

The Highway Extension and Research Project for Indiana Counties

J. F. McLAUGHLIN
Assistant Director and
D. G. SHURIG
Research Associate

Highway Extension and Research Projects for Indiana Counties
Purdue University

INTRODUCTION

Indiana has over 78,000 miles of rural roads. Currently the 92 counties spend approximately \$50 million a year of State-collected Motor Vehicle Highway Account funds plus smaller amounts of local and federal funds. The expenditure of public funds for roads and streets by Indiana counties is big business.

The 1959 Indiana General Assembly, recognizing the need for expanded and continued efforts to find and disseminate new knowledge on all aspects of county highway systems, enacted what subsequently became Chapter 331 of the 1959 Acts. This basically, provides for the conduct of county highway research and extension by Purdue University. Funds are provided by an appropriation from the counties' share of the Motor Vehicle Highway Account.

This is the second report to be presented to the Road School of the organization, operation and accomplishments of the Highway Extension and Research Project for Indiana Counties, the name given to the organization set-up within the School of Civil Engineering to implement the provisions of the law. The first report was made in 1960 and was concerned mainly with the origin and early organization of the project. This second report looks back over more than five years of operation.

HERPIC ADVISORY BOARD

The law under which the Highway Extension and Research Project for Indiana Counties operates, also creates an Advisory Board to be composed of six elected county commissioners and six Purdue University faculty members. The six commissioners are selected by the State Asso-

ciation of County Commissioners with the approval of the Governor. The Director of the Engineering Experiment Station at Purdue appoints the other six members from the faculty of the University. Terms are for two years and members may be reappointed.

The primary functions of the Board are selection and guidance of research and extension projects, approving the publication of literature for county highway personnel, and budgeting of HERPIC funds. The Board keeps in close contact with all research and extension work through frequent progress reports by staff members.

HERPIC also has had the services of a number of graduate and undergraduate students to assist in the various phases of research studies.

During the five-year period from July 1, 1959 to June 30, 1964, the Board met a total of 26 times or an average of about five times a year.

EXTENSION RESEARCH AND PUBLICATIONS

The work of the project can be broadly categorized into extension, research and publications. Extension activities are in four classes: (1) assisting individual counties, (2) conducting Area Road Schools for groups of county officials, (3) development and implementation of county sessions for the annual Purdue Road School, and (4) dissemination of Engineering Bulletins and other information resulting from research activities.

Extension Work with Individual Counties

Part of the time and effort of the HERPIC staff is spent in assisting individual counties with specific problems. Consultation and advice is given on the many phases of construction, maintenance and administration. In addition to supplying information, HERPIC extension activities tend to develop uniformity in policy, procedures and practices across the state where such uniformity is desirable. Extension work has also promoted better communications and cooperation among counties.

In the process of consulting with individual counties much information is gathered on the types and extent of county highway problems. This information is in turn used to select and guide research activities and other educational programs.

Area Road Schools

Planning and conducting area road schools is another major phase of county highway extension work. After five years experience, the area road schools have proven to be an excellent means of bringing technical information to county road officials. Road officials that participated in

these schools have included highway supervisors, highway engineers, county commissioners, county highway bookkeepers and clerks and county auditors.

The usual method of conducting area schools is to hold the same program at approximately nine different locations over the state. Each of the nine schools draws to it road officials from eight to 12 neighboring counties. Total attendance for a complete series has been about 200 for a series of one-day meetings to 350 for a series of two-day program meetings. The geographic distribution of meeting locations stimulates a concentration or focusing on specific problems common to the particular locality.

Topics for the schools range from routine maintenance and construction practices through administration, planning, financing, traffic, safety, equipment, public relations and bookkeeping. In the past five years eight programs have been developed and taken to county road officials by means of area road schools. In the future there will be at least two area road schools a year.

Annual Purdue Road School

A third phase of county highway extension activity has been carried out in connection with the four-day Annual Purdue Road School. HERPIC staff members and members of the Advisory Board have assisted in the development of general and separate sessions, have given numerous technical papers and talks, in addition to assisting with all the details connected with such a large undertaking.

Since the establishment of HERPIC, a County Information Center has operated at each Annual Purdue Road School. The Center is used to make available to all county road officials (especially those newly elected or appointed) copies of HERPIC publications and publications of the Joint Highway Research Project. A number of other State agencies are also invited to put up displays and to distribute pertinent information to county road officials.

Research Activities and Publications

The research activities have been concerned with subject matter considered by the Advisory Board to have the highest priority of the multitude of subjects possible. Most of these topics have been approached from the standpoint of assembling technical information from many sources and developing from the collected data, simple, concise, practical manuals covering specific subjects. Other topics have been handled along the more conventional lines of research—development of new data, analysis, interpretation and conclusions.

Each of the research projects results in a publication for distribution to county road officials. For this purpose, a *County Highway Series of Engineering Bulletins* has been established. These are the primary publications used to disseminate results of research to the counties. The small, paper-bound booklets give detailed, step-by-step procedural information for the solution or control of various highway problems. Effort is made to put technical data into a concise, easily understood, usable form. All practices recommended are well within the limits of practical application by the county highway departments of Indiana. A list of the Engineering Bulletins that have been published and distributed to the counties is shown below.

1. Dust Control on Unpaved Roads
2. Roadside Weed and Brush Control with Chemicals
3. Principles of Highway Drainage and Erosion Control
4. An Analysis of Traffic Accidents on County Roads
5. Planning and Financing County Bridge Programs
6. County Subdivision Control
7. Guide Manual on Records and Reports for Indiana County Highway Departments
8. Minor Maintenance of County Bridges

Other Engineering Bulletins that are in various stages of production and which will be printed soon are listed below.

1. Public Relations Programs for County Highway Departments
2. Guide Manual on Purchasing and Contracting for County Highway Departments
3. Standards in Classification of County Highways
4. Identification and Signing of County Highways
5. County Highway Inventory Procedures
6. County Bridge Painting
7. Major Repairs of County Bridges
8. Field Identification of Soils
9. Uniform Sign Manual for County Highways

A teaching medium recently employed by HERPIC is the sound filmstrip. To date one filmstrip has been developed and its success has pointed the way to the development of others. The first is entitled "Minor Maintenance of County Bridges." The text and illustrations were drawn from the Engineering Bulletin of the same name. Other sound filmstrips now in the process of development are: (1) County Bridge Painting, (2) Major Repairs of County Bridges, and (3) Field Identification of Soils.

Another publication issued by HERPIC is a small handbook of valuable statistical data for county road officials to use in highway planning. The publication is entitled "Handbook of Facts and Figures on Indiana County Roads." To date a 1962 and a 1964 edition have been printed and distributed. The Handbook provides information on the number of miles of roads of various surface types in each county, on motor vehicle registration, population trends and other useful data. Besides assisting in planning, the Handbook provides a means of comparing one county road system and operation against that of another county. It also assists officials in public relations activities.

HERPIC has also issued a publication called "Indiana's County Highway Engineer Law." The pamphlet consists primarily of a set of questions and answers which are used to simplify and explain the County Highway Engineer Law (Chapter 131, Acts 1963). This legislation provides a \$5,000 a year grant-in-aid toward the salary of a registered county highway engineer. This law has been very effective in helping to increase the number of county highway engineers over the State.

Periodic newsletters are also used to disseminate news, information and technical data to county road officials. HERPIC has joined forces with the Joint Highway Research Project and now both dispense news through the *Highway Extension News*. HERPIC items appear under the heading of "HERPIC Road Notes."

Highway Extension News is also used to provide seasonal information such as precautions to use when spraying weeds and brush or information on posting roads during the spring thaw. Information on new legislation pertaining to county roads and county road officials is also covered when necessary. Some recent issues have discussed the County Highway Engineer Law and the Indiana Drainage Act. Excerpts from outstanding papers, magazine articles or other highway news releases are passed on. Advance notice of Area Road Schools and the Annual Purdue Road Schools are given. These and many other useful bits of information are distributed to highway officials through HERPIC Road Notes of the Highway Extension News.

IMPROVEMENTS IN COUNTY HIGHWAY OPERATIONS

In the last five years there have been noticeable improvements in county highway operations. Some of these have been the result of both direct and indirect activities of HERPIC. Direct results have been brought about by educational activities at road schools, county visits and through the preparation and dissemination of technical manuals and other publications. Indirectly, HERPIC staff members have helped to

bring about improvements by serving, when asked to do so, as advisors and consultants to study committees both at the state and local levels.

A step forward has been the increase in employment of registered professional engineers in the county highway departments. The number has increased from two or three in 1959 to 20 or more at the present time.

Bridge programs have been stepped-up. In recent years there has been a substantial increase in cumulative bridge funds across the State. With this increase in funds available there has been an accompanying increase in the county bridge construction and maintenance programs.

The staff has worked closely and diligently with personnel of the State Board of Accounts to help establish the new system of cost records on county roads put into effect by the Indiana General Assembly in 1961. HERPIC staff members developed a "Guide Manual on Records and Reports for Indiana County Highway Departments" and several area schools were held jointly with State Board of Accounts personnel to teach the new system to highway officials and their bookkeepers and clerks.

Project personnel have emphasized the need for deeper and cleaner bases and subbases and for better drainage. They have discussed with county officials possible advantages of radio communications, load restriction signs (for spring thaws), more chemical weed and brush control and the need for such seemingly diverse items as good public relations and better garage facilities.

The results of an extension and research program such as that conducted by HERPIC, cannot be measured in exact, quantitative terms. This paper attempts to outline some of the programs and to point out broad changes in the State of county highway organization, administration and technology. Many factors in the economy, many technological improvements and the work of many organizations and men have combined to bring about these changes. HERPIC has contributed its share.