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ABSTRACT

Representing a broad segment of people interested in rural America, this document presents 16 speeches. Speeches on rural development implementation at Federal, state, and regional levels include: "The Rural Development Concept" (calls for a national rural development policy which provides for a multicommunity, regional framework strengthened by interpersonal and interorganizational community linkages); "Implementation at the Federal Level"; "Financial Resources for Rural Development" (how to finance rural development needs and rural needs re: income, housing, health, and water and waste systems); "State Planning and Management Assistance"; "Regional Planning Districts: The Functional Approach" (support for a rural development policy only if it is a component part of an urban or metropolitan region plan); "Management and Technical Assistance for Rural Areas" (local and regional development context); "Regional Planning and Technical Assistance"; "Local Government Technical Assistance"; and "Local Assistance Planning". Among the speeches on case studies presented are "Urban Pressures in the Swannanoa Valley"; "Mobile Home Settlement and Rural Development"; "Route Selection Criteria for Rural Bikeways"; "Land Management within the Blue Ridge Parkway Corridor"; "Rural Land Use Management: The North Carolina Experience"; "The Surface Mine Pollution Abatement-Land Use Impact Investigation: A Federally Sponsored Study into Alternative Land Uses"; and "A Multi-Disciplinary Computer Aided Approach to Environmental Impact Analysis". (JC)

PLANNING FRONTIERS IN RURAL AMERICA

Papers and Proceedings of the
Boone Conference, Volume II

(Boone, North Carolina, March 16-18, 1975)

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R. Douglas Taylor, Executive Director, Western Piedmont Council of Governments.

OLE GADE, Conference Director

PREFACE*

Approximately one-third of our people in the United States live in nonmetropolitan counties or rural America. Though that portion of the population which is functionally rural is still decreasing, it is a fact that the tentacles of urban America, through its expanding commuting range, are reaching into rural areas to the point of influencing recent increases in the total rural population. For many rural communities this has created a dichotomous situation with serious, if not fatal, effects. Many communities have experienced the gradual evolution of an either/or situation in which they are facing either a lack of employment opportunities, outmigration of young people, economic decay, and serious tears in the traditional social and family fabric; or they are facing, unprepared, the onslaught of suburban expansion with its accelerating demand upon community services and its all too frequent disruptive and negative impact on regional environmental resources and local ecological systems.

Much of rural America does reflect neither the quiet desperation of the lagging region nor the tumultuous impact of urban overreach, and yet it does experience serious voids in the development of its human resource base; the provision of basic services like medical care or water and waste management; the availability of a broad base of competitive employment opportunities; and the protection of its land and environmental resources.

After years of developing federal legislation designed to cope with the mounting problems of urban America it appears that Congress is now taking the important steps which may lead toward rural social and economic rebirth. Indeed, the Rural Development Act of 1972 and the Housing and Community Development Act of 1974 each contain much promise of a rural renaissance. Unhappily, states and, in particular, local governments are sometimes painfully slow in assuming the initiative necessary for the implementation of federal guidelines and support.

In rural America it is time to take stock. Who are we? Where are we? Where do we want to go from here? How do we decide? By what means do we get there?

The Conference on Planning Frontiers in Rural America was designed to look at alternative answers to these questions. To introduce some of the potential answers the Conference invited ten speakers with national reputations in rural development and planning. These individuals set the stage for workshop deliberations of a broad segment (geographic as well as professional) of people interested in contemporary rural America, its problems and prospects for the future.

Due to financial limitations it was not possible to include all papers presented at the conference in the initial volume of papers and proceedings. This has necessitated the preparation of this second volume.

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RURAL DEVELOPMENT AND ITS IMPLEMENTATION AT FEDERAL, STATE AND REGIONAL LEVELS

INTRODUCTION

What appears to be major barriers in facilitating the appropriate kind of federal, state, regional and local planning for rural areas and small towns? In part the answer curiously enough hinges on our apparent inability to define and delineate nonmetropolitan areas. More importantly though the answer involves the typical rural and small community traits of individualism and the lack of a historically developed interest in comprehensive planning. These are traits magnified by the difficulty of organizing for planning the multiplicity of small scale and traditionbound rural governmental units, and further complicated by the turnaround in the 1970's in American population redistribution. This phenomenon is characterized by the cessation of depopulation in many rural areas if not totally unexpected population increases.

A Conference plenary session speaker, William Bonner, suggests four alternatives to coping with these difficulties. Combining these alternatives would see future federal and state planning initiatives emphasize the unique character and need of nonmetropolitan areas. These initiatives are to be provided within a multicommunity, regional framework strengthened by interpersonal and interorganizational community linkages. To attain this rural oriented planning strategy will in Bonner's view require a national rural development policy, which he recommends.

Walter Gunthrap is in his presentation not so sanguine about our ability to devise national goals on population growth and distribution, as is obviously needed in support of the Bonner recommendation. And a regional planner, Dudley Onderdonk, will support a rural development policy only if it is a component part of an urban or metropolitan region plan.

The presently much higher rural rates of new manufacturing and construction jobs shields the continuing rural lag in improving family income, housing quality, health conditions and essential community services, particularly water and waste systems.

How to finance these and other rural development needs is the subject of Ted Parker's paper. Given the planning impediments created by the multiplicity of uncoordinated and in part conflicting federal and state agencies, which oversee the financing of rural and small town human and environmental needs, what can in fact be accomplished? Billy Ray Hall considers this question from a state's point of view while R. Douglas Taylor and his associates considers it in the context of local and regional development.

THE RURAL DEVELOPMENT CONCEPT

by

William S. Bonner, Chairman
Division of Community Affairs
University of Arkansas

This paper has three aims. One is to explore the meaning of the term rural; a second is to present an operational definition of rural development; and the third is to examine four alternatives for achieving rural development.

DEFINING "RURAL"

One definition of "rural" is that of the U.S. Census Bureau which applies the term primarily to unincorporated territory and to places under 2,500 population outside urbanized areas. Places over 2,500 population are, thus, considered "urban." This distinction has not been operationally acceptable for many programs because several thousand urban places are scattered throughout the nation surrounded by rural territory. Another U.S. Census Bureau concept is the Standard Metropolitan Statistical Area. Counties included in SMSA's are seen as "urban" or metropolitan, and those outside SMSA's as "rural" or nonmetropolitan. While the metropolitan-nonmetropolitan dichotomy works for many program purposes, the continued addition of counties to existing SMSA's, the designation of new SMSA's, and the change in criteria for determining SMSA counties have compounded the problem of stabilizing territory and organizational arrangements for Federal program purposes.

In 1970, nonmetropolitan or rural America totaled 72.7 million people, or 35.7 percent of the population, but in April, 1973, the Office of Management and Budget changed the criteria for the delineation of counties inoluded in SMSA's. Under the new alignments the population of rural or nonmetropolitan America amounted to only 55.2 million people or 27.2 percent of the population based on the 1970 census figures. This change did not alter the condition of most of those individuals who, by a definition change, found themselves metro instead of non-metro. Nearly all SMSA's contain areas, some even entire counties, that are more rural in character than urban except for the employment characteristics of the residents.

The "Fourth Annual Report of the President to the Congress on Government Services to Rural America" submitted in 1974, pointed out that "the true picture of the American population today is one of degree along a rural to urban continuum." To provide for such a continuum, the President's report divided the SMSA counties into three groups, large, medium, and small, with the large group being further divided into core and fringe counties. The non-metro counties were also divided into three groups:

urbanized, less urbanized, and thinly populated, and these three were further classified as being adjacent or nonadjacent to metro counties. Thus ten groups of counties were identified in the President's report for the purpose of discussing Federal per capita expenditures by selected programs for each of the county groups. Even with this degree of refinement the metro-nonmetro dichotomy still affords the most effective distinction for program purposes.

But what is "rural" or "urban" for program purposes also relies on definition in Federal legislation. During the 92nd Congress several bills which were introduced included rural definitions.

For instance, the definition in the proposed Consolidated Farm and Rural Development Act was "Rural areas for the purpose of this section shall not include any areas in any city or town which has a population in excess of thirty-five thousand inhabitants, nor any urbanized or urbanizing area immediately adjacent thereto."

The proposed Small Community Development Act of 1971 stated, "the term 'small community' means any community, municipality, town or village, which has a population of less than fifteen thousand according to the most recent decennial census, and is not part of a metropolitan area."

In the proposed Rural Revitalization Act of 1971 the terms "rural community" or "area" mean "any open country, or any place, town, village or city which is located at least twenty miles from any standard metropolitan statistical area as defined by the Bureau of Census."

The definition in the proposed Rural Development Act of 1971 reads, "the terms 'rural' and 'rural area' shall not include any area in any city or town which has a population in excess of ten thousand inhabitants."

The above definitions have little commonalty. Congress obviously needs to make a consistent delineation between "rural" and "urban" for Federal program purposes.

Some Characteristics of Rural America

Is there a difference between metropolitan and nonmetropolitan America? We hear more and more that we are becoming an urban nation, moving towards a homogeneous way of life. I believe, however, that many characteristics still distinguish nonmetropolitan America. The following are among the most apparent.

One characteristic is individualism, which persists and dominates in much of the nonmetropolitan United States. Many in rural America still believe that the application of police power to control use and development of land is a limitation on freedom. Some live in small communities and the rural countryside to escape not only the more crowded urban environment but also the more formalized controls and higher taxes found in larger urban centers. Many of these individuals look upon governmental planning and development as a threat to their way of life and thus oppose any governmental effort to influence community development. The current opposition in many areas of the country to the idea of Federal, State, or areawide roles in land use planning is a case in point.

Another characteristic is lack of interest in planning. Many residents reason that since the crossroads hamlet of today will not become a metropolis tomorrow, planning and development has no useful function. The leadership of the small communities may have had little exposure to planning and development concepts or to the need for restructuring local government. Consequently, they may not recognize the benefits to be derived from such programs. These and similar attitudes affect both local desire to undertake planning and development programs and the degree of local involvement once programs are initiated.

Moreover, residents of a nonmetropolitan America seldom see their community from the perspective of planning or community development. They do not think in terms of generalized land use, street systems, private versus public facilities, community decision-making, etc., but are more likely to know each parcel of land by the individuals who own it, its price, and its actual or potential use.

Besides these individual attitudes, nonmetropolitan areas have certain structural characteristics. For instance, politically, rural America struggles with a tremendous number of local governmental units, many with small populations and limited resources--social, economic, physical and political. Approximately seventy-five percent of all incorporations, counties, and special purpose districts are located in nonmetropolitan America.

Many small incorporations may be compared to the suburbs of a central city, that is, they are bedroom communities, with many residents employed in adjacent urban centers. Frequently, people living in a town of 500 may commute 30 miles or more to work in an urban center of 5,000 or larger. Often, the small town is dominated by an urban center, which, in turn, may be dominated by a larger and more distant metropolis.

The quality of environment in small towns also varies a good deal. This variety may be due in part to the level of economic activity. Some small towns have a sound economic base and can thus provide adequate community facilities. Other communities may be at or near the poverty level, unable to provide the facilities considered necessary for modern living.

Most small municipalities have inadequate financial resources, making it virtually impossible for them to initiate and sustain planning and development programs or to hire the technical and professional competence necessary to undertake such programs.

Although I have emphasized a few of the characteristics of smaller municipalities, much of what has been said about them applies as well to unincorporated or rural territory, where population densities are even lower.

Rural America has a disproportionately large share of disadvantaged residents--the poor, the aged, the underemployed, those living in substandard housing. For this reason, although rural America may, at first glance, appear to fare well in terms of capital expenditures for many programs, a closer look shows that nonmetropolitan areas need all the help they are getting and more.

The dispersed population in nonmetropolitan United States, the many governmental units, and limited social and economic resources all help to account for the difficulties local political units face in planning for and providing contemporary services and facilities. Many of these difficulties are best viewed as part of a larger regional problem, since both problems and solutions are linked in terms of an environment that goes beyond single local jurisdictions. Here the concept of rural development becomes relevant.

RURAL DEVELOPMENT CONCEPT

Rural development as a concept assumes that the Federal government, as a part of a national development policy, will provide differential treatment to rural America to help retain its population through location of industries and commercial services (economic opportunity), and through the provision of adequate public services and facilities, housing, education, transportation, and health services. The Federal government should base such action on the recognition that the total land and population resources in rural areas constitute resources in dire need of conservation and rehabilitation.

Logically, rural development requires that the locational decisions for economic activities and investments in public services and facilities be "directed" or "influenced" by national policies. Currently, major industries and businesses making locational decisions for new investments use statistical projections, including population distribution, generated by Federal agencies. Both those who do the projecting and those who use the projections tend to view them as "inevitabilities." The credibility attached to these projections by businesses and industries strongly biases private location decisions to take advantage of future manpower and market expectations developed from such projections. If, in fact, public and private decision makers accept governmental population distribution projections as inevitable, then a self-fulfilling prophecy is created, and depopulation of country-side and continued concentration of people in metropolitan centers are assured.

Although the Federal government generally pursues policies aimed at optimizing most of the desirable social and economic characteristics of the population that can be reported statistically, it has done little toward pursuing comprehensive national policies affecting distribution of the population. Indeed, in spite of the language of Congressional legislation aimed at rural development, the policy emphasis of Federal programs sometimes leads one to doubt that the national government totally accepts the legitimacy of rural development. To do so would entail policies and interventions in distribution of "economic" activities, including all aspects of the processes by which locational decisions are made.

Yet if rural America is to develop, it must retain its population and secure adequate economic opportunity within the area. The failure of the Federal Government to adopt policies directed to this end, except in limited, crisis situations, means that its policy, by default, condones continued urbanization and suburbanization.

ALTERNATIVES FOR RURAL DEVELOPMENT

There are, of course, several alternatives for furthering rural development. I will discuss four alternatives.

1. Differential Inducements for Rural America

In discussing differential inducements, I assume a national intention to retain in nonmetropolitan America its natural population increase and to encourage some in-migration from more densely populated metropolitan centers.

While many states have adopted legislation allowing local units of government to grant special inducements to industry (usually in the form of tax relief or provision of facilities built with tax exempt bonds), the states have not made the legislation selective in terms of metro-nonmetro location. Under a differential inducement system, states would adopt legislation that favored non-metro areas. Even then for industry to locate in nonmetropolitan areas, a reinforcing national policy would be required. One such national inducement might be a low Federal Reserve discount rate on investment capital for industries that locate in designated districts of nonmetropolitan areas.

If differential inducement is to achieve desired development location decisions, the metropolitan-nonmetropolitan distinction must be the basis for development decisions. Such a policy would allow better planning for nonmetropolitan development and would assign the necessary resources to accomplish the job. Such policy would go beyond simple redress for the apparent imbalance in economic opportunity, which has severely diminished individual citizens' choices in terms of place and style of life. It would provide the nation's metropolitan communities respite from the constant influx of nonurban people, thus allowing urban communities to work toward solving the many, and severe, problems which past migration has accumulated.

Public investment in public facilities by the Federal government--and to a lesser degree by state governments--undoubtedly affects locational decisions. Current actions at the Federal executive and legislative levels give favorable treatment to large urban centers. This urban bias and the concomitant failure to fund adequately portions of the "Rural Development Act of 1972" make it difficult for rural America to attract economic development and people.

2. Areawide Planning

The term areawide planning, for the purpose of this paper, indicates multi-governmental efforts. Usually, the term connotes a multi-county approach. An areawide planning organization may serve a subarea of a State or parts of two or more States.

Areawide planning may cover areas of concentrated population, such as the Standard Metropolitan Statistical Area; or it may deal with areas of dispersed populations that consist of several counties with no city over 10,000 or 20,000 population; or finally, it may serve areas that include both concentrated and dispersed populations. Areawide planning has been a reality for more than a half century.

Since the end of World War II, the Federal system of government in the United States has undergone increasing stress because of expanding national domestic programs and conflicting responsibilities among the governmental participants in the system--the Federal, State and local governments. Experience also suggests that local governments, in both urban and rural areas, are inappropriately organized to respond to needs that transcend their boundaries.

The Brookings Institution report, Making Federalism Work stresses the need, and the urgency, for a national program to achieve operationally meaningful program coordination. This report forcefully argues for the absolute necessity of establishing, in both "urban" and "countryside" areas of the nation, a "universal system of multicounty agencies with responsibilities both for planning and for facilitating action programs covering the entire range of community activities relating to economic and community development." The report, however, avoids suggesting a specific operational format and procedures for implementing the general recommendation--largely, it would appear, because, as the authors state, "we begin with a basic suspicion of model-building". The preceding pages /of the report/ are strewn with the debris of broken models--/which/ foundered because, among other reasons, they could not be fitted uniformly to the diversity of American communities--not alone the physical difference among communities but, what is even more important for model-building, the institutional diversity." In effect, the Brookings report leaves the responsibility for structuring a desirable operational framework and mode to the several states, presumably with the acquiescence of both local communities and Federal agencies.

From the 1920's to well after World War II, the few multi-county planning agencies were metropolitan, dealing with problems of concentrated populations. The passage of the Housing Act of 1954 accelerated interest in metropolitan areawide planning because such planning was eligible for grant assistance under Section 701. Nonmetropolitan planning received a similar stimulus with the inclusion in the Housing Act of 1968 of grants for nonmetropolitan agencies.

Since the mid 1950's, Federal programs have led to a proliferation of multicounty organizations. The following are some of the Federal

activities utilizing a multicounty organization: the Department of Agriculture with Rural Conservation and Development Districts; the Economic Development Administration with economic development districts; the regional health planning program of HEW, the law enforcement and criminal justice program of the Department of Justice; and the Appalachian Regional Commission. These and other activities have resulted in the formation of two or more single function multicounty agencies within a given area rather than of one agency handling several functions in the area. A recently completed study by the Advisory Commission on Intergovernmental Relations recommends that areawide planning organizations be multi-purpose umbrella organizations, capable of administering most, if not all, of the twenty-four or more Federal aid programs that require an areawide approach.

Obviously, it is not multi-county or areawide organization alone that makes for effective coordination of planning and development activities. Such organization must have some functional principles to succeed.

I would like to emphasize that areawide planning organizations must be concerned in a comprehensive way with the needs of dispersed populations. These organizations should have a comprehensive program approach concerned, at least, with the following:

1) The problems of cultural and economic lag, poverty, and underemployment.

2) The trends of impulsive migration to, and uninhibited growth in major urban centers which create social disorganization in receiving areas and forced retrenchment in provision of vital services and facilities in the sending areas.

3) More effective group action to achieve a wider range of, and a better balance in, decisions about the kind of environment in which people want to live and work.

4) Intergovernmental cooperation in the delivery of governmental services and citizen participation in evaluating issues in connection with such services.

5) The wise and balanced use of land and water resources.

Such areawide organizations should be able to offer or obtain expert assistance in a number of functional areas: for instance, in comprehensive planning, regional health planning, fiscal management, public facilities, code administration, resource development and conservation,

criminal justice and law enforcement, health services, manpower, aging, solid waste disposal, agriculture, tourism, and recreation.

The areawide planning organization and its staff must establish a working rapport with its constituency so that local units can profit by being an integral and responsible part of the larger organization. Making expert service available to solve immediate problems is an important aspect of a multicounty program, serving to increase local competence to identify, meet, and solve local problems.

3. Regionalism

"Regionalism" assumes that areawide problems and their solution transcend the boundaries and the capabilities of local governments--in terms of the expert assistance, authority, and fiscal resources required. Regionalism calls for other, broader governmental arrangements. However, in developing these arrangements, local general purpose governments may find their authority curtailed, fiscal resources diverted as a result of decisions made by Federal and State governments, or their rationale for existence questioned. We have seen, and will continue to see, Federal diversion of fiscal resources from local general purpose governments to independent regional organizations, some of them non-profit. This diversion of fiscal resources, which local general purpose governments believe they should receive, has been criticized by those who do not like the implied loss of local power.

Yet the concept of regionalism is probably here to stay. As far back as 1927, Alfred Bettman, in an article on "How to Acquire Parks and Other Open Spaces", noted: "...in this matter of open spaces, as in all other phases of planning, there is need of developing both regional planning and regional government; in other words, first the making of regional plans and, second, the creation of regional legislative and executive organs for carrying them out."

The first national conference on regional councils held in Washington, D.C. in 1967, had for its hidden agenda the objective of stopping the proliferation of special districts and the promotion of regional councils as the first step to regional government. A change in national administration brought this effort to a sharp halt.

The Advisory Commission on Intergovernmental Relations has considered recommendations to restructure government, including "regionalism". The staff of the ACIR proposed for consideration by the Commission a recommendation citing the need to "establish basic State policies and State and regional mechanisms for restructuring the system of local

government to make it more responsive and adaptable to the areawide as well as local needs of individual communities", and "authorize the creation of governmental units of several types capable of providing areawide services and of assuming all the responsibilities assigned by Federal, State, and local action to officially designated umbrella multijurisdictional organizations." At this time, the recommendations on local government restructuring and areawide mechanisms have not been adopted by ACIR. But the Advisory Commission on Intergovernmental Relations has also concerned itself with assignment of functions to local, areawide, and state levels and with the need for reorganization of local government to better serve the needs of its citizens--especially in areas of dispersed populations.

"Regionalism" in a pure form does not yet exist in the United States, although there have been some city-county consolidations, and some metropolitan arrangements such as Miami-Dade County, and Indianapolis with Uni-Gov. The Minnesota legislature has created the Metropolitan Council of the Twin Cities for the Minneapolis - St. Paul metropolitan area. But even this creature of the State does not represent true regional government.

4. Regional Communities

The regional communities concept as an alternative for rural development implies more than a geographic and political entity formed from a number of smaller units, although it implies this as well. The emphasis in both areawide planning and in regionalism is predominantly political, involving some type of intergovernmental cooperation or governmental reorganization. The basic emphasis in regional communities is the recognition of interpersonal and interorganizational linkages including shared values, accepted behavior codes, dependencies, psychological identifications, commonalities of interest, similarities of experience, etc.--and the strength of such linkages.

The regional community concept also transcends the definition of community as one or more groups of people interacting toward the attainment of goals in which they share a common interest. Such a community has geographic form, but it is not necessarily fixed in any one town, county, or other arbitrarily defined area, and may change with the definition of the problem. Regional communities must have political viability and a known role in the political hierarchy; they must also reflect the shared goals of their populations. But they must, above all, rest on the solid bedrock of reasonable and traditional human ties.

It is crucial that the geographic area of regional communities be delineated carefully, for once delineated, a series of events will be initiated that may start with areawide planning and end with regionalism. The regional communities concept can be viewed as evolutionary.

A NATIONAL RURAL DEVELOPMENT POLICY

I have presented my views on four alternatives for rural development. The last three of the four approaches apply to metropolitan areas, as well as to nonmetropolitan areas. I contend that some of our small SMSA's and adjacent dependent counties could form regional communities which would benefit more from nonmetropolitan programs than metropolitan programs. What is needed is a comprehensive national development policy.

At present, no one agency speaks for the satisfaction of our total domestic needs; responsibility is scattered throughout the Federal government and discharged in terms of a multitude of short range, erratically funded, and sometimes contradictory programs. Yet, in order to cope with the growing magnitude of domestic problems, domestic planning should at least match the sophistication of defense and space planning efforts.

The Nation needs a set of coordinated policies for population distribution, industrial dispersion, land use, resource management, agriculture, housing, education, employment, and quality of life. In developing such policies, Congress itself should compile and analyze its current policies, as set forth in legislation, to determine if they are indeed coordinated toward achievement of the goals of the legislated programs. A joint Congressional Committee should be authorized to evaluate successes and failures in implementing national goals and policies and to keep Congress up-to-date on the relationship among existing Federal programs, proposed new ones, and national objectives. The Federal government could then assess problems and needs more effectively to determine what is necessary for the development of nonmetropolitan areas and to redress inequities of income, housing, education, and employment.

IMPLEMENTATION AT THE FEDERAL LEVEL

by

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Rural America today represents 57 million people, most of whom live outside Standard Metropolitan Statistical Areas of the United States. These 57 million people occupy 98% of the land surface of the U.S. They also represent over 56,000 units of government including municipal, county and multi-county, district, and a number of other types of governing and coordinating organizations. It is customary when we think in terms of rural America that we also think in terms of Agriculture, but it is interesting to note that farmers who represent less than 5% of our national population also represent less than 20% of rural America and less than 10% of the rural income. So when we speak of rural America, we are really talking about small communities, and I am talking of communities of up to 50,000 but mostly those of 10,000 or less.

There is a history that is closely associated with today's necessity for rural development which has its roots in rural outmigration. Since about 1940 some 30 million people have left rural America for the cities. This is probably one of the greatest voluntary migrations of people in the annals of history. There would be perhaps twice as many people living in rural America today if it were not for this outmigration. Now when we talk about policies of balanced growth — and everybody is trying to sweep the folks out of the cities and back into the smaller communities as a feature of balanced growth - I am frankly not sure that this outmigration was bad for the country. In order to estimate what our population distribution really should be, I think we will have to consider variables which pertain to population distribution, resource conservation, and our agricultural food base. I am often critized by the Congress for not coming up with national goals for population growth and distribution, but I just don't know where to grab the problem. As a nation we have not made a determination of policy as to how we want our people to be distributed, and any arbitrary goal could be bad for the country, so we shy away from that.

We do know that this migration from rural to urban areas has caused a massive national headache and we have an entire department of Housing and Urban Development to contend with it. Cities have become congested and crime, pollution, drug addiction, human regimentation, and social unrest thrive primarily in our larger urban centers. So whether or not cities are the answer is really questionable; we do know that over half of the people who live in the cities say they would rather live in rural America. But just the same, we are confronted with the aftereffect of the migration to the cities, and look what has happened in the rural areas over that period of time. Businesses were forced to close down and follow

customers to the cities, community revenues fell off so that small communities were unable to supply conveniences such as water, sewer, and essential services. Personal services and social services moved out with the businesses, as lawyers, school teachers, doctors, dentists, and other professional people had to go somewhere else to make a better living, they saw their clientiele declining and they had to go along with them. And as a consequence, over the past three decades, rural America has been in a state of relative recession, a recession which is recent to the urban centers.

Now since 1970 within the last three to five years, there has been a remarkable turnabout in the nature of rural development and in the rural outlook. For example, from 1970 until 1973 over one million people moved out of the cities and back into the rural communities. In the calendar year 1973, 19,000 manufacturing firms moved out of New York City, Chicago, and Philadelphia to rural settings. Now they did not all move way out into the boondocks, but they did move away from the inner city and many of them actually did move into rural counties. Today the rate of new manufacturing jobs in rural America is over twice as high as the rate of new manufacturing jobs in the urban centers; the rate of new construction jobs in rural areas is over three and a half times the metropolitan rate. In terms of population, the metropolitan growth rate for the period 1970 to 1973 was 2.9%. In non-metropolitan counties adjacent to the urban counties that growth rate was 4.7%, and in the non-adjacent rural counties it has been 3.7%. The clear implication is that the rural areas are growing faster than the urban areas. This is not true across the entire United States since there are pockets where there is still substantial out-migration, but on the whole rates of population growth and industrialization are more rapid in rural areas than in the cities.

Now we come to a very important conclusion - that rural development has become a major national movement. This raises a question, "what are we going to do with it?" I think the requirement is that we spend all of our energies and intelligence guiding this movement along orderly and sensible lines because just like the industrial revolution, the renaissance, or the opening of the West it can't be stopped and we have had enough bad experience in the past of letting things such as environmental deterioration go on and on and on until it took a massive effort to correct the situation and to recognize the fact that some of the situation is uncorrectable.

Now let's talk for a moment about recession and rural America. The current recession seems to be rather selective in where it wants to settle because it hits hardest in the urban sectors of our economy and apparently the least in rural America and in the stock markets. During the period between March 1974 and November 1974, total metropolitan employment declined 0.3% and is probably down more now, while total non-metro employment went down 0.1%. Metro construction dropped 12.7%, and that of course is of major significance, while non-metro construction went down only 1.2%. Metro services went up 2.7% - now remember the field of services is where we have had one of our worst deficiencies in the rural areas - while non-metro services went up 4%.

All of these indicators paint a picture of rural development on the move, but the fact remains that many years of decline and neglect have left deep and cumulative scars on rural society and economy, so let's look at some of the darker sides. For example, nearly 60% of the substandard occupied housing in the U.S. is in rural America and the incidence of that within the Appalachian region is much higher than the national rural average. The median family income has been growing in rural America but it is still 20% below the median metropolitan income. However, since rural lifestyles are different the gap is not quite as great. There are approximately 35,000 rural communities which still have no central water system and there are 44,000 which lack a central sewer system so we have massive requirements there. For example, the Farmers Home Administration has a backlog of requests for assistance in the fields of water and sewer that exceeds $13 billion, and when people talk about the inadequacy of programs I don't think they want adequacy of programs at those costs. Doctors and health facilities and fire fighting equipment and other community services are obviously still in very short supply in rural America.

Beginning as many as three decades ago, the Federal government began to move into this picture and attempted to do something about it, but the programs that were created were piecemeal or overly specific until 1972 when the rural development act was passed. This act comprehends and addresses the entire spectrum of rural development needs along its hardware features and its programs include water and sewer grants and loans; long term, low cost loans for all other types of community facilities; and grants and guaranteed loans for the stimulation of business and industrial investments in rural communities. These are Farmers Home Administration programs which are in addition to FHA programs in the field of Housing and Farm assistance loans. These programs add a major load to that which is already carried by FHA and in spite of the fact that the program has a supervisor in virtually every county, the things that we have allowed to go into the Farmers Home Administration without augmenting the personnel and their capabilities have given them a most difficult role to play. I hear from time to time in some areas, a condemnation of the local FHA administrator because, they say, "he won't give you the time of day," and in other areas, I hear extraordinary praise. They are turning a corner in terms of new responsibilities, and like any organization some of them are slower to adjust than others, but I do suggest to you that the Farmers Home Administration agent in your county or in your district or your state is a hard pressed public servant who does in fact, have at his disposal perhaps the greatest single package of programs available to small communities.

One thing I would like to refute is an allegation that we are not spending the money that we have and again I go to some of the Farmers Home Administration programs as an example, although there are other ones. I would say that we are spending every single penny that the Congress allocates to us, nothing is held back, there is no reservation of funds. Moreover, the trend in assistance to rural development has been very sharply upward over the last several years, here I bring in the Rural Electrification Administration along with the FHA as an example. In 1969 housing loans from

FHA were only $512 million, in 1975 housing loans were $2,253,000,000 a quantum leap over this period of time. In the field of community facilrty loans, that is water, sewer, and other community facilities, the move has been from $222.6M in 1969 to $674.5M in 1975, and in the area of telephone and electric loans, most of which are billed to the cooperatives and are considered an improvement service in lieu of initial services, the fund level has gone up from $470 M to $2,286,000,000. Therefore, one should not be too quick to accept all of the criticisms of Federal rural programs.

Rural development is of course, not only a matter of hardware programs, it is also a matter of learning and planning and, most of all, human orientation and motivation. The Rural Development Act comprehends these needs as well as those of the hardware requirements. Title 5 of the Rural Development Act provides for research and education through the Extension Service, and the Cooperative State Research Service, and the nation's educational institutions, and there is another section of the Rural Development Act which states that the Secretary of Agriculture is authorized and directed to exercise leadership and coordination of a nationwide program of rural development. In so doing, he can use all of the services and resources of the entire Executive Branch of the Federal Government in coordination with state and local rural development programs. This is the mandate which is a charter of the Rural Development Service which is designated as a departmental agency for the specific purpose of accomplishing the leadership and the coordinating roles of the Department of Agriculture and fulfilling all of the comprehensive aspects of the Rural Development Act. However, we recognize that all of these people for whom we are going to provide leadership and coordination have their own legislation, their own charters, and their own regulations, and it makes it pretty much the business of crossing fences and getting into their yard and saying, "I am here to coordinate you."

We didn't quite know how to handle this situation. We were a little bit like the Board of Deacons in this little country church who ran across an item in the budget that said "chandelier - $200." They voted it down, saying that in the first place, it cost too much money, and in the second place, nobody in the church knew how to play one, and in the third place, they needed a new light in the entrance hall. This problem of approaching the responsibility of coordinating local programs has caused us to do a great deal of contemplation and has charged us with the responsibility of coming up with a means of accomplishing it. It has put us into contact with about 50 Federal Departments and Agencies which administer over 500 programs applicable to rural developments and rural needs, and we have decided that the only way to fulfill this mandate is to treat it as a service which can be extended to other men and to depend on their goodwill and their agreement that their program should fit rural as well as urban needs. We incorporate in this approach, all of these software areas and all other areas which were rather non-specific to the Rural Development Act such as health, recreation, social service, education, planning, conservation, manpower training and all the other remedies which are needed to extend Federal benefits into the rural areas.

Since the act is primarily a service to small town America it also

puts us into direct touch with a great number of small communities. There are a great number of small communities where the Mayor operates a hardware store for his living, runs the town out of a shoe box, and probably gets $50 a year from the community. He has no staff and no way of poring through the catalog of Federal domestic programs. He generally doesn't know about the 500 programs and 50 Agencies which can provide assistance to him and he needs a representative at the national level. He needs what you would call a one stop service center at the government level which can lend him a hand and help him with his development programs, and that is the service that we provide. We receive literally thousands of letters from small communities or telephone calls either directly or through the Congress and they say, "Our town, Hickory Hill or Pumpkin Center or whatever, needs a water system, or a community meeting house, or a fire station, or recreational facilities, or health services. Can you help us?" If this is a letter or if it comes through the Congress, we call that person back and we find out exactly what his problem is and where he stands with relation to getting it handled. Then after exploring every possible avenue of assistance open to him we write him a letter describing and explaining available programs to him and tell him who to contact in his neighborhood for assistance with a particular program. We send copies of all of this correspondence to all appropriate Federal and State contacts as a letter of introduction to this person. After which we call him up from time to time asking "how are you getting along with your project?" We follow his program all the way through until he obtains whatever it is that he is after or until we exhaust the resources. We also explain to him how certain programs dovetail with certain loans and grants and how maybe he can put a fire station and a police station together and get a grant whereas otherwise he may not have been able to do so.

All of these are specific services to rural America and they are gaining congressional recognition as well as recognition within the small communities as a snowballing type of an operation - we may have to computerize it. Our entire objective is to be non-paternal, we take the view that the role of government is to be responsible, but that the initiative must begin with the local communities. As Dick Hartman of the National Association of Regional Councils says, "we have to find area-wide solutions, we have to regionalize all this business." However, we cannot regionalize initiative. Not even at the multi-county district area can we have some sort of a multi-jurisdictional body telling Centerville or some other town precisely what it can have. We may come to that, and if they choose to do this themselves, I believe that it is good, but if they believe in self determination of small communities, we are going to have to depend on community initiative to a great deal and be responsive to it.

If we are talking about planning, I think it is quite proper to say that the best destiny for some small communities is to be shot dead right between the eyes. Some communities are not viable, some of them are anachronisms that are born of a communication system which was good in its day but is no longer needed, and to keep pumping money into some small community just because the inhabitants want it but can't keep it together without outside help, I don't know whether that is good or bad. However, this is not a Federal prerogative and we will respect their decision.

Rural development is undoubtedly a vital American need, but one also has to be exceedingly sensitive to the wise use of our land. Today urban sprawl (i.e. the standard metropolitan statistical area) is consuming from 1 ½ to 2 million acres of arable land every year. Rural sprawl could be much much worse because it is easier to be more profligate with land to fulfill rural needs. All you have to do is to have external interests which operate on the basis of a sense of convenience and expediency and buy up large tracts of land for factories, and developments, and subdivisions, and the land is gone... By the year 2010, not too long from now, certainly in the life span of our children, the world will have 3½ billion more people than today that is 3,500 more cities with 1 million more persons each. American agriculture and the export of American food and the policies associated with such exports are going to become tools of national diplomacy which is probably comparable to the power of our Defense establishment in shaping our political alliances and in determining who is going to live and who is going to die. In just a few more decades our agricultural production base and our export policy are going to make an imprint on the affairs of nations. Therefore, we have to protect our agricultural production resources and control their use. There is nothing at all inconsistent between this and rural development, they are hand in hand. Agricultural conservation does not retard rural development, but it does mean that we do not have inexhaustible resources in land any more— that we do in fuel, and we have got to be sensitive to this fact. Small communities and counties are going to have to confront the problems of zoning, however politically troublesome they are, if they are going to grow, and the time to do it is early so that the community can manage its own affairs, and manage its own growth and protect its own character and its own preference as to what it would be.

Now a final observation concerns energy and rural America. America is really the placenta of a growing world, but according to a Federal Energy Administration policy statement, by the end of 1973 the members of the Organization of Petroleum Exporting Countries will have earned from the rest of the world some $100 billion dollars in Foreign Exchange which was about ten times their earnings in 1972. By the end of the decade that figure could be $600 billion. By 1985 it could be one trillion two hundred billion dollars or six times the world's present total monetary reserves. That is painting the picture about as dark as you can paint it but it is one way to look at it. Now what could they do with this money? In eight hours they could purchase one lockheed C-5A; in ten days the Bank of America; in seventy nine days the Exxon Corporation; in 143 days the IBM Company; in 1.8 years all of America's investments outside the United States; in 15½ years all of Great Britain's personal wealth; and in 15.6 years all of the companies on all of the world's major stock exchanges. Now things may never get that bad but they don't have to get that bad to be pretty bad. This means that Project Independence is going to have to work and rural America is going to be the site of its working and will be called on to help it work. Appalachia for example, is going to be gravely affected in terms of coal production and most likely, coal gassification activity. Tennessee and other States will help by moving more and more to nuclear and hydro-produced energy. The coastal states will help in meeting the nation's energy requirements by harboring the land-based aspects of offshore Oil developments. These activities are going to have.

a great impact on development. There simply are going to be new and major and substantial influences on how the land is used in rural America and how rural America is going to be developed.

We will be having our Bi-Centennial next year. Anybody who is 67 years old right now will have lived one third of that time. The lifetime of one individual and the lifetime of one good idea can make a significant impact on what our country is going to look like. I think that we have more responsibilities than most generations to make an imprint on the future of our country and what sort of a legacy we leave for our children and their children. We are living in an especially fast moving era, and rural development is a dynamic phenomenon of modern-day change. Let's shape our rural areas wisely and leave them to our children in good shape.

FINANCIAL RESOURCES FOR RURAL DEVELOPMENT

by

Ted Parker

The remarks of Governor Holshouser and John Whisman on Sunday evening had really set the stage for the following discussion of the partnership of federal, state, and local government in getting the job done in rural development. This partnership puts things together and instead of decisions coming from the top to the bottom, the partnership reverses the process and local inputs have impacts on decisions made at the federal level. Local public investment strategies coupled with private capital can make this work. As a point of departure for the workshop reference was made to a Policy Statement on Rural Development prepared for a senate sub-committee (chaired by Senator Humphrey) by the Council for Agricultural Science and Technology at the Iowa State University.

John Evans spoke from the Federal level stating his role as one of leadership, coordination, education and research. He further noted that the Rural Development Service was a Washington based service agency which acts as a coordinating division with the Farmers Home Administration carrying out the programs of the Rural Development Act.

The mechanics of dealing with the various federal agencies in the 70 programs administered by the Department of Agriculture were explained with a special mention of the research arm of the agency. This is developing computer models for the purpose of providing resources such as socio-economic and other data for a specific location or project anywhere in the country for anyone requesting assistance in locating a site in which to invest private capital.

Evans also pointed out the existing gaps in various federal programs. He cited as an example the Community Development Act in non-metro areas where communities with a population of 20,000 to 50,000 could not qualify for assistance under the Community Development Act nor could they participate in programs administered by the Farmers Home Administration. He further indicated that the Rural Development Service would work with other federal agencies to come to some agreement so that every community would be able to apply for federal assistance.

James Craig, speaking from the state level said he was the closest

man to the firing line. He went on to explain that the Farmers Home Administration is an action agency and not a planning agency. Each county is understaffed and it is difficult to deliver an adequate program. However, state agencies have given manpower assistance and the program has not lagged too far behind. Reference was made to the number of programs administered by the Department of Agriculture under the Rural Development Act of 1972 and hope was expressed that more staff would be made available as the Rural Development Act is implemented.

Craig traced the Farmers Home Administration Program from the late thirties through the forties when the program focused strictly on farmers and low income rural people in building homes, and supplying operating and farm loans. In the fifties, the Administration expanded into multiple unit housing in rural areas. During the sixties, it began to fund water facilities programs. These rural water systems had tight design criteria and tight money limitations and caused many problems. For example, the rural water company would obtain the necessary number of subscribers to generate the revenue needed for meeting the loan payments and installing the system. Within several years the system was obsolete or inadequate because of the development that had occurred after the system was installed. The design criteria and money limitation has been reviewed in recent years to allow more flexibility and provide a more suitable system.

Craig then cited the massive authority given to Farmers Home Administration in the Rural Development Act of 1972. They can give financial assistance for the construction of water and sewer facilities, solid waste landfills, municipal facilities, hospitals, schools, recreation areas, day care centers, curbs and gutters, and can even develop industrial sites. This certainly is a long list of activities and programs that they never dreamed they would have to administer.

J.D. Foust explained his role in the Office of Intergovernmental Relations which provides the services side of government. The primary function is to work with local state and federal government to get the resources into North Carolina to meet the needs of local government. In other words, to see that North Carolina gets its fair share of Federal funds.

The Office of Intergovernmental Relations is divided into three dimensions:

1. Local and Regional Planning
2. Management and Analysis
3. Division of Programs

These divisions coordinate the state's programs with those of Federal and local programs. They are charged with the responsibility to interpret the needs of the state and get financial resources of various programs to meet those needs. There is a partnership in North Carolina; it is the 17 regional organizations. There are 450 municipalities and 100 counties in North Carolina and it is easier to

relate to the 17 regional organizations. It enables the state to respond to priorities closest to the people. The regional agencies come in with projects based on local needs and local decisions.

Funding resources for the regional councils are Appalachian Regional Commission, Coastal Plains Commission, the Department of Housing and Urban Development non-metropolitan "701" funds, and the Economic Development Administration. There is a good working relationship and coordination between the regional councils and these federal agencies. The regional councils, the state, and the federal agencies must start out together. We look at priorities, if EDA can put in some money to match local monies a project package is submitted to get the most mileage out of the federal dollars. This has, for example, helped with the establishment of state and neighborhood parks.

Some of the things that have been demonstrated successfully in North Carolina with seed money in certain areas has resulted in the statewide expansion of the program. A perfect example of this is the ARC funding of two health projects in western North Carolina. The success of these clinics convinced Governor Holshouser to expand this program statewide.

The staff of the Office of Intergovernmental Relations assisted local communities in preparing housing assistance applications under the Community Development Act. There is a shortage of funds to build or remodel houses because of economic conditions and it is hoped that four million dollars will be made available through these efforts.

Ted Parker injected that North Carolina was unique in that the State agency administrated the total program for the 17 regional councils. South Carolina, on the other hand, has ten regional districts but only one in the Appalachian region.

State Planning and Management Assistance

by

Billy Ray Hall

The need for rural planning assistance from whatever sources has recently been accentuated by three developments: 1) Federal initiatives in the form of general revenue sharing and Community Development Block Grants; 2) State activity in such areas as land use, notably the Coastal Area Management Act, and other programs which deal specifically with local units of government; and 3) Private development -- the last ten years have seen an unprecedented economic growth and a significant change in social, economic and growth patterns. The need for effective planning in these areas requires that we, as professionals, seek effective mechanisms to accomplish those ends.

In the Department of Natural and Economic Resources we are concerned with environmental protection, economic development, and combined assistance to specific local government units. In our divisions we handle problems such as environmental management, resource planning and evaluation, economic development, and community assistance. It is in this last division of which I am bureau chief, that we parallel many of the councils of governments' sections which have been outlined earlier this afternoon including recreation assistance, economic development, law enforcement assistance, administration, and local planning and management assistance. The local planning and management section, begun around eighteen years ago, is one I'd like to focus on in my discussion. It was formed primarily as a response to local planning problems and the need for drawing together planners when and where it might be economically infeasible to hire them on a local government level. Throughout the history of the program it has been geared toward contracted studies that could be printed, bound and sent out. The primary results of that activity were in getting something in the mail and an evaluation of that particular document. Our section has taken a decided turn in the last eighteen months and I like to think of our direction now in three areas -- one is to respond to local problems and needs, second, to gather input from the local level and third, to make it felt in state agencies and policymaking. The scope of our program can be seen from the fact that in the current year we are serving 96 communities. In the areas of which we have just discussed we're serving 30 localities and in the implementation of the Coastal Area Management Act in the east, we're helping 20 countries and municipalities.

As much as we are a state agency we have an advantageous input into state policymaking in the specific areas we deal with--housing, land use, and management. In the area of management assistance we have tried to respond to HUD's push for expansion of these services to local governments. Management and organizational development projects are of primary

importance to local governments no matter what size, rural or urban, and examples of these are provided by people in our division to the units with which we work. We seek two forms of expertise in the primary planners in our program -- that relative to the details and requirements of planning and that related to dealing with local governments. For this work we are funded in a number of ways -- from federal sources such as Housing and Urban Development "701" funds, funds from the legislature, and funding for special projects.

Our basic philosophy in providing planning services is to provide community assistance in such a way that communities solve their own problems with planning staff capabilities near to the problems.

Many of the same type problems are experienced in rural areas as are in urban areas. Often you hear leaders in this country referring to the needs for planning, management, and other activities related to development of an area being so great in urban areas and large cities or metropolitan complexes. These urban areas usually have the staff capabilities to study, analyze, and make recommendations for various solutions of problems.

Usually in rural communities, the problems relating to growth and development have gotten to the stage where planners are called in to help implement piecemeal approaches, rather than being involved in continuing, long-range planning approaches that interrelate all problems associated with growth and change.

Rural communities usually do not have monies or dedication to the planning process to employ full-time planning staffs. Therefore, through regional councils of local governments, regional planning commissions, and state planning agencies, such as the North Carolina Division of Community Assistance, these smaller communities can maintain a comprehensive continuing planning program at an economical cost and will certainly reap benefits when in the future they are not always reacting to crises, but preparing for them.

Regional Planning Districts: The Functional Approach

by

Dudley Onderdonk

Many State and Federal agencies are faced with allocating resources (monetary, physical, human) over space. Such a distribution of resources into separate administrative units is termed a regionalization. The State of Illinois for example, has a mandate from the Governor to establish a uniform set of State planning and administrative regions to be utilized by all State departments.[1] The Illinois Department of Local Government Affairs has surveyed regional planning directors in an attempt to establish criteria for regional boundaries. The survey results are unclear, but economic factors and homogeneity are believed to be the most important factors. Although the homogenous region may be of use to the water resources planner, the functional region defined by social and economic flows to a common center serves as a more efficient approach to regional planning.

Despite the suggestions of many regional scientists and economists, few of the regionalizations proposed thus far observe one simple concept. The city and countryside have an interdependent future. The old dichotomy between rural and urban is no longer meaningful. Large portions of the rural countryside will become part of the urban core while the remainder is and will continue to be dominated by the city. Our networks of transportation, communication, economic and social systems are dominated by an urban based mechanism through which these functions are carried out. Our cities will continue to grow and be the mediator of their regional economy. As urban-rural interdependency increases, technological change in rural areas will also have a profound effect on the central city. Rather than attack the symptoms of our problems we can concentrate on the conditions that will maximize the economic and social welfare within a regional system.[2] Essential to this point of view is the functional region.

In order to shape policies and plans for an area we need to understand the functional structure of the region and formalize the existing structure into administrative areas. If regional planners hope to direct regional growth, the relationship between cities and the surrounding countryside should be examined. The city is the focus of modern life. Our processes of spatial organization have concentrated a tremendous amount of resources into urban centers which provide services, a concentrated labor force, and the external economies needed to support future growth.[3] Central Place studies show that regions are organized around foci.[4] Christaller suggests that the town is a center or focus of a regional community and the mediator of that community's commerce.[5] Central places are important because they provide essential goods and services for the surrounding land, while at the same time the surrounding land provides clients for the central place.[6] Thus, central places interact with and dominate their hinterlands.

Planning regions should conform to the already existing functional integration between urban "cores" and their hinterland. At the present time many regions are "a jungle of obsolete, criss-crossing, overlapping agency districts which hinder or even block the efforts of State and local officials to plan and work together."[7] In Ohio alone, there are 366 different State agency service districts whose lack of coordination costs taxpayers time, effort, and money. State administrators have proposed functional regions centered around urban areas where local, State and Federal officials can coordinate their efforts in solving problems. The Ohio Department of Development suggests that such planning and service regions will upgrade governmental services and provide these kinds of benefits: (1) State and Federal services will be more available and responsive to local needs. (2) The new regions will enable separate counties to participate as a unit and thus facilitate communication, and the flow of Federal funds into the area, while at the same time eliminating the confusion and waste caused by the present sprawl of agency districts. (3) The urban centers will provide greater accessibility to State Government and serve as data gathering and planning centers. And finally, (4) Urban centered regions will provide a means for pooling limited resources among communities with common problems.[8] Although some of the above claims appear overly optimistic, one can say that administative efficiency would be increased by a functional organization of major governmental services. Christaller realized this - he suggested administrative regions based upon the separation of functional regions for purposes of distinction and growth in the regional metropolitan centers.[9] Such a change in regional policy requires a collaboration of government administrators and a basic change in the clear-cut administrative control.

Functional regions have more to offer the planner than administrative convenience. As the emerging pattern of the U.S. economy enters the "suburban phase," the conditions for controlling growth would be enhanced by strengthening the links between the metropolis and all the communities within its economic reach.[10]

Future urban growth in the U.S. will represent a significant expansion of the existing metropolitan areas. As Downs states, "Peripheral sprawl will undoubtedly be the dominant form of urban growth throughout the U.S."[11] Friedmann and Miller foresee "a new scale of urban living that will extend far beyond the existing metropolitan cores and penetrate deeply into the periphery."[12] Furthermore, the existing metropolitan areas contain a powerful set of interlocking institutions from which few individuals or industries can break away. Thus, despite a continually expanding urban field, the established cities will continue to provide the framework for virtually all of the nation's population growth.[13] Picard expects the present pattern to continue and anticipates that, "the lion's share of new communities would occur in urban regions or near the greatest metropolitan areas."[14]

Inherent in the above concepts is an economically expanding, dynamic urban core which will lend increasing social and economic support to the surrounding region. The metropolitan core organizes the regional economy. It provides the dominant business link with the rest of the United States and world through its high-order financial, professional and cultural establishments.[15] In addition, economic growth takes place

in a matrix of urban centered regions through which the space-economy is organized. Berry states:

> Cities organize the space-economy. They are centers of activity and innovation, focal points of the transport and communications networks, locations of superior accessibility at which firms can most easily reap scale economies and industrial complexes can obtain the economies of localization and urbanization. They encourage labor specialization in productive activities and efficiency in the provision of services.[16]

Not only does the metropolitan core provide an efficient economic center, but it is also the prime importer of culture and technology. Innovations filter down the urban hierarchy and spread out into the urban fields of the adopting centers.[17] These innovations make the region more cosmopolitan and economically viable. The urban core is a dynamic center of action which brings social and economic benefits to the people of its region.

Some students of economic development suggest that since the urban core organizes the economy and generates innovations, it is the center through which change can be brought into the region.[18] This "growth center" strategy suggests that the spatial structure of a developing economy can be structured around urban centers. Continued urban-industrial expansion in the major central cities should lead to catalytic impacts on the surrounding region. Growth impulses and economic advancement should spread out to the smaller places and "ultimately infuse dynamism into even the most tradition-bound peripheries."[19] Several mechanisms have been suggested by which economic and social development is transmitted from the growth center to the area surrounding it.[20] Hirschman argues that benefits may trickle down to the hinterland as investments and purchases from the growth center increase.[21] At the same time, Myrdal suggests that spread effects (similar to trickle down) from the core, such as increased outlets for the hinterland's agricultural products and raw materials, coupled with the diffusion of technical innovations may aid in the periphery's development.[22]

More recent researchers argue that development originates in "centers of change" located at the points of highest potential interaction within a communications field. They believe that city and regional growth depends upon the communication and resulting adoption of innovations. Meier, Berry and Friedmann suggest that the adoption-diffusion growth process can focus on urban areas which are centers of change. Berry adds that innovations are diffused down the urban hierarchy while they simultaneously spread within the urban fields of each adopting center.[23] Friedmann views development as a process that proceeds in a hierarchial system of dependent relationships established around a dominant center.[24] Such relations have led Friedmann to advocate that "the planning function should extend across the entire area dominated by the central city.[25]

A region can be defined as the set of spatial points for which the intensity of interaction is stronger than with any other spatial points.[26]

In the United States, urban centers are the focus of social and economic interaction. The intensity of interaction is greatest in the city and falls off with distance away from it. Therefore the space economy is already structured into regions of interaction which focus upon urban centers. More than 96 percent of the U.S. population lives within the boundaries of urban-centered commuting fields.[27] Many of these people have daily interaction with others at or near the urban core. Consequently, the metropolis can be thought of as the capital of its surrounding region. Individuals and institutions located in the center penetrate and organize the surrounding land. Flows of goods, services and information from the region focus upon the metropolitan core.[28] While studying the extent of urban influence in Iowa, Karl Fox delineated functional economic areas. He suggested that such areas become independent socio-economic units. Fox states, "This strategic concept would provide a new framework for economic planning and political decision-making; it would provide a clearer focus for the labor market and employment services; and it would permit the development of economic stabilization policies which recognize regional differences."[29]

French regional planners have used the functional concept in an effort to check the growth of congested conditions in Paris and have attempted to stimulate growth in the regional metropolitan centers. Such a change in regional policy requires the collaboration of government administrators and a basic change in the traditional geographic boundaries. In answer to this challenge, planners have delineated polarized regions which are defined as the "set of neighboring towns exchanging more with the regional metropolis than with other cities of the same order in the nation."[30] This concept was later expanded to include a high order urban center in a heterogeneous space whose different parts complement and support one another.[31] Today, French programming regions, both administrative and planning, are designed to reproduce polarized regions "because the maximum efficiency in regional programming is linked with the maximum interconnection of regional flows."[32]

A regionalization based upon urban centered regions provides an alternative arrangement of allocating existing areas into functional regions. Efficient regional planning is enhanced with the "maximum closure" of socio-economic interaction within a polarized region. If people's foci for goods, services and information reflect their primary loyalties, then functional regions form coherent areal units and communities of shared interest.

[1]State of Illinois Department of Local Government Affairs, "A Survey on Sub-State Regionalism In Illinois - July, 1973.

[2]Bishop, C.E., "City and Countryside an Interdependent Future," Appalachia, Vol. 1, No.8, (April 1968) pp. 9-11.

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MANAGEMENT AND TECHNICAL ASSISTANCE FOR RURAL AREAS

by

R. Douglas Taylor

This conference is related to rural areas, rural and area wide development and the like. Speaking to this point, there are a number of ways in which rural areas can receive assistance in their planning, management, and other technical assistance needs. Whether you're speaking of "rural" as small cities, counties, special districts or any non-metro area there is a mechanism by which those planning needs can be met.

In our discussion this afternoon we will be able to investigate the practice and theory behind planning sources available to rural areas. In broad terms local and regional planning may be regarded as a means for systematically anticipating and achieving adjustment in our physical environment. It is designed to fulfill local objectives of social, economic and physical well-being, considering both immediate needs and those of the foreseeable future. Our roles as planners are to assist decision makers in developing accurate and sufficient data about their environment and from this data to suggest mechanisms which will accomplish these social, economic, and physical objectives.

In this seminar we are particularly interested in the physical planning and management assistance aspects as services to rural areas. With regard to management assistance, in many areas of the country the "roving manager" or circuit rider technique has been used with success. For example, in the management advice area several small towns or districts may go together to fund a single-manager position to serve their jurisdictions. In some states the impetus for this service has come from university planning departments, from state municipal associations, from state departments of community assistance or from councils of governments. The concept has also received encouragement and support from the International City Managers Association -- the professional governmental management organization. Whether the actual service lends itself to direct, day-to-day management duties, or provides management consulting on an as-needed basis the concept and practice is a valid one. The application of this "shared individual" is also easily seen in other functional areas such as building inspections and engineering.

Options for rural areas to receive planning assistance are available through multi-county planning associations such as regional councils of governments, whether for specific, one time, or continuing assistance, consultants, state planning departments (in North Carolina, the Division of Community Assistance) or provision of their own full-time staff. Other speakers on the panel will illustrate additional avenues of planning aid including contractual arrangements with the state or local agencies.

The grant and technical assistance aspects of the council of governments' planning activities cover the entire range of planning needs, and consist, primarily of advice, review, and the preparation of grant applications. For example, in the preparation of planning ordinances the staff advises member governments of possible approaches to the problems they're attempting to solve. Sometimes this may also involve substantial assistance in the preparation of grant applications as with recreation projects. As such, the grant and technical assistance is a continuing day-to-day service that is only limited by our overall in-house work load and the urgency of one community's need over another's. Generally, these projects are handled as they are requested on a priority or need basis.

The special local planning assistance element is a specific response to special problems and needs in the region of local government units that desire quality planning, but lack the resources for a full-time planning staff. These needs might involve a short-term project, or a project continuing need for individual planning assistance. The development of this aspect of the council of governments' planning program came about as a result of two member counties' requests for a contractual arrangement to provide the services of a planner on a part-time basis. On investigation we were able to establish that certain municipalities in those counties could also use a less than full-time planner and the program began. The nature of this service, paid for entirely by those units it serves, is to provide a flexible method of serving special local planning needs identified by the local government which are over and above the work encompassed by the grant and technical planning assistance.

Special local planning assistance encompasses basically two work levels-- individual projects assistance, for example, if a county wanted to have a sedimentation ordinance prepared or, as has been experienced recently, requests to complete applications for Community Development Block Grants. The second level involves continuing planning duties such as staff and research assistance to the unit's planning board, or being on site in that town or county for two or three days each week for whatever planning activities they desire.

Regional Planning and Technical Assistance

by

H.D. Blackwell

A number of options have already been outlined with respect to rural areas. I would like to speak to those associated with a regional council of governments, and specifically as North Carolina Multi-County Planning Region E has approached them. The planning program is conducted by the Planning and Management Division of the Western Piedmont Council of Governments (WPCOG) and deals with three primary activities: regional planning coordination, grant and technical assistance, and special local planning assistance. These are for the most part a result of a great emphasis on "services-oriented" programs by the WPCOG. Originally, the WPCOG was involved in more regionally-based activities such as general land use, open space, and water and sewer studies, and at that time these were necessary to qualify for certification as an eligible agency for certain federal grant programs. Since the program emphasis of certain federal agencies, primarily the Department of Housing and Urban Development (HUD), is now more management or services-oriented, the role has changed. It must always be remembered that in discussing "regional" problems you are taking the individual problems of cities and counties and finding commonalities. These then become known as "regional" even though they are a collection of individual problems. These individual planning problems must be faced in conjunction with regional problems if real success is to be expected.

North Carolina is a state of 5.1 million people in over 470 incorporated municipalities, and its average land use density is twice that of the national average, partly because the people of North Carolina prefer living in smaller towns. In Region E the majority of towns have populations under 10,000. This presents special planning problems to them because they have genuine problems but many times cannot afford their own staff to meet them. In Region E, the council of governments help fill that role by providing planning assistance and personnel to the counties and municipalities on a part-time basis. As both a local and regional resource we have an advantage over other planning sources since:

1. All governmental units are voluntary members;
2. Regionally-based planning has the perspective of both local and area wide needs;
3. The staff is based locally and is always available for follow-up or consultation;
4. The program provides the benefit of sharing intergovernmental examples regarding common planning problems, and the combined resources of the council of governments rather than just the services of a single planner.

In these instances there is an opportunity to help shape good planning practices for the region.

Local Governmental Management Assistance

by

Terry A. Henderson

The concept of the "circuit rider" is an old one and one which has enjoyed considerable popularity in this country in the past. Stories of circuit riding preachers, judges, and hangmen are legendary. The idea is based on sharing a scarce commodity or service among several communities, and as has already been applied to managerial assistance among a group of communities.

In recent years local governments have come to recognize the importance of a professional management approach to the broad mix of city and county services. With the increased interest in managerial expertise some small units of government find that they have need of the services but cannot fund a professional position alone. The circumstances are then right for a shared person such as a circuit rider.

The key to planning and the provision of planning services is flexibility. In Region E we have competent, professional local government managers in most of the communities. In the smallest units they prefer to utilize clerical help to manage the accounting and bookkeeping of local services. With these two things in mind the WPCOG approaches management assistance in a little different way; however, the goal is the same -- that of improving local government capability and productivity.

In 1973, the WPCOG added a position descriptively titled "Local Government Aide" designed to assist those local governments without managers in particular administrative problem areas. For those with managers the position would be an added feature to what is too often a small research/resource staff. In general, the program is structured in a problem-solving manner and is oriented toward helping individual units with specific problems or to groups with a common need. Areas of activity include finance, accounting, legislation, public administration, personnel, organizational development, intergovernmental services, and general research. Specific projects in which local governments have been aided are personnel and pay plan review, recruitment of new managers, documenting procedures in emergency medical services programs, study of a unit's investments of idle cash, assistance in producing an annual report, research in local laws, joint purchasing, reorganizing office policies and physical layout.

The management assistance program which the WPCOG operates is on a request basis both for specific projects and general information and no extra charge is made for the services above the annual dues paid by the member government. Projects of a long duration would require discussion as to priority and the need for additional funding. We feel the advantages of the program to rural areas are:

1. Utilizing flexibility to meet the needs of local governments with or without managers;

2. Providing managerial expertise in a problem-solving orientation; and

3. Sharing a position among all council of governments' members on request at no extra charge.

Local Assistance Planning

by

Kenneth K. Kulp

As someone who has worked in the special local planning assistance program, I can vouch for the importance to a local government of the planning services which have been outlined. One of the benefits experienced in the program is the uniformity and continuity of service provided. For example, each special local planner reports to a unit for certain days each week to work on specified continuing projects; however, this schedule lends itself to working on other projects as they come up. The contractual arrangement between the council of governments and the local government provides a community with a comprehensive planning service, not just a planning person.

Some of the general work involved with the position is gathering planning and engineering data, preparing special reports, general meeting presentations and necessary public contacts, preparing studies and research on items such as land use, recreation, community facilities, population and the like. A planner in this category will also find himself involved with helping a community set priorities and target dates for projects and preparing administrative and regulatory measures for review and adoption by the governing body. Specifically, in those units with which I have worked, the staff has attempted to solve problems such as subdivision and zoning revision, flood plain mapping, capital improvements budgeting, staffing the planning board, recreation planning and a host of localized planning projects.

In summary, the advantages to the program are the ability of the local government to share in the cost and time of a competent planner, the strengthening of local planning input into the regional effort, and the ability of the community to share more fully in the experience and activities of other regional communities with similar problems.

Part II
CASE STUDIES OF RURAL DEVELOPMENT AND CHANGE

INTRODUCTION

Although we are frequently led to believe in the inherent stability of small towns and rural areas this is increasingly a condition characterizing the past rather than the present. Rural America is in many of its parts experiencing a turmoil of change previously confined to our larger urban centers. The pressure of urban growth is resulting in "wall to wall housing, with woods and fields destroyed, mountains closed off by no trespassing signs, and picture windows gazing out at other picture windows that stare back," as is related by Theodore K. Noss in his conference paper on the impact of urbanization in rural Appalachia. One facet of this urban expansion is the increasing choice of the mobile home which appear in the seventies to have won out over the prefabricated house in the battle for the low income family's housing dollar. The character and impact of this contemporary trend in rural areas is assessed by Ennis Chestang.

What might be the impact on rural areas of the increasing expansion of our leisure time, our per capita wealth and our spatial mobility? One obvious result is the skyrocketing usage of rural open space for recreational purposes. Rural environments as well as communities are affected. Developing the techniques for assessing this phenomenon is the subject of Robert Hogan's paper; Granville Liles, Superintendent of the Blue Ridge Parkway, discusses the problems of managing rural recreational environments; and John Shore details the state response to the need for protecting, preserving, and insuring the orderly development of rural areas in coastal North Carolina.

An even more serious question relates to the effect on rural areas of our dwindling nonrenewable energy resources. John Thomas suggests that part of the answer can be provided by deemphasizing automobile use in favor of the bicycle, and Adams and Kubiak elaborate on their results of a federally sponsored study on the rural impact of coal strip mining. So while coal is expected to provide an increasing share of our fuel needs it is rural America, whether Appalachia or the Western Plains, which are most negatively impacted. The result must be extraordinary federal attention to long range rural land use planning.

Urban Pressure in Swannanoa Valley

by

Theodore K. Noss

Swannanoa Valley is a narrow plain with an elevation of about two thousand feet surrounded by mountains that tower above it. To the west is Beaucatcher Mountain lying within the city limits of Asheville. Up a slight rise to the east is Swannanoa Gap at Eastern Continental Divide, beyond which the land falls away to Old Fort and eventually down to the North Carolina plains. The Valley floor extends eighteen miles in length, and varies from one mile to six miles in width. There are many coves, some of them spacious, that penetrate the rugged mountains on both sides abounding with streams and fine springs. The small Swannanoa River with headwaters on the eastern edge of the Valley collects these streams as it meanders to the French Broad River in the Southwest.

In this study the terms "urban," "rural," and "suburban" are used in a general sense, rather than as limited by the census. The western end of the Valley, within the city limits of Asheville, is, chiefly urban in activities and in point of view. The central portion of the Valley, including the village of Swannanoa, well could be called suburban, with commuter homes and a largely non-agricultural emphasis, notwithstanding some farming in this area. Rural, or non-city, life is found in some of the coves and, perhaps, in parts of the eastern, or Black Mountain, section. In general, as population increases near the expanding city, the emphasis changes from rural to suburban, to urban. How far along this road Swannanoa Valley travels depends on the future, but it is on its way.

Human habitations can be traced back over eight thousand years; little is known about these aborigines, but they may have been ancestors of the present Cherokees. White settlement began in the late eighteenth century. In the following years more settlers came to build cabins, clear land, and develop farms. Agriculturally self-sustaining settlements dominated the area from 1785 to 1882. Farming, supplemented by abundant timber and wild game meant plenty of supplies summer and winter, while highly prized guns and hunting dogs added zest to the chores of farm work.

The war Between the States in the early 1860's brought conflict and anguish. Some men enlisted with the North; others with the South; and it is said that many never returned. Many farms, neglected during the war years, continued to be neglected after the war because of a shortage of men. There was, however, a slow agricultural revival in the 1870's until the railroad came through the Valley.

This railroad, planned for forty years, and under intermittent construction for over twenty, entered a long tunnel through the crest

of Swannanoa Gap and came down through the Valley. When regular freight and passenger trains made their runs between the East and Asheville in 1882, the basic economy of Swannanoa Valley shifted away from agriculture. Many men again left their fields, this time not for war but for lumbering. They operated portable saw mills, cut trees, and built access spur railroad tracks first into the coves and then up the mountains. From 1882 to 1925, 225 million board feet of lumber were shipped from Black Mountain alone. When all the accessible virgin forests were exhausted around 1925, commercial lumbering sharply declined.

Passenger trains brought summer visitors who came to enjoy cool nights, a relaxed social life, and awe-inspiring mountains that changed in appearance from day to day and even hour to hour. According to the custom of the day, many reserved quarters for the season in resort hotels or boarding houses, arriving and departing by passenger train, and met at the station by buggy or surrey. Some arranged to have cabins, or "camps," built, often simple affairs on locust posts, to which they and their belongings were brought by wagon from the station.

With the fading of the lumber industry many permanent residents faced a bleak prospect of living on their deteriorated farms. Self-sufficient farming, both necessary and satisfying in the nineteenth century, usually meant poverty in the twentieth. The soils had been heavily used, often eroded; and those ingenious devices for "make-do," so carefully recorded by students of Appalachian history, did not appeal to workers who had received regular wages and learned to depend on retail stores.

Just at this time, 1925, Beacon Manufacturing Company entered the Valley, set up a blanket factory in Swannanoa village, and eventually employed 2,000 workers. Many people could now live in their own rural homes, have a regular income, and supplement it, if they wanted to, by part-time farming and animal husbandry. Subsequently a dozen other smaller industries have located in the Valley to employ local labor.

This shift from agriculture, begun in 1882, is continuing to this day. In Black Mountain only two percent of all workers listed in the 1970 Census were farm managers and farmers, one percent as farm laborers. In Swannanoa Township and in Asheville the percentages were even less. There is, however, a good deal of part-time farming, but the volume may be too small for commercial profit.

Low incomes and poverty are still present. Twenty-two percent of the families in the eastern end of the Valley, Black Mountain Township, had incomes of less than $5,000 a year in 1970, and 24 percent of those in the central section, Swannanoa Township, had similar incomes; in the western third, a part of the city of Asheville, the total for the city was 28 percent. Many poorer families live on gravel roads up in the coves.

Incomes in the Valley, however, are higher than in some neighboring areas. In Swannanoa Township, which is fairly typical, 55 percent were between five and ten thousand a year; 22 percent from ten to fifteen; and 8 percent over fifteen thousand a year. The value of all housing

ranges proportionately to over $35,000, with most in the $10,000 to $25,000 range.

There was a total of nearly 3,300 housing units in Swannanoa Township in 1970. Of these 71 percent were owner-occupied; 22 percent were rented; and 7 percent were vacant. Black Mountain Township contained over 3,100 units, of which 51 percent were owned, 19 percent were rented, and 30 percent were vacant as of April, 1970. The vacant rate includes summer housing which had not yet been opened for the season.

Types of housing vary widely. In 1970 there were 378 mobile homes of various sizes in Swannanoa Township of which an impressive 90 percent were owner-occupied. Used mobile homes can be purchased inexpensively if available, but high mortgage rates and space rentals, can increase the cost. Combustible synthetic materials are sometimes used in their construction, creating an acute fire hazard. For many with limited incomes, mobile homes are a desired solution to housing problems, but they usually are not admired by those who do not live in them, and are considered to reduce nearby real estate values. The phrase "restricted" in real estate covenants does not refer to ethnic groups, but to a proscription of mobile homes. The town of Black Mountain recently prohibited the location of mobile homes within its limits, but cannot control them in areas around it. The city of Asheville restricts them to mobile home parks, with specified sanitary and maintenance regulations.

Some long-time residents live in older homes surrounded by unpainted barns, chicken houses, pig pens, old cars, scrap lumber, and other paraphernalia husbanded for possible usefulness, but not always appreciated by neighbors. The usual tract houses appear in rows with almost identical construction and lots. Some residents prefer to buy summer cottages when available, "winterize" them, and live there. Houses are built on mountainsides or hill tops for the view, often with steep gravel roads leading to them. Others like to buy a field, place the house in the center and regularly mow one or more acres of smooth, treeless lawn. Some bulldoze down trees to create level lawns. Those who can afford to may close off large acreage as private estates, posted with "No Trespassing" and "Private Road" signs. As tastes vary widely, there is some difference of opinion as to what comprises a desirable area. Many think that uncontrolled building may seriously damage the valley.

Real estate operators and development builders here as elsewhere are active. The cost of hundreds of acres of "choice development property" is sharply lower per acre than the retail-asking price for building lots. Speculators come in from elsewhere to gamble on land, buying it and holding it as an investment. They are widely resented.

Access to the valley in the first years of settlement meant travel by foot or on horseback over difficult wilderness trails. Throughout the 19th and 20th century roads were imrpoved, but the area remained largely rural. In 1916, with the coming of automobiles, paving of gravel roads began. Two-lane roads were then widened and straightened, but the relaxed rural atmosphere continued. In 1953 Highway 70 was completed over the Blue Ridge. This broad, divided highway, said an old-timer, "really

opened up the Valley!" It transformed Swannanoa Valley into a heavily travelled corridor between the North Carolina Piedmont and the West.

As of June 1, 1973, traffic count at the crest of Swannanoa Gap was 10,700 vehicles a day. This rose to 13,800 in Black Mountain, and15,500 in Swannanoa. These figures reflect the beginning of the tourist season, not its peak, in a count made before the "energy crisis." They include commuter traffic. The lower count of 9,500 at Old Fort may come closer to a measure of through traffic.

West of Black Mountain, Highway 70, the chief road through the Valley, was broadened to four and five lanes through to Beaucatcher Mountain, where it tunnels its way into the business section of Asheville. Highway 40, now under construction, a major route from the East into Tennessee and the West, will increase through traffic. The single track railroad, heavily used as a freight line, adds its long, rumbling trains to the traffic flow.

The western third of the Valley, within the city limits of Asheville, is dominated by commercial congestion and all that entails. Traffic jams at Beaucatcher Tunnel have become so intense that it is planned to replace the tunnel with one of the largest open cuts in the United States, possibly followed by a widening of the thoroughfare called Tunnel Road into six or eight lanes, causing severe dislocations to many commercial enterprises along this route.

Commercialization is spreading eastward mile by mile. Although some planners hope that a cluster development pattern will be implemented from Asheville to Black Mountain, the route could become a solid commercial congestion that will dominate the narrow Valley by day and light up the hillsides at night. Perhaps Highway 70 through this area may again have its width drastically increased.

In August, 1974, the Metropolitan Planning Board of Asheville published population and economic projections from 1970 to the year 2000. It is estimated that the total population of Swannanoa Township (9,000 + in 1970) will increase by stages to almost 13,500 in the year 2000; other parts of the Valley will increase proportionally. Rents will more than triple in cost, and housing values will double, a little more sharply than income.

Water reserves for the city of Asheville and Swannanoa Valley are considered adequate for about ten years or more. A 22,000 acre watershed reaching up North Fork Valley, north of Black Mountain, to the Blue Ridge Parkway, on the crest of the Black Mountains, is sealed off to the public and patrolled, and contains a reservoir with a capacity of 5,750,000,000 gallons. In addition there is an older Bee Tree Reservoir, built in the 1920's and now held in inactive reserve. Black Mountain has its own water supply system, supplemented with Asheville water.

A trunk line sewer system connects most of the areas of the Valley with a secondary treatment plant on the French Broad River in Asheville, and is nearly fifty years in age, built before modern joining systems

were instituted. Some of the feeder lines are said to be still older. Although not intended as a storm sewer, it becomes one in a good rainstorm, with such a strong surge pouring into the disposal plant that sometimes the plant is overwhelmed and an overflow of raw sewage is bypassed directly into the French Broad River. Rain not only floods the disposal plant but can cause sewage overflows in many places in the Valley. Although the system is judged adequate, it really is not, and a massive rebuilding task lies in the future.

Floods are a recurrent problem. Of the nineteen recorded large floods in the Valley, the 1791 storm is believed to have crested six feet higher than any subsequent flooding. The second highest came in 1916 when a tropical storm slammed into the Blue Ridge and did not climb over it. The downpour caused extensive erosion and destruction of many bridges, roads, and buildings. The size of the flood problem is indicated by an estimate that all water expanses of the Asheville reservoirs could lower a future flood by only one foot. An attempt by the TVA to build a flood control dam in the Valley was defeated by popular opposition. Large floods happen during the summer hurricane season; smaller floods can occur any month of the year. As flooding is inevitable, there are building restrictions in areas estimated to be vulnerable to flood damage.

Beacon Manufacturing Company, the current largest manufacturer of upholstery in the United States and with a volume of backorders, is transferring its upholstery section elsewhere, partly because of difficulty in complying with an air quality regulation. On a windless, clear day one can enter the Beaucatcher Tunnel from the relatively clear air of Swannanoa Valley, and emerge into a smog that blurs the distance and lies in heavy black strata against the mountains. The proposed large, open Beaucatcher cut to replace the tunnel may improve air flow in Asheville to the detriment of at least the western end of Swannanoa Valley.

Although attention is paid to main arteries of traffic and a few important side roads that connect the chief areas of the Valley, other roads need more attention than they get. Developments, private houses, and factories sometimes are located in areas where the roads had been adequate, but the resulting increase overloads them. Large commercial tractor-trailers barrel down roads too narrow and winding for safety. Delays in road construction where needed not only can multiply costs but also render an area unsightly. We all have seen houses, sometimes new, perched above a steep embankment with their front lawns cut off by the widened road. Waiting until congestion forces emergency improvement may be caused by a lack of adequate funds or simply a failure to foresee.

The two colleges, Warren Wilson and Montreat-Anderson, have ample land spaces around them to serve all or most of their needs. With their modest enrollments, they offer no planning problems nor do they increase congestion. There are six religious centers for conventions and conferences, with ample grounds, housing, and dining facilities to cover current and expanded activities. Although these centers attract thousands

of conference visitors each year, they are largely self-contained and offer few planning or congestion problems.

Many elderly people come to Swannanoa Valley with retirement in mind. Highland Farms, a new one-story apartment complex for retired people, had a long waiting list of applicants before the last units were completed. Further expansion is difficult because rising land values around it prevent construction of apartment units at reasonable rental rates.

Buncombe County is actively engaged in developing ordinances and regulations to service the County effectively, in ever-tightening building codes for permits for construction. Electricity may not be installed in new buildings until rigid requirements are met. More than one acre of land may not be disturbed before a plan to prevent erosion has been approved. Industrial parks are proposed to attract new businesses and increase county employment and income. The County Commissioners presently are concerned over wise plans for the County, and are asking what the people in the County really want. This question has no easy answer.

There is a tendency among citizens to let events take their course, not to interfere, and leave County problems to those whose job it is to handle them, but, at the same time, to express opinions. Many a mountain man lives on his private land as he pleases in any way he pleases, and uses it in any way he chooses, and no local, County or State authority can tell him what to do. A moderate land-use plan prepared by the Metropolitan Planning Board has not been implemented. It may be that there was insufficient community participation in drawing up the plan and, therefore, little interest in adopting it. It may be that no really effective device is readily available to adopt and enforce it.

The incorporated city of Black Mountain is actively improving recreation areas and community facilities. This results from vigorous discussion and fine community leadership. Swannanoa Township is creating a community recreation area beside Swannanoa River, begun with a private gift of the land. A needed Medical Center in the eastern part of the Valley has been built and equipped with a massive local campaign for funds.

There are three natural areas in the valley. The east is dominated by the town of Black Mountain. The day may come when this town will expand its borders to include the township, the eastern third of the Valley. A plan to incorporate the village of Swannanoa has been under consideration for over ten years. This may be legally difficult, but, if it is achieved and encompasses Swannanoa Township, the central third of the Valley, community participation and responsibility can be increased. The western third is contained within and dominated by the City of Asheville. Leadership potential is present in all three areas. Community thought and discussion may result in local actions, slowly, perhaps, and limited by County and State regulations, but which can preserve resources and values that are dear to the people of the Valley.

Planning may also be initiated by Buncombe County or by an expanded City of Asheville. A second land-use plan carefully devised for Swannanoa

Valley can be followed by a zoning ordinance that is wisely and effectively enforced. If this receives reasonable popular support, requests for variances, and, more important, the number of variances granted, may be few.

Urban pressure is great. More people want to enter the Valley than leave it. Let us hope that this does not result in wall-to-wall housing, with woods and fields destroyed, mountains closed off by no trespassing signs, and picture windows gazing out at other picture windows that stare back. The disadvantage of an unplanned shift from rural to urban has been made most evident in many other urban areas where youth has nowhere to go but down the sidewalk to the shopping area and then back home again. It is hoped that some device is developed to preserve open spaces in the Valley and the beauty of the mountains and access to them. Resources and activities of interest for all ages and types of people should not be lost. The costs, however, as land values and congestion increase, may be more than the townships, the County, and the State are willing or able to pay.

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Mobile Home Settlement and Rural Development

by

Ennis L. Chestang

In November 1970 this writer researched and read a paper on mobile home settlement before the Southeastern Division of the Association of American Geographers in Columbia, South Carolina.[1] Within hours of posting the paper he was informed that a mobile home park had been proposed across the road from "home." The research and neighborhood impact before the city council and planning and zoning boards was sufficiently successful that a subdivision with houses ranging from the mid 30's to the mid 40's now occupies the site. The impact of that encounter has sharpened and broadened this geographer's analytical powers and caused him to clearly see that the development of plans and regulations for mobile home use based on something higher than the emotional reaction of the general public is essential.

In the course of that work it became apparent that no one specific group of people drift into mobile home living but rather that mobile home settlements attract people from all walks of life and income groups. Field investigation has also tended to suggest that once we can think in terms of types of mobile home settlements their role and impact in area development can be more readily ascertained as opposed to considering them in an atmosphere clouded with myth and legend.

When the myth and legend is stripped away reality is clear--mobile home living has been growing at a very rapid rate and a specific [illegible] of settlements have been, and are being placed about the countryside. A system of classification for mobile home settlements was devised by this writer in 1970. Further investigation in additional areas has tended to indicate that the system of classification holds up and requires only the slightest modification. That classification with minor modifications is presented here with interpretation designed to indicate its value in planning and area development.

Mobile home settlements fall into three classes: urban, recreational, and rural. (The term mobile home settlement is used since they require specifically designed utility and waste disposal connections. Such segregated mobile home settlements, mobile home parks or more colloquially trailer parks, may vary in character from those which resemble traditional well developed suburbs to slums created with portable structures.)

Urban areas account for over fifty percent of mobile home dwellings in the United States and the study area in which this classification was developed is no exception. In speaking of urban mobile home settlements it is necessary to use the word urban in the broadest possible sense for the settlements are often located on the fringes of towns and cities, just outside the corporate limits. Urban settlements fall into

three distinctive classes: Uniform Suburban, Concentrated Urban, and Scattered Suburban or Urban Fringe.

The most common type of mobile home settlement in urban areas is the Uniform Suburban, which is so common as to often be considered the only one there is. That type consists of a landscape organized to serve as the setting for from ten to several hundred units. Spaces are laid out in either monotonously uniform or varied shapes and each is equipped with connections for water, electricity, and waste disposal. The settlements themselves vary from tree shaded areas with a heavy emphasis on aesthetic values to wide monotonously uniform arrangements with no more aesthetic emphasis than that found in the parking lot at the neighborhood grocery store.

A second type of urban mobile home settlement is the Concentrated Urban. It consists of lots for ten or more units in densely built-up urbanized areas. The lots are surrounded by a variety of different but distinctively urban land use.

The third type of urban settlement is the Scattered Suburban or Urban Fringe, which is marked by a set of peculiarly discordant visible characteristics resulting from one mobile home parking area occuring as a locational misfit or from a number of small parking areas existing throughout a thoroughly polyglot ensemble of land use.

A peculiarly strong relationship exists between the location of mobile homes for recreational use and the ocean front and sounds in the original study area. The largest group of settlements created by this relationship is the Concentrated Recreational. It consists of large numbers of mobile units parked more or less permanently on land which has been spatially organized, improved, and equipped for the parking of mobile homes. They are most often found either on the ocean front or on the sounds. In the case of those located on the sounds, the sites are usually across narrow stretches of land and a highway from the ocean front.

There is a strong locational relationship between mobile home settlements in the areas of the ocean front and sounds and fishing piers which illustrates that concentrated recreational mobile home settlements have focal points or focal areas. Fishing piers are long narrow structures which extend out over the ocean for several hundred feet and are used exclusively as platforms from which to fish. There is invariably a bait and tackle shop at the entrance to the pier and very frequently a mobile home park conveniently nearby. Clusters of parks are also common in the immediate vicinity of fishing piers. In some cases the lots, particularly those immediately adjacent to the piers are owned or operated by the pier owners while in other cases they may be the property of someone other than the pier operator who takes advantage of a location in close proximity to a fishing pier. In any case, the mobile home parks contribute to the income from fishing piers through fees which the residents pay for fishing rights.

There is a second type of Concentrated Recreational mobile home settlement in the areas near the ocean which differs from the above in that

the owners of the mobile units also own the lots where the units are parked and in that the relationship to fishing piers or another focal point is not as close as the one discussed above. The mobile home lots are smaller than those on which cottages would normally be built, giving rise to a microsubdivision brought about by use of the mobile dwellings.

The third type of mobile home settlement in recreational areas is the Dispersed; the mobile units are simply used in place of permanent structures. A person who owns a lot will sink a well and install a septic tank or connect to a public water and sewer system if it is available, have electrical service extended to his lot, and park a mobile home rather than build a permanent structure.

In rural or rural farm areas, the use of the mobile home is common but it does not form as distinctive patterns as are commonly found in and around urban and recreational areas. The mobile home settlements may be Isolated, that is to say, distributed in a manner almost exactly like isolated farmhouses scattered across the rural landscape. Isolated mobile homes are so common on the rural landscape as to convey the false impression that they are the most widespread form of mobile home settlement in rural areas. A second type of rural occurance is Clustered. In that case the cluster may consist of several (usually 3 to 5) units grouped together as permanent rural structures. Mobile homes may also make up parts of rural clusters consisting of permanent structures and mobile units which have been added to pre-existing rural clusters of residences and/or commercial or agricultural buildings. In addition to the above, the Rural Non-Farm Concentrated Mobile Home Settlement is frequently encountered. It consists simply of a mobile home park built in a rural setting and occupied by people who do not engage exclusively in rural economic activities.

The cost of mobile homes and the manner in which they can be financed often results in their being adopted by people who might otherwise gravitate to traditional forms of rental housing. The price of a mobile home unit varies from $3,000 up and the mode of financing is very much like that of automobiles-simple. Unlike permanent owner occupied housing units the mobile unit allows a person to own his own home with a minimal capital outlay and without buying the lot.

A semipermanent mobile home population consisting of newlyweds, military personnel, skilled construction workers, salesmen, professional athletes, has found a new freedom in mobile home living. They have instant housing; furniture, appliances; accumulate equity; and have a high degree of freedom and mobility at the same time.

also

A permanent mobile home population exists. That group lives in them through choice and runs the full spectrum of occupations and professions. The mobile home is also attractive to many retirees. Perhaps to some senior citizens, mobile home living is a panacea. They sell the too large family home with its high maintainance costs, out-dated appliances, old furniture, inefficient heating, and insufficient wiring for "today's living."

Our affluent society of the recent past which at the beginning

of the century was concerned with a chicken in every pot and later with two oars in every garage progressed to the second home or vacation home. Be it on Bogue Banks in eastern North Carolina or the ski resorts of upper New England, mobile home ownership caught on and spread like wild fire. Their future is as dubious as everything else in our uncertain economy.

One of the most important characteristics of mobile home settlements is that they are instant. A land owner can create a mobile home park to accommodate 50 families in less than three weeks. All he has to do is grade and perhaps pave a set of streets, install water and electrical connections, put in septic tank facilities, and run pipe to the spots where the homes will be rolled into place.

We have traditionally thought of rural areas as open and possessing low population density but mobile home settlements can create spots of population density as high as that found in the Borough of Queens, New York. Many rural areas are simply not equipped to cope with such concentrations and lag behind in getting equipped or oriented to deal with them since they come into existence with the speed of lightning.

It is no joking matter that people do not flush the toilet any less if they live in mobile homes than they do if they dwell in apartments or houses. The problems of Topsail Island, N.C. where people (in some parts) were recently almost literally swimming in their own waste should neither be taken lightly nor regarded as isolated cases which cannot happen elsewhere. Instant high density in an area where an infrastructure to serve it has not evolved is a problem with which few of us are equipped to deal, and the traditional concept of one household - one septic tank goes right out the window when we come to mobile homes.

If mobile home dwellers flush their toilets no less than other mortals, neither do they suffer any lowering of their capacity to produce garbage. In fact the writer's own experience with 10 years in his cottage at the sea shore tends to suggest that in the case where people are in recreational settlements the curve of garbage production turns sharply upware and soars in comparison with ordinary day to day living. Mobile home settlements in rural areas sharply and suddenly bring the need for county waste disposal facilities into focus.

Mobile home settlements in rural areas, are for the most part rural-non-farm. Ordinary rural settlements are either clustered, dispersed, hamlet, village, blocked rural non-farm, or low density rural non-farm. Mobile home settlements are not arranged in such simple ways. They are high density phenomena with a very common characteristic: one road out. The prime consequence of this is high commuter density on a road network designed for something wholly different.

The fact that one or several clusters of from 5 to 500 dwellings can appear on the rural landscape within a period from 3 to 30 days is also a cause for concern where facilities are planned and developed in accordance with the traditional forms of population growth and projection. Instant impaction throws everything out of balance and requires new techniques of data gathering, projection of growth, and a general recon-

sideration of our procedures for providing services and facilities. Finally any consideration of mobile home settlements raises more questions than it answers which may be the most important reason of all for moving quickly to develop rules and regulations to cover their use in rural areas.

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1 Chestang, Ennis L. "Mobile Homes and Settlement Geography in the Middle East of North Carolina." Unpublished paper, presented before Southeastern Division, Association of American Geographers, November, 1970.

ROUTE SELECTION CRITERIA FOR RURAL BIKEWAYS

by

John P. Thomas

I am very pleased to have the honor to present what some feel is a way of reducing our dependence upon precious petroleum and easing our energy situation, producing a more physically fit population, lessening the effect of our present economic crunch, reducing pollution and congestion in our cities, increasing the efficiency of our transportation systems, as well as promoting "America's Favorite Participant sport." That sounds like a hard bill to fill, but the facts show that Americans are riding and purchasing more bicycles than they ever have before. Bicycle sales surpassed automobile sales in 1970 and the difference has increased ever since. In mid-1974 there were an estimated 100 million riders and by 1980 over half of the nation's people are expected to be bicycle riders. Most of today's bicyclists are recreational riders and the majority of recreational miles ridden are of the touring or rural long distance variety. Unfortunately with an increase in bicylce use there is also an increase in bicycle accidents. In 1973 the Naticnal Safety Council announced that 1,250 deaths occured to bicyclists during that year, with estimated injuries ranging as high as one million. This is an increase in deaths of 100% in the last decade. The percentage of deaths in the young adult and adult age categories has increased from 20% in 1960 to 50% in 1973, with a significantly larger proportion of these occuring in the rural areas.

A Bikeway Classification System

At the present there is no uniform system of bikeway facility classification. However, a basic pattern has developed as experience with bikeway planning has evolved.

The term Bikeway is a generic term encompassing the full range of cycling related roadways. Within the classification of Bikeways there are three different classes of facilities:

A "Class 1" or "Bike Path" is a completely separated roadway and is designated for the exclusive or semi-exclusive use by bicycles. Bike Paths reduce to a minimum or eliminate entirely conflicts with minor vehicles. In the United States these have usually been developed for recreational purposes or in the new developments where bikeways are planned and laid out to isolate bicycles from motor vehicle traffic. Potential locations for Bike Paths are along or within parks or open spaces, abandoned railroad right-of-ways, flood control channels or riverbanks, lake fronts, ocean fronts, highway right-of-ways, or utility right-of-ways.

A "Class 11" or "Bike Lane" is a restricted right-of-way designed for the exclusive use by bicycles. The lane is on the existing roadway, usually in the outside traffic lane adjacent to the curb or shoulder or on the paved shoulder of the road, and has a physical barrier between the automobile and the bicycle.

The "Class 111" or "Bike Route" utilizes the existing roadway for which there are two basic varieties: 1) a restricted right-of-way designed for the semi-exclusive use by bicycles, and set off with painted and reflective discs on the pavement, or 2) a shared right-of-way for both bicycle and motor vehicle traffic, with only posted signs designating the bikeway.

Route Selection Criteria

Two factors must be taken into consideration before route selection criteria can be proposed: the goals and objectives of a project, and the probable user characteristics.

The first step in the bikeway planning process is to determine or define the goals and objectives of a local bikeway development. The goals and objectives serve as a statement of general principles for local bikeway planning and are a guide to insure continuity in the planning and implementation process. Goals for a rural recreational route might read: To provide a safe, easily accessable and pleasurable area-wide recreational bicycle network. The objectives of such goals would then consist of protection, pleasure and efficiency, and continuity. These objectives form the basis from which to draw upon in establishing the route planning criteria and for evaluating the proposed network. Collection and analysis of user surveys, accident statistics and differentiating by trip type and purpose have provided planners with an indication of who they are planning for.

Studies of bicycle accidents in California have shown that the "bicycle season" is three times as long in rural areas as it is in urban areas, extending from March through September. The severity of accidents and groups involved in accidents also differs. It was found that there is a significantly higher incidence of fatalities in rural areas. Higher fatality rates are commensurate with higher vehicle speeds (both bicyclist and motorist) and oftentimes involve a larger motor vehicle. Those most likely to be involved in a rural accident are adults, who are now contributing to a significantly greater percentage of the bicycle fatalities.

When examining trip type and purpose, much of the accident analysis is further reinforced. There are basically two types of rural trips: through and local.

In addition to the aforementioned objectives, the "through cyclist" is interested in direct point-to-point routes connecting one edge of the study area to the other. The trip may be transcontinental, interstate, or regional or intercommunity in nature. Since their trips are of long

duration the proximity to service and support facilities, accomodations for food and shelter, need to be considered.

The "local cyclist" is usually out for an afternoon, day or short overnight, and may travel from 20 to 100 miles or more. For this type of cyclist, circular or loop routes, in an isolated and meandering situation are more important as well as the requirements for connecting many and varied points of interest. The ideal bikeway would be similar to a ladder providing outgoing and return routes connected at several intermediate points providing alternate cross-over routes. This would also provide the cyclist with optional choices as to the length of the trip.

The route selection criteria for Class 1 differs slightly from Class 11 and 111. Class 1 bikeways differ from Class 11 and 111 basically in their non-reliance upon existing roadways. In establishing criteria it is unfortunate that Class 11 and 111 rural route planning has not received more attention by planners. So it is important that route selection criteria be chosen and evaluated as to whether or not they meet the requirements established by the goals and objectives. The goals and objectives serve as a yardstick from which to select the planning criteria. So, for this inquiry, the planning criteria are broken down into the three basic objectives of protection, pleasure and efficiency, and continuity; and so a proper perspective is maintained.

The main advantage of Class 1 bikeways is the high degree of protection they provide for the bicyclist, with Class 11 a little less so. At first glance it may seem ironic that a Class 111 bikeway can at all be safe, and comparatively this would be correct. However, there are techniques that would lessen the chance of having an accident. Of most importance in Class 111 bikeways is planning routes on secondary roads that have light automobile and less than 5% truck and bus traffic. Unfortunately this cannot always be adhered to when considering the other objectives but such deviations should be kept to a minimum and could be justification for constructing a more protective bikeway.

Road widths and availability of right-of-way are other criteria that should be taken into consideration. Ideally for both classes 11 and 111 the road should be wide enough to allow for both the automobile and the cyclist, either on the outside land adjacent to the shoulder or on the paved shoulder itself. Minimum design standards would then be 10 feet for each motorized traffic lane and four feet for each bicycle traffic lane.

The quality of the road surface also needs to be examined. There are many different types of pavement that can be used for Class 1, but Class 11 and 111 are dependent upon the existing roadway. Smooth, non-chuckholed or cracked, well maintained pavement is the most advantageous. If the quality of the surface is less than ideal, consideration should then be given to a reduced Average Daily Traffic if a degree of safety is to be maintained.

Adequate signing and pavement marking is also necessary for clarity

and communicability. For Class lll they make the driver of a motor vehicle aware that he is sharing the roadway and alert him to the possibility of meeting a bicyclist on the road, as well as informing the cyclist where to ride.

In providing pleasure and efficiency the ability of a particular route to generate and insure repeated use depends upon its degree of accessibility and imageability. If a bikeway doesn't go where the cyclist wants to go it will be an instant white elephant, and unfortunately there is quite a "zoo" developing across the country. In planning rural recreational bicycle routes our concern is with connecting points of interest for the two specialized user groups. The points to be connected can be broken down into basically two areas: 1) natural scenic sites and 2) cultural sites.

The natural scenic sites or physical geography is probably of greatest importance for rural recreational route destinations. A wide variety of physical geography and geologic features should be included i.e. topography, water bodies, land use, scenic areas, and rock formations and structures. Parks, and campgrounds (National, state and local), and other centers of recreational generating activity should be included.

It is also essential to incorporate the cultural geography of the area. Routes originate where there are people, so population centers (hamlets, town, and cities) will more than likely be the primary origins for the routes (although there is an increase in the number of automobiles equipped with bike racks to carry bicycles to riding areas). Business centers providing food and lodging are also needed. Historic landmarks are also recreational generators and should be included.

The concept of "imageability" relates to the mental image that remains in one's mind after the direct stimulus is gone even after short exposure. Although there are no set guidelines to follow for a facility or an area to be imageable, it is theorized, for example, that a confusing set of instructions for a bikeway or a monotonous, nonvaried topography would not be conducive for retaining a favorable mental image in a given observer. So for a trail to receive and retain popularity it should travel along corridors of positive imageability. It is feasible to assume that given a wide variety of physical and cultural geography that continuous imageability is assured.

Another consideration in the location of a recreational bikeway is the terrain, for it affects both the length and grade that can be economically provided. Plus, cyclists may be deterred from using a facility in direct relationship to the amount of physical effort necessary to transverse a given length of grade. So the terrain is an economic as well as a rider consideration.

Finally the continuity in the proposed bikeway is essential. The bikeways should be established as a link, and compatible, with existing and proposed routes in adjacent communities as well as those on a statewide level. They should also be coordinated with local and regional recreation plans

Summary

All indications are that the factors that have contributed to the present popularity of bicycling will continue to entice greater numbers to participate. More and more people will be converting to the bicycle for recreation and for transportation. This should not be construed to imply that the bicycle will replace the automobile. Anyone who thinks that... has got a spoke loose! Along with the various federally sponsored funding programs it does mean, that millions of dollars will be spent on the construction of bikeways during the next decade and the bicycle will need to be included in and assume its proper position in the planning process. To avoid wasting public funds, plans for bikeways must be developed on the basis of a well conceived planning process, and be an integrated component of the area's overall recreation and transportation systems.

LAND MANAGEMENT WITHIN THE BLUE RIDGE PARKWAY CORRIDOR

VIRGINIA - NORTH CAROLINA

by

Granville B. Liles

This paper will discuss three aspects of land management in Blue Ridge Parkway Corridor:

1) origin of the rural Parkway concept,
2) coordination and involvement of this cooperative planning project, and
3) future land management objectives for the Parkway corridor.

Man's dreams and visions generally precede his achievements. Although the first shovelful of dirt for the Blue Ridge Parkway was turned forty years ago this fall in Alleghany County, North Carolina, the concept for such a scenic route was conceived many years earlier. As early as 1909 Colonel Joseph Hyde Pratt, head of the North Carolina Geological and Economic Survey had prepared plans for a "Crest of the Blue Ridge Highway." Pratt made a report on such a scenic highway idea at a North Carolina Good Roads Association Meeting and construction actually had already begun just south of Grandfather Mountain toward Linville.

Colonel Pratt even asserted that "....it would be one of the greatest scenic roads in America - rivaling anything in Yosemite Valley and the Yellowstone National Park." Unfortunately, the project was abandoned with our entry into World War I.

Today, the 470 mile Blue Ridge Parkway stands as positive evidence that such visions sometimes come true. This scenic Parkway is actually an elongated park - extending along the crest of the Southern Highlands through Virginia and North Carolina for 470 miles. It was the first rural parkway in the world, and is certainly an excellent example of frontier planning in rural America.

The term "parkway" has been identified with several projects in the twentieth century, having originated with county and municipal undertakings such as the Westchester County Parkway in New York. These earlier parkways served both commercial and recreational traffic. The first Federal Legislation pertaining to parkways was the Act of Congress of May 23, 1928, authorizing the Mount Vernon Memorial Highway. Then, on May 29, 1930, came the second Federal parkway legislation, providing for the acquisition, establishment, and development of the George Washington Memorial Parkway. Legislation authorizing the Colonial National Parkway connecting Yorktown, Jamestown and Williamsburg, was approved by Congress

On July 3, 1930. The next important measure was an Anti-Depression Act of June 18, 1933, authorizing a comprehensive program of "public highways and parkways." The Blue Ridge initially resulted from this program, for it was under this concept that approval was advanced to connect Shenandoah National Park and Great Smoky Mountains National Park with a parkway. Following this action in 1933, history reveals that only by a tremendous cooperative effort of local, State and national leaders was it possible to obtain final approval for the present route of the Parkway through Virginia and North Carolina.

As agreed upon in advance by the Federal Government and two States, the right-of-way land for the proposed Parkway was to be acquired by the States and donated to the United States Government. Legislation was approved in the General Assemblies of both States by 1935 and the States proceeded to acquire the right-of-way for the route as laid out by the National Park Service and Bureau of Public Roads (now Federal Highway Administration). The survey, design, and construction, on this major project was accomplished by the Bureau of Public Roads, and the National Park Service provided the landscape and architectural direction and supervision for the location, structures, easements, etc.

You must remember that much of the country through which the Parkway now passes was isolated and remote, so much that the radio had not yet found its way into most of the mountain homes! There were few paved roads in many of the counties.

In spite of the mammoth job of planning a 470 mile Parkway across the mountains, involving several Federal agencies, two States, and numerous counties, construction began in North Carolina in September 1935 and in February 1936 in Virginia. Now, forty years later, it is completed except a seven mile link near Grandfather Mountain, North Carolina. Fortunately, this section is now under construction.

The Parkway passes through twelve counties and two National Forests in Virginia for a distance of about 215 miles, embracing about 30,000 acres. In North Carolina, it traverses seventeen counties, one National Forest and the Cherokee Indian Reservation, for a distance of 255 miles and with about 45,000 acres within its boundaries.

When considering problems of land management on the Parkway, we must continually be aware of our close relationship with hundreds of local neighbors that adjoin a common boundary several hundred miles in length. For example, this proximity to so many private neighbors required about 1,400 reserved easements for public and private roads, utilities and other private rights in the deeds from the States to the United States Government.

It is the objective of the Blue Ridge Parkway to protect and preserve the natural and historic scene of the Southern Highlands, thereby affording the highest type of recreational and inspirational use possible. It serves the people as an elongated National Park, providing quiet, leisurely travel, free from the commercial development and congestion of

high-speed highways. It offers America a new concept in recreational land management, and the first venture of its kind in the world for such zoning for a rural Parkway.

It has been acclaimed throughout the world for its outstanding design and its scenic beauty. It deserves the best protection possible.

An interesting phase of land management through the years bas been a cooperative agricultural leasing program with local adjoining land owners. In the early years of the Parkway, farm practices along the Highlands were essentially the same as they had been for a century, except that the mountain neighbors began to discover the advantages of fertilization and good agronomy practices. Through the years, Parkway lands have been leased back to adjoining neighbors for a nominal fee for pasture, hay, orchards, row crops, etc., to insure the preservation of the highlands farm scene and culture. Almost 5,000 acres are under this "living farm" program to nearly 400 neighbors and private land owners. This program should continue as long as the local neighbors are interested.

In contrast to a scene of quiet, natural beauty, broken by the interesting highlands farm scene, a disturbing trend began in the early 1960's. Privately owned lands contiguous to the Parkway have become subject to a variety of uses that do not always enhance the panaroma along the route, and do not always contribute to its superb recreational and natural qualities. Gradually replacing the meadows, fields, forests and farms are tourist attractions, subdivisions and other developments. Thus, the same scenic qualities that make the mountain areas enjoyable for recreational purposes also make them desirable for land development.

It is not possible, nor intended, that the United States Government acquire sufficient lands to preserve the present qualities of the scenic corridor. Therefore, some control of this corridor must be imposed or the Blue Ridge Parkway will eventually lose the very qualities that made it an area of national significance. Much of the charm of the Parkway lies beyond the confines of the narrow right-of-way. If this rural environment is to be preserved, Virginians and North Carolinians will have to come to grips with some form of regional land planning. The people of both States have a tremendous investment in this resource. It has been a great asset to the people of both States as well as the nation, making the Highlands region and its variety of attractions more accessible now than in the past. It has been of considerable economic value, possibly accounting for as much as $150 million a year in local and state travel business. It is the most traveled park area in the nation, visited annually by more than 14 million people in recent years.

What can be done about future land management of this resource? Local and State planning bodies should give serious attention to the development of cooperative regional plans for the corridor relating to land use and economic development. Strong citizen support should be solicited and encouraged to prevent further exploitation and unplanned growth from seribusly damaging the Highlands environment and destroying its natural and recreational integrity.

Specific land management measures which could be adopted to safeguard the corridor are these:

1. Obtain through State and local legislation a land management plan (zoning) to control the intensity and kinds of land use in the corridor outside the present Parkway right-of-way. This could be achieved with state and local comprehensive planning and regulatory authority.

2. Tax incentives or adjustments should be allowed landowners who are willing to dedicate lands for open space where practical to assess as open space, or on their agricultural values rather than for potential development.

3. Legislation should be enacted in the North Carolina General Assembly controlling commercial signs within a reasonably viewing distance of the Parkway right-of-way, similar to that already approved by the General Assembly of Virginia.

The authority of the United States Government does not now go beyond the lands in its present ownership, and the jurisdiction for any land use control is confined to this strip. However, with regional land use planning within the twenty-nine counties through which the Parkway passes, preservation of one of the most scenic areas in America could be assured.

RURAL LAND USE MANAGEMENT:

THE NORTH CAROLINA EXPERIENCE

by

John Shore

The 1974 North Carolina General Assembly passed what has been called the most amended legislation ever to appear before that body. It promises to be one of the most far reaching. That legislation, the North Carolina Coastal Area Management Act, establishes a mechanism which will attempt to plan for, and manage, the resources of the twenty county coastal region of North Carolina.

In considering the Coastal Area Management Act (CAMA) the legislature made the following findings:

> It is hereby determined and declared as a matter of legislative finding that among North Carolina's most valuable resources are its coastal lands and waters. The coastal area, and in particular the estuarine, are among the biologically productive regions of the State and of the nation. Coastal and estuarine waters and marshlands provide almost 90 percent (90%) of the most productive sport fisheries on the east coast of the United States. North Carolina's coastal area has an extremely high recreational and esthetic value which should be preserved and enhanced.
>
> In recent years the coastal area has been subjected to increasing pressures which are the result of the often conflicting needs of a society expanding in industrial development, in population, and in the recreational aspirations of its citizens. Unless these pressures are controlled by coordinated management, the very future of the coast which make it economically, esthetically, and ecologically rich, will be destroyed. The General Assembly therefore finds that an immediate and pressing need exists to establish a comprehensive plan for the protection, preservation, orderly development, and management of the coastal area of North Carolina.

The bill that resulted was a highly complex sixty-three page document. It established a 15 member Coastal Resources Commission which is charged with the responsibility of overseeing implementation of the Act. They are aided by a 47 member Coastal Resources Advisory Council, representing local governments and State agencies.

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[1] N.C. General Statutes, Chapter 113A-102

One of the Coastal Resources Commission's duties is to designate, by rule, geographic areas of the coastal area as areas of environmental concern. Some of the areas suggested are coastal wetlands, estuarine waters, historic areas, national or State parks, wildlife refuges, public trust area - public trust water, sand dunes, ocean beaches and the outer banks. Once designated, anyone wishing to develop within an area of environmental concern will have to obtain a permit for development.

A major portion of the Coastal Area Management Act deals with planning. When the bill was first introduced into the General Assembly, the State was the principal actor in the planning process. This greatly upset local interest who viewed the bill as something the State was attempting to shove down their throats. The bill was amended to give local government a role, especially in the planning process. In the view of many this has greatly strengthened the bill by providing an inter-relationship between the State and local government and thus providing a wider basis for support.

Each of the twenty coastal counties is in the process of preparing its own land use plan under guidelines established by the Coastal Resources Commission. The guidelines set forth a four phase planning process: (1) data collection and analysis, (2) establishment of development goals, (3) a future land use plan, and (4) land classification based on the future land use plan which will serve as a policy statement on future growth patterns. A major emphasis is being placed on obtaining public participation in the planning process. "It is important," the Commission points out in the Introduction to its Guidelines, "to employ effective methods to secure the views of a wide cross section of citizens, representing not only each different geographical area of the county, but those who can ably represent the varying economic, social, ethnic and cultural interests as well."

Each county must complete its plan by November 1975, less than one year from when the Commission's Guidelines were adopted. This tight timetable, coupled with the requirements for extensive public involvement, has created most of the problems encountered to date with the Act.

The legislation also directs the Commission to make recommendations to simplify the existing permit system in the coastal area. At the present time the N.C. Department of Natural and Economic Resources issues over fifty different permits for development activities in the coastal area of North Carolina. The ultimate goal of the Act would be to reduce these to a single permit for development. Thus it would simplify administration of the permits and reduce the time needed by a developer to obtain a permit.

It is too early to tell whether the goals of this Act will be achieved. The 1974 General Assembly charted an ambitious course for North Carolina in managing its coastal resources. The implementation of the Act will raise many political and legal questions which must be answered. Probably the ultimate success of the Act will rest in the hands of the local governments of the coastal area. If they capture this opportunity to guide their growth, then the Act will be successful.

THE SURFACE MINE POLLUTION ABATEMENT - LAND USE IMPACT INVESTIGATION:

A FEDERALLY SPONSORED STUDY INTO ALTERNATE LAND USES

by

William G. Adams and T.J. Kubiak

INTRODUCTION

The problems or rural Appalachia are somewhat unique in the U.S. But even within the Appalachian region there is wide variation in the severity of rural problems. The economic and social planning issues faced by the Appalachian counties of New York state are quite different than those of Appalachian Kentucky. In fact, the 33 coal producing counties of eastern Kentucky, as a group, ranked lowest of all Appalachian sub-regions in terms of relative social and economic well-being.[1] Persistent problems of migration, unemployment, housing and welfare continue to plague eastern Kentucky even with the relative boom economy brought about by increasing coal production.

It is the purpose of this paper to describe the principle methods, results and conclusions of an on-going research effort funded by the Appalachian Regional Commission through the Kentucky Department for Natural Resources and Environmental Protection. The concerns of the project entitled "Surface Mine Pollution Abatement - Land Use Impact Investigation," (SMPA-LUII), are many, including pollution abatement, but mainly mining's impact on land-use and alternative post-mining land uses.

Background

In an area that measures consistently lower by all social and economic indicators there exists two dichotomous economies: the welfare economy and the coal economy. Nearly 42% of the region's families have incomes lower than poverty level. Unemployment in the civilian labor force is relatively low as a result of the coal boom, but the proportion of all males 16 to 65 years who are not in the civilian labor force is exceedingly high. In one county the figure reaches 58.7%. These persons are neither employed nor seeking employment. And there is little reason to assume that the coal rush will significantly effect this group as most mining jobs require skilled or semi-skilled labor. It is likely that the gap between the welfare economy and the money economy will remain until total economic development, including all employment sectors, emerges.

At the year's end in 1973, there were a total of 1,481 licensed mines in Kentucky. By the end of 1974 there were 2,424 mines. This is an absolute increase of 943 mines and a relative increase of 63.7% in just one year.[2]

With the dramatic increase in mining activity the aggregate economic picture will improve, but other planning problems emerge including pollution, reclamation, post-mining land-uses. This is where the SMPA-LUII effort plays a role.

The SMPA-LUII research team is comprised of an interdisciplinary group for research associates: three geographers including, the project director, a member of the board of advisors and a research associate concerned with the social and economic impact; three geologists, involved with water quality, one estimating coal reserves, and a member of the board of advisors. We are also joined by a biologist whose principle concern is post-mining vegetation. A mathematician expert in data processing is also an integral part of the effort. All of these individuals are at Eastern Kentucky University. The research team is additionally enhanced by a team of consulting engineers whose roles are of a technical nature. Each member, working in his area of concern and expertise contributes to the end product as need dictates.

Scope of Work

SMPA-LUII was divided into four phases. Each will be described briefly along with some important findings and conclusions.
PHASE I - Inventory of Orphan, Pre-Law, Active and Inactive surface mined land in eastern Kentucky. In this phase the primary inventory tools were high and medium altitude air photos and ERTS satellite and Skylab imagery. From these photos and images a careful inventory was made of all surface mining activity in eastern Kentucky. Certain satellite images, i.e., specific bands, were purchased and utilized with success in constructing a map depicting mining activity in the 33 coal producing counties. The basic unit of analysis was not the county but the watershed. Eastern Kentucky is comprised of 6 major watersheds of varying sizes, which may be subdivided into approximately 50 watersheds of fourth order or larger.

Also in this phase, all pertinent social, economic, and environmental data available for Appalachian Kentucky was gathered and organized for further analysis. This included published Census materials, published studies and related literature, and Census Summary Tapes, Files A and B.

This data, coupled with the surface mining inventory, enabled us to determine to the extent possible, on watershed basis, the severity of existing surface mining environmental and land-use problems.
PHASE II - The second phase of the research effort focused upon the development of a methodology for ranking watersheds, the selection and analysis of the study area, and the identification of land-use problems associated with the mining industry. The methodology for ranking watersheds were developed for a future more comprehensive study and for use as additional data became available. Other criteria for which data were available had to be used for ranking watersheds in the study area selection process.

The methodology for ranking watersheds was designed to permit rapid assessment of present and potential effects of surface mining within

each watershed. It was considered important that the ranking system be easy to apply; that data be either currently available or of sufficient importance to justify its acquisition cost; and, that it stand the test of replicability.

The criteria used were of three kinds. Two of the sets of criteria express in different ways the effects of mining and other considerations of importance to mining. For example, the first set concerns on-site mining effects: total area mined, acid or toxic materials in coal or overburden, mining technology, refuse piles. The second set of criteria were directed toward off-site effects. Included were considerations of water quality, aquatic species diversity, haul road make-up and surface types, and local coal truck traffic. The transportation variables were added because of the clear impact haul roads and truck traffic have upon quality of life in surrounding areas. Dust is a particularly noxious problem and is a direct result of truck traffic. From one strip-mining operation alone in the study area, it was estimated by simple calculation that about 1200 truck loads of coal per day move from the mining site through the county to the tipple at a railroad siding.

The third set of criteria introduced socio-economic and developmental factors. An index number was calculated for each watershed using the social and economic indicators of: 1) Percent of families with incomes below poverty level; 2) percent of the population 25 years or older who had not completed high school; 3) percent unemployed; 4) percent of houses lacking some plumbing. The index number expresses these combined variables as a percentage of the national average.

Land use was also a major consideration. The variation of land uses existing in an area are related to potential land use development and it was felt that these must be considered when evaluating surface mined land for alternative post-mining land uses. Existing land use was evaluated taking into consideration population shifts, especially the growth or decline of urban or "urban like" population.

It was further surmised that some of the most important factors in development potential are relative location and accessibility. Using these two factors, areas that have potential for urban or other type uses could be delimited. Some surface mined areas, for example, have hundreds of acres of level land, which, if properly regraded could be used for urban and other intensive forms of land use. Relative location was calculated based upon mileage distance between, for example, a reclaimed surface mine and a major highway. Accessibility, on the other hand, was judged to be a more relative concept. A reclaimed site may be located a short distance from an urban area but have limited accessibility due to such things as the road-stream-bridge pattern. Thus, it was concluded that consideration should be given to the post-mining development potential prior to issuing a mining permit in order to minimize haul road mileage and other development costs and constraints.

Other considerations included the existence of one or more unique characteristic of a watershed such as state and national parks, historic sites, recreation areas, fragile lands, and wild rivers. And perhaps

the most important indicator of impact potential of surface mining on any watershed is an estimate of strippable coal reserves. All watersheds were ranked according to acre/feet of coal reserves.

Basic data are not available to permit use of all these criteria in selecting the study watershed. Fourth order and larger watersheds were ranked for the purpose of selecting the study area using other criteria for which data were available. These criteria included (1) watershed size, (2) estimated strippable reserves, (3) location in a major coal producing county, (4) existence of orphan mined lands, (5) existence of deep mines, (6) and existence of pollution problems identified by previous research. The receptivity of local governmental officials to the project was also considered in the final choice of the study area.

From these criteria, all watersheds were ranked and the study area chosen. The Quicksand watershed was selected as the model. The study area is located primarily in Breathitt County, central to the east Kentucky coal field. Fortunately, there was also a strong coincidence between the watershed boundaries and census county divisions. This obviously facilitated the applicability of census data in the analysis.

As an integral part of Phase II, a land-use classification scheme was also developed based upon USGS revised Circular 671, "A Land-Use Classification System For Use with Remote-Sensor Data," dated October, 1973. The classification system primarily reflects three levels of land use. The first two levels are nearly identical to the USGS system. The third level is based upon several other classification schemes now in use, but the entire system has been adapted for Kentucky. The portion of the system related to sub-surface and surface coal mining has been expanded to include levels four and five to thoroughly classify mining types.

This is a very important result of SMPA-LUII and has been prepared as an aid to individuals and agencies interested in land use mapping and analysis. Its project applicability is reflected in Phase IV. The details of the system are too lengthy to describe here, but Mr. William Adams, Research Director, could answer all questions after this session.

The field work in Phase II took place primarily in the study area this past summer where the research team and a group of nine graduate assistants took part in such activities as land use mapping, water quality sampling, administration of a citizen attitude survey, reclamation and on-site mining study, as well as discussions with local government officials and concerned citizens.

PHASE III - Based upon the information collected and criteria developed in Phase II, it is the task of the research team to recommend alternative post-mining land uses within the study area. These are to be discussed in terms of both short and long-term impacts and benefits to the social, economic, and environmental make-up of the study area. This task is

still in progress, but in light of our findings coupled with the realities of present mining technology, law, citizen attitudes, development potential, and topographic peculiarities, it appears that the greatest need for post-mining land-use lies in the area of agriculture or grazing. Interestingly, our attitude questionnaire revealed that an overwhelming majority of the respondents would like to see the mined land restored to a less steep condition. In the study area, land suitable for crops, houses, transportation and other uses amounts to approximately 1% of the total land available. About 5 square miles of level land has been created by the "mountain-top" removal method and according to the geologic study of the coal reserves in the Quicksand drainage basin, an additional 5 square miles may be removed by the mountain-top removal method. Level land is at a premium and because of limited accessibility not only within the region but limited accessibility to the "outside," agricultural uses are realistically favored over industrial or other urban type uses.

Citizen attitudes, we feel, play a role in any development effort. Although it is realized that stated values, goals and desires of the respondent group often reflect paradoxes and inconsistency of goals, the fact is that these stated goals and desires serve as fairly reasonable indicators of the residents' expectations. For example, several questions related directly to attitudes and preferences with regard to coal mining and its effect upon individual and community well-being. The majority of the respondents felt that the mining of coal would not effect their future but, 87% felt that strip mining was "very important to the county's economy." Other questions were directed toward attitudes and preferences with regard to mining type, surface mining itself, and environmental impacts. There was no strongly expressed preferences for either deep mining or strip mining. In addition, most respondents felt that the people of the county are favorably disposed to strip mining and that strip mining should be either continued or expanded. In their perception of strip mining's environmental impact, a large majority recognized its negative effect on land and water resources. Most respondents felt that the natural beauty of the county has been harmed by mining activity. Yet, these people are willing, according to their stated responses, to make the trade-off between the economic and the esthetic.

Post-mining land uses can never be accurately predicted. The land use alternatives of Appalachian Kentucky are also different from those found in most other Appalachian states. Valleys in eastern Kentucky are ordinarily narrow and V-shaped. Ridges are correspondingly narrow and are not easily accessible. Hillside slopes are steep. As a consequence of this assemblage of topographic features, almost all of the region's population and various forms of land use other than mining and forestry are confined to the valleys. Appalachian areas of other states often have broader valleys and ridges, and therefore, more land use alternatives. Suitable alternatives can be suggested with consideration given to soils, vegetation, water availability, relative location, accessibility and the other physical considerations of highest and best use. But, the final decision as to the ultimate use of the reclaimed surface mined land is dependent upon demand and elasticity of demand. The demand for industrial land, although a highly desirable end-use in light of the region's economic

ills, is in eastern Kentucky, very elastic due to market and economic conditions elsewhere. A parcel of land may be ideally suited for industrial uses from a physical, local, economic and social point of view, but the demand may not be there. Its greatest potential, then, lies in some lower use. What are these lower uses? Agriculture, recreation, forestry are some of the uses with the greatest short and long-run potential for Eastern Kentucky unless the U.S. experiences a major industrial shift or expansion.

Another task assigned to the group is that of suggesting pertinent demonstration or development projects for which federal and state monies will be used to enhance the overall economic position of the study area. Thus far, serious consideration has been given to projects or investigations into complementary industrial or service activities, relevant to coal mining. Others being considered include forest management demonstration projects, agricultural crop specialization demonstrations as well as rural transportation improvement and recreation development.

PHASE IV - In this phase of the research several alternate date storage and retrieval systems are being investigated as to their applicability to land-use, socio-economic, and mining data. Such a system, it is hoped, will serve as a model for state-wide applicability in land use data systems (re: the land use classification system mentioned earlier). The system, as presently conceived, will be used to facilitate mine licensing, reclamation specifications suitable for each mine site, and post-mining land use suggestions.

Summary

The SMPA-LUII project is aimed toward identifying problems resulting from surface mining, analyzing the impact of surface mining on surrounding land uses and recommending alternative problem abatement schemes. The potential impact of surface mining on future land use is also being projected and evaluated in terms of highest and best use for the economic and social well-being of the rural population in Appalachian Kentucky. Investigations, knowledge gained and information obtained from the study area, it is anticipated, will serve as a model for the eastern Kentucky coal field and the central Appalachian region in general.

FOOTNOTES

1. J.P. Pickard; Appalachian Regional Commission, Washington, 1974.

2. Commonwealth of Kentucky, Department of Mines and Minerals

A Multi-Disciplinary Computer-Aided Approach To Environmental Impact Analysis

by

Robert J. Hogan

Every year, more and more land is being developed for outdoor recreational use. This development, which relies heavily on the environmental factors for its success, combined with the passage of the National Environment Policy Act (NEPA) in 1970, has developed an expanding interest in developing new methods and new techniques for environmental impact analysis. In the remainder of this article, I will explore one recreational facility now under development in the Appalachian Region of West Virginia, and the methods and techniques that have been employed in the evaluation of on-site and off-site environmental, physical, and social problems potentially generated by Snowshoe.

Background

Snowshoe, as proposed, is an integrated, year-round recreation resort located in Pocahontas County, West Virginia. The site is an 11,000 acre tract of land encompassing one of the biggest and most unusual mountains in the Southeast. Its north facing eliptical bowl shape, some five miles long, two miles wide and nearly one mile high, contributes to the site's unusual 180 inch annual snowfall. The bowl forms the head waters of Shaver's Fork, a pure wilderness trout stream which, due to its small size and location, is highly vulnerable to destruction caused by relatively little interference.

The forest of second growth red spruce, rare to the South, caps the ridge around the bowl, giving the visitor the illusion of being in a Canadian landscape. The Snowshoe site offers a suitable environment for an abundance of wildlife. In particular, the black bear, now a diminishing species in the region, and the snowshe hare, not usually found so far south, are the more unique members of the wildlife community.

Because of the unusually high snowfall found on the site, the major emphasis of the Snowshoe development is projected as winter recreation. Miles of ski slopes and trails are planned including the highest skiable vertical drop (1,500 feet) and the longest slope (6,500 feet) in the South. Ice skating will be part of the winter recreational activities. In the non-winter months, Snowshoe is projected to offer other recreational activities including golf, tennis, horse-back riding, swimming, backpacking, and possible limited hunting. Snowshoe plans to impound part of Shaver's Fork in the bowl to implement boating, sailing, and fishing activities, as well as snow making in the winter.

In addition to being a commercial vacation resort, Snowshoe is being developed as a second home community. Individual home-sites are being made available and condominiums are being built in isolated clusters around the rim of the mountain in the spruce forest. Plans are underway for conference and year-round retreat facilities.

Because of the critical environmental aspects of the site, and the general nature as to the extent of development, the Snowshoe Company felt it necessary to implement an environment impact study for the purpose of assessing and coordinating the development potential of the site, minimizing potential environmental impacts, and protecting the unique and fragile reources that they have.

Under a grant provided by the Snowshoe Development Company, an inter-disciplinary studio was formed of both faculty and students at Virginia Polytechnic Institute and State University. This team, made up of physical and social scientists, and designers, was drawn together in a studio made up of regional planners, geologists, aquatic biologists, forest ecologists, architects, landscape architects, geographers, and forestry and wildlife specialists so that the potential environmental impacts could be fully analyzed and understood. It was hoped that through the inter-disciplinary studio, a teaching-learning environment would develop among the disciplines for the purpose of adding depth to disciplinary studies and to expose the inter-relationships among the environmental and social problems that the Snowshoe Development might face.

The process for analyzing the potential environmental impact of the Snowshoe Development was established in two phases. The first concentrated on data inventory and professional pre-analysis. During this phase, each of the individual disciplines inventoried pertinent data from existing sources. Additional site specific data which was not readily available was interpreted from such sources as aerial photographs and on-site investigations. Also during this phase, a series of seminars were conducted by faculty and students representing the various disciplines. During these seminars, each of the disciplines presented an initial assessment of the environmental problems that they anticipated for the site. Snowshoe Company staff, as well as each of the disciplines, participated in discussions of each of the disciplinary assessments.

The second phase of environmental impact analysis concentrated on problem recognition and development of land suitability models. During this phase, computer aided methods of environmental impact analysis were implemented using the Harvard based programs of GRID, ATTRACTIVENESS, and IMPACT. The data collected by the team in phase one was coded at the initial spatial scale of 2½ acres and stored in computer data bank. The GRID program was then used to display each of the thirty-five individual data variables and later used to display the results of quantitative analysis in map form.

The GRID Program [1]

GRID is a oomputer program used to display topical maps by creating a grey scale using a standard line printer available on most computer

[1] Sinton and Steinitz, Grid Manual, Laboratory for Computer Graphics and Spatial Analysis, Harvard University, October 1971.

systems. Data is supplied to the program for display in terms of a consistent rectangular grid coordinate system. It is important to note that the GRID program displays and tabulates data only. There are no analysis procedures or data manipulation routines as a part of the standard GRID computer program.

The GRID program accesses data from a computer data bank one cell at a time. The program allows for user-provided subroutines to search, combine, and mathematically manipulate the data. The maps themselves are created by overprinting up to four alphabetic characters and print symbols to display a grey scale. The grey scale can be used to differentiate between the levels within data variable classifications, or as a range of values generated as output from a computer model. GRID is a deceptively simple data access and displays program and remains as a standard applications and display computer program in a wide variety of studies related to the environmental resource analysis.

Land Suitability Models[2]

In this phase of the analysis, the ATTRACTIVENESS computer program was used to develop land suitability models. These suitability models are essentially computer-generated overlays which allow for the selective resequencing and weighting of data variables. The models attempt to define those areas which are the most and least suitable for development. Suitability indices are generated by applying a set of design criteria to the data, converting these criteria to weighted expressions of the relative interrelationship among the variables, and then by a simple statistical procedure, suitability "scores" are assigned to each cell in the study area. Since each data variable is coded with a numeric designation, it is possible to mathematically combine or manipulate sets of variables to produce composite maps which express the relative interdependence of the data variables.

The mathematical properties of suitability models are straightforward and can be expressed as:

$$Sxy = \sum_{i=1}^{n} W_i \cdot V_i$$

where S(xy) is the suitability score for a cell with coordinates (xy), (W) is the weight assigned to each variable (V), and n is the number of variables included in the suitability model. For purposes of comparison between the scores generated by different models, S(xy) is recomputed so that the total distribution of suitability scores for a particular model has a mean of 50 and a standard deviation of 25. By using a table which described the area under the normal curve, we can compute the probability of a suitability score occurring at random. Thus, given a normal distribution with a mean of 50 and a standard deviation of 25, the probability that a score will have a value larger than 75 is .16; the probability that the score will have a value larger than 90 is .05; and the probability that the score will have a value larger than 100 is .02.

[2] Johnson and Simutis, Computer-Aided Location Studies, Appalachian Power

By applying this simple statistical manipulation to the suitability scores, fairly confident statements can be made about the range and distribution of the scores generated by the analysis. Low suitability scores, especially those less than 25, have a low probability of occuring by chance, and thus point to areas where there are major constraints. On the other hand, suitability scores above 75 generally describe areas where there are far fewer constraints than in the average cell within a study area.

The process by which appropriate data variables were selected and weighted involve the following steps:

(1) Identify criteria to assess the relative suitability of sites with the study area

(2) Identify those data variables which record the information required to apply the criteria to the study area.

(3) Rank-order the variables in terms of the relative importance of the variables as stated in the design criteria, and in terms of their relative contribution to potential disruption to the natural or man-built environment.

(4) Convert the rank-order relationships to numeric weightings, and where appropriate, resequence the data variables to conform to the hierarchy of 1=low suitability to 9=high suitability.

The results of the suitability models were used for visual inspection and analysis to generate alternative developable areas and each suitability model display documented the major constraints to development. Both architecture and landscape architecture students and faculty teams then proceeded to develop prototypical design solutions for various suitable areas of the site. The solutions were then analyzed by computerized environmental impact models.

IMPACT Analysis Models

IMPACT is a computer program designed to manipulate data variables by assigning values to the comparison of the elements of three data variables in two matrices. Initially, the three data variables are re-ordered by potential degree of impact; high impact, moderate impact, and low impact. The next proceudre requires that the three data variables be ranked by importance. The two least important variables are compared in a 3 x 3 matrix according to their potential impact. The results are then compared to the most important variable considering the potential impact of a specific land use, i.e., the potential impact of high density multi-family housing on a specific resource system. In the final comparison, adjectives are defined to describe the potential degree of impact.

Terminal Impact - the resource system may not recover and may ultimately be changed by imposing the land use on the resource system.

Severe Impact - the resource system will recover from the imposition on a land use upon it, but only over an extended period of time.

Moderate Impact - the resource system will recover from the imposition of a land use upon it within a relatively short period of time.

Compatible Impact - imposition of a land use will have no potentially effect on the resource system.

The potential impacts were then mapped for each of the land use groups using the GRID program.

The potential impacts were then evaluated by the team and designs were revised to reduce these impacts. This process was carried out until the team was in agreement that the minimum potential environmental impact has been achieved. The entire process was then implemented at the site with Snowshoe Company representatives and team members through the use of a remote terminal and interactive versions of the computer programs. This greatly increased the potential of the process by allowing immediate on-site verification of suitability and impact analysis. Through this implementation, the process is now usable by the Snowshoe Company for analyzing the environmental impact of future development.