STATE HIGHWAY POLICIES
By J. L. Murden, Member, Indiana State Highway Commission

Co-operation with other state departments, counties, and municipalities, and service to all the citizenry, characterized the work of the Indiana State Highway Department since its creation eleven and one-half years ago.

In that period of slightly more than one decade, the state road system has expanded to 6,000 miles, 3,164 miles of which were paved at the close of building operations last fall. This pavement, plus maintenance of the entire mileage, is directly responsible for all-year overland transportation of a vast amount of freight and passenger movement throughout Indiana.

It is the policy of the commission to select, construct, and maintain a system of highways to provide suitable and satisfactory traffic conveniences in all sections of Indiana, connecting with the main trunk highways that serve the nation's transcontinental traffic.

It has ever been the policy to distribute highways equitably in harmony with traffic demands and the convenience of the general public. In the creation of a great highway system it is necessary to study thoroughly and analyze fully, anticipated future traffic developments and demands as well as present-day requirements, without regard to personal appeals. Expansion of the state road system by the addition of several hundred miles and the completion of hundreds of miles of pavement annually testify that the commission endeavors to provide road service where it will do the most good to the larger number of people, personal complaints to the contrary notwithstanding.

Since its inception the commission has followed the business principle of paving first those heavier traveled routes through and adjacent to the more congested industrial centers and into regions where agriculture and the marketing of farm products constitute a major business. At the same time they have not been unmindful of the necessity of keeping all roads under active maintenance to provide accessibility to all sections of the commonwealth. In the selection of roads to enter the state system from time to time, the commission has, from necessity, adopted a policy of "no friends to favor and no enemies to punish," with the thought uppermost of providing the greatest service to the most people. The policies of our construction department are:

1. To locate our paved roads so as to provide the shortest reasonable routes for the traffic which pays for the roads and uses them.
2. To locate our new paved roads so as to avoid the obstruction and delays from narrow or congested streets in cities, towns, and villages.

3. To construct long vertical curves, particularly over summits, in order to provide long sight distance for approaching vehicles in the interest of safety.

4. To construct long, easy, properly banked curves in the interest of speed and safety, thus increasing the capacity and usefulness of our paved roads.

5. To construct the easiest reasonably-possible grades on our paved roads, in order to reduce to a minimum the cost of operating over them.

6. In any case to avoid a combination of steep grades with sharp curves, either horizontal or vertical.

7. To secure a maximum of visibility at the corners of intersections with county roads or other state roads.

8. To build shoulders of sufficient width, and clear of obstructions, to permit parking thereon entirely off the pavement surface.

9. To construct guard railings alongside the pavement on high embankments and particularly at curves and turns.

10. To construct side ditches of sufficient depth to take care of surface drainage, but as shallow as is reasonable, as a matter of safety to traffic.

11. To construct bridges enough wider than the adjacent pavement to provide traffic lanes of both actually and apparently safe widths.

12. To construct all new pavement above the highest probable flood levels when at all reasonably possible financially.

13. To maintain detours or alternate routes or road-side run-arounds and temporary bridges to take care of traffic during the construction of roads and bridges.

14. To construct our pavements of sufficient strength to carry reasonably heavy traffic units, but not to squander great sums of money to provide for illegal overloads.

15. To separate grade crossings with important railroads and highways carrying heavy traffic, in the interest of safety and also in the interest of the uninterrupted use of our highways.

While higher type pavement is apportioned first to highways carrying the bulk of traffic, it has been learned by experience that secondary roads may very profitably be developed with a less expensive type of pavement and accommodate traffic very satisfactorily until traffic density demands the more durable type of surfacing.

During the last fiscal year there were built 563 miles of
high-type pavement, the largest program ever completed. At the same time the entire mileage of the system was maintained for all-year service, and 102 major bridges were completed. For the first time in the department's history virtually every building project undertaken was completed before the end of the fiscal year on September 30. So rapidly was construction prosecuted that less than eight miles of detour roads are in service today as compared to nearly 100 miles at this time last year. When one considers the tremendous saving in cost in maintaining 8 miles as against 100 miles of detours during winter, plus the individual cost and waste in time of users, then one understands why the 1930 highway construction program stands forth as the most notable year's work in the history of the state department. That our 1930 construction program was nearly 100 per cent complete on September 30 is due both to the speed at which skilled contractors worked, and to the exceptionally favorable weather prevalent during the intensive building season.

While the commissioners desire to pave all roads as rapidly as possible, they are not unmindful that systematic maintenance is necessary on both paved and unpaved highways if the public is to receive the maximum of service. The best paved highway would deteriorate rapidly if maintenance ceased, and in a short while would retrocede to a condition at which its repair would be very costly. With some 3,000 miles of gravel and stone surfaced highways in the present system, it is necessary to give them almost daily maintenance to keep traffic moving. On paved roads snow removal is a considerable item in season, especially in the north where snows of greater depth and frequency occur. It is necessary to keep trunk lines open, for in transcontinental traffic Indiana is just a link in a country-wide service chain. In order that maintenance may function adequately at the least cost, the state is divided into six major districts, and equipment is distributed at thirty-four maintenance garages.

Tersely speaking, it is the policy of this department:

To locate roads, when new ones are selected or old ones rebuilt, along such lines as will best accommodate the traveling public, keeping in mind local interests but remembering that primarily a state highway should not be twisted and curved out of alignment to accommodate merely local interests. Heavy through traffic is a great contributor to the state's business and also to road finances through the gasoline tax.

To maintain suitable gravel and stone roads of the drag type in a reasonably good condition for traffic until a low type, dustless pavement or a high-type pavement can be financed thereon.

To treat the heavily traveled gravel and stone roads with dust treatment or light bituminous treatment as a temporary surface until a better type of pavement can be provided.
To employ technical men and supervising force because of their ability and qualifications, disregarding favoritism.
To buy the most for the public road dollar and to place it in as permanent an investment as possible while giving a continuous service.
To continue the policy of keeping Indiana in the forefront of all the states in the matter of road progress at the least cost, for largely to the degree that our overland transportation system expands, will our state progress along other avenues of endeavor.
Service rendered by the state highway department may be said to be directly responsible for a changed transportation system.

Review of Commission's Progress

Most people recall highway conditions before the establishment of the road department. Many counties, as a matter of fact, had some mileage of well-kept but narrow gravel and stone roads, and a few had even gone into paving. Many such roads, however, because of high crown and narrow roadbed, later proved inadequate for heavy motor traffic.

The tremendous expansion of transportation facilities came naturally with the increased popularity of the automobile and the truck in business, demanding adequate highways.

Maintenance was the first major service of the highway department created in 1919, for it was necessary to take the people out of the mud, and only later to provide pavement, one of the major functions of the department today.

Narrow county roads were widened, dragged, and treated with liberal quantities of gravel and stone. A few miles of cement concrete pavement were built the first year.

As state-maintained roads became smoother and more capable each year of augmented service, traffic increased, for traffic is drawn to these routes because of the cheaper operating costs and speedier service. With many miles of state roads paved, it is noticeable even today that when a new road comes into the system, traffic on it immediately trebles as people desert adjacent county roads for the systematically maintained state highway with its important connecting links.

In September, 1921, the state system consisted of 3,191 miles, of which only about 170 miles had been paved by the state. The department at that time maintained 1,762 miles of gravel and 797 miles of stone surfaced roads.

In the same year 119 miles of concrete paving contracted for in 1919 were completed. Illustrative of the speed at which pavement is laid now as compared to ten years ago, contractors in 1930 completed 563 miles of pavement. A few years ago it was customary to see fifty to sixty miles of pavement uncompleted when cold weather forced cessation of work with
the department maintaining from 100 to 150 miles of detour roads around these projects.

From the beginning, the work of the State Highway Department has been one of far-reaching public service and universal benefit to all the people. Road expansion and betterment has promoted the state's natural resources, provided thousands of jobs for workmen, augmented business activity and transportation facilities, and added happiness to the lives of our citizens. Indiana has huge deposits of stone and gravel, and maintenance of state roads makes heavy demands on these resources quarried and sold to the department, thereby providing work and profit for thousands of people.

Of the 150 million dollars invested in roads, bridges, and maintenance, 76 cents of each dollar has gone into the pockets of wage-earners. Hundreds of small towns along state roads depend solely upon this public work for a livelihood, and this is the most noticeable in these depressing times. One student of public affairs has said that our state could do nothing finer now to aid its unemployed citizens than to start building and maintaining additional miles of roads and bridges. Such activity would accelerate business in varied lines, from steel, cement, stone, gravel, and various aggregates used, equipment accessories, etc., even to the overalls needed by the workmen in their labor—all tending to accelerate business in factory and mart, thus decimating the ranks of the jobless.

The highway department was first financed by a small property tax, the inheritance tax, the license plate sales, and federal aid. Succeeding legislators, cognizant of the need of better road facilities, increased the funds for expansion, but changed the methods of financing. Today the department's annual income is approximately 20 million dollars, obtained from 3 cents of a 4 cent gas tax, the license plate sales, and federal aid. There is no property tax diverted to state road work, and the inheritance tax years ago was sent elsewhere. Only users of state roads pay for the building and upkeep, and then only in the proportion of use.

When one considers that every county has been saved millions of dollars by not needing to support roads kept up by the state, he realizes that here alone is a service inestimable in its far-reaching effect. It is the more noticeable, too, because each county is traversed by one or more state roads which carry the bulk of all state traffic.

This department has demonstrated with its central and district organizations, its purchasing power, and its creation of an organization of competent men and women, that roads can be built and maintained more cheaply with the state as a unit than with each county a unit.

County road organizations obtain many helpful suggestions from the department and services innumerable from its lab-
oratory and technical staff. Thousands of samples of materials used in county road building are analyzed in the laboratory; and the state department, when appealed to under the law, sends inspectors to see that county road work is up to the standard engineers prescribe.

Under Indiana highway laws, the maintenance division cooperates with the Engineering Department of Purdue University. Each year our engineers take part in the discussions at the Road School. Mr. Ben H. Petty, in charge of the University’s highway activities, is greatly responsible for county and township road superintendents maintaining their road systems after the state.

To one giving only cursory attention to state road expansion and the insistent public demand for more roads, development in the last decade is seemingly miraculous.

Records of the automobile license department show that motor registrations increased 18 per cent in 1921, 20 per cent in 1922, and about the same in each succeeding year except 1930. Ownership of automobiles in the United States registered an increase of 56 per cent in five years between 1924 and 1929, according to a survey of the American Research Foundation, which gives total 1929 registrations in excess of 26 million. Compared to the increase in population of the United States figured on the 1930 census, the Bureau says that automobiles are increasing six times as fast as the nation’s population.

All of which has been made possible by the development of state and national systems of highways.

WHAT ABOUT OUR LOCAL ROADS?

By Norman M. Blaney, Director, Farm-to-Market Roads, American Farm Bureau Federation, Chicago, Illinois

We have made remarkable progress in providing transportation facilities for our stockholders—the taxpayers of this nation. On a basis of population there is no doubt that we have taken care of at least the minimum requirements of a majority of the people, and no doubt that was the proper and correct method of procedure. However, I do believe that the time has come when we must stop for a moment, and take stock, in an endeavor to arrive at the decision required in ascertaining what the future policy should be.

The building of roads to me is simply the expanding of our factory. We are adding to our investment solely for one purpose; that is, so that we may produce more economically by facilitating the transportation of our merchandise from its