

# New Concepts and Goals in Highway Planning

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• THIS PAPER represents the "non-highway" point of view as well as the "non-planning" by professional planning standards. The author is a professional political scientist as well as the administrator of a State planning and development program. But with credentials stemming from the administration of a state-wide planning program rather than any evidence of professional engineering or planning talent, this opportunity is taken to importune highway people to "take the broader view."

A short resumé of planning activity in Wisconsin in the past 2½ years is of significance in a discussion of "concepts and goals" in highway planning. Since the creation of the Department of Resource Development by the State legislature in October 1959, the following planning activity has taken place:

1. Where not a single "701" Federal urban planning assistance grant program was under way previously, there are now 40 Wisconsin cities and villages in the program administered by the Department of Resource Development with at least 30 more localities on the waiting list.

2. Three regional planning commissions are now active, with two other regions having formally petitioned the governor to create such commissions. This means that over one-half of the State's population lives in areas that have, or have petitioned for, formally established regional planning commissions. In each instance, these regions became interested through the encouragement and active inducement by the governor and personnel of the department.

3. Work has begun on a comprehensive state-wide plan which should be completed by the end of 1963. The largest Federal HHFA "701" grant for a state-wide plan (\$75,000) has been received and the "first approximation" of this plan will be ready by July 1 of this year. (The transportation plan,

which is an integral part of the State comprehensive plan, has been a cooperative program between the Department of Resource Development and the Highway Commission with a well-known eastern transportation consultant firm doing the major work.)

4. The 1961 Wisconsin legislature passed Governor Gaylord Nelson's \$50 million resource development program which is one of the largest recreation and land acquisition programs in the country. The planning for this program, which involves comprehensive, multipurpose planning has been delegated to the Department of Resource Development.

These comments indicate Wisconsin's vital interest and activity in planning. They also indicate that only a comprehensive approach can adequately solve the State's economic, social and resource development problems.

What then, does one not engaged in highway administration see as important in the investigation of the role of planning in highway administration? The categorical imperatives necessary to the development of planning as a sophisticated tool of the highway administrator are as follows:

1. The recognition that highway planning and development is inextricably bound up with all of the other development factors of a given governmental unit and cannot be a distinctly separate operation.

2. The planning of highway networks can no longer be limited in scope to a single route or community but must be based on a regional or a state-wide systems concept; also, planning efforts by the many governmental units with responsibilities for highway construction must in some manner be coordinated.

3. Highway planning is more than fact-gathering, origin-destination studies, and projections of traffic. It ought to be a socially-conscious and esthetic

operation, tied strongly to careful consideration of other resources and their uses.

Many will say that these three cardinal virtues listed as requisites of good highway planning are not at all new. The Sagamore Conference in October 1958 said all of these things and said them better. The only rebuttal is that many city, county and State highway departments either never heard of the Sagamore Conference or did listen and went back to the status quo.

Wisconsin is fortunate in that over a year ago the State highway commission created an Office of Urban Planning. In addition, that bureau's staff engineers work closely with the personnel of the Resource Development office on community planning programs on the State plan and with the various regional planning staffs. Nevertheless, even with such a long-range planning function now operating, most highways are still planned on the basis of established need rather than anticipated need. This is not unlike most other States to date, of course, and it is expected that before too long the highway planning program will be developed on such an anticipatory concept.

Highway planning and development cannot be undertaken as a disparate operation. Conceptually, highway planning has taken great strides in the past few years. The new transportation studies in Philadelphia, Los Angeles, Chicago, Pittsburgh and other metropolitan centers have one common denominator; they all recognize that the piece-meal planning efforts of the past provided few lasting solutions to the transportation problem. The new approach, equally apparent in all of these studies but to date woefully lacking in all but a handful of State highway programs is a comprehensive planning approach.

A great failure of the Federal Interstate Highway program was its lack of attention to comprehensive planning. Fortuitously, it has literally forced a comprehensive planning approach on many localities and regions but the Federal program itself is almost devoid of

such concepts. Only recently has the Federal highway program demonstrated awareness of the tremendous impact of highway construction on other resource development decisions by the recognition given this concept in the 1961 Housing Act calling for Federal grants for transportation planning but only within a comprehensive plan context; and by the recent announcement of the creation of an Office of Planning in the Bureau of Public Roads. These are welcome—but long overdue—new trends.

The granting of incentives to minimize billboard blight was a commendable action but more importantly the Federal Government, in its Interstate program, should have insisted on adequate zoning in each of the highly expensive interchanges created in every State by the new system. The twin problems of potentially blighted, honky-tonk areas around each interchange, and the generation of traffic volumes much greater than those designed for, are pressing today. The Department of Resource Development drafted a bill that sought to create special interchange districts, with zoning standards set up by the State. It passed one house but failed in the other. The Federal Government could have encouraged this sort of control by granting a bonus in road fund allocation.

Wisconsin's new state-wide planning program recognizes the non-disparate quality of the comprehensive approach to planning. The transportation project could not possibly be isolated from the land use, economic, population, recreation, and State facilities project.

The dramatic increase in transportation movement, particularly motor vehicle travel, since World War II has prompted a number of travel habit studies seeking new and better means with which to anticipate future travel demands. A significant outgrowth of these studies has been the increasing realization that, in all areas studied, very significant and basic relationships exist between travel desires, land use, and other social and economic factors.

The establishment of quantitative measures of these relationships, to-

gether with the use of electronic computers, has made possible the integration of transportation and general land use planning into a comprehensive planning process. It is now possible to study the interaction that exists between transportation and economic development and land use in any region of Wisconsin. It is strongly believed that transportation systems can be planned not only to meet the transportation needs of the State, but to help shape the State and its regions along the economic and social lines most desired by the citizens. The transportation planning work undertaken in connection with the State planning program embodies these concepts. It will reveal a reliable picture of the State's future travel demands related to such items as the future distribution and extent of the population, economic and recreational activity, and land use.

The transportation phase of the comprehensive planning program is utilizing information available from previous surveys and data collected routinely by various private organizations and Federal and State agencies. The information from these sources has been assembled and a composite picture of travel is being developed. Transportation movements are broken down into two basic purposes: movement of people and movement of goods. These movements will in turn be identified by mode of transportation; that is, highways, rail, air, water and pipe line.

Several other things are being considered in Wisconsin's program, including (a) an identification of the most significant trends in transportation, (b) an evaluation of the possibility of major technological changes in the field of transportation, (c) a determination of the special and unique problems with which the State is faced in respect to transportation, and (d) an evaluation of the advantages that Wisconsin has in this field.

From these studies and analyses a model of present transportation movements will be prepared by means of which these movements can be related to current land use and economic activities. A comparable outline of such

movements will then be made for the year 1980. Trends based on both the current relationships and the forecasts of 1980 activity being developed in the other phases of the planning program will be taken into account. Thus the future travel picture will have been developed with the consideration of such factors as the future shape of the state's major recreation facilities, urban and industrial developments, agricultural operations, etc., and will be compatible with expected changes in all travel-producing activities.

Future plans for the public segments of the transportation network will then be developed from these over-all statements of needs. Finally, the implications of trends in the field of transportation, especially as they might affect needs for publicly financed improvements beyond 1980, will be studied.

The objective to formulate, in cooperation with other State agencies, an over-all plan for highway and other transportation facilities is predicated entirely on the observation that the "whole is the sum of its parts."

The largest regional planning area in Wisconsin, which includes metropolitan Milwaukee and Racine, Waukesha and Kenosha, is currently developing a regional transportation plan. That group, like the State plan directors, fully recognizes the relationship of land use planning to highway planning. Based on the premise that future distribution of land use is the major factor in projecting travel patterns, the regional group is developing an integrated transportation systems design approach that consists of the following:

1. Relating trip generation directly to land use; at present this requires the collection of origin and destination survey data.

2. Establishing the future land use pattern of the area for which the transportation system is being planned; this may be done either on the basis of a land use projection based upon a regional growth model, or on the basis of a land use plan which would use a growth model to establish ranges within which policy decisions can be made and

which would indicate not only choices that are feasible, but choices which are optimal.

3. Establishing total trip generation for the design year using the previously established trip generation factors and future land use patterns. It should be stressed that in this approach it is the future land use pattern which determines the future origins, destinations and travel linkages and not the existing origin and destination survey data, necessary as this data may be to the planning process.

4. Converting trip generation to travel pattern—future trip desire lines—by means of a mathematical model expressing zonal interchange.

5. Developing a planned network of facilities to serve the volumes and locations of these synthesized travel demands. This requires a quantitative assignment of travel demand to the proposed network, and adjustment of the network if necessary to relate planned capacities to future loads, thereby obtaining a workable system.

A second admonition to highway planners is that new highway developments not be planned within the confines of a single municipality or even a single county. Nothing less than regional concepts, and in some instances those incorporating an entire State, must prevail if new transportation systems are to achieve their optimum value.

The author is a zealous advocate of state-wide planning in transportation as in other critical areas. Some in Wisconsin have been saying that the most important planning to be done in the United States in the next 10 years is going to have to be done in the State capitals, but they are also aware that this is not a fashionable view among many professional planners, who have a low opinion of the State as a planning vehicle. Nevertheless, almost all including the planners, are in agreement that the great, unresolved problem before the public is the shaping of future urban growth. The problems are regional but the governments are local.

There is already a regional government; although State governments are

still antiquated and unacquainted with 20th century living, they can be made into viable instruments of public policy.

Because of rapidly mounting population pressures, a whole series of major, critical problems has been thrust upon the States. They are problems which were not anticipated. They are problems the States are not prepared to cope with in any planned and orderly fashion. For this reason probably the most important single problem faced by the States is the problem of preparing comprehensive plans to meet the pressure of future growth. This involves a careful evaluation of such factors as present and future needs and assets in all areas: population growth—where and how much; economic development—what kind and how much; transportation pressure—where and what kind; public institutional requirements—where and how many; recreation needs and resource assets—where located, what needed, how should they be used.

No State has yet prepared an adequate plan offering guidelines for future growth. Wisconsin now has such a plan well under way. When it is completed the State will be prepared to follow an intelligent course for the future.

The decision to launch vigorous programs of State planning comes at an appropriate time. Most States are in periods of massive transition. Among the problems are these:

1. A shift from an agricultural to an industrial base, causing imbalance in rural areas and uneconomic, oftentimes unattractive, seemingly uncontrolled metropolitan sprawl around urban centers.

2. A growing population pressing hard against the State's fund of natural resources, and particularly against water, forest, lake, wildlife and recreation areas.

3. Rapidly mounting pressures on public facilities, creating new demands for public works at both local and State levels.

Looking back, it is easy to see where the States would be better off today if they had anticipated more of the prob-

blems that inevitably arise from a growing population. Roadside developments would not have been allowed to encroach on highways near cities, clogging their traffic carrying capacity and partially destroying their usefulness. Helter-skelter housing and commercial developments on the outskirts of cities would have been prevented. Railroads would be carrying a large share of the commuters, taking a load off city streets and parking places. Waters now too polluted for swimming would still be clean; streams that once offered good fishing would still be good; ground water in some contaminated areas would still be safe for wells.

There are other unpleasant conditions that could have been anticipated and at least partly controlled: downtown decay; building of houses on river flood plains; despoilation of scenery; destruction of fish and game habitat; overdevelopment of lakeside property; construction of inefficient, hard-to-service housing developments; uneconomic distribution of airports, etc.

The social and economic forces which caused these problems are still operating. There is every evidence that the problems will get worse in some places, and for a long time to come. Although growth brings on the most dislocations, the reverse is a cause of much concern over large areas of the State where population is declining, bringing with it a host of problems of another kind.

It is believed that state-wide planning is desirable to coordinate State agency activities, to provide a framework for local and regional planning efforts, and to identify problems before they reach the crisis stage, as well as to offer solutions where possible.

Wisconsin's State planning program is founded on the principle that the best results will be achieved by taking advantage of what is already known. Plainly, this is not the time for further broad-scale, long-term, original research studies as important as they are. The facts are gathered. The various agencies of the Federal and State governments are invaluable sources of specialized learning and information. But the uses to which such resources have

been put have often been single-purpose or superficial. The big problems have been to place a deeper tap on such resources, to establish a freer flow of information, and to weld the facts into a unified system of development policies.

In addition to careful planning coordination horizontally—that is, to approach land use, transportation, capital facility and resource problems simultaneously—there is a great need to coordinate highway planning activities vertically. No longer is any single level of government capable of evolving the kind of highway system society today demands.

The most carefully engineered and designed municipal transportation system is faulty if the broader implications of the entire regional transportation system are not taken into consideration. Inter-regional traffic patterns also are in as much need of investigation as are intra-regional patterns. This obviously requires State government participation.

A last plea to highway administrators, in considering the vital role of planning in their deliberations, is to accept a new dimension not covered by slide-rules, logarithm tables and computers. It is of social-consciousness. Today's modern highway systems will have an awesome impact on the customs, habits and the directions society will take. The kind of planning, therefore, that goes into these systems bears important responsibilities. It must see that the contributions highways make to society are positive, that they are creative, esthetic, and mindful of a balanced allocation of resources.

In attempts to guide urban growth, it is time to recognize the necessity of searching for new urban ways of living as well. The problem of American culture seems to be whether the people can be motorized as well as civilized. Urban living is a collective form of living, and habits must be changed from a rural orientation to an urban one. Good highway planning can help during this critical period of transition. It will influence greatly, for good or ill, what kind of a society is eventually achieved.