

erative relations, advisory groups, and procedures for settling difficulties

(2) Provision of technical assistance

B. Recommendations in the interest of efficient and economical administration

1. State highway department

a) Changes in jurisdiction, powers, and responsibilities

b) Changes in character of organization

2. Changes in powers, responsibilities, jurisdiction and organizational character of county and local highway agencies

3. State aid

a) Changes in methods of apportionment

b) Recommended measures of administrative, engineering, and fiscal control by State

4. Measures to promote cooperative intergovernmental relationships

5. Other recommendations

HIGHWAY VEHICLE AND TRAFFIC REGULATION

A. History of the development of vehicle and traffic in the State, and statement of principal present regulations

B. Proposal of desirable amendments of the existing regulations, and the timing of such amendments, consistent with the safe and efficient use of highways as they now exist and as they will be improved by the program proposed

C. Enforcement of traffic regulations

CONCLUSIONS

A. Summary of the principal recommendations of the report

B. Proposal of legal and other action required to give effect to the recommendations.

HIGHWAY REVENUE AND EXPENDITURE TRENDS

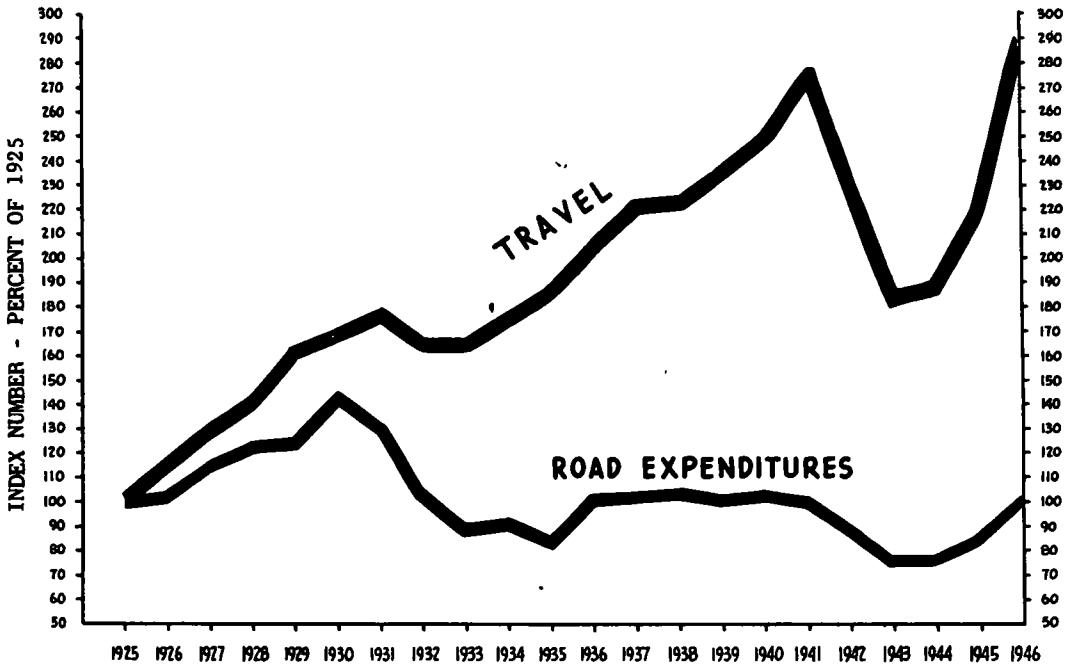
BERTRAM H. LINDMAN
Highway Specialist
American Automobile Association

The Public Roads Administration has published much excellent highway financial data. From the data contained primarily in their HF and DF tables, I have prepared several charts for popular presentation. It is my purpose to point up certain trends in highway financing. I shall also bring out some of the deficiencies in available data and emphasize the need for more adequate statistics if those in the highway field are to have a clear understanding of the highway financing problem, particularly as it relates to county roads and city streets.

On the first chart, the line labeled "TRAVEL" is in terms of gasoline consumption, upon which data has been kept since 1925. The amount consumed during that year is taken as the index number 100. This line has a steep upward trend all the way except for a slight dip during the depression and a considerable dip during the war, and in 1946 reached a new high approximately three times that of 1925.

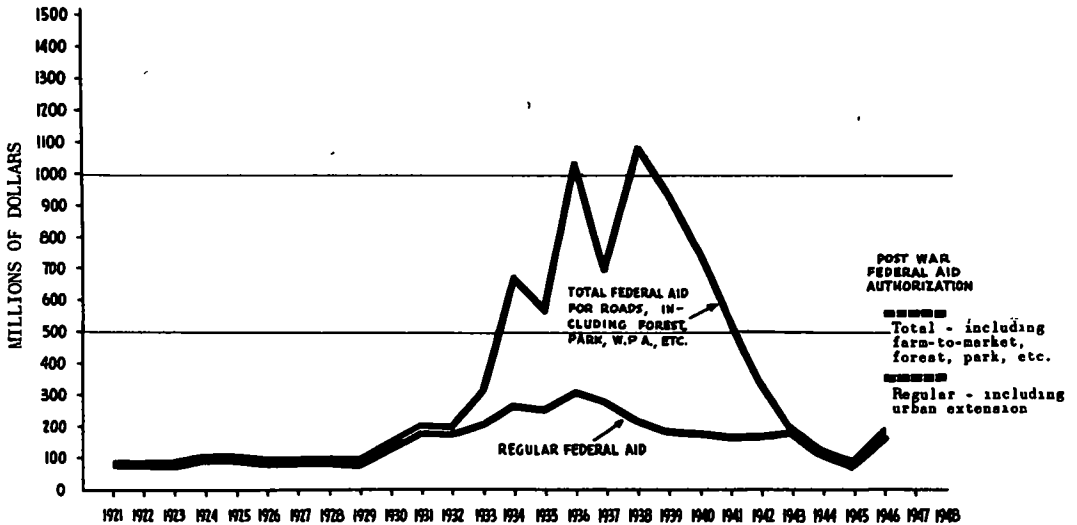
While travel has been increasing, the total expenditure for roads, streets, and highways as represented by the other line, ended with the

LINDMAN - REVENUE AND EXPENDITURE



Expenditures for construction, maintenance, and administration on all roads and streets

Chart 1. Travel Reaches New High But Road Expenditures Are at 1925 Level



Federal-aid system designated prior to Highway Act of 1944

Chart 2. Highway Revenue: Regular Federal-aid Reaches New High

same amount in 1946 as it started with in 1925; \$1.7 billion. This expenditure increased to \$2.5 billion in 1930; dropped below the 1925 amount during the depression; returned to the 1925 level during the middle thirties; dropped during the war, and returned to the pre-war level in 1946.

1948. However, at the present rate of construction, this figure will not be reached during 1947.

Also shown is the cumulative total of regular Federal-aid and other funds such as those for forest roads, park roads, WPA, and secondary or farm-to-market roads. This total reached a maximum of

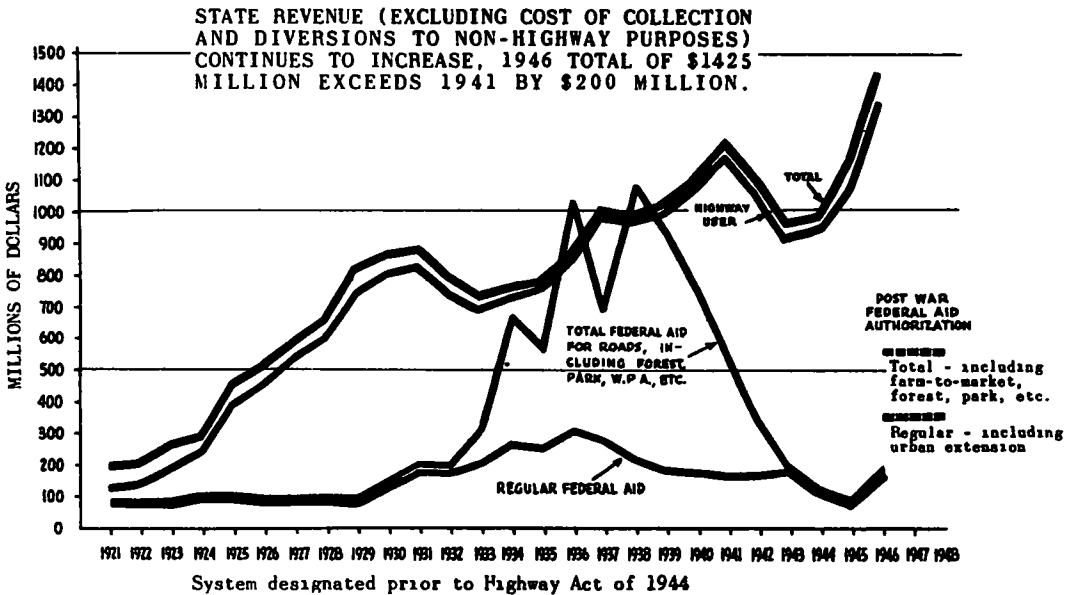


Chart 3. Highway Revenue

This total expenditure includes construction, maintenance, and administration for all roads, streets, and highways. Relief construction for "make work" road expenditures such as WPA are excluded. Expenditures shown for the latter years are PRA preliminary estimates.

The second chart shows regular Federal aid ranging from \$77 million in 1921 to \$92 million in 1929, then crossing the \$200 million mark in 1933 and the \$300 million mark in 1936; receding to a low of \$75 million in 1945, and finally increasing to \$167 million in 1946. The lower broken line shows for the Federal-aid Highway System, including urban extensions, post-war authorizations of \$350 million annually for the years 1946, 1947, and

over one billion in 1936 and 1938, and then dropped off. The post-war authorizations are \$565 million annually, but at the current rate of construction the amount of Federal revenue actually contributed will be far less.

Chart 3 is an overlay to Chart 2. The top line represents the total state highway revenue contributed to roads, and the lower line, which closely follows the top line, represents the portion contributed by highway users. These lines started at \$196 and \$110 million, respectively, in 1921, increased rapidly except for set-backs during the depression and during the war, and reached \$1.425 and \$1.37 billion, respectively, in 1946. These last figures are of course only prelimi-

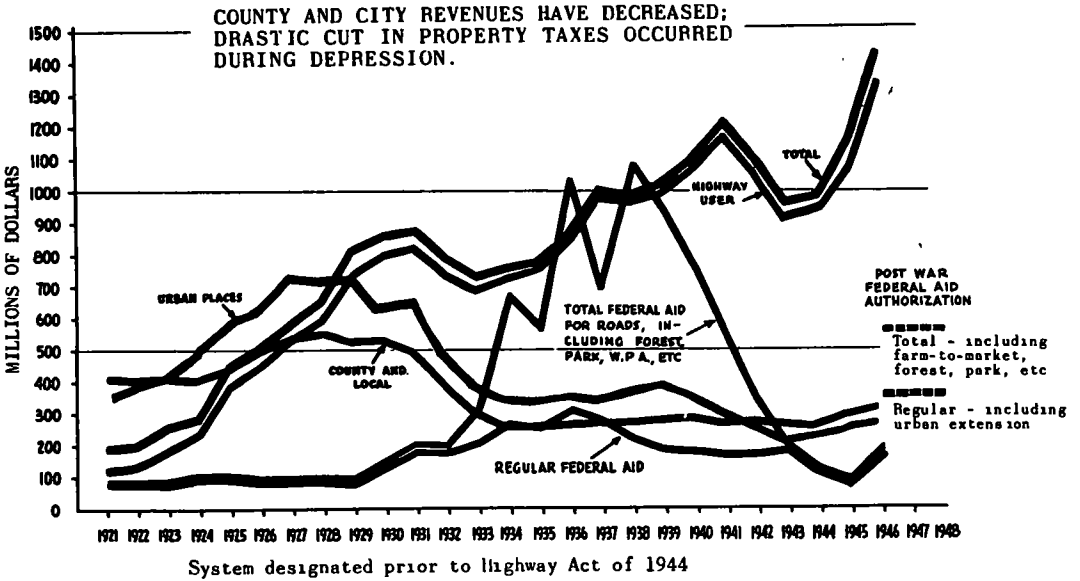


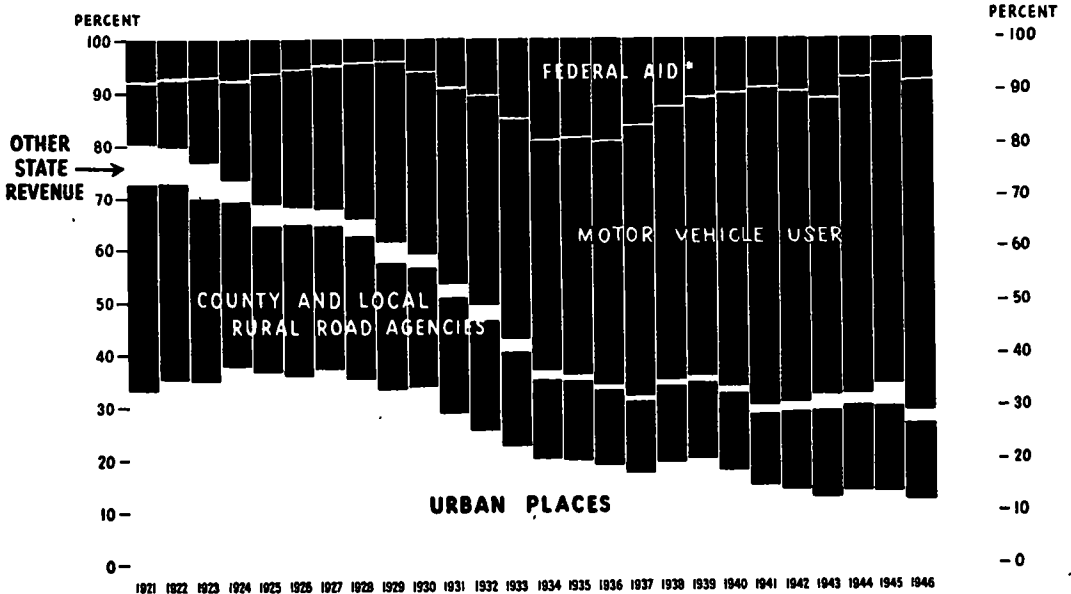
Chart 4. Highway Revenue

nary estimates.

In Chart 4 two other lines are added. One represents the contributions of county and local rural road agencies to roads. This line started at \$400 million in 1921; increased to \$550 million in 1928; dropped to \$251 million in 1934; increased to \$282 million in 1940;

decreased during the war; but turned up to an estimated \$314 million in 1946.

The other new line represents the contribution from urban places which started at \$337 million in 1921; climbed to \$787 million in 1928; dropped to \$335 million in 1930; decreased to \$335 million in 1935; increased slightly for a



* W.P.A. AND OTHER FEDERAL RELIEF FUNDS EXCLUDED

Chart 5. Motor Vehicle Users Providing More and More of Highway and Street Revenue; 63 Percent in 1946

while; decreased during the war; and increased to an estimated \$255 million in 1946.

Although the revenue provided by counties and cities is primarily free from property taxes, local motorist user taxes for 1941 are estimated at \$38 million.

of 70 percent of the total in 1921 but less than 30 percent in 1946. This decrease is indicative of the withdrawal of property tax support for roads and streets. In fact, in several States the entire cost of all rural roads is defrayed by state highway user revenues.

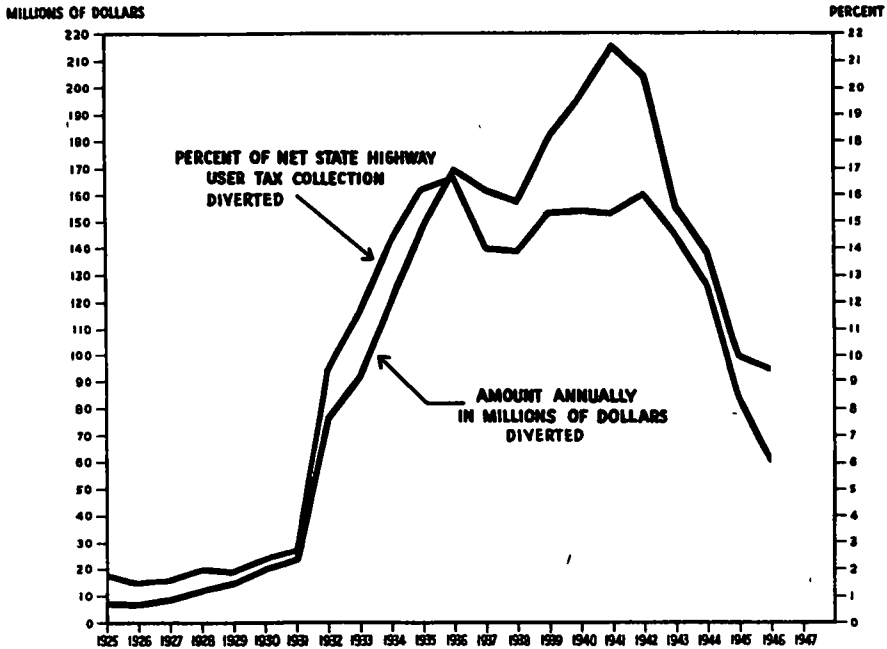


Chart 6. Fight Against Diversion Showing Results; Diversion of State Highway User Taxes to Non-highway Purposes Reduced \$120 Million

The fifth Chart shows the percentage distribution of total revenue for all roads, streets, and highways by source of revenue. Across the top is the regular Federal-aid contribution which amounted to 8 percent of the total in 1921; decreased to 3.8 percent in 1929; increased to 20 percent in the middle thirties; decreased to 4 percent in 1945; and increased to 8 percent in 1946.

Just below is the state highway user portion which was 12 percent in 1921 and increased to 63 percent in 1946.

The county and city contributions, shown below, were in excess

The sixth Chart shows that the fight against diversion is showing results. Diversion of state highway user taxes to non-highway purposes has been reduced \$120 million. From 1925 to 1931 diversion was nominal, then it turned sharply upward, reached a peak of \$215 million in 1941, and since then has curved sharply downward, reaching \$95 million in 1946.

This chart also shows the percentage of total state highway user taxes diverted. A peak of 15 percent was attained in 1938 and again in 1941 from which the line drops sharply to 6 percent in 1946.

The seventh Chart is a map show-

ing the diversions of state highway user taxes to non-highway purposes by states in 1946. The 19 white states on this map had no diversion in 1941 or 1946. The 19 black states reduced the amount of diversion between 1941 and 1946, and the 10 crosshatched states increased the amount of diversion.

war years.

The total of state highway user taxes distributed to county and local roads is understated to the extent that it does not include a figure for the State of Delaware. That state classified all its rural roads as state highways and has no separate accounting for them. The

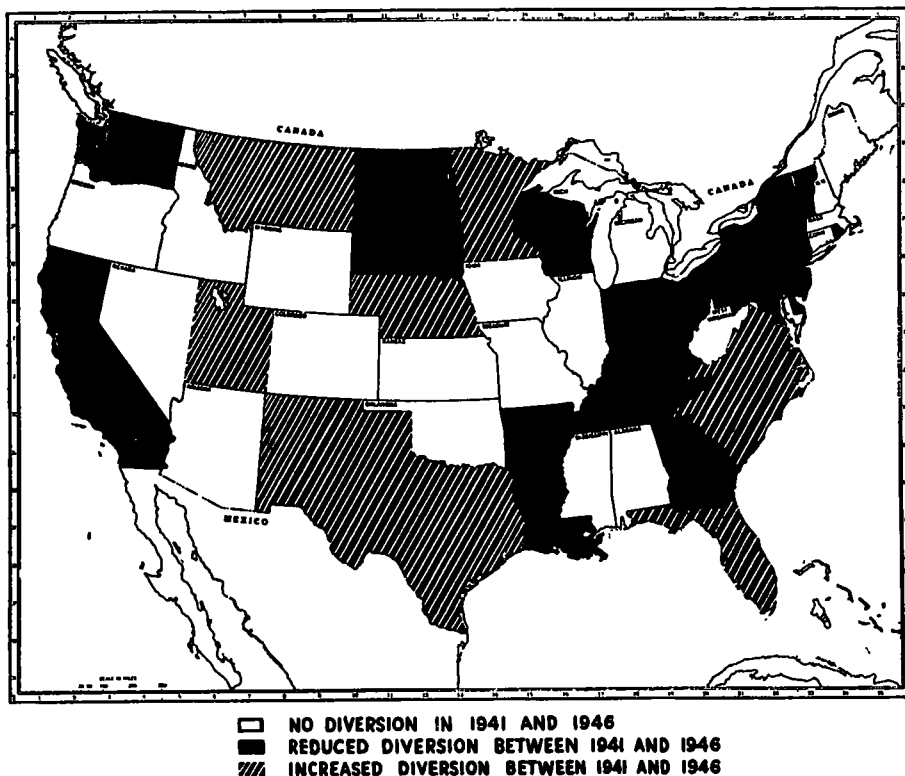


Chart 7. Diversions of State Highway User Taxes to Non-Highway Purposes by States in 1946

The eighth Chart shows that the amount of state highway user taxes distributed to county and other local roads was about \$80 million in 1925 but has increased sharply since then, except for the war years, to a total of \$392 million in 1946.

This chart also shows that the percentage of total state highway user revenue distributed to county and local roads increased from 19 in 1928 to over 25 in 1946. This upward trend continued through the

States of North Carolina, Virginia, and West Virginia likewise classify all their rural roads as state highways, but do account for county and local roads separately.

The amount of state highway user taxes expended on county roads is overstated by an unknown amount to the extent that certain counties expend their allotments on city streets. It would be very helpful if the Public Roads Administration financial tables could be refined to show as city street funds those

state funds that are transferred to the counties and by them either transferred to the cities or expended upon city streets.

Locally collected highway user funds are not included in these charts. In a few states these amounts are substantial.

or generated by local road use. This excess actually represents revenue earned or generated by city street traffic. The unfairness of this situation is emphasized by the urgent need of cities for highway improvements to remedy traffic congestion.

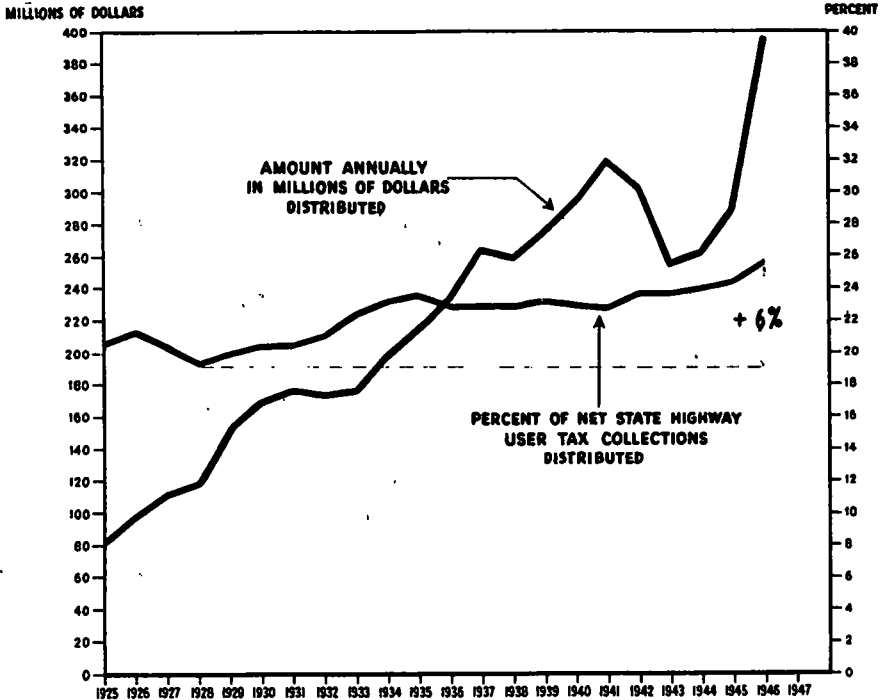


Chart 8. Distribution to Local Roads Increasing; Quarter of State Highway User Taxes Now Going to County and Other Local Roads

During this period (1925-1946) when highway user funds were being used in increasing amounts on county roads, the need for such funds was reduced by transfers of substantial mileages of the more heavily traveled county roads to the state highway system.

It is significant to note that in 1941 when county roads were receiving 25 percent of the state highway user revenues, they were carrying only 14 percent of the traffic. In other words, the amount of state collected highway user revenues expended on local roads is in excess of the gasoline tax earned

The ninth Chart is a map which shows that the percentage of state highway user taxes distributed to county roads varies greatly from state to state. However, it should be interpreted in the light of limitations on the underlying data which are discussed in connection with the preceding chart.

The tenth Chart shows that the amount of highway user taxes distributed to city streets increased from \$4 million in 1925 to \$62 million in 1946. Except for a dip during the war years, this line has had a sharp upward trend.

The percentage of state highway

Chart 12 shows how the cost of constructing a composite mile of highway has varied from 1925 through the first three-quarters of 1947. The index number 100 represents the average annual cost of a composite mile of highway between 1925 and 1929.

ally much greater than the chart indicates.

The map (Chart 13) shows the status of toll roads. In the five grey states (Connecticut, Florida, New York, Pennsylvania, and Maine) toll roads are now in existence, and in the seven black states, toll

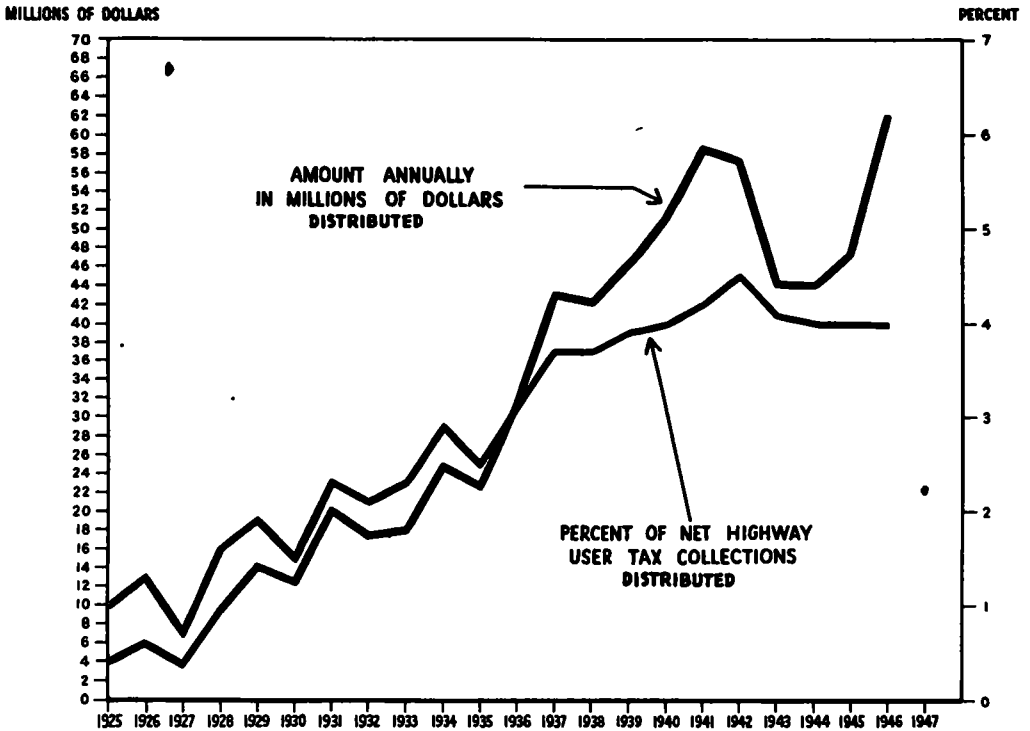


Chart 10. Distribution to Local City Streets Increasing; Four Percent of State Highway User Taxes Now Going to Local City Streets

The line had a downward slope from 107 in 1925 to 61 in 1932; recovered to about 84 in 1934; eased off to 72 in 1940; climbed to 127 in 1943; decreased to 112 in 1945; and increased to 142.9 in September 1947.

The foregoing percentages do not reflect the cost of constructing a mile of highway to modern standards. A highway today requires more grading, concrete, steel, etc., than it did between 1925 and 1929, hence the percentage increase in the per mile cost of construction is actu-

roads have been authorized.

Toll bridges and toll tunnels are excluded from this presentation.

The rapid spread of toll roads should be regarded as symptomatic of a serious deficiency in our present method of financing the main highways which is primarily by highway user taxes on a pay-as-you-go basis. It is true that many miles of these main highways carrying many thousands of vehicles daily are congested and hazardous and some means must be found for reconstructing them. However, to

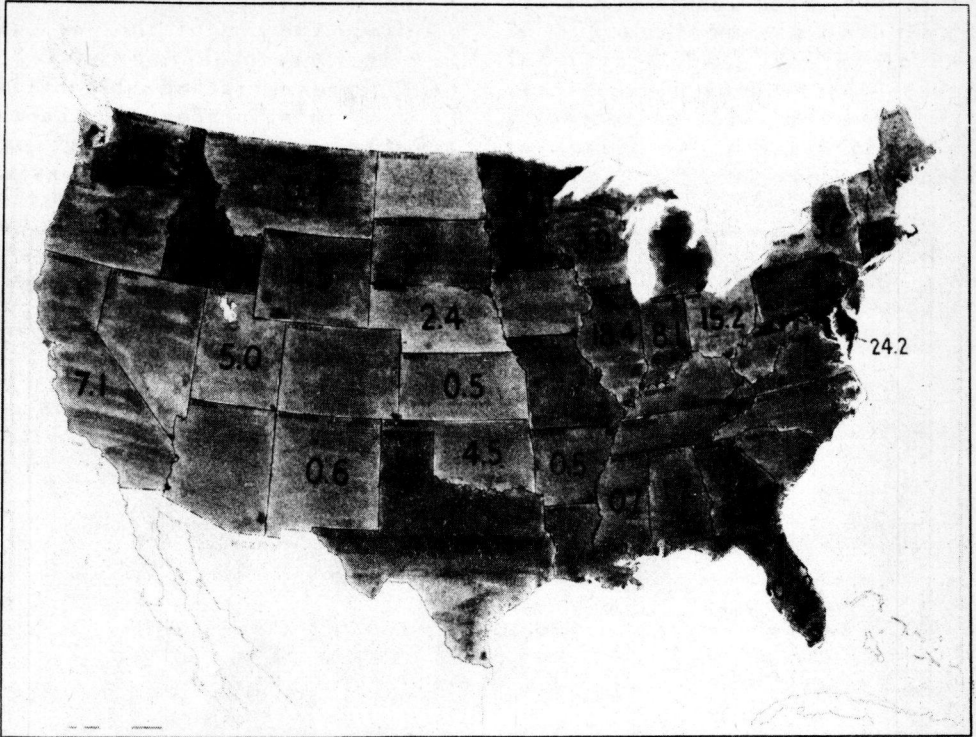


Chart 11. Distribution of state highway user taxes to local city streets ranged from zero percent to 24 percent in 1946.

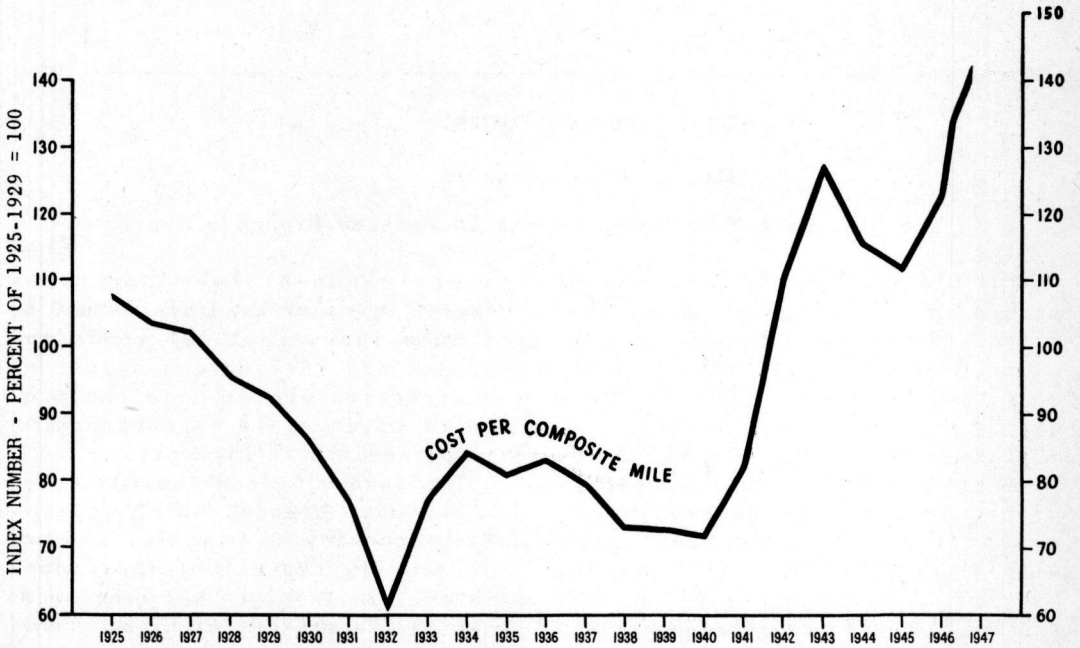
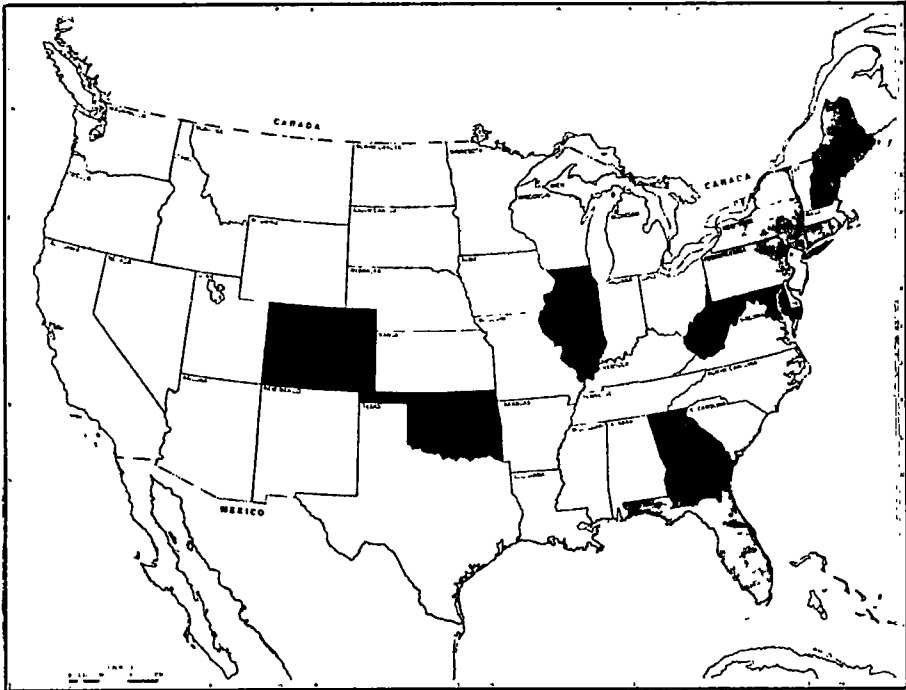


Chart 12. Highway Construction Costs 90 Percent Above 1937-1941

turn to toll roads, rather than to correct any mis-application of funds or to levy such additional taxes as may be proved necessary, is an expedient which could easily spread and destroy our system of public highways.

financing.

Since the end of the war, highway user revenues and Federal aid have increased rather substantially. Part of this increase is attributable to the drastic reduction in diversions of state highway user



 TOLL ROADS IN EXISTENCE

 TOLL ROADS AUTHORIZED

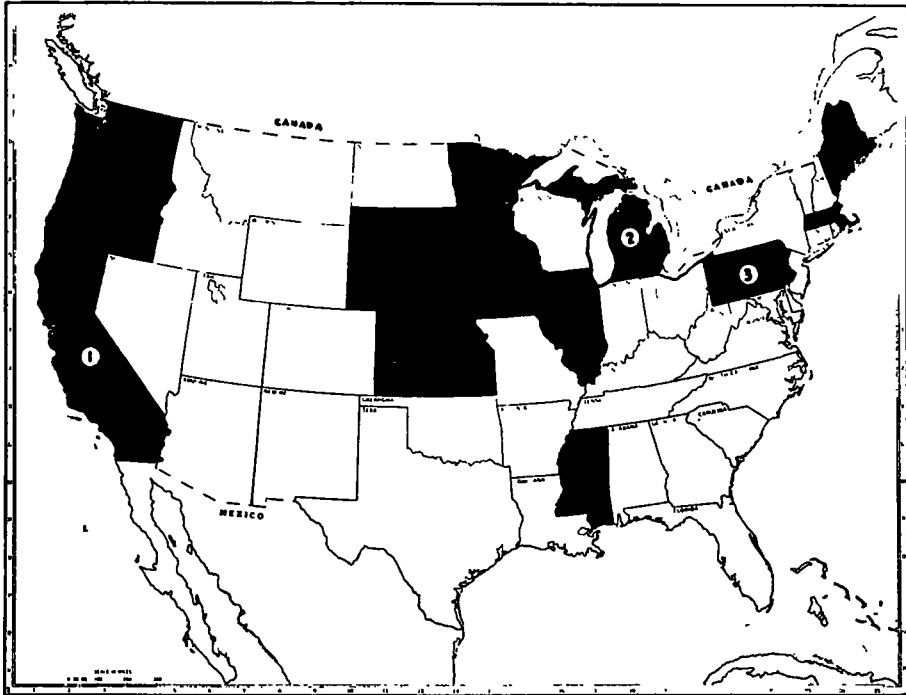
Chart 13. More Toll Roads Menace Interstate Highways System

The map in Chart 14 shows the 14 states in which highway study committees have been created. A complete discussion of highway study committees is presented in Mr. Kennedy's paper (see p. 57).

This paper has been a brief review of highway revenue and expenditure trends. In general, past expenditures have not kept pace with highway travel. As a result, many of the main highways in both urban and rural areas are congested and a substantial number of states are turning to the toll method of

taxes to non-highway purposes. However, the increased distributions of such funds to local roads and streets and the increased cost of construction are dimming the prospects of an early reconstruction of the needy main highways.

The foregoing conclusions based on national trends, which typical of the country as a whole, are not necessarily typical of individual states. In fact, it has been shown that in the mis-use of highway user revenue and in the authorization of toll roads, the situation varies



- 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