



- ① STUDY COMPLETED  
 ② A NON-LEGISLATIVE COMMITTEE  
 ③ COMMITTEE CONTINUED

Chart 14. Highway Study Committees Created in 14 States

greatly from state to state. Therefore, the recent trend toward the establishment of state highway

study committees is a highly commendable one.

## CURRENT LONG-RANGE STUDIES OF HIGHWAY MODERNIZATION PROGRAMS

G. DONALD KENNEDY  
*Vice-President*  
*Automotive Safety Foundation*

Addressing a highway planning symposium at the University of Michigan in February 1938, Mr. Herbert S. Fairbank outlined the objectives of the planning surveys which were then in their second year by saying

that "the highway planning survey is not a report. It is a full-length view of our highway situation and it fits the day-to-day needs of common-sense highway administration. The establishment of a road program

rationally developed is the final objective of the highway planning survey."

In the short period between Mr. Fairbank's remarks and the start of World War II, noticeable progress was made toward the objective he outlined, the surveys having furnished a variety of new and useful tools to highway administrators, thereby aiding them in the fulfillment of their public duties in the best possible manner.

Major accomplishments resulting from the surveys included the preparation of road inventory maps and diagrams; complete analyses of highway traffic; the study of auto trip lengths and the exploration of traffic volume variations; careful investigation into the demand on highway systems by urban and rural users; and detailed compilations of public finance.

In addition to these were the studies of apportionment of road user taxes; of highway costs and studies of vehicle movements and of vehicle sizes and weights so that the life expectancy of our present road plant is well understood.

These are but a few of the accomplishments of the continuing operation we call the Highway Planning Survey as carried on jointly by state highway departments and the Public Roads Administration under the terms of the Federal Highway Act.

The war's impact placed a tremendous burden on our highway plant as the replacement of worn out and obsolete road sections was almost completely curtailed and manpower shortages placed severe restrictions on planning research.

The 1944 amendment to the Federal Aid Highway Act expanding the activity of planning work is a result of a new awareness of the survey's importance to road management problems.

Congressional provision for a three-year postwar program in De-

cember 1944 restored the opportunity for even greater achievement by planning agencies.

Now state legislative bodies have placed a burden on the planning surveys as information is sought on which to base the programs so essential to restore and advance highway systems.

Beset on several sides by postwar demands for state financial assistance, legislators have been perplexed in attempting to solve highway needs and in deciding how tax income should be apportioned to the governmental jurisdictions controlling roads.

#### NEW APPROACH DEVELOPED

This dilemma has brought about a new approach to highway programming but the data and methods devised in 12 years of highway surveys are still the foundation and chief source of information.

With administrators and legislators alike now seeking the immediate establishment of sound road programs, the ultimate objective of the surveys becomes immediate and calls for reporting of the first rank.

An appropriate analogy between the continuing operations of the planning surveys and the type of reporting now being accepted may clarify this relationship. The engineer who is engaged in stream gauging seeks to determine the dynamics and flow of a wide and deep river. He must observe the differences in current at varying points in the river's cross-section and study the water's velocity to gauge the total product of the stream.

The present studies of highways at this particular point in time cut across the flow of highway planning work to measure activities in progress at many different points. Such an activity, it seems, might well be justified at perhaps 10-year intervals.

What, then, should be the scope of the current long-range studies for highway modernization programs?

To solve the problems facing the administrators, engineers, and legislators, the studies must project into the future. This means studying the impact of motor transportation on the state's future economy and it means particularly studying any important changes in the character of motor transport likely to be developed by vehicles or drivers.

To do this we must project important indices based on trends already fairly apparent. Such data must include population studies, motor vehicle registrations, especially larger trucks, vehicle use in terms of mileage and fuel consumption, the occurrence of accidents and the history of the system's development.

Further, we must study the nature of road use, traffic pattern variations, travel origin and destination, speed problems, the kind of vehicles in use, and other elements of traffic and human behaviour. Roads must also be classified according to a pattern of use and jurisdiction and a recommended classification plan prepared as an approach to the problem of road need determination.

Standards for road improvement are those which may be adopted when a road is rebuilt or which can be tolerated for a number of years until there are funds available to rebuild it.

In order to secure the most economical and effective maintenance and the most efficient traffic control, standards for highway operation as well as construction must be accepted.

Expansion of the data to extend to all city streets and county roads is imperative. Obviously the study involves every phase of highway engineering practice.

From facts thus harvested, then, a program of needs can be prepared

with cost estimates determined for a given number of years as it is only by the application of this all-inclusive technique that a state can arrive at a thorough and dependable long-range highway modernization program.

Especially important is the physical make-up of the finished study. It is essential that all technical verbiage and exposition be distilled thoroughly so that the report in its final printed form can be clearly understood by the non-professional mind. In this connection graphs, charts, photographs, and other visual devices for explaining conclusions or facts, in many cases will serve a better purpose, from the point of view of the lay intellect, than will written discussion. The physical make-up of the report should be, of course, as attractive as can be devised by modern publishing standards.

This process of study and reporting has been approved by such organizations as the American Association of State Highway Officials, the Public Roads Administration, and the Highway Research Board.

The purpose of this paper is to explore the extent to which states are now engaged in this type of activity and the kind of arrangements that are made for its execution.

To accomplish this purpose, a preliminary questionnaire was sent to the various states through the offices of the Highway Research Board on October 28, 1947, to determine whether or not such activity was contemplated. On the basis of information derived from this questionnaire a second and more extensive set of questions was sent to states which indicated plans for long-range studies. These well-answered inquiries have been utilized in preparing this paper. Other records, too, have been examined, including many state planning reports.

We especially wanted to ascertain

whether a particular study is sponsored by a legislature, a highway department, a highway user group, or some other agency. We are interested in knowing if its scope includes urban streets and county roads as well as state highways. We are interested in knowing the method of financing; to whom the survey is addressed, and whether or not it will find its way into the legislative halls; what organizational effort is being made for the survey; and we are interested in knowing in some detail the scope of the survey and the objective information to be obtained.

An up-to-the-minute report, then, on survey activity in the several states, will show us the current status of such work.

#### STATES IN WHICH STUDIES ARE UNDERWAY OR COMPLETE

**CALIFORNIA**, the nation's fastest growing state, is where necessity first created demand for this type of study. In 1945, the legislature authorized creation of an interim fact-finding committee with seven members from each house and an advisory group made up of highway users and public officials to study the state's highway needs and to report its findings to the 1947 session.

The Automotive Safety Foundation loaned staff to study the engineering phases of the problem. Bertram Lindman surveyed the financial and tax aspects.

In all, a total of \$130,000 was appropriated by the state. The results were reported to the interim committee, which then presented its recommendations to the legislature.

The California survey was based on all the factors mentioned earlier as proper and essential elements of such a study.

**PENNSYLVANIA** in 1946 engaged the Brookings Institution to make a

study of highway taxation and its allocation to local jurisdictions. This study indicated a need for improved administrative techniques as well as jurisdictional changes and the state now plans a survey of its roads to be completed January 1, 1949.

**MICHIGAN's** needs also demanded such a report for the chief automobile producing state. The Michigan Good Roads Federation, a non-profit organization with a long background of successful support for highway development, raised funds and secured a director to complete a thorough study which was financed by the State Highway Department and the Public Roads Administration. This engineering survey is nearly completed.

**KENTUCKY**, in July 1947, engaged the Public Administration Service to study administration and financing of Kentucky highways. Such a report was submitted in October. It outlines methods for establishing a highway classification, the development of engineering standards, and estimated cost of a proposed program. The Kentucky commissioner of highways now states that he has authorized a survey for the purpose of developing a six-year program of improvements.

**WASHINGTON** followed the California pattern and the work is now going on there under an interim legislative committee with Automotive Safety Foundation staff members loaned to direct the engineering phases of the survey. A total of \$75,000 has already been appropriated for the work by the legislature.

**OREGON**, like Washington, followed the pattern set by California and the work there is now under way with Automotive Safety Foundation representatives loaned to direct the engineering phases of the

project.

The KANSAS legislature earlier in 1947 authorized an interim committee of two senate members, two house members and 18 members appointed by Governor Frank Carlson to make an interim survey of highway needs. An appropriation of \$25,000 was voted for the survey which is now getting started. It will be completed early next fall. The Automotive Safety Foundation has loaned staff to assist in the engineering phases.

NEBRASKA's unicameral legislature has directed its Legislative Council, an interim group, to cooperate with a citizen's committee, appointed by Governor Peterson, composed of 35 members, many of whom are representatives of highway users groups, to study the state's highway needs. Financed as a Federal Aid highway project, the survey is under way and will be completed in the latter part of 1948 under the supervision of staff members loaned by the Automotive Safety Foundation.

COLORADO reports that at this time it plans no survey but Governor William L. Knous has requested the Highway Research Board to look into the state's highway organizational needs, and it is likely that recommendations will be made for deeper studies.

#### EARLIER HIGHWAY PLANNING EFFORTS

Published earlier this year, "Wisconsin Highway Planning Survey-Activities and Findings, 1939-1945" is a thorough study which covers in considerable detail the major factors involved in arriving at a complete long-range program. This study was conducted by the State Road Commission.

CONNECTICUT's Highway Department completed a survey, "Connecticut's

Road Program," late in 1946. In the course of the study, all the major elements of the problem, except administration, were examined with an eye to the eventual creation of a system which can meet any demands on it in the predictable future.

VIRGINIA's Highway Commission earlier in 1947 finished a survey called "A Twenty Year Plan for the Development of Virginia Highways." This survey creates a program for getting a large portion of the state's unsurfaced roads onto a paved basis.

VERMONT finished a survey in 1940. "Needed Highway Improvements in Vermont" was its title and the study was undertaken by the Highway Department planning survey in cooperation with the Public Roads Administration. This study did not delve into problems of administration.

WEST VIRGINIA finished a study in 1941 titled "West Virginia Highways-Preservation and Development, 1940-1960." Like other of the earlier studies, however, this one also did not go into problems connected with the development of urban streets, administration, and financing. The survey was made by the State Road Commission.

MARYLAND's last survey, was one called "Maryland Highway Needs" completed in 1940. It was designed to create a program lasting until 1960. It did not consider thoroughly such major factors as urban streets.

The DISTRICT OF COLUMBIA, a completely urban area insofar as highway problems go, has made a study which covers its needs, although spot and local surveys including origin-destination checks will continue to be made as needed.

## STATES WHICH PLAN NO ACTION NOW

**ALABAMA** indicates that it contemplates no study in the immediate future, but that eventually one will be made by the Highway Department through its statewide highway planning survey in cooperation with the Public Roads Administration. When this study will be made and the method of appraisal have not yet been decided.

**OKLAHOMA** lists no action, but reports that public hearings are being held throughout the state with highway needs expressed by local groups by priority, the suggested improvements to be assembled by the Highway Department looking to an overall long-range program.

**SOUTH CAROLINA** plans no immediate study as there are reported to be no "legislative" problems there at the moment calling for such a report.

**UTAH's** plans call for no survey now although the Utah Legislative Council, an interim committee of the legislature, is interested in activity for devising a program by planning.

**WYOMING** has no immediate plans for action. Officials there report "the necessary studies and statistical data to determine highway needs is obtained from continuing studies carried on by our planning survey."

**MISSOURI, NEVADA, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, and RHODE ISLAND** also indicate they plan no studies in the immediate future. **LOUISIANA** has not answered questionnaires seeking data on its intentions.

SURVEYS AUTHORIZED  
BY LEGISLATIVE MANDATE

At the last session of the *ILLI-*

**NOIS** legislature, a commission was created consisting of six members of the house, six, of the senate, and five citizens to formulate a comprehensive highway program for the state. The commission is to report its findings in March 1949, to the legislature. For the survey, \$25,000 was appropriated.

**IOWA** established a joint committee of citizens and members of the legislature to investigate primary and secondary road problems and related financial problems.

**MAINE's** Highway Commission was authorized to resume a postponed state-wide planning survey to recommend financing mechanics for a program of highway improvement at the next legislative session in January 1948. The work was done by the highway department in cooperation with the Public Roads Administration. Approximately \$50,000 was spent for the study.

In **MASSACHUSETTS**, the legislative committees on highways and motor vehicles were authorized to sit during the legislative recess, to study and recommend a program of highway and traffic improvements to the legislature by December 1948. Expenses will be met from the Highway Fund.

**MINNESOTA** created an interim commission on highways consisting of five representatives and five senators with an appropriation of \$20,000 set aside for a survey, results of which were, at the time, expected to be presented to the legislature in mid-April of 1948. The study was made by Highway Department personnel assisted by County Highway Engineers' Association and the League of Municipalities.

**MISSISSIPPI** State Highway Department officials planned an outline, presented to the legislature in

January 1948, of the need for a study of the road and street systems. If the legislature decides such a need exists it is the thought of the department that a joint legislative committee be named to make a survey.

*SOUTH DAKOTA's* legislature has named an interim committee to supervise a survey which is scheduled for completion by January 1949. No definite sum has been set aside for financing the study which will be carried on by the State Highway Commission although there is not now an adequate staff to assure completion of the work.

*OHIO's* legislature will probably reconsider a proposal to authorize a highway study to create a long-range plan. Favorable action by the legislature in this matter is sought by the Highway Department. At the regular session earlier in 1947 the proposal was not approved. Meanwhile, the state's Highway Planning Survey has continued its regular work in the field.

#### SURVEYS AUTHORIZED BY ADMINISTRATIVE DIRECTIVE

*ARIZONA's* Highway Commission is undertaking a survey which will be conducted by the Highway Department and which is reported to cover the entire ground of various road and street classifications as well as administration, financing, construction, and maintenance. No definite sum has been set aside for financing the study which will take about a year to complete.

In *ARKANSAS* the State Highway Commission also has authorized a survey on which about \$75,000 will be spent during the six months in which the study will be made. This survey will cover all the essential ground as outlined by a definition of such studies.

*DELAWARE's* Highway Department has ordered a study to be made by the Traffic Planning Division which is currently undertaking tentative surveys of all roads, but is not considering problems of administration or maintenance. Officials report that no specific fund has been appropriated for the study which is due to be finished in January 1949. As yet, a definite course of action to be followed in the development of a long-range program has not been decided upon.

*FLORIDA* reports its State Road Department conducts a survey with its own funds on a continuing basis for the use of the department in programming future improvements.

*GEORGIA's* Division of Highway Planning has been instructed by Highway Department officials to prepare a report carrying information on state roads, county roads on the secondary system, and urban streets on primary and secondary systems as well as those on the interstate system. The other major phases of a modern planning survey are reported to come within the scope of the study.

In *IDAHO*, the Bureau of Highways has ordered a study by the Highway Planning Survey, but no outline of procedure has yet been set up nor has a budget yet been devised. City streets will not come under surveillance of the proposed survey.

*INDIANA's* study, authorized by the highway Commission, calls for completion in August 1948, with an expenditure of approximately \$40,000. The engineering staff of the Commission which is conducting the study will make its report to the Commission.

*MONTANA's* Highway Planning Survey Section in cooperation with Public Roads Administration is undertaking

a complete survey of every essential phase of planning work financed by state and Federal funds. No deadline for completion of the study has been set. The study is a re-survey of one which has been going on continuously since 1936 and is being made to re-examine the financial and economic ability of the state to continue its program of construction and maintenance on the mileage now included in the primary and secondary systems.

**NEW HAMPSHIRE** reports it is starting a survey in cooperation with Public Roads Administration officials. The study, scheduled for completion in September 1948, will not include an appraisal of county roads or city streets, but other major aspects will be surveyed. The State Highway Department has authorized the study.

**NEW JERSEY's** current survey being undertaken by the Highway Department's Division of Planning and Economics covers the outlining of a comprehensive state highway system needed in the next 30 years, and is nearly complete. A 10-year program calling for the expenditure of \$600,000,000 has also been studied by the Division, although no official action has been taken.

Hampered by manpower shortages, New Jersey has not included county roads or urban streets in its survey.

The **NEW YORK** Department of Public Works has ordered a survey which will not, however, investigate county road or maintenance needs. No deadline has been set for completion of the survey nor has any fixed fund been appropriated. The

work will be undertaken by department personnel.

**TENNESSEE** reports it plans a complete survey of each major phase of its highway system.

**TEXAS** is now completing an examination of its state roads and a partial survey of county roads and city streets. Ordered by the State Highway Commission, it is staffed by Highway Department personnel and was designed to develop an estimate of the state's large highway system. Officials expect its completion early in 1948.

#### SUMMARY

A round-up of the states shows that nine surveys are in progress or complete; six, plus the District of Columbia, have made earlier efforts; 12 plan no action; eight are now authorized by legislatures; and 13 are authorized by administrative directive.

There appears to be developing a new high degree of interest and enthusiasm as states step up the tempo of their search for a solution to the long-range highway problem. Technical standards of surveys may vary in the different states, but it is apparent that a new awareness of the importance of finding an answer to the problem is everywhere.

Just so long as this enthusiasm and interest is sustained, and they must be if our roads are to catch up with the demands on them, there seems good reason to hope that all the states will eventually tackle the problem with studies patterned on the best techniques yet devised.