

## LOOKING TO THE FUTURE

By James D. Adams, Chairman, Indiana State Highway  
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About a century ago, the poet Tennyson wrote, "Then I looked into the future, far as human eye can see." At that time, man depended on the horse and the ox for travel. Now, a hundred years later, he uses electricity, steam, and flying machines. Science and invention have brought this about, and scientists tell us that what *has* taken place is but the beginning.

In the able study of county and municipal taxation and expenditures in New Jersey, made in 1928 under the direction of Dr. Harley L. Lutz of Princeton University, the conclusion was reached that the problem of road and street costs was the second most important problem in governmental finance before the people of the state. It was also stated, "If to this very large volume of expenditure there be added the difficult question of a wise and economical future policy, the highway situation becomes easily the most important problem before the people in the field of governmental finance. The state and local units are alike involved. . . ."

A year ago in addressing this assembly I discussed the elimination of danger hazards on our highways. At that time certain expressions of opinion were made and beliefs were offered that if we did certain things we hoped for certain results. In that address the prediction was made that if our automobile fatalities were to continue for the coming 15 years at the ratio of 1933 that we could expect 450,000 people to be killed and 15,000,000 injured.

Six months later, in the light of the experience of the first half of 1934, those figures were revised upward and the estimated number to be killed in the next 15 years was increased from 450,000 to 525,000. Two months later it was necessary to again revise those figures upward, this time to a total of 540,000.

As I stated last year, the total number of Americans killed and dead of wounds in America's six major wars, which covered a total of 15 years, was 300,000. We realize that we have found the answer to what is worse than war. A few months ago on Armistice Day I heard a distinguished divine deliver an impressive sermon, pleading with his congregation to oppose war; yet it amazes me that the voice of the pulpit has not been raised against a slaughter more vicious and fully as cruel as anything that America has known in civil or international conflict. During the year 1934 an average of more than 99 people were killed as a result of automobile accidents every 24 hours of the 365 days.

It is useless to think that human nature will change, that motorists will drive with the caution requisite to safety on our highways. It is unreasonable to presume that mechanical difficulties will not develop in many of the 25,000,000 motor vehicles on our highways today. Since we are dealing with human nature we must recognize its weakness and attempt to build to help prevent some of the more frequent causes of motor accidents. It is just as important to construct a road so that the motorist will reach his destination in safety as it is for him to get there at all. It is just as important to build a highway that offers an avenue of escape when some unforeseen situation arises as it is to build the traveled surface.

A year ago we told you of a program of shoulder and culvert widening which had been undertaken by the State Highway Department as a work relief measure. In that undertaking your state highway department was merely an opportunist. It took advantage of the unemployment, using it for leverage to induce people to sell their right-of-ways along the more important thoroughfares. Naturally you have every reason to ask what our results have been with this widening program. You have a right to wonder whether the expenditure has been worth its cost. It is logical to let the question rise in your mind of whether your highway department acted wisely in carrying out, and now continuing by contract methods, such a widening program.

Your highway department also recognizes that Indiana is a young civilization, certainly young as compared to the Old World and young as compared to New England. It is our responsibility to try to help our state avoid some of the problems which are so perplexing in the older settled communities. I am thinking particularly of the difficulties they encounter with their narrow right-of-ways and insurmountable difficulties which confront them when they attempt to widen their roadways. New Jersey has found it easier to build an elevated 40-foot highway, some places as high as 50 feet in the air, for that is cheaper than to buy the right-of-way down on the ground. The time will come when Indiana's increasing population will result in more traffic on her highways; and those right-of-ways which we are widening now, we trust as we look to the future, may provide the necessary space for road construction for those who follow us.

#### SOME FACTUAL RESULTS

A year ago our suggestions on road work and widening were based on belief. Now we are ready to submit some data. Any figures that we use, however, are not very accurate for the reason that in the spring of 1933 all of our subdistrict superintendents who gather statistical reports from over the state were new and it was a period during which many fatali-

ties and accidents were not reported. That fact does not really permit our figures for 1934, which we believe have been very accurately compiled, to show as favorably as they otherwise would. Using the incomplete figures of 1933 and comparing them with 1934, we show an increase in fatalities on our entire state highway system.

Now let us make a comparative analysis of those highways on which widening has been done, comparing the year 1933 with the year 1934. That it might be comprehensive we selected the widened sections on Roads Nos. 3, 9, 20, 29, 30, 31, 35, 37, 41, 50, and 53. On these sections in 1933 our incomplete figures show 29 fatalities, while in 1934 our complete records show but 16, a reduction of nearly 50 per cent over the preceding year. The number injured in 1933 on those sections was 27; in 1934, 19. Since much of our widening was done in 1934 we have made a study of fatalities on the above mentioned 11 roads on sections which were widened before the last half of 1934, making the comparative study of the same period in 1933. In 1933 we show 12 killed, while in 1934, 11 met death in tragic accidents on the same sections. The number of accidents which occurred on these roads in the last half of 1933 was 25 and 16 in 1934, and the number receiving personal injury dropped from 55 to 32.

It is therefore clearly shown by these figures that there is a direct relationship between the reduced number of fatalities on the widened highway as compared to the larger number of accidents on the highway which has not been widened. Scores of reports have come to the department from people who claim that they were able to escape an automobile accident as a result of the widened roadways. Many say that there is a psychological effect when they get on the wider section and the wider shoulder. It gives them a feeling of confidence and assurance. Any motorist knows how he cringes as he meets another speeding car on a narrow bridge or culvert. He realizes that the roadway is just as wide, that he has just as much clearance, that all he has to do is to keep on his side of the road and all the approaching motorist has to do is share the highway and no accident will result, but the cold facts reveal that the personal equation or the mental hazard plays a big part in accidents of this character. The motorist is not apt to get the "jitters" on a wider road and that, in the opinion of many, helps prevent accidents. We feel that in the light of our experience and the response of motorists to our widening program the policy has proven its own worth.

If we are to consider the personal damage due to automobile accidents we are able to say to the motorists, "We have cut down the cost of accidents by reducing the number; we have eliminated some of the hazards of motoring." Who is there to place a value on human life if a value may be placed upon it? So we have no way of measuring the saving in cold dollars and cents of the lives which have been spared as the

result of our wider sections. Several men who were present here a year ago have since been killed in motor accidents, and two in particular were victims of the narrow roadway. Had the accident which cost their lives occurred on a wider section they might both have been present here today. They were sacrificed on the narrow right-of-way.

Statistics gathered by the Traveler's Insurance Company and others reveal that the entire State of Indiana, including her cities, towns, and highways, has made one of the best records of any state in the Union in the last 12 months in the matter of the reduction in percentage of increase of automobile fatalities. According to the authority mentioned above for the first 10 months of 1934, as compared with the corresponding period of 1933, Illinois' fatalities increased 22 per cent; Ohio's increased 15 per cent; Michigan's 18 per cent; Wisconsin's 18 per cent; Kentucky's 38 per cent; and Indiana's 5.49 per cent. These figures include motor tragedies of all character, whether in the cities or towns or upon our state and county highways. Figures of the Indiana State Highway Commission deal only with roads in the state system outside our cities and towns. The increase for the country as a whole is over 16 per cent, so that we feel that Indiana's record of only 5.49 per cent increase in deaths is commendable.

Our department has also built many grade separations and many more will be constructed during the coming year. When the faster air-flow trains commence speeding across Indiana at one hundred miles per hour the need of the grade separation will become more and more imperative.

#### DIVIDED HIGHWAYS

There is a tremendous amount yet to be done, but we are moving in the right direction and are causing our people to become more conscious of the motoring danger. In looking to the future and studying our fatality maps there are certain realizations which one can not escape. Perhaps the most pressing of these is the danger of the head-on collision or the sideswipe or the reckless motorist who cuts in and out of traffic. If we are to look the future squarely in the face we must realize the necessity of divided highways. By that is meant paralleling roadways. Each section would be twenty feet or more in width, one section carrying traffic in one direction, the other carrying the traffic in the opposite direction. A distance of perhaps fifty feet should separate these two lanes. By dividing these roadways the danger of the head-on collision would be eliminated; the number of sideswipe accidents would be tremendously reduced. The glaring headlights would no longer be a peril to the motorist, and it is easy to believe that the number of our fatalities would be greatly reduced. The thirty-foot roadway or the forty-foot roadway does not eliminate the danger of a crashing, crushing, head-on smash.

As proof of that statement consider the widened portions of U. S. 40 east and west out of Indianapolis, where our records show forty-nine fatalities, and No. 30 northwest out of Fort Wayne, where we have record of five fatalities on a thirty-foot section this year. Look further to the Dunes Relief forty-foot pavement, where newspaper reports told of 19 killings and 334 injured in a period of ninety days during the summer. Records for this forty-foot section show a total of between thirty-five and fifty killings. Is there anyone in this room who does not believe this number would have been reduced had there been two twenty-foot divided lanes?

The only permanent thing—may I repeat—the only permanent thing about a highway is the width of its right-of-way. Any surface we build will sooner or later have to be replaced; so we should be most careful in determining the width of right-of-way to meet our future needs.

To undertake the construction of the divided section in Indiana is fraught with many obstacles, but when you consider the future and the importance of our roadways it seems that there is no better time to start than now.

We thought a year ago that the thirty-foot or forty-foot pavement on our more heavily traveled highways was the answer. It is a vast improvement, but the fatality convinces us that the forty-foot road, divided into two sections, would have been infinitely preferable. The cost of right-of-way for such a program would be such that this development would naturally have to be confined to a few of our more important east-and-west or north-and-south highways. But should such a division of traffic lanes be built it is easy to believe that the motorists would concentrate on those highways. When we think of the long, long trail ahead and the centuries which are to come we certainly have a right to include a recommendation for the divided highway in any discussion in which we look to the future.

As a means of meeting the situation perhaps it would be best to procure the needed right-of-way now, but to construct only one section, building the extra section as funds become available. I realize full well the difficulties and the opposition that the inauguration of such a plan will entail; but, as stated above, only a few of our most heavily traveled highways should now be considered for such a type of improvement. With divided sections you will eliminate the lurking danger of a head-on collision, the fear of meeting a big truck, the difficulty of passing one, and will attain benefits too numerous to mention.

Think of the satisfaction in starting out on a long journey, knowing that you need not fear a head-on collision, with all the vehicles on the section you were traveling moving in the same direction.

Certainly a 16 per cent increase in motor fatalities through-

out the nation in 1934 over 1933 is pretty good proof that it would be a business investment in the saving of lives and property damage to look to the future and lay plans to divide our most heavily traveled roads. Our principal railroads are double tracked. Are our highways less important?

Many miles of highways have been planted with trees and shrubs during the past year and this will be continued. Work of this character grows in attractiveness with the passing years.

I should like to take this opportunity to say a word about the contractors doing work in this state and the material producers and the equipment manufacturers. During the past two years I have always found these groups most fair, and their actions almost without exception have been to promote the improvement of our state highway system. Such an attitude over the years will continue to be of great benefit to the people of this state, and I want to express publicly the appreciation of the State Highway Commission for the many helpful suggestions we have received from the material men, the equipment firms, and the contractors. This splendid road school is also immensely helpful to our state, and those who have made it possible are entitled to our credit and praise.

#### FUTURE DEVELOPMENTS

In any long-time consideration of our road problems in Indiana we must recognize that the immediate future holds a development that will be far-reaching in its consequences and of tremendous importance to our rural as well as our urban population. I am thinking particularly of rural electrification.

Not many years ago New England was recognized as the industrial center of America. Her development was pointed and centralized along that line, but the changing conditions in America have found New England slowly deprived of her great industrial development so that today she is losing part of what had become her basic wealth.

Indiana's position is quite different from that of New England. Geographically she occupies a strategic place. She has more miles of road per square mile than any nation in the world except England and than any state in the Union except Massachusetts and Connecticut. She has a larger percentage of her highways improved than any state in the Union. Four out of seven east-and-west U. S. highways cross Indiana. The center of population of America is in this state. Being situated in such a favorable position, Indiana must take those steps not only to maintain but to enhance her immediate as well as her future opportunities. We have a splendid industrial development, a development which offers employment to more than 400,000 of our citizens. Our second largest employment goes to agriculture, which uses approximately 250,000

of our working people on 181,000 farms. Indiana's population is nearly 55 per cent rural; the total of the United States is 52 per cent.

In thinking of Indiana and looking to the future, highway construction and rural electrification are one and inseparable. Practically all of our main highways have already been built. Henceforth it will be a development of the more important secondary or farm-to-market roads.

Indiana's strength lies in her geographic position in relation to the other states, in her magnificent industrial development and her strong and sturdy agricultural population. Here in Indiana industry and agriculture most nearly meet, and the maintenance of that strong balance is imperative if Indiana is to attain the position of eminence that her natural endowments offer.

Since many of our road problems of the future concern the agricultural sections of our state we must give thought to some of agriculture's most important needs. We must recognize that if our Indiana farmers are to hold their place in competition with their neighbors of Tennessee, Georgia, Alabama, the Carolinas, and Kentucky they must be able to compete with the advantages which the TVA power development will offer. Rural electrification is in keeping with plans of the Federal Government.

Power companies in Indiana, both municipally and privately owned, will welcome such a development which offers greater outlet for their product. Farmers have long cherished the hope of extensive rural electrification, and the farmer's wife thinks of the day when she may have the advantage of electricity's gift to mankind. This development may come more quickly than most of us are apt to imagine, and for that reason it is not too early for us to consider what it will mean to thread power lines up and down our highways.

During the past sixteen months the utility companies have expended hundreds of thousands of dollars in moving pole lines on our widened roadways. They have done it with a grace that is to their everlasting credit, but the expense that they have been called upon to meet because the poles had to be moved from their first location should not be repeated in the construction of our great rural light and power system.

Surprising as it may seem, rural electrification is far more general in many foreign countries than in the United States. Canada, Australia, New Zealand, Denmark, Finland, Italy, Germany, Sweden, France, Japan, and Czechoslovakia give governmental aid to rural electrification. Fifty per cent of the farms in Denmark are electrified. The standards of living are higher and more farms are operated by the owners. In Sweden it is said that sixty-five per cent of its farms are not only lighted by electricity but heated by it as well, and that even up under the Arctic circle the ground is heated by the

use of electricity for the raising of crops and vegetables. Czechoslovakia surprises us with seventy per cent of her farms electrified. The latest available figures for Indiana give her sixteen per cent of her farms electrified, including Delco or other unit lighting systems. In South Carolina the State Highway Commission is in charge of the rural electrification of that state and a tremendous development is planned there.

The above brief summary of other nations and states is given here to prove the reasonableness of the assertion that rural electrification is imminent in Indiana. That it should be encouraged and that the state highway department as well as boards of county commissioners should study the important changes which are apt to take place when rural electrification comes in a big way is but a part of looking to the future—not the dim, distant future, but actually to the present which is upon us. Perhaps many men who are unemployed may be set to work building pole lines and stringing wire for rural development offering a market for electric washers, pumps, irons, stoves, sweepers, churns, milking machines, radios, etc., for the Indiana farmer will find a way to finance the project if he is permitted to pay off his investment over a long period of years and buy his power at the rates which are now getting down within his reach.

When this widespread rural electrification has taken place in Indiana it will be an unquestioned factor in raising the standard of living in the placing of our farmers on a parity with their neighbors in the Tennessee Valley; it will tend to build a strong rural population and it will help to maintain the balance between agriculture and industry. More of the boys and girls born on the farm, growing up with every advantage enjoyed by their city cousins and having many more of their own, will be influenced to remain in the wholesome atmosphere of a rural home. With our improved roadways and the ever-ready motor car, many of our citizens of the future will choose their homes away from the more congested urban development. Our geographic location and our natural endowments indicate that there is every reason for Indiana to grow into a position of pre-eminence in our national affairs. The measure of our attainments will be determined by the thoroughness, the promptness, the aggressiveness with which we undertake rural electrification on a big scale.

#### CONCLUSIONS

In looking to the future I have endeavored to cover three points which are of interest to us as representatives of the State Highway Commission, of interest to us as men giving thought to our road problems, and of interest to us as citizens of Indiana:

1. That we continue the widening of the right-of-ways of our state highways for the safety that comes from the widened shoulder and widened culvert or bridge.



2. That we consider seriously the divided section for our more important heavily traveled roads rather than the widening of the existing pavement to thirty or forty feet.

3. That we recognize that rural electrification must be considered in future plans of highway development.

With wider right-of-ways, wider shoulders, and wider culverts on our more important thoroughfares; with divided sections on the most heavily traveled roads; and with a network of electric lines threading their way to the farm homes of Indiana we may face the future with assurance that ours is a part of the world ready to meet what comes.

Each of the three suggestions mentioned will bring many social benefits and will enhance the opportunities of future generations born in this state, and, back of all our planning, we must recognize that Indiana's basic strength lies forever rooted in the soil.

## SOME LEGAL ASPECTS OF HIGHWAY IMPROVEMENT

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The President's Recovery Program during the last twenty months has brought to the attention of administrative bodies charged with the construction of public highways, numerous legal questions connected with such projects. These questions, with few exceptions, are not novel, but in the old order of things they were sometimes lost sight of. The State Highway Commission was charged with the duty of expending that portion of these federal grants which was allotted to the state for the construction of highways and streets. Prior to these extraordinary grants, made to the state as part of the President's Recovery Program, the State Highway Commission had done but little work in the cities and towns. This work consisted mainly of the extension of pavement in the smaller cities and towns, although in a few instances the state did improve streets to their full width. The federal grants of 1933 and 1934 changed this, in that such legislation authorized the State Highway Commission to improve streets in cities and towns over which federal highways are routed and also to improve certain county highways which were not a part of the state highway system. Under this authority the Commission improved streets in more than sixty cities and constructed some twelve or fifteen county roads in different parts of the state. These added duties required the members of the State Highway Commission to familiarize themselves with the law governing such improvements, and therefore the Commission feels that it has attained a knowledge of these laws which might be of some advantage to you.