Benefits Derived from a County Secondary Road Department

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To say that I was pleased and flattered to be invited to participate in this program is putting it mildly. It is an honor to appear on what is acknowledged to be the oldest and most widely known Road School. In Kansas we also have what we call an annual Highway Engineering Conference under the joint sponsorship of the Kansas County Engineers Association, the Kansas State Highway Commission, and Kansas State College at Manhattan. Nearly every year someone from Purdue University appears on that program. Within the past three weeks, your Mr. Harold Michael, discussed “Effects of City By-Passes” at our conference. He brought out that in most cases unless there was limited access on these by-pass routes, it became necessary to provide by-passes to by-pass the by-passes. Two years ago, we were fortunate in being able to have Prof. Ben Petty give our banquet address. He was most favorably received and everyone in attendance stated that it was one of the most appropriate talks ever given on that program.

In addition to being able to reciprocate, there was a personal reason why I was glad to be invited here at this time. It so happens that my elder son and his family live in Indianapolis and this gave us an opportunity to visit with them. Incidentally, my son, Dr. Irving Johnson, is one of those engaged in the production of the polio vaccine which is going to be used so widely this year and which has had so much publicity during the past few weeks.

The benefits derived from a Secondary Road Department are limited only by the willingness of the state and local officials to cooperate in solving a common problem. As far as the State Highway Departments are concerned the question seems to be, “Shall the counties be treated as unwanted stepchildren or as our own brethren and kin?”

The Federal Aid Highway Act of 1950 provided that “any state desiring to avail itself of the benefits of funds apportioned for
expenditure on the Federal Aid Secondary Highway System shall establish in its State Highway Department within six months after the close of the next regular session of its legislature, a Secondary Road Unit. Such a department shall be suitably organized to discharge to the satisfaction of the Secretary of Commerce, the duties herein required."

Some states have long recognized the benefits and the desirability of having Secondary Road Units or County Divisions prior to the enactment of the Federal Aid Highway Act of 1950. As an example, Minnesota established such an organization many years ago and it is still in effect. It is being efficiently operated under the able leadership of Mac Evans whom I have had the pleasure of working with on various committees in the American Association of State Highway Officials. In a report issued in November, 1950 by the Subcommittee on Administrative Techniques of the Operating Committee on Design, Construction and Maintenance of Secondary Roads, AASHO, 24 states out of 41 reporting stated at that time that they had established Secondary Road Divisions. It is assumed that all of the states in compliance with the Federal Aid Act of 1950 have now established Secondary Road Units. The congress wisely left it up to the states to decide what kinds of Secondary Road Units should be established within the various highway departments and naturally they have been of various sizes and types.

**TWO TYPES OF F.A.S. ORGANIZATIONS**

Two general types of organizations have been developed in most of the states. One type is an organization of a few full-time engineers within the general state highway organization to coordinate the administration of county F.A.S. programs. These engineers correlate the county secondary work with related state work. The various state highway divisions and individuals are then made responsible for part-time attention to county work corresponding to their state work. The full-time employees of the state's county department do all the preliminary work with the county officials to initiate the program projects, advising them of the standards and plans which must be prepared, etc. Then the plans are turned over to the proper state departments for checking and further handling. For example, the road plans would go through the state's road department and the bridge plans would be checked by the state's bridge department and so on. This type of organization has the advantage of effecting economy in number of personnel and avoids duplication of effort by superimposing a separate organization in addition to those already established.
The other general organization type of county secondary departments is one which is a separate department devoting its entire efforts to cooperation with the counties from the beginning of the programs up to the time when projects are advertised for bids. This type of organization is possibly more expensive to operate and requires more personnel but it has the advantage of assigning the county secondary work exclusively to persons who devote their entire time to county problems. It has the advantage of developing personnel in such a department to have the county viewpoint which sometimes differs from the state highway viewpoint. Ordinarily counties are not interested in using the same standards for construction on their roads as are being used on the state system. The efficiency and degree of success of a county secondary road department depends largely on the type of personnel assigned to such a department. No doubt each system has its advantages in the particular state in which it operates. It is emphasized that this paper does not intend to recommend any particular system.

KANSAS METHOD

For the purpose of a case history, the method used by Kansas will be outlined. Indiana and Kansas receive practically the same amount for federal aid secondary construction. Following the passage of the Federal Aid Act of 1944 which provided the first large amount of federal funds for secondary road construction, the State Highway Commission of Kansas established a Secondary Road Department early in 1945. It was set up as an entirely separate department somewhat like a little state highway department within the regular State Highway Commission. Originally it consisted of two engineers and a stenographer, but was quite rapidly expanded to a total personnel of 18 or 20 and has continued to operate with about the same number.

The department has an Engineer of Secondary Roads, an assistant engineer, two road engineers, a bridge engineer and office engineer, an engineer in charge of plan checking, the required number of draftsmen, engineering aids, and other necessary clerks and stenographers. We keep in close contact with all of the county officials and assist them in every way possible in establishing a secondary system, initiating construction projects and giving them advice on the preparation of appropriate plans.

Kansas has 105 counties, each of which is administered by a Board of three County Commissioners and a County Highway Engineer. The counties are expected to prepare their own plans either with the personnel they have available or with the assistance of consulting
 engineers. After preliminary plans are prepared, field checks are made by the secondary road engineers with representatives of the Bureau of Public Roads. When the plans have been completed they are checked in the office of the Secondary Road Department and if necessary are returned to the designers for final completion. We assist the counties by making any minor changes necessary after their plans have been completed, before they are advertised for bids. After bids are received, the construction engineering is now handled by our State Highway Construction Department. It is hoped that in the future the county engineering organizations can be developed to such an extent that they can also supervise their own construction. We urge them to do this now and a limited number do have sufficient personnel to handle their own construction engineering.

As you have no doubt heard before, Kansas has the second largest mileage of public roads of any state in the union, being exceeded only by the state of Texas. We have some 130,000 miles of public roads, exclusive of city streets. Approximately 10,000 miles are on the state highway system while the remainder of the roads are under the jurisdiction of the counties and townships. By action of the 1945 legislature, a secondary system of 25,000 miles was established. This is in addition to state highways. (Here it might be noted that the term "county secondary roads" is somewhat a misnomer and a bit confusing unless everyone understands what the term means. Of course, we are using it in differentiating between the state's system and the county's system. A state system of secondary roads are the primary roads within the counties.)

Our law provides that 92 per cent of this 25,000 miles shall be apportioned among the counties in the following manner: one-fourth in the ratio which the area of each county bears to the total area of the state, one-fourth in the ratio which the number of farms in each county bears to the total number of farms in the state, one-fourth in the ratio which the value of rural land taxable in each county bears to the total value of rural land taxable in the state, and one-fourth in the ratio which the annual daily average vehicle miles of rural highway travel (exclusive of travel on the state highway system) in each county bears to the total annual daily average vehicle miles of rural travel in the state. The remaining 8 per cent of mileage is used to provide road connections in any county found necessary to complete the system.

While this formula is far from perfect, it does provide a fairly equitable distribution of the mileage among the counties. If it were
equally distributed, it would mean that each county would have 238 miles on its Secondary System. However, on account of the various factors, it actually works out that there are 8 or 10 counties that have around 100 miles on their system and a limited number that have as much as 400 miles. It actually provides a system of approximately 25 per cent of the mileage in any county not a part of the state highway system.

There are approximately 2,000 miles or 20 per cent of the state highway system also on the Federal Aid Secondary System in Kansas. The State Highway Commission, feeling that the Federal Aid Secondary funds were provided principally for the benefit of the county program, decided to allocate approximately 82 per cent of the available Federal Secondary funds for the counties' use. At the same time an additional cent was added to the state gasoline tax and from this collection sufficient funds were made available to each county to match the federal funds allocated to the county. The funds were then apportioned to the counties in proportion to the total permissible F.A.S. mileage in each county. Approximately 1,000 miles of county secondary roads have been improved each year since construction started in 1946. Up to date there have been 8,300 miles improved together with the construction of 450 bridges. There has been construction in every county. Even the smallest county has completed a half-dozen projects.

TWO PATTERNS OF OPERATIONS

In addition to there being two general patterns of Secondary Road Units within the various states there have also been two general patterns of operations developed. They have been most appropriately described by A. C. Leonard, Chief, Secondary Roads Branch, U. S. Bureau of Public Roads, as the “Do-it-for-the-counties” pattern and the “Help-the-counties-do-it-for-themselves” plan. In Kansas we have attempted to follow the pattern of helping the counties do it for themselves rather than trying to do it for them.

In 1946, Thomas H. MacDonald, then Commissioner of Public Roads, recognizing the necessary cooperation that would be needed between states and counties in the improvement of secondary roads throughout the United States set up a Board of County Consultants composed of ten county engineers or administrators selected from the various regions of the United States to advise and consult with the Bureau of Public Roads and the State Highway Departments on road matters of joint federal, state, and local interest. In 1948 this Board of County Consultants suggested the desirability of having the
American Association of State Highway Officials set up an Operating Committee on Secondary Roads. It has been my pleasure to serve on this committee. After some three years of work, the committee published its recommended principles for a state-local partnership in the use of state and federal funds on jointly financed road systems. This report was accepted by the parent organization AASHO, at its 1953 annual meeting. I shall discuss some of the highlights of this report.

Two conclusions have been formed:

(1) The creation of a county division in highway departments has improved state-local relations, and these relations can be improved by state initiative. Such an agency tends to stimulate the use of competent personnel in engineering and supervisory positions in county road departments. Better than average working relationships exist where the administrative contacts take place between professionals.

(2) Recent Federal Aid Highway Acts have provided significant benefits in additional financial assistance for the more important county roads. There has been an increase in the volume of construction of F.A.S. roads; improved design standards are used on these roads and the effect has been noticeable on other local roads.

The principles recommended in this report are limited to state aid incentive plans and do not necessarily cover all types of state aid programs. On account of the definite legislation and practices in the various states, the recommendations are not applicable to all states.

Where the principles do apply, two things are necessary: first, the amount of financial assistance should be so substantial that the county cannot afford to lose it, however, county participation should be on a voluntary basis; second, harmonious state-local relationships are necessary. The state-local partnership is most effective where the following principles exist.

(1) Technical County Management. Local highway policy and programs should originate in the county and be carried out locally because the road needs are best known to local officials and they should be allowed local freedom in carrying out policies of local concern. It is essential that either a professional engineer or competent practitioner be at the head of a county highway department. The use of engineering principles in location, design, construction and maintenance are essential to economical road improvement. In addition to engineering, there are also problems of economics and politics.
(2) A Joint System of Roads. The counties and the state as a partnership must develop a road system on which they both share financial responsibility. This system should cover the more important county roads.

(3) State Counsel and Assistance. While some states have had some sort of a county division in their highway departments for many years, such divisions are of recent origin in many states. Where these divisions have existed for some time, state counsel and assistance on technical and administrative questions have become a recognized and accepted feature of the partnership program. Strong county engineering organizations have been developed. The county engineers are doing their own work and asking for and relying upon advice from the state only as necessary to carry out their programs. When it is necessary for the county engineer to talk over plans, specifications, and other subjects with state personnel, where jointly financed road systems are involved, he uses the ideas coming out of these conferences in all of his work.

(4) Delegation of Authority. If county engineers are to obtain the benefits gained from discussing their problems with state personnel, they must themselves deal directly with state officials. The county boards should, therefore, delegate such authority to the county engineers. In these relationships, neither state nor county personnel tend to dominate but the problems are met with mutual understanding and decided on the basis of professional equals.

In order to carry out the principles, the Committee believes that local governments are dependent upon state initiative for enabling legislation as well as financial assistance and the establishment of minimum standards of joint programs. State aid available to an individual county should be sufficiently large to interest the county and furnish an incentive for voluntarily entering into the partnership program. Cooperative agreements between state and local governments and with the federal government are necessary to meet the increasing demands for improved standards of road service. In order to have good management of a county road department there must be a qualified administrator, therefore, minimum qualifications for this position must be established. Provision should be made for cooperative long-range planning by state and local agencies. Inter-governmental relations are built upon human relations rather than organizational charts or patterns. The chances of success in establishing a harmonious relationship are much better where negotiations are carried on between professionals.
RESULTS IN MINNESOTA

While not mentioned in the AASHO report, since human relationships are so much a part of the picture, it is necessary that those assigned to county divisions have the county viewpoint and "Speak the same language" as county officials.

Attention is directed to Highway Research Board Bulletin 85 entitled Experiment in Extension Programs for County Highway Engineers. The bulletin concerned Minnesota and was presented at the annual meeting of the Highway Research Board in 1953. This state was among the first to enact far-sighted laws establishing as one of the duties of the elective administrative body called the Board of County Commissioners, the appointment of a county highway engineer who shall be a registered professional engineer and have charge of the highway work of the county and the forces employed.

These county highway engineers formed an association over 20 years ago and for many years have held an annual County Highway Engineers' Institute. They can point to many accomplishments among which are a cooperative spirit between the state and county highway departments, and the establishment of a county division in the Minnesota Highway Department. A uniform accounting system is in use in every county in the state. Standardized bridge designs for various types of structures have been developed and there is a high level of uniformity between counties on design standards. A broader use of highway planning survey data has been recognized and used. In order to determine what the County Highway Engineers' Institute had accomplished for the engineers of that state, a questionnaire was sent to the county engineers. It is interesting to note that practically all of the county engineers felt that during the past few years relationships between the county engineers and the state highway department had shown great improvement. They also reported that there had been a gradual improvement in service of the County Division of the State Highway Department.

CONCLUSION

To sum up, we can again make the statement that the benefits to be derived from a Secondary Road Department are limited only by the willingness of state and local officials to cooperate. Everyone recognizes the necessity of having desirable legislation in connection with highway work. Many of the recommendations in the report just referred to could not be placed in effect without enabling legislation in some states. This is one field where the state and counties can cooperate to accomplish this result. In our state, the lower house of
the legislature is composed largely of representatives from the rural areas. Our county commissioners association is quite powerful. Any legislation of benefit to not only the local roads, but also the state highway program has a much better chance of passage with the backing of these rural representatives. Our secondary department has helped materially in obtaining the cooperation of county officials for the promotion and passage of necessary legislation.

A secondary road department should act as the county’s agent in all road matters and provide them with the central agency to which they can bring their problems. The county division also acts as a buffer between the counties and the other state highway divisions. We have frequently been accused by other state highway divisions of working for the counties. We are glad to be recognized in that way because that is what we feel we were established for. Better communications have been developed between state and county agencies. This is a two-way communication set-up, as we are not trying to put out directives telling them how to do things, but are taking their suggestions and trying to work out suitable means to cooperate with the counties and recognize them as full brothers and not stepchildren. Such a department gives the counties someone to lean on when necessary. Occasionally local arguments come up about the location of secondary routes or the type of construction and if they are unable to agree among themselves, they have someone to “pass the buck” to. We are able to cooperate with them in developing better construction standards, development of certain standard plans, plan assistance, recommendations on maintenance problems, and assistance in setting up a uniform accounting system.

By acting as the counties’ agent, our county secondary division has made many of the state highway facilities and services available to them. They look upon the state more as a big brother than a big bully. Better relations generate cooperation rather than competition in obtaining beneficial legislation and finances. We do not believe we could get along without a county division if all federal aid were eliminated. The County Secondary Road Division can be of material assistance in establishing technical management in the counties.

We are encouraging the development of county engineering organizations to the extent that they can do all of their own engineering from planning to completion with only state counsel and assistance. It is believed that the state should take the initiative through its Secondary Road Department in cooperating with local officials in every way possible to promote the planning, construction, and maintenance of adequate local roads at the lowest possible cost to the taxpayer.