of 30 inches of average precipitation is equivalent to about 4.50 billion acre-feet, or 402 billion gallons per day over an average year. About 70 percent (3.15 billion acre-feet) of the precipitation is consumed in place to support forest, range, and other vegetation, including nonirrigated farmland. The balance of 30 percent (1.35 billion acre-feet) is runoff or streamflow, supporting such nonwithdrawal uses as power generation, waste dilution, navigation, and recreation. It can be withdrawn along the way for various municipal, industrial, or agricultural purposes and then returned, to the extent it is not consumed in these processes.

Water consumption is then a measure of net depletion of streamflow and ground water. About 304 million acre-feet of streamflow and ground water were withdrawn for all purposes in 1965. Roughly 30 percent (87 million acre-feet) was consumed in the sense of not being available for withdrawal again. Agricultural irrigation accounted for 41.4 percent of all withdrawals but, because of a high

rate of consumptive use (60 percent), represented 82.7 percent of the total consumption or net depletion. This consumption occurred on about 37.8 million acres of irrigated farmland in 1965, of which 34.9 million acres were concentrated in the western mainland regions or States. There were about 2.7 million acres of irrigated farmland in the eastern regions in 1965 and around 150,000 acres in Hawaii. Irrigated farmland has been increasing annually 8.51 percent in the East, 1.78 percent in the West, and 1.18 percent in Hawaii. The national rate of increase in irrigated farmland is 1.85 percent.

Major Uses of Land and Water in the United States With Special Reference to Agriculture Summary for 1964

(By H. Thomas Frey, Geographer, Orville E. Krause, Agricultural Economist, and Clifford Dickason, Agricultural Economist, Natural Resource Economics Division, Economic Research Service)

THE COUNTRY AS A WHOLE

In this publication, the available statistics on the major uses of land and water have been summarized for one point in time. By comparison with similar studies for previous periods, significant changes and trends in use also have been documented. The findings are presented briefly at the national level of aggregation and then treated in more detail at the regional level. State-by-State acreage for each major use are shown in the appendix tables.

The dynamic processes of land and water utilization continually change the landscape of America. When European explorers and colonists first arrived in what is now the United States, the natural cover of vegetation, undisturbed by use in the economic sense, consisted of approximately one-half forest, one-third grass, and the rest desert shrub and tundra. During the centuries that followed, settlers progressively occupied, in varying degree, all but the most inhospitable areas. In establishing homes and means of livelihood, they cleared forests for crops, pastures, building sites, and timber products; converted grassland to cultivated fields; created cities, roads, and railroads; and developed and altered the distribution of water resources. As the population increased, the intensity of land and water use also increased. Changes in demand for particular products were accompanied by changes in the use of land and water resources. Now, after three centuries of settlement and development, one-fifth of the land area is used for crops and one-twelfth is in various special uses such as cities, roads, and parks. These uses have grown primarly at the expense of forested and natural grassland areas, although irrigated crops and most specal uses, such as parks and urban areas, have made inroads on the acreages of arid and other normally low-value land. Despite these decreases, acreages of grassland, forest, and miscellaneous other land remain large.

TABLE 1.—MAJOR USES OF LAND, UNITED STATES, 1964

Land use	Acreage (in millions)	Percentage of total
Cropland, including land in rotation	444	19.6
Grassland pasture and range [1]	640	28.3
Forest land [2]	732	32.3
Special uses [3]	173	7.6
Miscellaneous other land [4]	277	12.2
Total land area [5]	2,266	100.0

[1] Exlcudes cropland used only for pasture.
[2] Excludes 30,000,000 acres in special uses.
[3] Urban and transportation area, areas used for recreation and wildlife purposes, public installations and facilities, farmsteads, and farm roads.
[4] Marshes, open swamps, bare rock areas, desert, tundra, and other land generally having low value for agriculture purposes.
[5] Includes streams and canals less then ⅛ mile wide; and ponds, lakes, and reservoirs less than 40 acres in area.

The U.S. land area totals approximately 2,266 million acres.[1] The distribution among uses of this acreage is shown in table 1 and figure 1.

[1] Includes all dry land temporarily or partially covered with water, such as marshland, swamps, and river flood plains; streams, sloughs, estuaries, and canals less than ⅛ mile wide; and lakes, reservoirs, and ponds less than 40 acres in area. Data supplied by the U.S. Bureau of the Census.

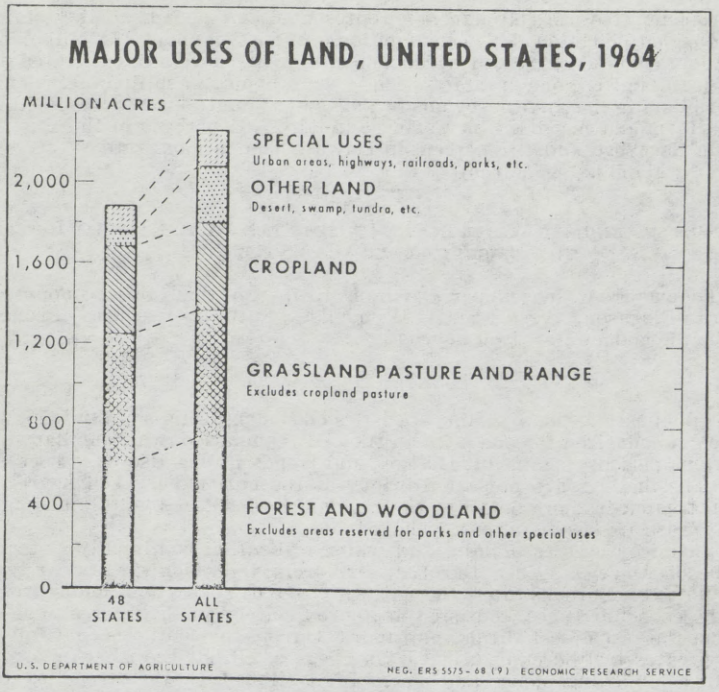


Figure 1

Agricultural Land Uses

Land used for agricultural purposes totals 1,318 million acres, or 58 percent of the land area (table 2). This total includes cropland, grassland pasture and range, forested pasture and range, and areas occupied by farmsteads and farm roads and lanes. It does not include ungrazed forest land or areas with no reported use, even though these types of area often occur near or are otherwise associated with land used for crop and livestock production. If forest land not grazed is included, the total used for agricultural purposes is 81 percent.

Approximately 78 percent of the land in agricultural use is in farms, although only 49 percent of the total land area of the country is in farms (table 3). All of the cropland and the most productive pasture are in farms. Substantial acreages of forest land, both grazed and ungrazed, are counted as being in farms, but much of the forest land, including some large tracts owned or managed by farm operators but associated only loosely with agricultural operations, is not enumerated as land in farms. Similarly, a large proportion of land in the special and miscellaneous use category is outside farm boundaries.

Agricultural land not in farms totals 293 million acres and consists entirely of grazing land including grassland, brush-browse, and forested grazing land. A large proportion is federally owned, mainly in grazing districts and National Forest system range allotments. Privately owned grazing land not in farms is predominantly forest land, frequently in large tracts. Grazing land not in farms is usually located near farm areas and associated with them in terms of operation and management.

Nonagricultural Land Uses

Forest land exclusive of the acreage grazed or reserved for parks and other special uses totals 507 million acres. However, one-third of the total land area—762 million acres—is forest land. About two-thirds of this larger acreage is classified as commercial forest by the U.S. Forest Service. The remainder is classified as noncommercial because of low productivity or, in the case of some public lands, because of legal reservation for recreation and other nontimber uses. Both commercial and noncommercial forest land characteristically provide watershed and wildlife protection and as noted above, many areas provide recreational opportunities and forage for livestock as well.

TABLE 2.—AGRICULTURAL AND NONAGRICULTURAL USES OF LAND, UNITED STATES, 1964

Major land use	Acreage (million acres)	Percentage of total
Agricultural:		
Cropland	444	19.6
Cropland used for crops [1]	(335)	(14.8)
Soil improvement crops and idle cropland	(52)	(2.3)
Cropland used only for pasture	(57)	(2.5)
Grassland pasture and range [2]	640	28.3
Forest land grazed	225	9.9
Farmsteads, farm roads	9	.4
Total, agricultural land	1,318	58.2
Nonagricultural:		
Forest land not grazed [3]	507	22.4
Special uses	164	7.2
Urban and other built-up areas [4]	(55)	(2.4)
Primarily for recreation parks and wildlife [5]	(76)	(3.4)
Public installations and facilities [6]	(33)	(1.5)
Miscellaneous land [7]	277	12.2
Total, nonagricultural land	948	41.8
Total land area	2,266	100.0

[1] Cropland harvested, crop failure, and cultivated summer fallow.
[2] Excludes cropland used only for pasture.
[3] Excludes 28,000,000 acres of reserved forest land and 2,000,000 acres of unreserved forest land duplicated mainly in parks and other special-use areas. It was not feasible to eliminate some overlap that exists because of multiple use.
[4] Urban and town areas; highway, road, and railroad rights-of-way; and airports.
[5] National and State parks and related recreational areas, National and State wildlife refuges, and national forest wilderness and primitive areas.
[6] National defense (including military reservations and other land administered by Department of Defense), Federal flood control, Federal industrial (AEC land, etc.), and State institutional areas.
[7] Marshes, open swamps, bare rock areas, deserts, tundra, and other land generally having low value for agricultural purposes.

TABLE 3.—MAJOR USES OF LAND IN FARMS AND NOT IN FARMS, UNITED STATES, 1964

[Acreage in millions]

Major use	Land in farms		Land not in farms		Total acreage
	Acreage	Percentage of total	Acreage	Percentage of total	
Agricultural uses of land:					
Cropland	444	100			444
Grassland pasture and range	490	77	150	23	640
Woodland grazed	82	36	143	64	225
Farmsteads, farm roads	9	100			9
Total agricultural land	1,025	78	293	22	1,318
Nonagricultural land:					
Forest land not grazed	64	13	443	87	507
Special uses			164	100	164
Other land	21	8	256	92	277
Total nonagricultural land	85	9	863	91	948
Total land area	1,110	49	1,156	51	2,266

Special uses, exclusive of those classified as agricultural, now occupy 164 million acres of land and continue to increase in importance as the Nation's population increases. Some of the special uses are intensive while others are extensive. One-third of the acreage is in urban and transportation areas which generally compete more directly with cropland than do other special uses. The rest is in parks, wildlife areas, national defense areas, and other generally extensive uses.

Approximately 12 percent of the Nation's land area consists of marshes, bare rocks, deserts, and tundra. Although now virtually worthless for agricultural purposes, these areas may have value for minerals, wildlife, and other purposes. About 213 million acres in this miscellaneous category is Alaskan tundra.

Trends in Major Land Uses

Recent changes in the use of land, for the most part, have followed trends established in the 1950's or earlier (table 4). Between 1959 and 1964, the total cropland acreage decreased from 458 to 444 million acres, some 3 percent. Cropland used for crops, mainly as a result of acreage diversion programs, declined even more rapidly—from 358 to 335 million acres. The acreage of permanent grassland pasture and range increased 7 million acres. This increase is associated with a continuing movement of land from crop to pasture use and to land clearing and reclassification activities. Among the nonagricultural uses, the total acreage of forest land decreased 15 million acres, due largely to reclassification in Alaska but land in special uses increased sharply. Trends in major land uses are summarized in figures 2 and 3.

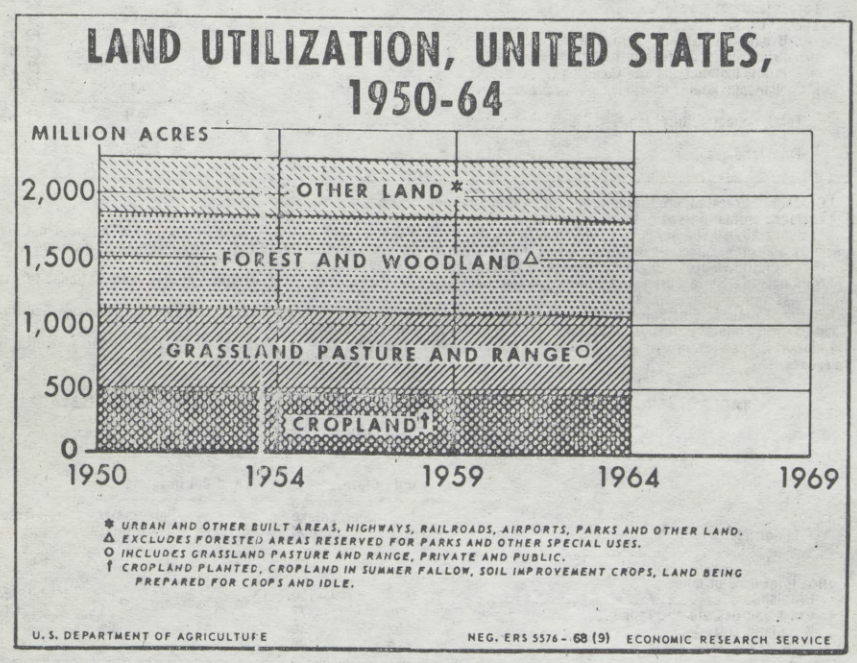


Figure 2

TABLE 4.—TRENDS IN MAJOR USES OF LAND, UNITED STATES, 1950–64

[In millions of acres]

Land use	1950	1954	1959	1964
Cropland [1]	478	466	458	444
Grassland pasture and range [2]	632	634	633	640
Forest land [3]	740	745	747	732
(grazed)	(319)	(301)	(245)	(225)
Special areas [4]	138	143	157	173
Miscellaneous other land [5]	285	285	276	277
Total [6]	2,273	2,273	2,271	2,266

[1] Cropland harvested, crop failure, cropland idle or fallow, and cropland used only for pasture. Cropland and pasture acreages for 1950 relate to the previous year.

[2] Grassland and other nonforested pasture and range.

[3] Exclusive of forest land in parks, wildlife refuges, and other special-use areas.

[4] Includes such uses as urban areas, highways and roads, parks, wildlife areas, military reservations, and farmsteads.

[5] Includes deserts, swamps, bare rock, tundra, and similar areas generally having low value for agricultural purposes.

[6] Decreases in the land area mainly represent increases in the water area of artificial reservoirs. Changes in methods of area measurement used by the Bureau of the Census together with revisions for Alaska also account for much of the decrease after 1959.

WATER SUPPLY AND USE

Precipitation in the 48 States averages 30 inches annually—the equivalent of 4,700 million acre-feet per year. In the 48 States, approximately 70 percent of precipitation reaching the ground is returned to the atmosphere through evaporation and transpiration. Part of the moisture returned by transpiration is first used productively by commercial crops. The remaining 30 percent of precipitation constitutes the natural runoff, amounting to an average of about 1,350 million acre-feet per year. A substantial fraction of this runoff is available for irrigation and other uses. In addition, large reservoirs of ground water can be tapped and used. In 1965, 347 million acre-feet of water were withdrawn from surface and ground sources for all uses, including 130 million acre-feet for crop irrigation.

The geographic distribution or runoff in the 48 States is uneven—some areas have much precipitation and runoff, while others have little. Yearly precipitation and runoff also vary widely in some regions. The greatest variability is found in the North Central and Southwestern portions of the Nation. The adverse effects of droughts are particularly felt in areas using a high proportion of the available water supply each year.

CHARACTERISTICS AND DISTRIBUTION OF MAJOR LAND USES

Land used primarily for agricultural production (cropland and nonforested grazing land) accounts for nearly half of the Nation's land area. Forest land accounts for about one-third and other land one-fifth, but the proportions vary greatly across the country. Variations in physical conditions account for many of the differences, particularly among agricultural and forestry uses. Large portions of some regions are suitable only for grazing and other extensive uses. Physical conditions on a high proportion of the area in other regions permit a choice between crops, pasture, and forestry, with the most profitable usually predominating (table 5, fig. 4). Throughout all regions, of course, physical conditions affect such characteristics as specific vegetative composition and yields, as well as the relative proportions of area in most uses. The influence of such variables as ownership characteristics, management practices, and location relative to other economic activities is also discernible in the use pattern.

TABLE 5.—MAJOR USES OF LAND BY REGIONS, UNITED STATES, 1964

[In thousands of acres]

Regions	Cropland [1]		Pasture and range [2]		Forest land [3]		Other land [4]		Approximate land area [5]	
	Acreage	Percent of total	Acreage	Percent of total	Acreage	Percent of total	Acreage	Percent of total	Acreage	Percent of total
Northeast	19,173	17	7,110	6	66,637	60	19,303	17	112,223	100
Lake States	44,970	37	8,485	7	53,417	44	15,094	12	121,966	100
Corn Belt	94,750	57	20,335	12	30,407	19	19,737	12	165,229	100
Northern Plans	98,843	51	80,675	41	4,244	2	10,679	6	194,441	100
Appalachian	28,883	23	10,778	9	73,021	59	11,493	9	124,175	100
Southeast	18,880	15	12,564	10	78,992	64	13,381	11	123,817	100
Delta States	20,238	22	9,433	10	54,624	59	8,305	9	92,600	100
Southern Plains	49,446	23	118,378	56	33,071	16	11,556	5	212,451	100
Mountain	43,167	8	314,399	57	127,591	23	63,088	12	548,245	100
Pacific	25,451	12	54,307	27	89,819	44	34,845	17	204,422	100
48 States	443,801	23	636,464	34	611,823	32	207,481	11	1,893,569	100
Alaska	24	([6])	2,772	1	118,156	32	241,565	67	362,517	100
Hawaii	371	9	1,203	29	1,796	43	817	19	4,187	100
U.S. total	444,196	20	640,439	28	731,775	32	449,863	20	2,266,273	100

[1] Includes cropland harvested, idle, and used only for pasture; crop failure, cultivated summer fallow, and soil-improvement crops.

[2] Includes open permanent pasture in farms and grassland range not in farms.

[3] Total forest land area as reported by the U.S. Forest Service, preliminary table, September 1967, excluding reserved woodland and forest areas in National and State parks and other special use areas. Because of multiple use, some overlaps occur in acreages between forest land, special use, and other areas that were not feasible to eliminate.

[4] Includes cities and towns of 1,000 or more population, highway and railroad rights-of-way, airports, National and State parks, wildlife refuges, wilderness areas, national defense lands, Federal flood-control areas, farmsteads, feedlots, ditches, farm roads and lanes, swamps, bare rock, deserts, and tundra.

[5] Remeasurement after the 1960 census showed land area of 1,900,000,000 acres for the 48 contiguous States, and 2,266,000,000 acres for the Nation.

[6] Less than 0.5 percent.

[From *Landscape Architecture*, January 1970]

What Goes Where?: Landscape Resource Analysis—The State of the Art

(By Carl Steinitz)

There has been a sharp increase in the development of landscape resource analytic methods in recent years. Several methods have been published in scholarly and professional journals. Several have been the basis of many regional plans, new-town proposals, and watershed development plans.

"Landscape resource analysis," in fact, has become a requisite among an increasing number of government officials, developers, and agencies. Consequently now is an opportune time to ask: how effective are these methods? How do they compare?

It is clear from a study, made by our research group during 1968–9, that much good work goes on. But it is equally clear that there is a lack of documentation in the field. Consequently, we have selected the landscape analytic work of 15 individuals and groups, abstracted the logic of each approach, and have applied it[1] to the common base of a computer data bank which describes the Boston Region Southwest Sector. We have used data-management and computer techniques developed by the authors at Harvard University.

The question we raise, and seek to answer, is: How well does each method work when applied to the same piece of New England landscape, and to information available about that landscape? So far as we can ascertain, such a problem has not before been raised, much less answered.

These 15 methods[2] represent the state-of-the-art of landscape analysis. We do not discuss Method 16—the common practice of "consulting the old-timers in the neighborhood." While we respect the old-timers' expertise, one cannot readily teach it or transmit it.

In order of increasing complexity, the 15 methods fall into these categories:

Resource inventory.
Resource-centered analysis.
Analysis linked with demand studies.
Single-sector models which predict the effect of change.
Simulation models which can interact with other models in a general planning system.

Their subject-matter, or content, varies. Three are classifications of soil types (Hills, Soil Conservation Service, Christian);* four are broad analyses of potential land uses (Chester County, Lewis, McHarg, Toth); five are studies of open space and recreational land use (RECSYS, PARIS Allison and Leighton, Williams, Dearinger), and two (Litton, Zube) deal directly not with land use but with its visual impact.*

Of all methods examined, the California and Michigan studies are the best examples of the prediction-oriented analystic style. The Michigan study is the only one of the group in which the question, "What if . . .?" can be applied to certain types of demand for recreational (camping and boating) resources.

In most cases, their study areas have political borders. Yet no resources are arranged in space on the basis of political borders. The Zube and Lewis studies cover multi-state regions; Lewis also analyzed one state, Wisconsin; the Chester County and Soil Conservation Service studies covered counties only; and the Toth study, a township.

Second to political areas, the watershed is the most popular unit for analysis. Thus, watershed-based studies range from the very large Upper Mississippi River Basin studied by Lewis to the smaller watersheds studied by the Dearinger group. Yet the demand—from the public, developers, or official agencies—does not stop at watershed limits. State parks on the edge of Michigan come under pressure from neighboring states. City-dwellers on the edge of Michigan go outside that state for recreation. So it is clear that an area of influence must be defined for each study area. Otherwise it becomes impossible accurately to plan for the wisest and best use of those resources.

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[1] Financed by the Corps of Engineers, the study is to be published in: Carl Steinitz, Tim Murray, David Sinton and Douglas Way. *A Comparative Study of Resource Analysis Methods*. Harvard University, Department of Landscape Architecture, 1969.

[2] R. Allison and R. Leighton; Chester County Planning Commission; C. S. Christian; J. A. Dearinger; G. A. Hills; P. H. Lewis, Jr.; R. B. Litton, Jr.; I. A. McHarg; PARIS—State of California; RECSYS—State of Michigan; Soil Conservation Service; R. E. Toth; Corps of Engineers; E. A. Williams; E. Zube; see also appendix at end of article.

*See appendix at end of article.

The studies that also analyze demand typically take this broader view. The Williams and Dearinger studies, and the RECSYS and PARIS models each recognize that demand comes from a larger area than the ultimate supply of resources to which that demand is attracted. Urban areas up to 300 miles from a resource study are typically considered in determining the area of potential demand.

The zones by which data are inventoried and analyzed vary widely as well. Several methods treat large, pre-defined areas as homogeneous in terms of the evaluated resources: Michigan considers each State Park with a single evaluation; Zube evaluates counties, and in the Dearinger study, whole subwatersheds are assumed to be uniform. Although assigning a single evaluation or description to a large area greatly simplifies the task of the analyst, he risks a non-valid assumption of homogeneity within his description.

Several methods allow spatial spread of the resources themselves to determine the data zones. These typically use the techniques of preparing overlays for each resource, each overlay being to a common scale and coming from whatever represents the best source of information. When overlaid with each other, these maps define homogeneous areas.

This technique often makes a hidden, early assumption in that the sources from which overlays are made often dichotomize the data variables. Thus, on the USGS maps, areas considered forest are green; areas not in forest are other colors. If one makes an overlay with lines drawn around forested areas, one is in fact saying that there are no forests in other areas. This and others like it are unnecessary simplifications. Data aggregation should be avoided in the inventory stage. Further, a method that uses someone else's inventory for such basic decisions limits his analysis by the quality of the inventory data he is using.

For essentially undeveloped areas, this search for a resource-based data zone of homogeneous character is perhaps adequate, as in the work of Christian, Hills and the SCS. But in a developing context, in which demand analyses must be included in planning, the sources of data on the demand side cannot coincide with a zone defined on the basis of resources. One thus finds himself in a bind in deciding which data zone to identify. On the one hand, political zones which provide much of our demand data, such as those defined in the census, are unsuitable for resource analysis; and on the other, resource defined zones which one can identify by a variety of methods are not the zones from which the sources of demand data are available. Here, depending upon the nature of the study area and the purpose of the method, one either takes his choice or, as demonstrated in our study, attempts to approximate both.

Considering the variety of purposes and scales of interest of the resource analysis methods, one notes a substantial consistency in the data sources. Basically, one suspects that the general rule is "Use the best data you can get." And in most cases these data sources are those publicly available government documents, notably the USGS and Soil Conservation Service maps, and the U.S. Census.

In many cases it would seem that the analysis method is largely governed by the data available, and that often the question of the resource analyst is, "Given the data available, how can we evaluate for X?" But analysis must not be biased by the availability of data. The fact that one has data does not necessarily mean that one needs to use them. But, if data are not available, this does not mean that analysis must be terminated. What is needed is clearer reporting, of data used and of data which were not available and therefore limited the results of the analysis.

There is, in many studies, a distinct relationship between the range of data inventoried and used and the specific purpose of the response analysis. Data inventory is a costly process. It seems that an inventory usable for a variety of analytic goals and purposes would be a more efficient and economical tool than one used for a single purpose. McHarg, the U.S. Corps of Engineers, and implicitly, Hills and Christian, are among those who advocate comprehensive data inventories for analysis rather than collection of data specific to the immediate analytic purpose.

In comparing the inventory methods, one has the curious feeling that the several investigators are looking at the same objectively measurable data and idiosyncratically interpreting them.

Topographic slope is a prime example of an objectively measureable variable used in a variety of interpretations, notably for its impact on urbanization. The cut-off point between "good" and "bad" slope for urbanization ranges anywhere

from 9 to 45 degrees. Thus it appears not to be data inventory which distinguishes a method, but interpretation of the data. This sometimes results in confusion between inventory and evaluation, evidenced in some methods which in the inventory stage introduce point rating evaluations. To the maximum possible, the inventory stage should be value-free, and rely on objective measurement. Clearly, substantial work must be done to increase the degree of objective measurement applied to variables which now must still be considered subjective evaluations.

It is in analytic methods themselves that the studies exhibit widest variation. The studies can be described in increasing orders of complexity and usefulness for planning policy and implementation. Completeness is not necessarily synonymous with quality, however.

The first order of analysis is purely descriptive. Several methods identify zones of homogeneous character but do not make qualitative or quantitative evaluations of them. It is, however, intended that these methods and their descriptions be evaluated by others for a variety of development purposes. The methods deal primarily with the supply side of natural resource analysis; the work of Christian, Hills, and the Soil Conservation Service would fall into this category. The Corps of Engineers in its general inventory procedures and the Litton and Zube studies of visual form are also essentially descriptive.

At the next order, that of evaluating resources for development purposes, several styles of analysis can be identified. Most of the methods can be considered "static" (for a given proposed use the resources are evaluated on a singular basis). Changes in the data caused by time or the intervention of man are typically not considered. Most of the investigators undoubtedly recognize that natural resource data do change, but technical means at hand do not allow them to include variables which are dynamic to their analyses. Even the Michigan RECSYS study, the most dynamic in its consideration of demand factors, essentially analyzes the resource attractiveness of the state parks in a static manner.

One analytic use of raw data which several methods employ is the rearrangement of raw data into "key elements." These, which combine and evaluate data, would seem to be a major convenience and indeed, given the manual methods that many of the studies use in map-overlaying, the consolidation of many variables into fewer is absolutely necessary.

One potential drawback of this method, however, is that in combining key elements one very often finds the same basic variable appearing many times in only slightly different guises. The analyses do not always recognize the degree to which a final cumulative measure reflects the multiple use of only a few specific variables and the singular use of others, in an implicit weighting system. A second danger of this concept is that the key elements often combine variables basically different in their manner of measurement, some of them being based on nominal descriptive scales and some on being ranking scales. Thus key elements, let alone summary evaluations, combine what are in essence apples and oranges.

Most of the static analyses define suitability of the resource base for any of a range of purposes, and in doing so, use numerical point rating systems. To apply point systems to large regions it must be recognized that explicit specification of evaluation criteria is mandatory if others are to be able to replicate the method. Variation in point rating systems clearly indicates the degree to which subjective (and seemingly arbitrary) interpretation is used in resource analysis. In analyses of very large regions (the Upper Mississippi River Basin study of Lewis and the North Atlantic Region by Zube, and in nationwide analysis, those of the Soil Conservation Service) the standardization of measures becomes less of a problem. This is so because local and more relative resource evaluations are perhaps more important to development than consistent evaluation over such very large areas. It is here that the Michigan study has a major advantage, in that, after the variables are inventoried on as objective a basis as possible, the analytic procedure itself derives the variable and their appropriate weightings which *explain* rather than define attractiveness.

The specificity of the evaluations will vary. They range from broad characterizations shown in the colored maps of McHarg and in the ratings of excellent, good, fair, and poor that several methods use; to the descriptions of suitability, capability, and feasibility, each of which is internally dichotomous, as in Hills' method; to the numerical point rating systems such as those of Allison and Leighton, Dearinger, and Lewis; to the derived formula for state park attractiveness in the Michigan study. Given the grossness and lack of specificity originally inventoried in many of the variables, one is dubious about the very precise numerical evaluations, and more comfortable with the broader characterizations.

While broader generalizations are most likely to be reliable, the resource analyst is pulled from the other side by the requirement that in order to be useful for implementation, his method must indeed rank-order the resultant evaluation. He must identify the single best area for an activity or the single worst area, and if policy and implementation do not allow the best site to be obtained, then the second, third, ninth, etc. best sites must be identified. Thus, as in many other issues, the resource analyst must make his choice between reliability and specificity. Again, obviously, the goal is to achieve both.

Some of the methods assume that evaluations of suitability can be directly translated into development policy and implementation, and do not make clear the distinction between "could" and "should." Hills' study is perhaps the most explicit, and his definitions of suitability, capability and feasibility are most useful.

In evaluating resources for development purposes, several methods, notably those of Lewis, McHarg, and Zube, often reverse the more typical suitability evaluation procedures. They evaluate resource patterns or resource areas which "shall not" be subject to unconstrained development because of natural factors detrimental to the interests of development itself. If the bias of an analytic technique is to be from the viewpoint of natural resources, it would seem that this analytic style would have many attractions. Certainly this is the area in which most resource analysts themselves can claim expertise.

A method, to be useful in planning policy, must be able to integrate demand measures. With varying degrees of expertise, several methods attempt to include demand and economic factors in their inventories and analyses. In their studies of camping and recreation, Allison and Leighton, Dearinger, and the Soil Conservation Service attempt crude measures of demand. The California and Michigan studies make estimates for recreation on a much more sophisticated basis. Toth, the Chester County planning group, and McHarg attempt measures of demand for urbanization in their rating evaluations of various sites for potential urbanization. Most of these methods assume, however, that a given quantity of demand will spatially organize itself in direct relation to the capability of the landscape resources to support such demand. Even by implication, this is an assumption often not borne out in fact. Demand as well as the resource base must be considered dynamic, and must be understood as such. And demand, probably to a greater extent than natural resources, is subject to change and even manipulation, to achieve planning goals.

Prediction would be the next order of complexity and methodological completeness, Lewis, McHarg, and Toth identify resource areas in which they are prepared to make predictions of consequences of various development policies. Thus Lewis identifies flood plain patterns, and predicts damage to urbanization should it occur here. Similarly, McHarg makes generalizations about increased air and water pollution in areas of industrial development. Given the level of scientific expertise and applied ecological knowledge, and the meager financial resources often available to the investigators, these broad generalizations are perhaps the most appropriate ones which can be made. Certainly the level of technical sophistication employed in these resource analysis methods to predict ecological and other damage to the natural environment is not at the same level as that of many recent engineering studies of water pollution and air pollution.

The highest order of predictive analysis that we have investigated is illustrated by the California and Michigan studies. These models were designed for predicting (specifically, quantitatively, and by implication, qualitatively) the impact on the recreational experience of changes in either the condition of the resources themselves, the characteristics of population demand, and the linkage system as represented by the transportation networks. The Michigan study, as a computer-based simulation model, is the only method we have investigated in which the question "What if . . ." can be applied, albeit to the single sectors of camping and boating. As an analytic style, it is most attractive and it is perhaps one of the few studies which will receive more attention than simply being noted, rolled up, put on the shelf, and forgotten.[3]

One aspect in which comparisons of these studies were not possible and perhaps is most crucial, is that of cost and efficiency. For various reasons, most of

[3] An attempt at developing a predictive analysis method was made by Carl Steinitz, Peter Rogers, and others, in *A Simulation Model of Urbanization and Change*, Cambridge, Harvard Graduate School of Design, 1968 [$5.50]. This model links a variety of resource evaluation models with several allocation models, representing various types of urbanization pressures on the developing Boston Region Southwest Sector.

them obvious, the dollar and manpower costs of resource-analysis studies are never stated in documentation. These surely must vary greatly. One hesitates to apply criteria of cost effectiveness to the obvious "good" of natural resource evaluation, but it is an important factor to be considered, particularly by the public or private client.

Finally, we cannot forget public relations. It is probably true that one goal of resource analysis, and particularly of its predictive aspects, is quite literally to frighten people into caring about environmental quality. Unless the public is made aware of the value of its resources, efforts to save them or even to improve on them cannot come about. The importance of those involved in public persuasion cannot be underestimated.

We frankly feel that the field of landscape resource analysis is wide open and that the combination of an increasing public awareness, an input of more and new talent, and a revolution in data handling will surely lead to new ideas and methods. We must welcome these.

Appendix

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[From the Record of the Association of the Bar of the City of New York, 25, Jan. 1970]

Power For Tomorrow: The Siting Dilemma

(By Charles F. Luce)

Writing in the November 1969 issue of *Fortune* on the subject. "A Peak Load of Trouble for the Utilities," author Jeremy Main concludes his article by posing a dilemma:

"Americans do not seem to be willing to let the utilities continue devouring these ever increasing quantities of water, air, and land. And yet clearly they also are not now willing to contemplate doing without all the electricity they want. These two wishes are incompatible. That is the dilemma faced by the utilities."

Mr. Main's summation of this dilemma is admirable, but I would add at least two qualifications. The incompatibility he finds between protection of the environment and production of electricity is not absolute. Accommodations can be made which recognize the validity of both social objectives. And the dilemma he poses is not faced by the utilities. It is faced by all of society.

In this paper I propose to examine the nature of this dilemma in the New York City metropolitan area and other large cities of the United States; how present law seeks to resolve the dilemma in New York State; and what improvements, if any, ought to be made in the New York law.

In the summer of 1969 residents of New York City experienced an early warning of what can happen to a large city when the completion of new power projects is unduly delayed. On four hot, muggy days Con Edison had to ask the public voluntarily to conserve electricity because generating reserves were dangerously low. If the appeal had been unsuccessful, the Company could have been forced to disconnect a substantial number of its customers during the hours of peak usage. Indeed, this latter step is one that several neighboring utilities were forced to take on one of these days.

Two new power projects on the Hudson River, Cornwall and Indian Point No. 2, were the projects whose delayed completion exposed New York City to last summer's power shortage. If either project had been finished on schedule, there would have been no shortage. This is not a proper occasion to argue the merits of either project. But I think it will be helpful to an understanding of the siting dilemma to give a short chronology of each project, and a summary of the reasons for its delay.

Cornwall, also called Storm King, is a pumped-storage project designed to generate 2,000,000 KW of peaking capacity. A "pumped storage" project is one which uses off-peak generating capacity from other power plants to pump water into a storage reservoir at a high elevation. Later, the water is released from the storage reservoir to generate electricity at the hours of peak demand. The pumps and motors which lift the water up the hill become turbines and generators when the water is released down the hill. Cornwall was originally proposed in 1962 for completion in 1967. A license to construct Cornwall was granted by the Federal Power Commission on March 9, 1965, but the Commission was reversed by the Second Circuit Court of Appeals on December 29, 1965. The ground of reversal was that FPC had not given adequate consideration to the scenic, recreational, and wildlife aspects of the project, nor to possible alternative sources of peaking power, including jet engine turbines which might be located in New York City. The Court sent the case back to the Commission for further testimony on these issues.

Retrial of the case commenced November 14, 1966. Seventy six parties appeared as intervenors, forty-five against, twenty-five for, five objecting to interference with their property, and one neutral. The proceedings lasted, with numerous recesses, until May 23, 1967. The hearing was later reopened for additional testimony taken on October 16, 1967. The hearing examiner issued his decision on August 6, 1968 generally approving the project. New York City petitioned to

intervene on October 25, 1968. This petition was granted and additional hearings were held from March 4, 1969 until May 12, 1969. Briefs were completed May 23, 1969. The hearing examiner who conducted these proceedings now has the case under advisement.[1] Opponents of the project publicly have asserted their intention to appeal, if necessary, to the Federal Power Commission, the appropriate Circuit Court of Appeals and the United States Supreme Court.

Indian Point No. 2 is a 1,000,000 KW base load nuclear plant being constructed by Westinghouse Electric Corporation for Con Edison near Peekskill, New York. A base load plant is one designed to operate around the clock, as distinguished from peaking units, such as pumped storage or jet engine turbines, which are designed to operate during the relatively few hours of peak demand. Commenced in 1965, Indian Point No. 2 was scheduled for completion in May, 1969. Unlike the delays at Cornwall, which have been caused largely by environmental objections the delays at Indian Point No. 2 have resulted from other factors such as design problems, strikes, and shortages of skilled labor. But an organized environmental group which is opposing Indian Point No. 3, under construction adjacent to Indian Point No. 2 has served notice on the U.S. Atomic Energy Commission that it intends to oppose an operating license for Indian Point No. 2.

No useful purpose would be served in cataloging all of the other new power projects proposed by Con Edison, and all of the objections and objectors thereto, in general there are objections placed on environmental grounds to new oil-fired generating units because of alleged air pollution and unsightliness: to new nuclear plants because of alleged radioactive emissions and excessive thermal discharges into cooling water; and to major new transmission lines because of alleged unsightliness. Strangely, the jet engine peaking units, of which we are installing about 1,700,000 KW in New York City to supply capacity in 1970 and 1971 we had planned to supply with the delayed nuclear plants, seem to have escaped serious objections from environmentalists.

Objections on environmental grounds to power plant siting are not peculiar to New York, nor to the investor-owned segment of the electric industry. A few examples will illustrate the point.

In Illinois, the Metropolitan Sanitary District of Greater Chicago is seeking an injunction to prevent the construction of two large nuclear plants by the Commonwealth Edison Company of Illinois, an investor-owned company which serves Chicago and northern Illinois. It alleges undesirable heat and radiological discharges from the plants into Lake Michigan, from which Chicago gets its drinking water.

In Minnesota, Northern States Power Company, an investor owned company which serves Minneapolis-St. Paul and large areas in the upper Midwest, obtained a permit from the AEC to construct a large nuclear plant and has applied to the AEC for a license to operate it. It also applied to the Minnesota Water Pollution Control Commission for a Waste Disposal Permit. On May 20, 1969, the Minnesota Pollution Control Agency, successor to the Water Pollution Control Commission, issued a permit which contained not only the conventional waste disposal provisions but also limits on radiological emissions more stringent than AEC regulations, and requirements for the design of additional features for the plant. The Governor of Minnesota then asked the AEC not to issue an operating license that would allow greater radioactive emissions than prescribed by the State. The AEC replied that it would not comply with this request for both legal and substantive reasons. The utility has gone into court to contest the validity of the restrictions in the state license alleging, among other things, that the restrictions on radioactive emissions and requirements for additional equipment are illegal, require the development of devices not now in existence and require the addition of equipment which cannot be completed in time to operate the plant when needed.

In California, the enforcement officer of Los Angeles Air Pollution Control District has indicated his intention not to issue a license to operate a new oil and gas fired plant being constructed by the Los Angeles Department of Water Power, the largest municipally owned utility in the United States. He alleges the plant will aggravate air pollution over Los Angeles.

In the State of Washington, a bitter struggle is being waged before the City Council of Seattle by the Sierra Club and other environmentalist groups to prevent the enlargement of Ross Dam on the Skagit River owned by the Seattle City

[1] On December 23, 1969, after this lecture was delivered, the hearing examiner issued his decision, again approving the project.

Light, the second largest municipally owned utility in the United States—a struggle which well may result in administrative and judicial litigation. Opponents allege the enlargement will flood one of two remaining stands of valley bottom western red cedar, and 15,000 acres of other forest lands.

The common element in each of these situations, whether New York, Chicago, Minneapolis, Los Angeles, Seattle, or elsewhere, is a growing concern that the construction of new power plants may damge the natural environment in ways that society cannot accept. It is not correct to say—or to imply as did a recent two page advertisement in the *New York Times*—that only a "handful of people" are expressing this concern by opposing new power plants. Every Gallup poll taken on the subject in the past few years shows that concern about air and water pollution ranks very high in any list of the citizenry's concerns about national problems. Recent projections by Chairman John N. Nassikas of the Federal Power Commission of the expected growth in national electric energy requirements over the next 20 years show why utility executives, along with everyone else, share the general concern about the impact of new power stations on the environment:

"The projected growth of the electric utility industry during the next decades may possibly require the construction of about 40 new hydroelectric installations of 100 megawatts or more, approximately 50 new pumped-storage hydroelectric installations of 300 megawatts or more and about 90 fossil and 165 nuclear steam-electric plants on new sites.

To meet these needs, the electric utility industry will need to install nearly 1,000,000 megawatts of new capacity between 1970 and 1990. Tentative projections of the staff indicate that about 40 per cent of all power installed in 1990 will be nuclear fueled, about 45 per cent will be from steam generating plants fired with fossil fuel, 7 per cent will come from conventional hydroelectric installations and about 5 per cent from pumped-storage hydroelectric projects. The remaining 3 per cent is expected to be internal combustion and gas turbine capacity."

Even in the metropolitan area of New York City serviced by Con Edison, where electric load growth is slower than the national average, there is reason for great concern. To meet the present rate of growth of about 375,000 KW per year, and provide adequate reserves, now requires a new 1,000,000 KW plant approximately every two years. And the prospect is that, expressed in kilowatts per year, this growth rate will increase.

There is, of course, another side to the environmental impact of new power plants. Much of man's progress through history has been measured by his ability to change his environment to make it more liveable and comfortable and productive. The environment is altered every time a farmer plows or seeds or fertilizes. Electric energy has been, and continues to be, one of the most effective ways he has found to improve his environment. Because of electricity the environments of our homes, factories, offices, and public places are vastly more comfortable in daytime and nighttime, in summer and winter. In terms of the every day life of the ordinary citizen I think it fair to say that electricity has greatly improved the quality of his environment, despite the admittedly undesirable impact of power plants and transmission lines on the water, air, and land. So far as I am aware, no serious candidate for public office yet has run on a platform of protecting the natural enviroment by reducing the consumption of electricity—for example, by requiring everyone to forego air conditioning on hot days.

What does all of this mean to the Association of the Bar of the City of New York? The dilemma we face in our City and State is the conflict between two essential social goals: Protection of natural enviroment and production of electric energy. What legal mechanisms have our profession devised for the resolution of the dilemma? Are these mechanisms adequate? If not, what can we do to improve them?

I suggest that better mechanisms are needed, and that the task of finding better ways to resolve the conflicts between environmental protection and electrical production are as much the concern of lawyers as of utility executives. As a footnote, I also suggest that an important, though not the sole, cause of this conflict of social goals is the rapid rate of population growth; that this growth is putting tremendous pressure on the natural environment in myriad ways; and that unless our society can find ways to control this growth, no amount of legal or technological ingenuity can protect the natural environment as all of us would want it protected.

Let us examine briefly the law applicable to the construction of bulk power supply facilities by a utility in New York State such as Con Edison.

If the plant is fossil fueled, a number of government agencies must approve the project. Taking as an example our proposed oil and gas fired units at the Astoria plant, we will need three approvals from Federal agencies, four from New York State agencies and at least twenty from New York City agencies, the exact number depending upon the final design of the plant. Federal approvals are from the Federal Aviation Agency, Corps of Engineers and the Department of the Interior. Examples of the state approvals are the Departments of Health and of Conservation. Examples of the city approvals are the Department of Air Resources, Department of Buildings—Boiler Division and the Department of Ports and Terminals. Five of the city permits are from the Fire Department for matters such as blasting and storage of hydrogen.

Although not all of these approvals for the Astoria plant are environmental approvals, many of them involve environmental issues. Separate applications are filed with each of these agencies. A permit may be granted in a routine fashion or some problem may develop and it will take much longer than anticipated. It is important to recognize that we need a yes answer from each agency; a single final "no" could kill the project.

If the plant is nuclear, the utility must obtain the same basic permits as for a fossil plant at the same location, and in addition must obtain two licenses from United States Atomic Energy Commission, the first to construct the plant, and the second to operate it. Although several statutory findings are required, the principal one is that the plant can be constructed and operated at the proposed location without undue risk to the health and safety of the public. In view of the statutory history of the Atomic Energy Act, the AEC has interpreted its present jurisdiction over environmental matters as limited to radiological health and safety, and this interpretation has been upheld by the First Circuit Court of Appeals.

An application to construct a nuclear plant is first reviewed by the staff of the Atomic Energy Commission and then by a committee of scientists outside the Commission called the Advisory Committee on Reactor Safeguards. After these groups have approved the application, the Commission appoints an Atomic Safety and Licensing Board, consisting of one lawyer and two technical men, to conduct a public hearing. The Board's decisions is subject to review by the Commission and a United States Circuit Court of Appeals. An application for an operating license goes through the same procedure except that the appointment of an Atomic Safety and Licensing Board to conduct a public hearing is not mandatory.

If the proposed plant is hydroelectric, the utility must apply for a license from the Federal Power Commission, whose jurisdiction supersedes that of state and local legislative or regulatory bodies. The Commission's jurisdiction is stated in broad terms as requiring a determination that the project is best adapted to a comprehensive plan for improving or developing a waterway. The courts have directed FPC to consider many aspects of a proposed project such as aesthetics, protection of migrating fish, and alternative methods of generating electricity which might be preferable to the project for which a license s sought. The FPC appoints a hearing examiner to take testimony and reach a decision. His decision is subject to review by the Commission, and the Commission's decision, to review by a United States Circuit Court of Appeals.

If the facility to be constructed is a new transmission line the utility must obtain, in addition to privately owned right-of-way, permits from all public bodies whose lands or streets will be traversed, and from all zoning authorities within whose jurisdiction portions of the line will be located. This means that permits for a new 345 KV transmission line from Millwood in Westchester County to Rampo in Rockland County, a ditsance of 25 miles, must be obtained from five municipalities in Westchester County, three in Rockland County, the Hudson River Valley Commission, the Federal Aviation Agency, the Corps of Engineers, the New York State Highway Department, the East Hudson Parkway Authority and the Palisades Interstate Park Commission. Parenthetically, the completion of this line, which is one segment of an interconnection described in 1967 by the Federal Power Commission staff as "the most critically needed transmission line in the United States today," has been delayed for approximately four years by litigation commenced by property owners along the route of another segment of the same line in New Jersey.

If the facility, whether a generating plant or transmission line, is to be located in the Hudson River Valley, it is necessary to file plans with the Hudson River Valley Commission, an agency of the State of New York. This Commission's jurisdiction extends to all land within one mile of the shore of the river and

all lands or projects visible from the river and within two miles of the shore. The Commission is directed to review plans for substantial conformity with a plan for the preservation, enhancement and development of the scenic, historic, recreational and natural resources of the Hudson River Valley and for the encouragement of the full development of the commercial, industrial, agricultural, residential and other resources of the valley. The Commission reviews the plans and may hold hearings, but it has no direct enforcement powers other than to delay commencement of a project until 45 days after plans for the project are filed with it.

The weakness in the present laws governing the construction of new bulk power facilities is not that private companies are making decisions on the siting of new facilities without public review. Obviously, there are many reviews of various sorts at all levels of government, many of them relating to environmental considerations. The shortcoming, I believe, is that there is no coordinated, systematic review by a single regulatory agency in which all of the factors necessary to a wise decision can be considered: The need for the new power supply; the reliability of the proposed project; the relation of the project to other new power projects to be constructed in the region; the cost of the project; its impact upon the environment; and the available alternatives. Indeed, the most striking omission in the law, I believe, is that neither the New York Public Service Commission nor any other agency (except the Federal Power Commission in a hydro licensing case) has authority in a licensing proceeding to review the need for the project, its reliability, its cost, its relationship to other power projects to be built in the region, or the availability of alternatives. Another shortcoming, I believe, is that the environmental review is fragmented among many agencies and levels of government with each official looking only at a single aspect, and from the point of view of a specialist in a particular subject matter area. Because of this fragmentation environmental trade-offs, need for power, reliability, cost, relationship to other projects, and alternatives are accorded only such informal and ad hoc consideration as men of good will who administer the various laws for protection of the environment feel they can give them.

The time is at hand, it seems to me, for a complete review and revision of the laws of New York as they pertain to the licensing of power plants and transmission lines. By whatever political initiative such a review might be undertaken I would hope that the expertise of the appropriate committees of our City, County, State, and national bar associations is enlisted. The main thrust of the review, I believe, should be to combine in one agency the decision of those engineering, economic, and environmental questions involved in the licensing of power projects that can best be decided in a balancing process. Consultative to such a licensing agency, I believe, should be a panel of interested local and state agencies which by the nature of their jurisdiction have a substantial interest in the outcome of the licensing procedure. I believe, too, that such a panel should include citizen representatives, perhaps on a rotating basis depending upon the nature and location of the project for which a license is sought.

Any re-arrangement of legal procedures for the licensing of new power projects should include at an appropriate stage a public hearing at which arguments for and against may be offered by any interested person—and I would define broadly an "interested person." I suggest also that a publicly appointed Counsel for the Environment could represent the public interest in protecting the quality of the environment, with authority to present testimony, cross-examine witnesses, and appeal from an adverse decision when he thought such an appeal necessary in the public interest. Such a counsel could assure that the viewpoints of citizen groups unable to afford independent counsel would be presented to the licensing agency. With such a counsel to advocate the environmental cause, the right of objectors to the project to offer expert testimony, cross-examine witnesses, and appeal from the granting of a license safely could be kept within limits that would permit a timely decision of the application.

It seems to me, also, that a review and revision of licensing procedures should consider ways to assure expeditious judicial review of an order granting a license. The *Storm King* case has proven that the mere consolidation in one agency of authority to decide all the engineering, economic, and environmental questions does not assure that licensing delays will be reduced. Not only should the scope of judicial review be carefully defined within those limits necessary to assure the integrity of the administrative process, but special procedures might be specified such as the discretionary writ of certiorari instead of a right

of appeal, direct review by the highest appellate court, and docket priority for cases cerfied by the licensing agency as deserving such priority.

Somehow, too, it is important to devise administrative procedures whereby the advance plans of utilities for periods of ten years or more can be reviewed and passed upon. Such a review, I believe, holds the best promise of considering the alternatives which everyone agrees should be publicly considered. I do not underestimate the legal difficulties of a review of general plans. Advance plans for power supply must be flexible, and must be changed quite frequently in response to changes in technology, load projections, labor and capital costs, construction schedules, and other factors that affect the validity of the plans. Morever, the advance plans of each utility for new generating stations and lines can best be reviewed in conjunction with similar plans of all other utilities with which they are interconnected. It would be a mistake, I believe, to attempt to judicialize the procedures for reviewing the general plans of the utilities for future power supply to the extent that every proposed new project could be litigated twice: once in the general plan, and again when specific construction permits are requested. Possibly the solution is an even closer consultative relationship at the advance planning stage between the electric industry and the regulatory agencies which ultimately must pass upon licenses for new power projects.

Those who review the laws of New York which govern new power projects will face many delicate questions. Particularly delicate will be the jurisdictional relationship among the several state agencies which now have pieces of the problem, and between the state and the many local licensing bodies which also now have pieces of the problem. But I am inclined to believe that unless the several states can settle in a rational and timely manner the diverse questions involved in the licensing of new power projects, it is highly probable that the federal government will assume jurisdiction. Numerous bills introduced in the past two Congresses by such legislators as the late Senator Robert Kennedy, Senator Edmund Muskie, and Congressman Richard Ottinger, attest the strong federal interest in a solution. Personally I believe that the intricate engineering, economic and environmental considerations involved in the choice of hundreds of new power sites and thousands of miles of transmission lines across the country can best be decided by smaller political entities than a single federal commission and by entities closer to the terrain. But respectable arguments have been made on the other side of the question, and they will be pressed relentlessly if the states do not act.

Pending the enactment of new legislation to meet the needs of the seventies in the licensing of power projects, there is evolving a technique which T. J. Carlson has described in the Columbia Law Review as "the consultative process." In Mr. Carlson's words, written in 1968:

"It is an outgrowth of reality because when dealing with complex problems, whose solutions are not easily ascertainable, agencies must carry on an interchange with the regulated industries. Since agencies live by reason, they must constantly seek understanding; this need leads them to consultation. Moreover they must see to it that the public interest is not only accurately assessed, but also that it is understood by those who will implement the social program. This is necessary if the law seeks to encourage as well as prohibit."
(68 Col. L. Rev. 1496, 1502–1503.)

Mr. Carlson cites as an example of the consultation process the regional and national advisory groups which the Federal Power Commission has encouraged all segments of the electric industry to form. In the Northeast, for example, the Northeast Power Coordinating Council reviews and comments upon the operating and construction plans of all of the utilities which produce or transmit bulk power in New York, Connecticut, Massachusetts, Vermont, New Hampshire, Maine, and the Province of Ontario, Canada. Now sitting with the Executive Committee of the NPCC are representatives of the Federal Power Commission and the several state public service commissions.

If Mr. Carlson had written his article on Consultative Law a year later, he might have added as another example the request of Con Edison for a review of its ten year construction program by the Federal Power Commission, the New York Public Service Commission, the State of New York, the City of New York, and Westchester County. As of now the review has not been completed by all of these entities. But we are hopeful that the results of the review will be constructive, and that until more basic revisions in the licensing laws are made,

possibly a way will be shown whereby we can advance closer to a solution of the siting dilemma.

Nothing I have said this evening is intended to be in derogation of the primary responsibility of the electric companies themselves to solve the siting dilemma. It is on the staffs of the electric companies where one finds the greatest concentration of engineering, scientific, and economic skills which can be brought to bear on the problem. And whatever the case may have been in the past, I think it is accurate to say that the senior management of the utility industry now recognizes its responsibility to supply the electric energy needed by society in ways that will not unduly damage the natural environment.

In the long run, the resolution of the siting dilemma will be found in better public understanding of the issues involved, not in administrative innovation no matter how brilliant, nor in utility management however far-sighted. To achieve this better public understanding is a never ending task of the utilities, the agencies which regulate them, the intellectual community, the press, and many others. If all of us who must face the dilemma will do so objectively and in good spirit, I believe that the public will support the accommodations that ultimately must be made. And if our laws can be changed to make it easier to find agreement upon the right accommodations, I am confident that the utility industry can provide the electric energy our society requires and keep our land a beautiful and healthful place to live.

APPENDIX 7

Additional recent articles and editorials from the New York Times concerning land use.

[From the New York Times editorial, July 26, 1970]

Uses of the Land

How this nation's land is used is presently determined, according to Senator Henry M. Jackson, by some 60,000 separate jurisdictions, each with some measure of zoning authority. The results have been an over-all planlessness, a running conflict of generally legitimate interest, and a staggering waste of resources which only the world's richest country would have tolerated—and only its most prodigal people could have. The Senator from Washington has accordingly introduced a National Land Use Policy Bill intended to make at least a start in applying to land use the kind of systems analysis so dear to Americans in business and so abhorrent in government.

Mindful of the fact that in this area Federal powers are very limited and the states very sensitive, Senator Jackson would employ not so much a stick-and-carrot technique as one of carrots-or-no-carrots. He proposes an inventory, which each state would take of the land resources outside its cities. On the basis of such a survey it would develop within three years a statewide environmental, recreational and industrial land-use plan. Sites would be designated as appropriate for heavy industry, or for power plants, airports or anything else, always with environmental factors taken into account. Future park or beach areas might be similarly staked out and regions spotted as desirable locations for new cities.

The funds for carrying on so extensive a study, as well as for training technical aides, would come from Federal grants-in-aid. If a state failed to adopt within four years a land-use plan meeting prescribed minimal standards, certain Federal funds now going its way would be reduced by 20 per cent a year until it complies.

The net result of introducing coherence into the nation's use of land would be an end to the need for unscrambling the conflicting claims of would-be-users, sometimes by a weighing of political pressures and often when it is too late to make the right choice. Sacrifice the Everglades to gain an airport? Build a play-resort or leave a wilderness? Add another highway or enjoy an unbroken view of the sea?

The Jackson bill has little chance of passing in this session. But it has been endorsed by the Governors Conference and is an important move toward substituting order for what is now a dangerously haphazard process. With the population rocketing toward 300 million and resources showing signs of depletion, the country is more than ripe for so obvious an exercise in prudence.

[From the New York Times editorial, Aug. 9, 1970]

Fiery Run, Va.: The Ethics of the Land

(By James Reston)

Fiery Run, Va., Aug. 8.—In this lovely corner of Virginia, men are changing their ideas about the land—not much but some. A generation ago, they plowed the foothills of the Blue Ridge to plant corn and the gully-washing rains carried the red earth down the Rappahannock River to the sea.

Fiery Run, which is part of the headwaters of the Rappahannock, is much clearer now, because while corn is still planted on these hillsides, much land has been put into grass for cattle. The land is being conserved, not because conservation is ethically right, but because it paid more money to raise cattle than to raise corn.

THE UNEQUAL STRUGGLE

Nevertheless, it is necessary to raise hell. For while the Government has helped conserve the natural resources of the nation by giving tax havens to well-heeled gentlemen farmers and shelling out billions for planting or not planting certain crops, the fact is that the economic incentives for preserving our natural resources have not been as great as the economic rewards for ruining them.

No doubt much more could be done by changing the law and making the destruction of the land and pollution of the air and waters prohibitively expensive, but even the enactment and enforcement of punitive new laws is not likely to deal with the conservation problem unless there is a fundamental change of attitude about property rights and property responsibilities.

THE ETHICAL QUESTION

This is not only an economic but an ethical question. It requires the kind of change that took place when the conscience of the American people rejected human slavery as a "property right."

Aldo Leopold made the point over a generation ago at the University of Wisconsin. He felt sure even in the 1940's that a conservation system based on economic motives would fail, partly because most Americans were drifting away from nature, and partly because most of the creatures of nature—songbirds and wild flowers, for example—have no economic value.

He felt we had to develop a different way of looking at ourselves as part of a community of living (and dying) things, each important to the other, which man must approach, not as a conqueror or owner, but as a partner and trustee for his own and his children's serenity and security.

"Conservation is getting nowhere," he wrote in "A Sand County Almanac," "because it is incompatible with our Abrahamic concept of land. We abuse land because we regard it as a commodity belonging to us.

"When we see land as a *community* to which we belong, we may begin to use it with love and respect. There is no other way for land to survive the impact of mechanized man . . . that land is a *community* is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics . . ."

For the Federal Government, sixty miles down the pike in Washington from here, and for the farmers down the roads of these stony coves and valleys of the Blue Ridge, all this seems vaguely romantic. They are sticking to the economic view of the problem: make conservation pay; don't talk philosophy, talk dollars; be realistic.

But this is precisely the paradox. The realistic, as things are now going, are the philosophers. The enduring reality is the natural world which is working on a longer clock than the rest of us.

ECONOMIC APPROACH

The economic approach to conservation is important. don't reward but punish the destroyers. But this requires a philosophical and even ethical change toward the land and property and ownership by a much larger proportion of the American people.

It is not enough to obey the conservation law, vote right, join the Audubon Society, practice profitable conservation on your own land and leave the rest to the Government.

The Government is still looking at the problem as an economic question—how to punish the destroyers and reward the conservationists—and this will help, but it is not enough. Aldo Leopold was undoubtedly right: we have to change the question and get a new philosophy of values about the land, property rights and man as only one part of the living community.

[From the New York Times editorial, Aug. 10, 1970]

. . . WHO SHALL DECIDE?

To acknowledge Con Edison's recent willingness to see beyond its profit-and-loss figures, a pleasant contrast to earlier attitudes, is not to suggest that it should be entrusted with exclusive control over plant location, capacity, transmission lines and the like.

Product, methods of production and volume produced—all are inextricably tied to the community's needs, wants and desires. The business of distributing electricity should reflect these, not dictate them. Unfortunately, perhaps even

disastrously, these needs, wants and desires are not always coherent, nor are they assigned any social priorities.

Does an increase in mass transit warrant a small increment in air pollution from a generating plant if it promises to eliminate much more air pollution from autos? Should a nuclear plant designed not to dirty the atmosphere be built to power a factory making planes that will dirty the stratosphere? Which is more important, a stretch of scenic beauty or a generating plant that will make jobs in a nearby community?

It is not for Consolidated Edison or any other business to make such decisions. The difficulty is that the nation has so far evolved mechanisms for handling them that are at best only fragmented and sporadic. To get permission to build power plants or transmission lines, a utility has to deal with countless Federal, state and local agencies—sometimes riddled with politics and often in conflict with each other.

Ideally, each state would systematically survey its land resources, setting aside sites for future power plants as it would for grazing lands, new towns or parkland. That is the objective of Senator Jackson's Land Use bill. It is an objective still on the distant horizon, but something like it will have to be realized if communities are to be saved from debating each separate project in isolation and without regard to a whole fabric of environmental protection, economic need and social usefulness.

As though proclaiming the absence of the Emperor's clothes, Senator Muskie recently felt obliged to make the point that "the public has assumed that government—somewhere—is looking after their electric power interests, but such is not the case." Until people demand and get regional planning that combines the social good with sound technical judgment, they will have to put up with hastily conceived prejects, brownouts, pollution—or all three.

APPENDIX 8

Except from policy position of the National Governors' Conference, August 1970.

State Land Use Planning Is Needed

There is an interest and need for a more efficient and comprehensive system of national and statewide land use planning and decision-making. The proliferating transportation systems, large-scale industrial and economic growth, conflicts in emerging patterns of land use, the fragmentation of governmental entities exercising land use planning powers, and the increased size, scale and impact of private actions have created a situation in which land use management decisions of national, regional and statewide concern are being made on the basis of expediency, tradition, short-term economic considerations, and other factors which are often unrelated to the real concerns of a sound land use policy.

Across the Nation, a failure to conduct sound land use planning has required public and private enterprise to delay, litigate, and cancel proposed public utility and industrial and commercial developments because of unresolved land use questions, thereby causing an unnecessary waste of human and economic resources and a threat to public services, often resulting in decisions to locate utilities and industrial and commercial activities in the area of least public and political resistance, but without regard to relevant environmental and economic considerations.

The land use decisions of the Federal Government often have a tremendous impact upon the environment and the patterns of development in local communities; that the substance and the nature of a national land use policy ought to be formulated upon an expression of the needs and interests of state, regional, and local government, as well as those of the Federal Government. Federal land use decisions require greater participation by state and local government to insure that they are in accord with the highest and best standards of land use management and the desires and aspirations of state and local government.

The promotion of the general welfare, and to provide for the full and wise application of the resources of the Federal Government in strengthening the environmental, economic and social well-being of the people of the United States, we believe, is a continuing responsibility of the Federal Government, but should be consistent with and recognize the responsibility of state and local government for land use planning and management.

There should be undertaken the development of a national policy, to be known as the National Land-Use Policy, which shall incorporate environmental, economic, social and other appropriate factors. Such policy shall serve as a guide in making specific decisions at the national level which affect the pattern of environmental and industrial growth and development on the federal lands, and shall provide a framework for development of interstate, state and local land use policy.

The National Land Use Policy should:

1. Foster the continued economic growth of all States and regions of the United States;

2. Favor patterns of land use planning, management and development which are in accord with sound environmental principles and which offer a range of alternative locations for specific activities and encourage the wise and balanced use of the Nation's land and water resources;

3. Favorably influence patterns of population distribution in a manner such that a wide range of scenic, environmental and cultural amenities are available to the American people;

4. Contribute to carrying out the federal responsibility for revitalizing existing rural communities and encourage, where appropriate, new communities which offer diverse opportunities and diversity of living styles;

5. Assist State Government to assume responsibility for major land use planning and management decisions which are of regional, interstate, and national concern;

6. Facilitate increased coordination in the administration of federal programs so as to encourage desirable patterns of environmental, recreational, and industrial land use planning; and

7. Systematize methods for the exchange of land use, environmental and economic information in order to assist all levels of government in the development and implementation of the National Land Use Policy.

Intelligent land use planning and management provides the single most important institutional device for preserving and enhancing the environment and for maintaining conditions capable of supporting a quality life while providing the material means necessary to improve the national standard of living.

Full Funding and Implementation of State Comprehensive Outdoor Recreation Plans Is Needed

Remaining undespoiled natural areas of wetlands, forests, plains, deserts, and mountains are being exploited and despoiled at an alarming rate. The expenditure of outdoor recreational funds should not be diverted from the urgent need to acquire and protect these natural areas.

Crash funding programs that seek to carve urban parks in the midst of urban glut are dramatic examples of inadequate planning. The overcoming of inadequate planning in the past through crash programs should not be allowed, through the monopoly of limited funds, to perpetuate inadequate planning, insufficient preservation, and too little and too late acquisition for future generations.

Meanwhile, however, we must also recognize that these long range plans are being eroded by present and increasing pollution of our water resources.

The National Governors' Conference, therefore, calls upon the Congress and the Administration to support also the appropriation of the full 1.25 billion dollars authorized by the Congress for the construction of waste water treatment plants. Any retreat from this promised federal commitment will further delay the day when American citizens will have access to adequate supplies of unpolluted water for recreational and other uses. Further delay will also increase the construction costs involved in bringing about clean waters, and it will represent a betrayal of those States which have, through prefunding, relied on past federal promises that funds would be forthcoming by now.

Full funding and implementation of state and comprehensive outdoor recreation plans and national sewage treatment plant construction programs is the best means of solving both short-run and long-run recreational problems of megalopolis.

Supplement to appendix 1: Reply to Chairman Jackson's letter of June 4, 1970, from the Secretary of the Interior.

U.S. Department of the Interior,
Office of the Secretary,
Washington, D.C., July 16, 1970.

Hon. Henry M. Jackson,
Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.

Dear Mr. Chairman: This is in response to your letter of June 5 concerning S. 3354, the National Land Use Policy Act of 1970. Submitted herewith are general answers to the questions presented in your letter. We will not repeat the questions but will endeavor to answer them as they are presented in the letter.

A. As you are aware, this Department has the responsibility for the administration and management of 550 million on-shore acres of the 770 million on-shore acres of public land, or 71% of the total public land, as well as the administration and management of the estimated 822 million acres which make up the Outer Continental Shelf. We have over the years through the various land management programs in the Department collected extensive data concerning this land and its resources. Those of our Bureaus that have data that would be helpful to a national land and resource-use program would, to the

greatest possible extent, make data available for inclusion in the central data bank. As for the type of data that would be made avialble, the Bureau of Land Management could provide data arising from its long time management of vast tracts of the public land and the experience developed from such activity; the Geological Survey could make its mapping information, as well as its mineral survey information available; the Bureau of Outdoor Recreation and the National Park Service could make their recreation data available; and the Bureau of Reclamation could make its data on rivers and river basins available. These are together data that would be useful to the data bank proposed in section 409(a) of the bill.

As an example of information developed by this Department, we have learned that the classic belief of many that public land plays a major role in supplying the resources to support various domestic industries is only partially true. In comparing the role of the major resources derived from public lands to the total industry or consumer needs, one finds that timber, leasable minerals and water withdrawals from public land each account for less than 30 percent of the respective national needs: fuels 10 percent; recreation, including fishing and wildlife in 10 percent; and grazing 2 percent. This result is mainly due to the location of the land in the West—away from the population centers—and the nature of the land. This is not to say that public land does not play a significant role locally or regionally in meeting the resource needs of an area. In many instances, it is true that the only or primary source of an important mineral may be from public land. In addition, public land represents the largest single supply of open space.

B. The Department is presently carrying on an inventory of the public land and the resources thereon. Under the authority granted the Department under the Classification and Multiple Use Act (P.L. 86–607), which authority is due to expire on December 31, 1970, we have proceeded to inventory the public land and determine which land should be disposed of and which land should be retained in federal ownership and managed for multiple use. We have set out procedures for making this determination, procedures that have focused public attention on the classification of the public land. As an aside, we have found that the public is interested in the public land and its future and that local governmental officials have welcomed the opportunity for close cooperation on matters bearing on the communities' land use.

From this experience, it is our opinion that a national land and resource-use program would be one that would be welcomed by local governments and one in which the public at large would take an interest.

We have presently classified 146,971,000 acres under the classification and multiple use program. Of this total, 144,400,000 acres have been classified for retention by the Government under multiple use management, while 2,571,000 acres have been classified for disposal. As you can see we have classified only a little over one quarter of more than 550 million on-shore acres under the administration and management of this Department.

The continued survey program of the Bureau of Land Management, the mapping and mineral surveying functions of the Geological Survey, the evaluation of potential national park and recreation sites by the National Park Service and the recreation plans and surveys prepared by the Bureau of Outdoor Recreation are only a few of the practices and programs of the Bureaus of this Department that will be useful in the implementation of the national land use program.

C. In most instances, the public works and Federal grant assistance programs, such as those contemplated by section 408, which this Department administers, are generally coordinated with State and local governments. As an example, the recreational surveys conducted by the Bureau of Outdoor Recreation are generally conducted in cooperation with State and local governments and only projects which are consistent with each State's outdoor recreation plan are eligible for grant assistance under the Land and Water Conservation Fund.

The Bureau of Reclamation in its public works programs makes feasibility studies of such projects and includes in the studies the input of State and local governments as well as the inputs of interested Federal agencies. These are examples of coordinated programs carried on by this Department in the public works area. We believe that this type of coordination would be a valuable asset in developing and carrying forward a national land and resources-use program. There are examples of public works programs that we have opposed because of

our belief that such programs would have a detrimental effect upon the public and its environment. An example of this type of opposition was our strong opposition to the building of an international airport by the Dade County Port Authority in close proximity to the Everglades National Park. We assume that any national land and resource-use program would have the protection of the public and its environment as one of its top objectives.

D. We feel that an essential part of any land and resource-use program would be close interagency cooperation and cooperation between the various levels of Government. However we question the use of an interagency council as the best method of carrying out this program of interagency and intergovernmental cooperation. We do not believe that an interagency council-type of organization has a sufficient base to provide the leadership for an effective Federal-State land and resource-use program. In our judgment such an assignment requires the organization-management technical capability, effective relationships in these fields with States and communities and political leadership represented in operating agency. We believe that the considerable experience of the Department of the Interior in the area of land and resource-use planning makes it one of the agencies that should be considered for the development and the carrying out of a program of the type proposed by this bill.

E. As we have pointed out in our answers to the preceding questions, the activities of most of the Bureaus of this Department would be included within the programs of a national land and resource-use program.

As to questions F and G, we would like to offer this general answer: While generally supporting the need for a national land and resource-use program, we believe that the Government, before implementing such a program, must rethink its approach to our use and enjoyment of this Nation's land and natural resources and this will take time and be fundamental. The subject matter covered by this legislation is very complicated and much analysis and review is necessary before any decisions regarding an acceptable program can be made. Further there are questions about the ability of the States to handle a program of this nature at this time. We also feel that further Federal cataloging of resources on Federal land would be helpful in making meaningful decisions relative to land use policy on public land.

Before instituting any national land and resource-use program, we believe that it is essential that the basic framework for such a program be sound so that the best results can be obtained. There are a number of problems in connection with the development of that framework that will require careful consideration and design. We think that the best sources of information should be sought and all elements of public policy considered. In this connection, the report of the Public Land Law Review Commission may be especially valuable.

We, therefore, at this time do not offer any specific recommendations of amendatory language or suggestions of ways in which the Committee might improve the bill. We will continue our study of a national land and resource-use program to help in the evolution of a policy in this area. This is the beginning of what we believe is an essential program and we believe that the public debate over such a program, both in Congress and elsewhere, will be helpful. We look forward to making contributions to the debate and to the ultimate program.

Sincerely yours,

HARRISON LOESCH,
Assistant Secretary of the Interior.