The County Road Problem and the Interstate System

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The sound management techniques and proven modern engineering principles used in industry and as applied in federal and state road-building agencies definitely should occupy a more prominent place in county government than is generally the case today.

In America, our way of life and our economy is predicated to a major extent upon the convenient and safe transportation of goods and persons as furnished by the motor vehicle.

Our standard of living has paralleled the unprecedented use of the motor vehicle. Motor transportation is no longer a luxury but by every measure and definition a necessity for a city dweller, the suburbanite, or the country cousin.

Any segment of our country or society that has inferior roads is hurt, whether the shortage is urban expressways or land service farm-to-market roads.

At this point, I wish to assure you that the state highway departments are not going to neglect work on secondary roads, primary roads, and urban connections, during the time that they are answering the challenge of completing the interstate program on schedule.

Improvements on all highway systems must be kept in balance with the need, and with one-seventh of the nation’s gross national product coming from the highway and motor vehicle industries we cannot let inadequate and unsafe highways of any category stifle so great and vital a contribution to our national expanding economy.

In our highway transportation facilities we definitely hold an extremely valuable and unmistakable advantage over any other great world power.

In the current and unprecedented highway construction program, Congress gives primary responsibility to building the authorized roads to the “Bureau of Public Roads-state highway departments” partnership that through the years has given this nation a system of roads, superior
from the world-wide viewpoint but lacking when compared to the highway needs of our expanding economy at home.

Although the primary responsibility for the accelerated and unprecedented road-building program and particularly the interstate system is placed upon the federal and state governments, a definite secondary responsibility falls upon the city and county levels of government to protect their interests, to cooperate with the states in planning, to insure maximum utilization of the benefits and to make such adjustments as indicated to properly complement the new interstate routes.

To aid in the necessary cooperation and understanding, the Bureau of Public Roads has only recently re-established and named its Board of County Consultants, composed of an outstanding county engineer from each of the Bureau regions to advise with the Bureau of Roads on county road problems and matters.

In modern times mileage is not the criterion for motor vehicle travel habits, but the measure is in time and convenience. The new controlled access interstate highways will put more rural areas within convenient travel distances from population centers.

Because I have mentioned the term, let me digress here to prove the case for control of access. It insures that roadside ribbon development will not cut the design capacity of the facility. It also means that the facility that has access control will have only about one-third of the fatality and one-fourth of the accident rate of a conventional highway carrying the same traffic density. It is the main distinguishing feature between the interstate highway and the conventional primary facility.

SIGNIFICANCE OF INTERSTATE SYSTEM TO COUNTIES

Since the system is designed and located to accommodate the safe and efficient movement of high-speed, high-density traffic and dedicated to mass movement of vehicles between cities and road systems instead of being created to serve the single vehicle and the individual adjacent roadside properties, the interchange site, where traffic enters and leaves the expressway, takes on particular significance to the county.

The joining local road system must be the distributing and collecting network to complement and complete the service. Cooperation between the county and state road officials is essential for an integrated road network and for the public convenience and welfare. The county road official will have new and sometimes complicated highway operating problems because of the induced and concentrated travel on his roads.

Not only the adjacent tier, but all counties will benefit from the interstate system. It will be the most important farm-to-market system
ever devised for it will expedite the movement of farm products directly to market with a minimum of delay and damage. Fifty per cent of the rural population will be served by the interstate system.

All of the flow of traffic and goods will not be from the rural areas to the urban. Controlled access expressways have demonstrated that industry, population, property improvement, and increased tax values follow them into the suburban and rural areas.

It is to the county's best interests to be ready to take these changes in stride—to have plans ready. Long-range engineering and land-use plans are essential. Proper zoning regulations must be ready to prevent uncontrolled and heterogenous property development that could be injurious to the county.

It is also to the best interests of the county to work with the state highway department in highway location and in furnishing the state with factual information as to which county roads may be stubbed-off at the interstate location or may be rerouted. It is very important that the data and reasons be presented about which intersecting county roads should be carried over controlled access highways with grade separations or which will have the traffic potential and need for an interchange.

COUNTIES NEED ENGINEERS

The importance of having competent county personnel to cooperate with the state highway engineers in such discussions and decisions is paramount. Mutual respect for judgment and knowledge is essential.

Generally the federal and state road agencies are ready for their big highway-building assignment and in due time will enlarge their respective organizations to do a commendable job on schedule. They have gone through two score years of building the types of organizations needed.

Is the same true of the county level? The fact that the most recent comprehensive information dealing nationwide with county road mileage, types, income, traffic and expenditures is for the 1953 fiscal year and that a large part of that data was obtained and prepared by the state highway departments would indicate that it is not.

County road engineering organizations vary from nil to very competent and comprehensive organizations in some of the major large urban counties. It is fully realized that conditions such as population, land use, finances, topography, size, road mileage, road needs, and other factors vary extensively from county to county and no set engineering requirement can be determined.

In some counties, elected laymen officials have road-building and maintenance responsibilities. Long-range planning is impossible under
such an arrangement, and the application of sound engineering principles is indeed unlikely.

In many counties, practical self-taught non-technical people, with experience from doing, carry on the road activities. Generally, it would be unlikely such a man would keep current on improved and new techniques in maintenance and construction and operate at the highest efficiency.

Out of 3,047 counties, about 2,800 have road responsibilities. Approximately 850 have highway engineers.

Local rural governmental units have control over 70 per cent of the nation's 3.4 million miles of public roads and streets, but this 70 per cent carries approximately 15 per cent of all rural and 8 per cent of the total motor travel. Ninety per cent of all local rural roads carry less than 100 vehicles per day.

Forty-five per cent of the total of local rural roads are primitive, graded and non-surfaced facilities. Only 11 per cent have intermediate or high-type surfacing.

The counties employ 620,000 people with a monthly payroll of $160 million. They spend $3 1/4 billion a year for goods and services of all types.

Local rural governmental units of the United States spend approximately $1.4 billion a year for road purposes in the average ratios of 35 per cent for construction, 50 per cent for maintenance, 5 per cent for administration, and 10 per cent for debt service. Until the start of the big interstate program, the state jointly spent four times as much for construction and maintenance in order to try keeping pace with traffic needs. Under the big program that ratio will increase. The Clay Committee's estimate of construction needs on the local rural roads was approximately $20 billion.

Currently half of the county road money spent comes from county income, mainly appropriated from property taxes and general revenues. Each year, it appears that the counties supply a smaller proportion of the road dollars they spend. Half that is spent is transferred from urban, state, and federal sources. The federal portion is that part of the federal-aid secondary funds apportioned to the states that are made available to the counties for use on those county roads on the federal-aid secondary system of highways. Although local rural roads carry only about 8 per cent of the total travel, the states collectively turned back 18 per cent of the state-collected motor user taxes to counties in 1953.

Anyway you look at it, local rural road expenditures constitute big business and warrant the best management practices and engineering that can be employed, especially since the money, although big in total,
is spread thin as far as available funds per mile of road is concerned. The money must be used to do the best possible job.

Over the years, when a majority of the counties have not been developing a road engineering unit, highway engineering has become a most complex science requiring highly trained personnel, and a serious shortage of trained engineering personnel exists at this time, making it exceedingly difficult to obtain competent engineers, to begin an organization anew.

COUNTY ENGINEER REQUIREMENTS

Let us take a look at the actual job requirements of a county engineer, especially where the county is not large enough to justify an extensive road engineering organization.

He should be an effective and personable administrator. He must possess knowledge of legal matters as they affect the county's right of way procedure and road building, operation, and administration.

He must have knowledge of soils, testing and materials specifications, and the sources of the best and cheapest commercial materials as well as all local road materials available.

He must be familiar with traffic studies and control. He must know how to properly sign a road.

He must be a planner capable of developing and selling long-range road programs.

He must be a competent locator, estimator, designer, specifications writer, and construction and maintenance engineer.

His integrity in purchasing practices must be above question.

He must know what type of available road equipment is best suited to his needs and how to take proper care of the county's equipment.

He must be the road finance authority and budget director.

He should be able to help in the development of land-use zoning if needed.

He must be a bridge engineer who can make the county's meagre road budget do wonders in furnishing and maintaining the multiplicity of minor and major drainage structure requirements so there can be some money left for other needs.

In fact, to do the job, and because he generally cannot have a staff of engineering specialists unless he is in a large county, he must be quite a man. The self-taught sub-professional technician is hardly the answer. Those services that I have listed are needed by any county that has a major road problem.

A sizable majority of the counties could save money by paying the salary it takes to employ an experienced professional highway engineer
and turn the road duties over to him, making his tenure conditioned upon performance and not upon political whims.

Governmental units must accept the fact that they must compete in salary and employment conditions with industry for competent personnel. Generally, the counties are the last to recognize this situation.

For most any county in the proximity of the interstate system to grow with and benefit to the maximum extent from the current big national road program and the induced expanding economy, a top-flight engineer is indispensable. If the county government intends to keep road responsibilities and not let them go to the states by default, the county must staff for the job that must be done.