

REPORT OF DEPARTMENT OF HIGHWAY FINANCE

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TRENDS IN HIGHWAY FINANCIAL PRACTICES *

SYNOPSIS

As a guide to highway financial administration, this study of trends provides information concerning possible future income sources and expenditure needs. The discussion includes the trends in gasoline tax rates, registration fees, bonds, tolls, property taxes, Federal aid, diversion, State and local relations, and expenditures for highway transportation services.

It is concluded that gasoline tax rates may be expected to remain approximately stationary, pending the establishment of a definite highway expenditure program. Registration fees, on the other hand, show downward tendencies for passenger cars and an upward trend for trucks. The decreasing use of general obligation bonds is described, together with the growing popularity of highway revenue bonds secured solely by motor vehicle tax earnings, and of public revenue bonds for high-cost structures, secured by toll earnings. The extent of toll financing and its theoretical implications are investigated, revealing a limited place in highway transport of this method of payment. Property tax trends are discussed for both State and local levies, the former being generally reduced to zero, while the degree of local property support varies from zero in some States to considerable amounts in others. On the subject of "diversion," it is noted that although there was growing hostility to this practice in recent legislative sessions, the amount of highway user funds applied to non-highway purposes is expected to reach a new peak for 1939. Changing Federal policies are described, particularly the shift in emphasis to urban problems, and the generally increasing interest in highways from a national viewpoint. Recognition of the cities and local roads in State motor vehicle tax distribution is also described, a survey of State control over the expenditure of these funds revealing that States which have no control exceed those which do, and that many States having legal control find such laws ineffective. Finally, data are presented to show the trend toward increasing expenditures for motoring convenience and safety, and the problem of providing a higher quality of urban highway service is outlined, particularly with reference to the provision of parking facilities.

The report concludes that since many so-called "principles" of highway finance evolve through expediency and legislative fiat, it is important to watch financial trends, and if necessary to challenge them, before they become accepted practice.

Altering financial practices make contemporary highway history a kaleidoscope of ways and means. For since the automobile first revealed itself as a factor in road finance, changes in income sources and expenditure needs have developed more rapidly than statistics to describe them or theories to interpret them. It is an important aid to enlightened highway administration, however, that new developments in financial policy should be anticipated and their probable effects evaluated, in order that

actions may be directed with approximate knowledge of future income and future requirements. More fundamentally, since highway financial developments have for the most part evolved through expediency, legislative fiat and the pressure of special interests, financial evolution must be watched, and if necessary challenged, before simple expedients become ruling principles.

The present discussion of trends is primarily a watch, but also a challenge. It attempts to indicate financial princi-

* Prepared for the Department by Wilfred Owen, Research Economist, Highway Research Board.

ples in the making and in the unmaking, to permit better judgment in financial planning and greater scrutiny of financial practices. Source material has not been confined to statistical account of what has already occurred, but has been based primarily upon bills introduced and laws enacted in recent State legislative sessions, as well as upon up-to-date literature, and recent expressions of public opinion.

Trends in highway transportation are often indistinct and seldom universal. Moreover, the fact that they are subject to shift is only proof of the financial mutability which this study of trends has sought to demonstrate. Such disturbing factors, however, are of no serious consequence in the present study, for its primary objective has not been financial prognosis, but rather something in the nature of a moral: that present and future highway policies do not evolve through economic truths or basic rights, but by the normal processes of legislation. Consequently, to the highway administrator, as expert witness, falls the duty of guiding financial policies rather than merely serving as their victim.

TREND IN MOTOR FUEL TAX RATES

Increasing Rates

The multiplication of motor fuel tax income has been the combined effect of increasing numbers of vehicles, greater annual mileages per vehicle and higher tax rates. The question considered here pertains to the tax levy and the extent to which future highway income may be expected to change as a result of altered rates.

Since the first tax on motor fuel became effective in 1919, there have been 124 rate increases in the various States. In 1923, out of 19 States which had previously adopted this method of finance, rate increases were effected in 13. In 1925 the tax was raised by 16 States, in

1927 by 22 States, and in 1929 by 20 States. Altogether the years prior to 1933 account for 110 of the 124 rate increases.

Resistance to Rate Changes

In contrast to this earlier persistence of higher and higher fuel taxes was the tenor of the 1939 State legislatures. These sessions yielded but one rate increase, and this a temporary levy to be effective for two years. At the same time legislative resistance to changing the tax one way or another was demonstrated by the failure of proposed increases in 15 States and the defeat of bills to reduce in at least 10. Since 1932, moreover, out of 330 bills introduced in State legislatures to increase gasoline tax rates, only 14 have passed. The year 1932 was perhaps the beginning of this successful resistance to rate increases, for it was then that a referendum to raise the fuel tax in Maine from 3 to 5 cents was voted down at the polls, while voters in North Dakota for the second time defeated a tax increase, and legislatures in both Massachusetts and New Jersey were likewise unwilling to sponsor higher rates.¹ Recently the people of Missouri voted against an increase in the fuel tax from 2 to 3 cents.

This trend toward stability of rates is demonstrated by a summary of tax increases in each four-year period since 1924. The number of times the tax was raised in the several States during those periods was as follows:

1924-1927	52
1928-1931	37
1932-1935 ..	13
1936-1939	6

Capacity to Pay

That the tendency toward fewer increases in motor fuel tax rates will be

¹ Motor Fuel Taxation in the United States by Finla G. Crawford, 1939.

continued is an opinion not devoid of factual support. For there are several altered circumstances to be considered at the present time which were absent or relatively inoperative during earlier years, and which may readily affect gasoline purchases. In the first place, declining gasoline production costs have ceased to cushion the effect of rising taxes on price, so that motorists can no longer afford indifference to gasoline tax policy. To illustrate, from 1920 to 1931 the price of gasoline without tax fell an average of 16 cents per gallon in 50 representative cities, so that in spite of constant State fuel tax increases, total gasoline prices fell from more than 29 cents per gallon in 1920 to 17 cents in 1931. Since that time, however, gasoline prices have been comparatively stationary or upward, the average 1937 service station price in the same 50 cities being 1½ cents higher than that quoted in 1931, and the price with tax included being 3 cents higher.

The fact that future tax increases are more likely to be reflected in gasoline prices, moreover, is economically of much greater significance today than it would have been in earlier years. The extension of vehicle ownership to lower income groups through easy payment plans and used car bargains has rendered the gasoline consumption bill a primary item in the auto budget. Today the so-called "marginal" group of motorists is much larger and more sensitive to small changes in operating costs, and with total unit transportation costs lower, gasoline payments loom larger as a percentage of the whole.

Willingness to Pay

Not only is the growing importance of paying capacity a deterrent to higher tax rates, but also the factor of willingness to pay. Growing realization that motor vehicle revenues may be spent for general purposes of government has aroused an

opposition to motor fuel taxes which the former practice of earmarking such funds for highways had generally obviated. Tardy recognition that some city streets are an integral part of the highway transportation network and as such entitled to consideration in the expenditure of user revenues has also fostered urban hostility to the tax.

In addition to these deterrents to any further general increases in motor fuel taxation, considerable opposition to the tax has been created as a result of pressure brought to bear by organizations interested directly or indirectly in highway transportation. The motorist has been somewhat depressed by the information that he pays in excess of a billion dollars a year in taxes. He is then reminded of the modest size of his weekly salary, with the consequences that distinctions between motordom and martyrdom are rather uncertain. Without commenting on the extent to which such pronouncements may be defended on economic grounds, it is undeniable that future attempts to increase highway revenues by user charges must reckon with this type of opposition.

Fuel Tax Reductions

To speak of motor fuel tax reductions calls for some imagination, for there are few examples of such action and these have involved the reduction of temporary taxes only. It has been noted, however, that in the 1939 legislatures 10 bills for decreasing the motor fuel tax were voted upon, and although they were defeated they are perhaps an indication of what may be expected.

Resistance to gasoline tax reductions is comprised of more than the natural reluctance of legislative bodies to cast aside a profitable source of revenue. Many States, for example, have already assigned a large part of their gasoline tax revenues to the service of State and

local debt. Sixteen States now dedicate more than 20 per cent of such monies to debt payments, and in seven States over one-third of all gas tax receipts go for this purpose. With increasing amounts of the gasoline tax being distributed to local units of government, moreover, it is hardly conceivable that rate reductions could be effected in States where the municipalities are not yet satisfied with the present plan of distribution. The pressure of local units for more State funds may also be expected to continue aggressively in those States which are most dependent on gasoline tax receipts as a result of property tax reductions. Another possible barrier to lower gas tax rates is the growing tendency toward lower registration fees.

Not all the evidence precludes the possibility of gasoline tax reductions, however, for circumstances as well as tax rates differ considerably among the States. Increasing revenues, decreasing debt service and reductions in diversion might provide the setting for lower road user charges on gasoline, particularly in high-tax States.

Temporary Taxes

While resistance to any increase in motor vehicle taxes was evident in the 1939 State legislatures, there were no successful attempts to permit the expiration of temporary increases which had previously been voted for emergency purposes. There are now 12 States which levy temporary motor fuel taxes. The proceeds of these taxes are wholly for non-highway purposes in 4 States, for highway purposes in 5 States, and for both purposes in 3 States. In 6 States the levies expired and were renewed in the recent legislative sessions, one State extending the period for another year and the other 5 for two years. In one State the tax was continued indefinitely by the 1937 legislature, while in another the emergency is expected to pass in

1954. It appears that while only "temporary" increases can be passed under current conditions, the difficulty of getting along without this revenue may prevent a return to the original rate.

Federal Excise Tax

The Federal excise tax on gasoline, enacted as part of the Revenue Act of 1932, was also in the nature of a temporary measure, being adopted for one year instead of the two-year period applying to other levies of the Act. An extra $\frac{1}{2}$ cent tax effective for 6 months in 1933 was permitted to expire, but the 1-cent levy has been maintained. Its latest renewal occurred in the present Congress, the extension being until 1941.

The Interstate Commission on Conflicting Taxation has several times advocated that the Federal tax be discontinued in order that the States might retain this field of taxation exclusively. Recognition of the gasoline tax as a State revenue source for highway purposes was also translated into a resolution by the Council of State Governments, and since the Federal tax was enacted, the legislatures of approximately 25 States have memorialized the Congress to refrain from voting such impositions.

Many persons who have abandoned the hope that the Federal gasoline tax will ever be discontinued have also abandoned the original thesis that the tax is an excise for general purposes of government, and instead have preferred to consider it a permanent source of revenue for Federal highway grants-in-aid. This view has been expressed at the recent Annual Meeting of the American Association of State Highway Officials, which passed the resolution that Congress should be urged to authorize the expenditure of all Federal income from highway users for highway purposes.²

² A National Tax Association Committee on Highway Finance, Jacob Viner, Chairman,

Other Gasoline Taxes

The Federal government is not the only jurisdiction which has adopted gasoline taxes as a source of revenue. Many counties, and cities in eight States, have levied their own motor fuel taxes. The unproductive nature of these collections and their high administrative cost and nuisance value, however, have discouraged their general application. In the 1937 and 1939 legislatures several counties in Alabama and cities in Florida were empowered to raise revenue in this manner, but apparently there was no further spread of municipal and county taxes. On the other hand, in Missouri, where local gasoline taxes are levied by 60 municipalities, plans are now under way to seek a constitutional amendment to increase the State gasoline tax from 2 to 3 cents, with the proviso that municipal gas taxes shall be abandoned. This will probably be voted upon at the November elections, 1940. Also in New Orleans the municipal gasoline tax of 2 cents per gallon has recently been repealed by the City Council. In view of such developments, and because of the inherent administrative weaknesses of local motor vehicle taxes, it is unlikely that this method of highway finance will long survive.

Fuel Tax Trend: Conclusion

On the basis of past trends, legislative action and current public opinion, it appears that for the time being the highway administrator can expect few changes in motor fuel tax rates. The stage, it seems,

advanced the opinion in 1924 that "the Federal government should derive the revenues which it devotes to highways from the special taxation of highway users," except to the extent that such aid may be for national defense or the opening of undeveloped regions. In addition this Committee stated that "the Federal government should not levy taxes on motor vehicles as such in excess of what it spends on highways.—National Tax Association, 17th Proceedings, 1925, p. 426.

is set for a studied demonstration by the highway departments of the financial needs which the attainment of given highway standards indicate. In the current deadlock between pressure to decrease taxes and pressure to increase them, the establishment of thoughtful guides to the highway expenditure program might well tip the scale for more rational tax rate determination.

TREND IN REGISTRATION FEES

Past Trend

Methods of highway user revenue collection have undergone a rapid shift in

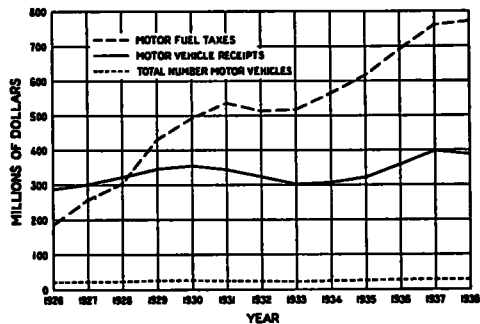


Figure 1. Receipts from State Imposts on Highway Users

emphasis. In 1926, motor vehicle registration fees produced \$100,000,000 more than the motor fuel tax, and constituted 60 per cent of all highway receipts from motor vehicle users. (See Fig. 1 and Table 1.) By 1938, however, these fees amounted to nearly \$400,000,000 less than fuel tax receipts, and constituted but a third of total user revenues.

The average payment of registration fees per motor vehicle in 1926 was approximately \$13. In 1938 this average figure was still the same, in spite of the increase in number of heavy vehicles. It is indicated, therefore, that in general the average rate of passenger car registration fees has been on the downward

trend. It is true, however, that the situation differs in each individual State, with average 1938 registration fee payments for all vehicles being less than \$8 in seven States and more than \$18 in eight States. Extremes were Georgia's \$4.56 average and Vermont's \$27.06.

TABLE 1

STATE IMPOSTS ON MOTOR VEHICLE USERS,
1926-1938

Year	Motor vehicle receipts ¹	Motor fuel taxes ²
1926.....	\$288,282,000	\$187,603,000
1927.....	301,061,132	258,839,000
1928.....	322,630,025	304,872,000
1929.....	347,843,543	431,312,000
1930.....	355,704,860	493,865,000
1931.....	344,337,654	536,397,000
1932.....	324,273,510	513,047,000
1933.....	301,315,497	518,195,000
1934.....	307,260,000	565,027,000
1935.....	322,974,000	616,851,000
1936.....	359,783,000	691,420,000
1937.....	399,613,000	761,998,000
1938.....	388,825,000	771,764,000

¹ Total receipts, including miscellaneous licenses, fees and fines. Data from Public Roads Administration, Tables MV-2.

² Net receipts after deduction of refunds and taxes paid on aviation gasoline. Data from Public Roads Administration, Tables G-1.

Recent Legislation

A review of recent statutes dealing with motor vehicle registration rates is rendered exceedingly difficult by the complexity of registration laws. Changes in the bases of the fees as well as in the rates, and the enactment of special laws for particular classes of vehicles, make it doubtful whether the net result for any special type of vehicle is higher or lower, and whether the general trend is up or down. Study of the laws emerging from the past few State legislative sessions on this subject reveals that a large volume of enactments are unimportant. However, there have been several indications that recent developments have been toward generally lower registration fees.

During 1933, passenger car fee reductions were passed in 8 States and private truck fees were reduced in 5. Legislative action was taken by 33 States in 1933, and the results show 6 States having increases, either in whole or in part, and 16 having decreases.³ Slight reductions were passed in 1937 for private vehicles in 3 States and for trucks in 2, while major increases in truck rates were enacted in 7 States.

Legislation in 1939 also resulted in many bills of minor importance. However, increases were levied on trucks and busses in Nevada, on busses in Tennessee, and on heavy trucks in Vermont, while Delaware made reductions in passenger car fees, and Idaho and Wyoming lowered the fees on both automobiles and trucks.⁴ A Missouri bill proposing a 50 per cent reduction in passenger car rates combined with a one-cent gasoline tax increase was defeated. This attempt, however, as well as the successful reduction of Idaho passenger car fees to a flat \$5, coupled with a redistribution of the gas tax, represent a fairly widespread movement toward a low flat fee and increasing dependence upon gas tax revenues.

Deferred Registrations

Probably of greater importance than any other legislative developments concerned with the registration fee has been the enactment of bills deferring the motor vehicle registration date. This practice was first introduced in the State of Maine, which in 1932 changed its registration date from January 1 to March 1 in an effort to encourage all-year use of motor vehicles by assisting the motor-

³ These figures both include four States which increased fees in some classes and reduced them in others.

⁴ Changes made in carrier taxes for regulation rather than revenue have been omitted in this discussion.

ist to keep his car on the road during the winter. For it had been generally observed that the combination of inclement weather and post-holiday pocketbooks exerted strong pressure on the motorist to leave his car in the garage. The resulting idle capacity of transportation facilities meant financial loss to the State not only through unpaid registration fees, but also through consequent reduction in gasoline tax receipts.

The success of the Maine experiment in decreasing unused capacity by recognizing the financial convenience of the motorist was expressed by a 22 per cent increase in gasoline tax receipts for January and February 1932 over 1931. This increase resulted in spite of a 5 per cent reduction in receipts for the year as a whole. Favorable results were experienced in following years, and in 1937 the State attributed the collection of approximately \$150,000 additional gasoline tax receipts to the deferred registration plan.

Although winter weather is not so important a factor to the motorist in the southern States, the experience of South Carolina illustrates that considerations of ability to pay are alone sufficient to warrant more careful selection of the time of vehicle registration. In South Carolina the convenience of farmers was served by changing the registration date to October 31, when the sale of crops creates more cash on hand. Since 1933, when the new plan was inaugurated, there has been a marked increase in the number of cars registered during the early months of the year, and gasoline tax receipts have increased approximately 20 per cent.

Previous to the 1939 legislative sessions, 18 States had provided for registration dates other than January 1, most of them April 1. In 1939 further extensions were provided in 7 States, 4 on the first of April, one on the first of March,

and another on the first of November, bringing the total to 25 States. Bills were defeated, however, in 5 States and vetoed by the governor in another. In addition to the States with deferred registration dates, 16 have periods of "grace," and one issues half-year plates.

This universal trend toward minimizing the burden of the registration fee, while doubtlessly adding acceptability to that type of charge, at the same time provides evidence of waning enthusiasm for financing highways by means of burdensome lump payments exacted so far in advance of actual road use. If the gasoline tax were collected in the same way, to cover the total charge for a year's highway service, such an outright payment would be quite certain not only to arouse opposition, but to restrict the utilization of highway facilities. For the average annual gasoline tax paid per vehicle is \$26 for the country as a whole, and in 8 States amounts to \$45 or more.

Registration Fee Trend—Conclusion

It is indicated, therefore, that while a continued trend toward registration fee reductions appears likely for passenger cars, development in deferring or budgeting registration payments may be expected to temper this movement. In the case of trucks and busses, no large-scale reductions are indicated in the near future, and the possibilities of further increases are not remote. It is to be anticipated also that the amount of fees collected will constitute a progressively smaller part of total highway user contributions.

The perplexity arising from analysis of motor vehicle registration laws arouses the hope that less complicated statutes may emerge from future legislation. Multiple classifications of vehicles, diverse bases and combinations of bases, and confusion between cost-of-service and value of service principles yield solu-

tions to the vehicle tax question which often appear more challenging than the problem.

TREND IN BORROWING

The future of borrowing for highways is clouded both by limited data and conflicting trends. On the one hand there are no reliable compilations of State and local highway debt outstanding over a period of years. On the other hand recent disfavor of the general obligation bond for roads has grown simultaneously with enthusiastic endorsement of the highway revenue bond. The future of highway indebtedness, therefore, while a hazardous field for prophecy, is an interesting one for speculation.

A reasonably accurate figure of State highway obligations at the beginning of 1938 places total debt at close to \$2,000,000,000.⁵ An estimate of local road debt would be well over \$1,000,000,000. On the whole, however, it appears that the general highway obligations of both State and local jurisdictions are declining.

General Obligation Bonds

On the subject of State highway general obligation borrowing, it appears that in recent years the pay-as-you-go principle has become fairly well embedded in the financial matrix of a considerable number of States, and that reluctance to repeat large-scale general obligation borrowings such as were customary in the 1920's is fairly well established.⁶ This development has been accelerated by the transition from a pioneer period of new highway construction to the less spectacular requirements of maintenance and replacement. In addition, the growth in highway earning power and in Federal

highway grants has provided large amounts of current revenues to minimize the necessity for bond issues. On the other hand, it is possible that in some States the realization of highway needs may stimulate a new period of borrowing, and that this might be encouraged by prevailing low interest rates.

In the case of local highway debt, increasing awards of State motor vehicle revenues and Federal funds to local units of government have in many cases provided the financial relief which might otherwise have been sought through additional borrowing and refunding. At the same time tendencies toward State centralization have resulted in the lessening of local financial responsibilities in terms of reduced mileage and State assumption of local debt. Debt limits, tax limits, and the achievement of passable standards on large mileages of local roads have also promoted the continuing downward trend in outstanding local road obligations.

Revenue Bond Development

There are now approximately one billion dollars of public revenue bonds outstanding in the United States, half of these financing domestic service enterprises such as the furnishing of gas, electricity and water, and the other half being for highways, bridges and tunnels. Revenue bonds are issued by public bodies on the security of earnings from the project financed, without backing of the general credit of the State or resort to State taxing power. Practically nonexistent 15 years ago, these bonds have already won a place of significance in public finance. This popular acceptance may be attributed in part to the fact that revenue bond finance recognizes only the users of a service as responsible for its support, thus providing an extension of the benefit principle which has gained acceptance in the financing of highways. Also, since these bonds are issued only

⁵ Source: Public Roads Administration. A more complete study is now in process.

⁶ State highway debt, which increased 180 per cent from 1923 to 1931, increased only 4 per cent from 1931 to 1936. See Edna Trull, "Borrowing for Highways," Dun and Bradstreet, 1937.

for projects expected to pay their own way, support is given to the careful selection of economically sound projects. Expediency has been a further factor in the resort to revenue bonds, for the absence of any obligation to levy taxes for their redemption and the exclusion of such financing from the public budget have avoided the restrictions of tax and debt limitations.

Revenue bonds for highways issued by the States are secured by a lien on all or part of motor vehicle revenues. The year and amount of some of these revenue bond authorizations are as follows:⁷

Montana, 1931	\$4,500,000
Georgia, 1933	26,600,000
Maryland, 1934-1935	5,236,000
Colorado, 1936	25,000,000
Mississippi, 1936	60,000,000

In addition, many States issuing general obligation bonds service them entirely from highway user revenues, so that in practice these issues resemble revenue bonds in servicing methods.

Another form of revenue bond is that issued by a proprietary corporation or authority which issues bonds to the public on the security of tolls. These so-called agency revenue bonds have been used since 1926⁸ for bridges, tunnels, and recently for highways.⁹ A few of the most important agencies are the following, which are listed with the amount of bonds issued:¹⁰

California Toll Bridge Authority..	\$71,000,000
Delaware River Joint Commission	38,120,000
New York City Parkway Authority	18,000,000
Triborough Bridge Authority.....	35,000,000
Port of New York Authority... ..	196,834,000
Pennsylvania Turnpike	35,000,000

⁷ John F. Fowler, Jr., "Revenue Bonds," 1938, p. 36.

⁸ The Port of New York Authority issued bridge revenue bonds in this year for the Staten Island Bridges.

⁹ The 166-mile Pennsylvania Turnpike, now under construction.

¹⁰ B. J. VanIngen and Co., "Financing Public Improvements," 1939.

Other agencies in Washington, Kentucky, Delaware, Maryland, Missouri and Illinois have issued approximately \$40,000,000 in bonds.

Municipal revenue bonds have been confined for the most part to the provision of domestic services such as water supply and electricity, the possibilities of this method of finance for urban highway facilities having been generally undeveloped. The recent \$60,000,000 highway revenue bond issue for express roads in Chicago, however, may mark a new attempt to improve the traffic situation in metropolitan areas. California also made provisions for such undertakings in cities by passage in 1939 of the "Transportation District Act" providing for the organization and operation of transportation districts within two or more municipalities situated in one county, with power to establish comprehensive transportation plans, including freeways and elevated structures, and to designate methods of finance, including tolls.

There are now more than 60 bridges built and operated by agencies representing the public and financed by public revenue bonds. None of these is in default.¹¹ Revenue bond acts have been passed by nearly all the States, and although many of these are unsatisfactory, the trend toward better enabling legislation may be expected to continue. For "under present conditions it isn't as much a question as to whether the cost of needed public improvements shall be met by revenue bond financing or by general obligation bond financing; it is, rather, a question as to whether the project shall be financed by public revenue bonds or abandoned entirely."¹²

¹¹ For an excellent treatment of bridge financing, see Robert Klaber, "Bridge Revenue Bonds," 1939.

¹² L. R. Ayers, in "Financing Public Improvements," p. 128. B. J. VanIngen and Company, 1938.

Recent Provisions for Borrowing

In the 1937 and 1939 sessions of the State legislatures, the most important bills dealing with highway borrowing were authorizations for toll bridge and tunnel construction or acquisition, refunding issues, and temporary motor vehicle tax anticipation notes. Provisions for revenue bond financing of toll structures were passed in Alabama, Maine, Maryland, New York, Pennsylvania, New Jersey, Idaho and Indiana.¹³ New Mexico authorized \$10,000,000 of highway revenue bonds in 1937 and \$6,000,000 in 1939. In Illinois, permission granted to Cook County and Chicago makes possible a \$60,000,000 bond issue for a system of superhighways, to be repaid from the share of State motor vehicle revenues received by those jurisdictions. A small revenue bond issue was authorized in Idaho, while a projected \$35,000,000 revenue anticipation note issue in Oklahoma was declared unconstitutional. The 1939 Arkansas legislature provided for a referendum on the issuance of general highway refunding bonds not to exceed \$141,000,000, and Tennessee is also refunding county highway bonds to effect savings in interest. West Virginia in 1937 authorized \$10,000,000 of general obligation borrowing, while in New Jersey a proposal for general obligations totaling \$60,000,000 has just been abandoned. Maine voters recently defeated a proposed \$9,000,000 issue.

Several laws were passed this year restricting borrowing, such as in Iowa and Oregon, or providing for the servicing of outstanding debt by local units with shares of motor vehicle taxes. In fact, legislative action appears to be

largely concerned with clearing up errors and omissions in past borrowing provisions, and adopting with caution the newer practice of revenue bond financing.

Self-Liquidating Projects

In connection with revenue bond trends, recent highway financial developments have attached growing importance to the self-liquidating possibilities of various large-scale construction proposals. A considerable part of recent engineering and financial achievement has resulted from the application of self-liquidating principles as expressed by the revenue bond.

On the subject of self-liquidating projects and spending programs, the testimony of Professor Alvin H. Hansen of Harvard University before the Temporary National Economic Committee last May is of interest. Mentioning the proposed highway spending program and others, Professor Hansen made the following statement:

"Some public investments are self-liquidating in character. These offer no difficulty with respect to financing, and about these there can be, I think, no serious grounds for controversy. Yet, because of an obsolete system of public accounting, we have dumped even these expenditures into our ordinary budget and mistakenly counted ourselves poorer by reason of the public debt incurred to finance these projects."

It was further pointed out in this testimony, however, that there is danger in placing too much stress on self-liquidation, for many undertakings of the greatest social and economic importance, unable to pay their way directly, may be extremely useful and highly productive in an indirect manner.

Right of Way Problem

Further national interest in highway problems which may affect the trend in

¹³ Some of these revenue bond laws are described in the section of this report dealing with Toll Finance.

highway borrowing is that directed toward land acquisition. The obstacle to highway development created by difficulties incident to land purchase has made it necessary to seek some means of assisting the States and municipalities in financing the acquisition of adequate rights of way for present and future highway needs. In line with recommendations made by the Public Roads Administration this year,¹⁴ bills have been introduced in Congress which would authorize the Public Roads Administration to purchase or condemn land which it would sell back to the States and municipalities for highway purposes.¹⁵ Repayment to the Federal government would then be spread over a long period with Federal funds being realized through the sale of bonds by the Reconstruction Finance Corporation. The latter may also be authorized to make direct loans to the States and municipalities. This proposal will come before the next session of Congress, and if passed will result in a new type of long-term financing in the highway field.

Highway Borrowing Trend—Conclusion

Investigation of the trend in highway borrowing reveals a sharp distinction between that of general obligation bonds, which is down, and that of revenue bonds, which is sharply upward. For although in most States the stage of pioneer highway development has passed, and with it much of the pressure for general credit financing, at the same time the urgency of providing new high-cost facilities for heavy traffic and the demonstrated requirements of metropolitan transportation have created new de-

mands for credit. These factors have evidenced a growing acceptability of public revenue bonds as a method of satisfying present needs, and this acceptability from the viewpoint of highway administration has been complemented by the success of recent bridge and tunnel revenue bond projects in offering attractive opportunities for investment.

In considering the possibilities of bond issues in the future, the fact must be taken into account that many States are still carrying large debt service burdens from past borrowing programs, and that

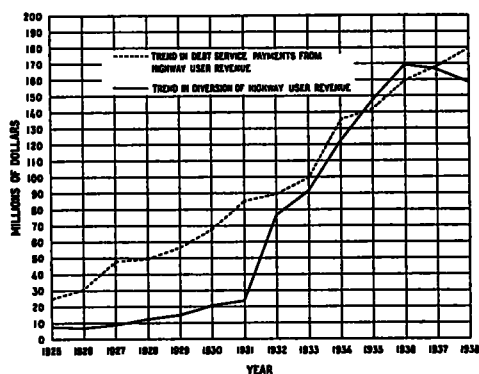


Figure 2. Diversion and Debt Service from Highway User Revenues 1925-1938

consequently it may not be possible at this time to dedicate larger amounts of highway user revenues to the service of indebtedness (see Fig. 2 and Table 2). From recent legislation it appears that further refunding issues may be expected as a means toward intelligent re-ordering of the present debt structure, and that short-term notes will continue to be issued on the basis of revenue anticipation. The chief development in the future, however, seems to be indicated for revenue bond issues, which, if not abused by overenthusiasm or thwarted by lack of satisfactory enabling legislation, may be expected to assume a leading role in long-term highway finance.

¹⁴ Toll Roads and Free Roads, House Document 272, 76th Congress, 1st Session, 1939, p. 114.

¹⁵ Companion bills S-2974 and H. R. 7533 introduced by Senator Hayden and Representative Cartwright.

TABLE 2
TREND IN DEBT SERVICE PAYMENTS FROM
HIGHWAY USER REVENUE,
1925-1938

Year	Total	Per cent of user revenue
1925.....	\$24,977,000	6.2
1926.....	30,513,000	6.4
1927.....	47,968,000	8.6
1928.....	49,446,000	7.9
1929.....	56,556,000	7.3
1930.....	67,359,000	7.9
1931.....	85,063,000	9.7
1932.....	89,738,000	10.7
1933.....	99,518,000	12.2
1934.....	135,536,000	15.3
1935.....	141,745,000	15.1
1936.....	159,132,000	15.0
1937.....	168,089,000	14.1
1938.....	179,905,000	15.3

TREND IN TOLL FINANCE

The Toll Principle

The use of toll payments to finance special high-cost facilities for highway transportation has received considerable attention during the past few years. Tolls are generally recognized today as being an equitable and expedient method of financing bridges and tunnels when their cost would otherwise prohibit construction. The toll principle, in fact, is embodied in the gasoline tax, which in reality is an adaptation of turnpike finance to "free" road finance. The collection of "tolls" through the State gasoline tax permits payment from large numbers of vehicles without collection difficulties or excessive administrative costs, and accommodates traffic on a system rather than on a single road.

The toll-gate is unsuited for any large part in the financial plan of modern highways. Transportation today must be swift and safe as well as convenient and economical, and while the toll in its proper sphere promotes these desirable qualities, on anything but a limited scale it would tend to interfere with them.

There is, however, a legitimate place for the toll structure in highway transportation in so far as it provides a desired super service. Theoretically, as long as the savings to the motorist by reason of his use of a toll structure are in excess of the toll payment plus motor fuel taxes generated in using the facility, there should be no economic objection to the special charge. No toll facility could be liquidated which did not offset the availability of a competing "free" road by savings in time and operating costs, and by increased convenience. For while the toll structure has often been branded a barrier to free highway traffic, in reality the barrier is not the presence of the toll but the absence of the bridge.¹⁶ "To assert positively that tolls have no place in the American road system would be just as indefensible as to say that tolls should be charged wherever there is lack of money or stress of traffic."¹⁷

In the use of tolls for financing self-liquidating projects, however, it should be pointed out that the criterion of self-liquidation as applied to the toll structure is not sufficiently inclusive. Considering the highways as a system, the earnings of a bridge consist not only of the revenue collected on the structure but also the motor fuel taxes generated on the whole system by traffic induced by the bridge.

Considerable controversy has arisen with regard to the collection of tolls on the parkways in Westchester County, New York, and on the Merritt Parkway in Connecticut. Thought should also be directed, however, to the circumstances which have given rise to the imposition of these tolls. In Connecticut, the popularity of the Merritt Parkway may constitute evidence of the dangers and in-

¹⁶ D. B. Steinman, American Toll Bridge Association, *Proceedings*, 1935, p. 56.

¹⁷ Editorial, *Engineering News-Record*, October 26, 1939, p. 41.

conveniences of alternate Route 1. On the other hand, the high cost of the Parkway which required resort to the extra toll charge may be a symptom of failure to provide a long-range plan of land acquisition or appropriate financial methods for purchasing expensive rights of way.

In the case of the tolls in Westchester County, an important consideration may be the fact that in New York the use of \$73,000,000 of State motor tax payments for general purposes and the denial of appropriate shares of highway aid to heavy-traffic metropolitan areas have created a need for the adoption of additional highway revenue-raising methods. However, Westchester was restrained from collection of the 10 cent toll on the Hutchinson River Parkway by court order in November 1939, on grounds that the Parkway is a link in an important interstate system and hence that local imposition of tolls is illegal. An appeal will be made and a stay of injunction sought. A decision of the New York Supreme Court had previously denied an injunction on the grounds that "... the exaction of a modest fee from those who seek the benefit of a luxurious park system, constructed at enormous expense to the county and its taxpayers, would seem to be eminently reasonable."

Extent of Toll Facilities

The Committee on N.R.A. Code for the toll bridge industry¹⁸ reported in 1933 that there were 312 toll bridges in operation, of which two-thirds were privately owned. Total assets were estimated at \$832,000,000 and gross revenues at \$59,000,000. The latest survey of toll structures was made by the U. S. Public Roads Administration, which listed 241 toll bridges and 5 tunnels in the United States as of December 31, 1938, more

than 100 of these being publicly owned. At that time 6 more bridges were under construction and during the early months of 1939 at least 11 bridges were made free.

Federal Government and Tolls

In recent years the Federal government has been actively interested in the subject of tolls as a means of financing highways and bridges. When the Reconstruction Finance Corporation was created in 1932, authority was granted to provide loans for public and privately-owned toll bridges of a self-liquidating nature. In the following year the Public Works Administration was created and empowered to provide both loans and grants to public bodies for constructing publicly-owned toll bridges. Under these Congressional authorizations \$158,000,000 of loans and grants had been made by the early part of 1938, of which \$145,000,000 were loans.¹⁹

Further Federal interest in toll finance was expressed in the Federal Aid Highway Act of 1938, which provided that a report be submitted by the Bureau of Public Roads on the feasibility of certain transcontinental superhighways and of a toll system on such roads. The resulting study led to the conclusion that "since a liberal estimate of revenue for the period 1945-60 is less than 40 per cent of a conservative estimate of debt service, maintenance and operating costs for the same period, a toll system on the roads selected . . . is not feasible."²⁰ It was noted, however, that the indicated failure of the system as a whole to be self-liquidating through user tolls did not preclude the possibility of successful toll financing on particular sections of road on the system, although it was estimated

¹⁹ American Toll Bridge Association, *Proceedings*, 6th Annual Convention, 1938, p. 83.

²⁰ Toll Roads and Free Roads, House Document 272, 76th Congress, 1939, p. 86.

¹⁸ American Toll Bridge Association, *Proceedings*, 1934, p. 13.

that even by 1960 only 300 miles would earn cumulative revenues sufficient to cover costs.

Later in 1939 the Federal government again considered the subject of toll structures in connection with the Administration's proposals for a program of loans for self-liquidating toll roads, bridges, high-speed highways and city by-passes. This spending program, however, was rejected by the Congress.²¹

On the other hand, in keeping with its policy of advocating "free" roads except where special circumstances favor the use of tolls, the Federal government in 1937 passed an act to aid the States in purchasing toll bridges on the Federal aid system for the purpose of making them free. Payment up to 50 per cent of the reasonable worth or construction cost of any toll bridge was authorized out of Federal aid funds. In 1939 the eligibility date under this Act was extended by Congress to July, 1941.

Public Opinion on Tolls

In connection with proposals for the financing of Federal superhighways by tolls, the American Institute of Public Opinion conducted a survey in March, 1938, to determine the reaction of vehicle owners to the payment of extra charges for the use of special high-speed roads. Referring to the longest trip made by each motorist during the previous year, the Gallop poll asked whether a charge of one cent or half a cent per mile would have been paid for making the trip on such "super" roads. The survey answers revealed that 27 per cent of car owners would have paid one cent, and 39 per cent would have paid half a cent.

The fact that these questions had reference to the motorist's longest trip creates speculation as to what answers

might have been given with regard to toll bridges, tunnels, and special highway facilities to alleviate metropolitan congestion. However, the significance of the replies seems to lie in the widespread acceptance of the toll principle by motor vehicle owners. Moreover, the largest number of persons interviewed said that safety considerations alone would make them use toll highways, with the next two desirable factors being time saving and relief from strain. It appears to be a reasonable assumption that such considerations would play a large part in the willingness of motorists to pay for better highway service in urban areas if they could get it.

State Toll Legislation

Increasing interest in toll financing has been evident in recent sessions of the State legislatures. In the 1937 sessions Alabama extended the powers of a corporation which it had created in 1935 for the purpose of freeing Alabama highways of toll bridges, the additional authority permitting the issue of bonds for this purpose. Maryland repealed a 1935 Act which had permitted the charging of tolls on certain bridges financed by a 1935 bond issue, at the same time authorizing the State Roads Commission to formulate a comprehensive plan for the construction of bridges and tunnels to be paid for solely through earnings. Georgia authorized local units of government to operate toll structures, while Michigan enacted the provision that all toll facilities should be made free as soon as indebtedness had been paid off. New York State authorized the building of a tunnel under New York Bay from Richmond to Brooklyn, and another underneath Manhattan. In Pennsylvania the Secretary of Highways was granted the power to acquire toll bridges by bond issue, and the State also approved a 166-mile toll road. In New Jersey the Gloucester

²¹ Further consideration of self-liquidating projects is contained in the section of this report dealing with Trends in Borrowing.

County Tunnel Act provided for construction of a toll facility under the Delaware River. In general, 1937 toll legislation reveals a recognition of toll payment for financing high-cost structures, and a tendency away from smaller toll facilities which hamper the "free" movement of traffic.

Increasing interest in toll finance was evident to even greater degree in 1939 State legislation. Many States established special commissions to acquire or to operate toll structures. Some of the laws passed in 1939 are the following:

Arkansas: Authorizes the highway commission to maintain a highway toll bridge across rivers or waters bordering the State. Another bill appropriates \$120,000 for purchase of privately-owned toll bridges.

Nebraska: Appropriates not more than \$63,000 to complete the purchase of any intrastate toll bridges on the Federal or State system.

Idaho: Enacts the "Toll Bridge Acquisition Act" creating a Toll Bridge Committee composed of the governor and 4 members, to acquire toll bridges. Authorizes the issuance of not exceeding \$500,000 in treasury notes for this purpose.

Indiana: Creates the Indiana State Toll Bridge Commission to construct and acquire highway bridges over rivers on the State boundaries. The Commission is authorized to issue bridge revenue bonds and collect tolls.

Connecticut: Imposes tolls on the Merritt and Wilbur Cross Parkways, the charge being 10 cents per vehicle or an annual fee of \$10 for each Parkway or \$15 for both.²²

Pennsylvania: Authorizes the Depart-

ment of Highways to lease from the General State Authority any bridge on the State system, to be operated as a toll bridge. Another bill provides for the freeing of all toll bridges acquired by the Department which have cost less than \$30,000.

California: Enacts the "Transportation District Act" to permit municipalities to undertake joint plans and finance transportation facilities with tolls.

Michigan: Repeals the Public Acts of 1909 which provided for toll roads.

While 1939 laws in some cases provide for the freeing of toll structures, the extent to which provision is made for the construction and operation of toll bridges emphasizes that such facilities have a recognized place in present-day systems of highway transportation. With growing need for high-cost traffic structures in metropolitan areas and greater resistance to increasing motor vehicle taxes, it is not unlikely that the special toll-financed facility will continue to maintain its modern applicability. For the toll payment today is not simply a means of obtaining money, but a means of getting a job done. If it is used with discretion there can be no logical cry about the demise of the "free" road. For as Mr. H. S. Fairbank has aptly put it, "freedom" of the highway describes "a condition of the use of the public roads, not a condition of cost."²³ Whether we pay for highways directly or indirectly is a matter of financial practice. To go without necessary transport facilities in the name of the "freedom" of the road is no way to arrive at a destination.

Toll Trend—Conclusion

Whereas the toll was once considered a nuisance charge or evidence of monopoly contrary to public interest,

²² The charging of special license fees for commuters making regular use of toll facilities is an interesting possibility for correcting some of the administrative objections to toll facilities. It is understood that several cities are now considering the adoption of such methods.

²³ "A Highway Program for the United States," presented at the Interstate Conference on Automotive Taxation, October, 1939.

today this method of finance has come to be recognized as an equitable and expedient extension of the benefit principle to the problem of paying for high-cost special service on the highway. As an extraordinary income source its acceptability has paralleled the growing resort to revenue bonds issued for necessary improvements which might otherwise be impossible to attain.

The question of toll popularity in the future depends upon whether the achievement of costly super-service roads and structures demanded by the motor vehicle will continue to remain outside the possibilities of ordinary financial methods. To a certain extent the answer is dependent upon the degree to which other highway financial and administrative problems are successfully settled. For the use of tolls depends in part upon the availability of other revenues and the extent to which the latter are made to yield acceptable standards of highway transportation. But it also appears that the toll is assured a special applicability independent of other financial policies, as an extra charge for service beyond that provided generally from ordinary user revenues.

TREND IN PROPERTY TAX SUPPORT

State Systems

The combination of depressed real estate values, increased motor vehicle tax revenues and concerted effort on the part of property owners has resulted in a widespread decline of the property tax as a source of highway revenue. For the nation as a whole, this downward trend is universal for the State highway systems. State property taxes for roads totaled \$34,739,000 in 1921, \$10,884,000 in 1932, and in 1938 less than half a million (see Fig. 3 and Table 3).

The tremendous growth in motor vehicle traffic on the State highway systems

and the consequent productivity of motor vehicle charges have had much to do with acceptance of the principle that property taxes should no longer be considered a source of primary State highway income. For although the main road may be of considerable benefit to property, its chief function is not land service but traffic service.

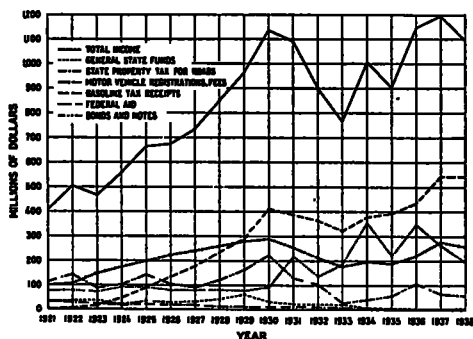


Figure 3. State Highway Income 1921-1938

Secondary and Local Roads

The decline in property tax contributions, however, has not been confined to main roads. In many States property support of other rural roads has also shown startling downward trends. In 1930 the contribution to local roads from property taxes and local appropriations, mostly from property, was close to half a billion dollars, or 60 per cent of all local road income. In the following years of depression, however, the amount of local road property taxes in a number of States was reduced abruptly. For example, in the State of Washington property tax levies for local roads totaled \$8,072,000 in 1931 and only \$1,396,000 in 1936. California's experience has been similar, with county road tax levies falling from \$8,075,000 in 1931 to \$1,393,000 in 1937. In 1938, however, receipts increased to \$2,451,000. The Michigan experience has been more spectacular than either California or Washington, town-

TABLE 3
STATE HIGHWAY INCOME¹, 1921-38

Year	Total income ²	General state funds	State property tax for roads	Motor vehicle registrations, fees	Gasoline tax receipts	Federal aid	Bonds and notes
1921.....	\$ 405,973,946	\$34,981,680	\$34,739,197	\$100,232,835	\$ 3,358,988	\$ 77,456,687	\$114,804,202
1922.....	504,713,429	35,855,278	29,975,825	107,715,649	5,396,677	79,741,492	143,004,141
1923.....	467,540,849	37,461,579	24,348,478	147,075,966	15,872,884	72,343,401	88,186,784
1924.....	555,397,045	20,084,324	18,282,878	174,816,973	47,810,615	91,400,832	101,653,327
1925.....	664,424,571	33,390,642	21,489,004	199,845,163	89,328,340	92,180,406	141,402,022
1926.....	673,208,430	29,868,048	18,278,994	224,551,631	134,303,154	79,163,201	103,846,301
1927.....	733,840,751	30,794,645	18,769,561	239,955,128	176,769,657	80,159,671	90,979,230
1928.....	849,326,598	42,468,386	11,955,782	259,134,820	234,163,826	80,798,365	121,483,599
1929.....	961,807,038	60,305,631	11,431,349	278,092,734	287,258,416	77,572,691	161,229,297
1930.....	1,136,673,437	32,136,298	11,181,693	289,801,738	411,109,446	92,462,836	222,288,308
1931.....	1,092,636,635	22,502,574	12,935,109	253,402,734	386,182,600	218,073,818	130,613,678
1932.....	898,317,794	20,703,283	10,894,756	211,321,285	363,368,041	136,857,174	104,649,840
1933.....	764,264,132	20,299,602	7,413,721	176,817,169	321,413,833	185,643,882	27,975,062
1934.....	1,005,960,000	6,456,000	4,709,000	195,071,000	376,630,000	354,812,000	40,969,000
1935.....	902,010,000	5,914,000	1,929,000	188,433,000	392,658,000	219,381,000	55,883,000
1936.....	1,145,590,000	3,756,000	1,377,000	219,088,000	434,876,000	346,281,000	106,235,000
1937.....	1,195,625,000	2,210,000	775,000	276,840,000	542,813,000	262,762,000	65,009,000
1938.....	1,096,908,000	5,473,000	489,000	256,817,000	542,638,000	196,826,000	57,505,000

¹ Data compiled by the Public Roads Administration, Tables F-1 (1921-33) and SF-1 (1934-38).

² This column includes certain miscellaneous current revenues and transfers from local units not listed in the other columns.

ship and county property taxes having declined from \$24,430,000 in 1929 to \$1,070,000 in 1937 (see Fig. 4 and Tables 4a, 4b, 4c). Reduction in Wisconsin has been from \$18,580,000 in 1930 to \$4,493,000 in 1935.

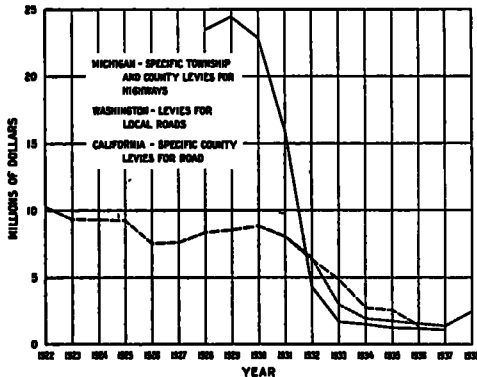


Figure 4. Local Property Taxes for Rural Roads—(Michigan, solid line; Washington, broken line; California, dotted line).

TABLE 4a

PROPERTY TAX TREND—CALIFORNIA ¹

Specific County Tax Levies for Road Construction and Maintenance

Year	Number of counties making levies	Total levy
1931.....	56	\$8,075,000
1932.....	55	6,455,000
1933.....	47	2,975,000
1934.....	37	1,910,000
1935.....	35	1,729,000
1936.....	34	1,559,000
1937.....	34	1,393,000
1938.....	38	2,451,000

¹ "Highway Facts," California State-Wide Planning Survey, 1939, p. 38.

Where motor vehicle revenues are of considerable magnitude, where the State has either assumed control of large rural road mileages or adopted a generous subvention policy, and where highway facilities are relatively adequate, conditions have been favorable to the passing of the property tax as a source of rural road income. Such has been the case in North

Carolina, Virginia, West Virginia and Delaware, in which States centralization has been a prime factor. It is also apt to be true of States where all motor vehicle taxes are used for highways.

TABLE 4b

PROPERTY TAX TREND—MICHIGAN ¹

Specific Township and County Property Tax Levies for Highways

Year	Total levy	Per cent of 1928
1928.....	\$23,480,000	100.0
1929.....	24,430,000	104.0
1930.....	22,860,000	98.4
1931.....	15,920,000	68.0
1932.....	4,220,000	18.0
1933.....	1,680,000	7.2
1934.....	1,490,000	6.3
1935.....	1,210,000	5.2
1936.....	1,180,000	5.0
1937.....	1,070,000	5.0

¹ Michigan Highway Planning Survey

TABLE 4c

PROPERTY TAX TREND—WASHINGTON ¹

Property Tax Levies for Local Roads

1922.....	\$10,281,000
1923.....	9,376,000
1924.....	9,323,000
1925.....	9,263,000
1926.....	7,556,000
1927.....	7,603,000
1928.....	8,396,000
1929.....	8,536,000
1930.....	8,852,000
1931.....	8,072,000
1932.....	6,366,000
1933.....	4,872,000
1934.....	2,702,000
1935.....	2,557,000
1936.....	1,396,000

¹ State of Washington, Highway Cost Commission, Supplemental Report, 1937, p. 108.

Property taxes, however, are still an essential item in the highway budgets of a large number of States. In Iowa, 1935 highway property taxes of \$9,800,000 exceeded gasoline tax receipts and constituted more than a third of net direct expenditures for roads and streets. Kansas property taxes amounted to

\$7,200,000, while motor vehicle taxes contributed \$11,600,000. In Missouri, likewise, nearly \$8,000,000 from property were but two million less than collections from the gasoline tax.

Trend in Nine States

Surveys of highway finance in 1930-1932 conducted by nine States in co-operation with the Bureau of Public Roads provide evidence of the extent to which property levies were then relied upon in those States.²⁴ Data summarized in the 1936 Report of the Department of Finance²⁵ revealed the following amounts of property taxes available for rural highways:

System	Property taxes	Percent of total direct expenditures on systems
State highways...	\$ 9,829,000	7
County roads....	69,654,000	70
Township roads..	48,234,000	89
All rural roads...	\$127,717,000	42

That this contribution of approximately an eighth of a billion dollars far exceeds the property contributions being made for rural roads in these nine States today is evident even from the limited data available. In the case of the State highway systems, with the exception of \$330,000 collected by Colorado, there were no property taxes being used for highways in 1938. In addition, the amount of motor vehicle revenues distributed to local roads and streets in these States during 1938 was three times as large as in the years of the surveys, indicating considerable relief to property. The downward trend in property contri-

butions has already been noted for Michigan and Wisconsin, while the consolidation of 6,000 additional miles of rural roads under State control in Minnesota and New Mexico may also indicate a shift from local to State financing sources. This evidence, together with the knowledge that property support has been reduced by depression and supplemented by Federal aid leads to the conclusion that property contributions are much smaller in these States today than in 1930 and 1932.

City Street Support

From these financial surveys, property taxes spent for city streets in the nine States studied were found to equal \$156,000,000 or 84 per cent of total direct street expenditures of \$186,000,000. During depression, however, the pressure of relief requirements on municipal budgets, combined with shrinking municipal revenues, at first resulted not only in virtual cessation of capital outlays, but also in the deferment of a large part of necessary maintenance. Later, as locally raised revenues failed by increasing margins to accommodate the needs of the cities, Public Works, Works Program and regular Federal Aid Funds, together with increasing State allotments of motor vehicle revenues, alleviated the financial distress. A considerable amount of work relief expenditure was made on streets in municipalities during this period, since the unemployment problem was most acute in urban areas, and street work could readily be provided.

That the trend in property tax support of city streets has been downward, in many cases to zero, is well established by scattered data on declining expenditures for city streets and increasing State and Federal assistance. As isolated examples, property taxes for city streets declined in Wisconsin from \$3,114,000 in 1930 to \$996,000 in 1935, while in Michi-

²⁴ The States are Colorado, Illinois, Michigan, Minnesota, New Hampshire, New Mexico, New York, Wisconsin and Wyoming.

²⁵ Summary of Financial Surveys in Nine States, *Proceedings*, Highway Research Board, Vol. 16, 1936.

gan city street capital outlay and maintenance expenditure from State and local sources was reduced almost one-third from 1930 to 1935. This reduction, moreover, took place in spite of the fact that the cities received some \$3,500,000 of motor vehicle revenue in 1935 and none in 1930.

Further evidence of financial trends for city streets is furnished by a recent compilation of methods used for street support in 400 cities throughout the country.²⁶ Of these cities, 136 reported that 100 per cent of street costs were ordinarily paid by special assessments against benefited property. Among sources of revenue other than special assessments or general funds, 79 cities mentioned P.W.A., W.P.A., or State gasoline tax monies, and some cities were financing all street work from these sources. Moreover, a number of municipalities stated that no capital improvements had been made during the past few years, or that taxes were being levied for maintenance only.

Property Tax Trend—Conclusion

In many States acceptance of the principle that property should contribute to the financing of roads from which it benefits has met with repudiation. Where the responsibility for road support has not yet been shifted from property to motor vehicles and the Federal government, efforts are tending in that direction. The experience in a number of States where property is no longer a factor in road finance, however, indicates that in other States attention should immediately be given to means of determining equitable shares of the road bill payable by vehicles and by real estate before the pressure to relieve property of what may be a fair charge against it has deprived the highway program of this revenue source.

²⁶ "Financing City Pavements," *American City*, August 1937, pp. 83-89.

TREND IN FEDERAL AID

Change in Concepts

Federal participation in highway construction was formerly confined to rural mileage on the Federal-aid system, which originally comprised up to 7 per cent of the rural road mileage within each State. The expenditure of these funds within municipalities exceeding 2,500 population was specifically prohibited in order that the more pressing needs of intercity rural routes would be given prior attention. In the years 1919 through 1930, therefore, aid from the Federal government to the State highway departments constituted a rural road program, with average authorizations of \$75,000,000 per year.

In 1931, however, confronted with the problem of unemployment and general economic stagnation, the Federal government found that emphasis in highway policies had suddenly shifted from providing a national system of rural roads to creating employment and stimulating the construction industry. Regular Federal aid authorizations were raised to \$125,000,000 per year, and additional emergency grants from 1930 through 1935 totaled \$1,200,000,000. The effect of these new conceptions was to increase the income of State highway departments by as much as \$354,000,000 of Federal money in 1934, and to render Federal sources of State highway revenue from 1931 to 1938 larger by well over \$100,000,000 than contributions of motor vehicle registration fees during the same period. In addition, considerable sums of Federal support were received directly by local units of government.

Changes in Federal policy brought about by depression, however, were not confined to objectives or amounts of expenditure. For as a result of the availability of large roadbuilding appropriations, and in keeping with the purpose of relieving unemployment, federal interest in highway building was broad-

ened to include city streets and secondary roads. What had been taking place gradually in the evolution of State aid to local units of government now began quite abruptly in the case of Federal Aid. By the end of October 1939, municipal highway and grade crossing projects completed or approved for construction with Federal funds authorized since March 1, 1933 totaled \$393,000,000. With resumption of regular Federal aid in the fiscal year 1936, it was provided that these funds be made available for expenditure on extensions of the Federal aid system into and through municipalities.

Secondary Road Program

Beginning with the fiscal year 1938, the improvement of secondary roads with Federal funds, first undertaken as an emergency measure, became a part of the regular Federal aid program. The new policy, which authorized \$25,000,000 for each of the fiscal years 1938 and 1939, differs from that of the emergency in that the States must match Federal funds and select an eligible system of secondary roads not exceeding 10 per cent of total rural road mileage. Similar procedure had met with such success in developing the primary Federal aid system that its extension to secondary roads has been widely endorsed both for financial and administrative reasons. The fact that there are approximately 1,000,000 miles of important secondary roads, including State aid highways and principal county trunk highways, and that only 37 per cent of these have been improved to gravel surface standards, suggests that considerable further attention must be given to the secondary road problem.²⁷ The determination of secondary systems now being carried out by the State highway departments may be expected to

encourage this trend by assuring the expenditure of federal funds where future traffic and land use considerations warrant.

New Financial Needs

In addition to the requirements of the primary and secondary Federal aid systems, as well as the grade crossing elimination program, two new developments have recently been given study by the Federal government. One of these is a system of interregional highways which would join the larger cities of all the States for the principal purpose of serving relatively long-range highway transportation. On these roads attention would be directed to safety, time saving and convenience of travel by limitation of cross traffic and local access roads, by protection of roadside land uses and through the by-passing of small towns. These express roads would follow existing primary routes where feasible, but would depart from them where routing of traffic or acquisition of sufficient rights of way required.

Added to the regular assistance now being granted to cities for street improvements, increasing attention is also being directed toward a program of expressways through and within the larger cities to alleviate the congestion which discourages motor vehicle use in urban areas. The magnitude of this problem is generally familiar, not only to half the population of the United States which lives in the metropolitan areas of Class I municipalities, but also to those of the other half who have penetrated the American City by automobile. The disposition of newly introduced Federal legislation to assist the States in right of way acquisition will determine in the next session of Congress whether a beginning can be made toward freeing the flow of traffic through urban bottlenecks.²⁸

²⁷ Governor H. H. Blood, *American Highways*, Oct., 1939, p. 42.

²⁸ Proposed Federal legislation for acquiring rights of way is discussed in the section

Federal Expenditure Trend—Conclusion

Federal participation in future road-building programs is dependent not only upon demonstrated highway needs, but upon government policy with regard to public spending, which in turn is dependent upon general economic conditions. Highways provide excellent channels both for work relief projects and compensatory spending. Growing acceptance of the theory that an outlet for savings must be provided in the form of investment expansion to prevent chronic depression may in the future lead to new capital outlays for roads by the Federal government. On the other hand, business recovery and the probability of government economies may reduce Federal support.

The hazard of venturing opinion upon future sources of highway revenue, therefore, is nowhere more evident than in the field of Federal participation. This is also true because policies of the Federal government are dependent upon circumstances of national scope, and its highway policies must be formulated with reference to numerous counteracting and modifying factors. Yet the conclusion appears inescapable that interest in the development of a modern highway system has at no time been more convincingly indicated on a national basis.

TREND IN DIVERSION

Considerable legislative activity has been directed in recent years toward the so-called diversion of highway revenues to non-highway purposes. With only one State diverting in 1921, and only 7 in

on Borrowing. Of interest in this connection is a law passed by California in 1939 providing for acquisition, including acquisition by condemnation, of real property or interests therein for State highway purposes, including excess acquisition for future needs, and for the management, control, leasing, sale or exchange of such property of interests.

1929, depression and the consequent dilemma of obtaining public revenues anywhere and quickly found law-makers turning more frequently to the earning capacity of the highways. In 1938 they were obtaining \$158,000,000 in 37 States. It should be noted, however, that in 8 States diversion was a negligible amount, while in 14 others it was less than 10 per cent. On the other hand 6 States were diverting more than 25 per cent of all highway income.

When in 1936 the peak diversion of \$169,000,000 had been reached (see Fig. 2 and Table 5), comprising 16 per cent of

TABLE 5
TREND IN DIVERSION OF HIGHWAY USER
REVENUE, 1925-1938

Year	Total	Per cent of user revenue
1925.....	\$7,179,000	1.8
1926.....	6,903,000	1.5
1927.....	8,793,000	1.6
1928.....	12,046,000	1.9
1929.....	14,697,000	1.9
1930.....	20,160,000	2.4
1931.....	23,600,000	2.7
1932.....	76,747,000	9.2
1933.....	91,577,000	11.2
1934.....	122,150,000	13.8
1935.....	147,143,000	15.7
1936.....	169,344,000	16.0
1937.....	161,413,000	13.5
1938.....	158,284,000	13.5

all motor vehicle tax revenue, a counter-attack was already being launched by those who would preserve the motorists' contributions for motor road purposes. To date, seven States²⁹ have passed anti-diversion amendments, while in the 1939 legislative sessions five States³⁰ took action toward that end, and actual diversions were defeated in Tennessee, Florida and Washington. In addition North Dakota reenacted its present anti-diversion statute.

²⁹ Kansas, Colorado, Missouri, Minnesota, California, Michigan, New Hampshire.

³⁰ Idaho, Iowa, South Dakota, Wisconsin, Nevada.

On the other hand 1939 progress in diversion was impressive. Resolutions to place anti-diversion amendments before the electorate failed or were not acted upon in 11 States, while an anti-diversion statute was voted out in Indiana. Moreover, the size of appropriations from the highway fund to general purposes in a number of States indicates that the total for this year may exceed the 1936 peak.³¹ In New York the general fund will receive \$73,000,000 from the motorist, Rhode Island will continue using one-third of the gasoline tax for relief, and Nebraska increased appropriations to the State assistance fund from 10 to 20 per cent of the gasoline tax. Pennsylvania appropriated \$11,570,000 from the motor license fund for servicing the State debt. Ohio permits counties to use 25 per cent of gas tax revenues prior to April 15, 1941, for poor relief, provided reimbursement is made for such borrowings before May 31, 1941. But previous experience with temporary borrowing from the highway fund permits no assurance that such loans will be repaid.³² In the case of California, however, it has recently been ruled that temporary transfer of motor vehicle revenue to the general fund is contrary to the anti-diversion constitutional amendment adopted last year.³³

The successful passage of anti-diversion amendments appears to have established the fact that public opinion favors the use of special motor vehicle revenues for the development and maintenance of highways. A poll at the New York auto-

mobile show this year on the question "Should all gasoline taxes and registration fees be used for highway purposes?" yielded similar indications, with the vote 8,551 yes and 968 no.

It would be naive to suppose, however, that after passage of a constitutional amendment a desirable standard of highway service is thereby assured. Other provisions, in the form of adequate administration and planning, are necessary to guarantee how, where and to what advantage highway money shall be spent. For example, investigation of administrative control over the expenditure of State-wide money has revealed the interesting information that in the majority of cases where there is constitutional provision barring diversion, the State has no control over how motor vehicle revenues distributed to local governments shall be spent. In addition, the difficulty of framing an amendment which will endow the term "highway purposes" with sufficient breadth or limitation to fit particular circumstances remains a serious problem.

TREND IN STATE-LOCAL RELATIONS

Highway transportation comprises travel over an integrated system of roads and streets. Motorway finance, however, was originally conceived on a different pattern, consisting of the concentration of motor vehicle revenue expenditure on the main lines and the abandonment of other road and street problems to the financial solutions of local jurisdictions. This financial pattern was a wise expedient when the priority problem consisted of building main lines. Today, however, with many parts of the highway system having legitimate claim on State revenues, the highway administrator must think in terms of an integrated network.

Figures of motor vehicle tax allocations to local units of government are evidence that considerable financial recognition is now being given to the

³¹ A \$21,000,000 relief bond issue recently voted in New Jersey is expected temporarily to ease the pressure for highway fund diversions in that State.

³² One example of repayment is that by the Georgia legislature in 1937, which provided for the restoring of 1935-36 diversions.

³³ An opposite situation has been permitted by Connecticut; which in 1937 authorized the highway department to borrow from the general fund for highway purposes at any time, for a period not exceeding three months.

systematic nature of highway traffic. In 1937 \$277,000,000 was distributed by the States to lesser units of government, this amount constituting the most generous assistance yet awarded for local roads and streets. In 1938 the distribution of \$273,000,000 was approximately as great. But such figures of tax allocations are by no means the only necessary criteria in judging the extent to which financial aid to local units is in the interest of the motorist. Equally important are the questions of where and how well the money is spent.

Laws Affecting Local Roads and Streets

In the 1939 legislatures 122 bills were introduced on the subject of allocating motor vehicle revenues, and laws were enacted in nine States. In addition, numerous bills were passed concerning other financial and administrative matters of concern to the local units. From this legislation and the laws passed in 1937, there is noted not only an increasing recognition of financial claims made by counties and municipalities, particularly the latter, but in addition a growing concern for the administrative task of redesigning highway financial policies on a system basis.

In 1937 Indiana passed its Motor Vehicle Highway Account Act which required budgeting of State funds distributed to counties and cities, and imposed limitations on the amount of such monies which might be used for maintenance. Minnesota amended its statutes relating to the use of gasoline taxes by the counties with a provision that 50 per cent of this money should be apportioned to the towns. In Michigan the registration law was amended to permit the use of registration fees for maintenance of city and village streets.

During 1939, problems of city street financing continued to be the subject of considerable legislative activity in the

field of State-local relations. In South Dakota, Wisconsin, Minnesota and Arkansas attention was directed to the inclusion of city trunkline extensions as part of the State highway systems. In Wisconsin both the State and the counties were made responsible for construction and maintenance of city and village streets serving as connecting routes for State and county systems. The highway commissioner of Minnesota was authorized to enter into contracts with municipalities for the construction, improvement and maintenance by municipalities of streets forming part of the trunk highway system, the law having previously applied only to cities with over 50,000 population. The Montana legislature also passed a bill which stipulated that counties may use their roadbuilding machinery on the streets of cities and villages of less than 4,000 population.

Other 1939 State laws affecting local finance were Oklahoma's distribution of 15 per cent of registration fee receipts and 5 per cent of gas tax revenues for streets in cities and villages, increased aid of approximately 50 per cent to cities in Washington, the allotment of \$8,500,000 in gasoline taxes to second-class township roads in Pennsylvania, an appropriation of 20 per cent of the motor fuel tax to Idaho counties to compensate for a reduced registration fee,³⁴ and the stipulation that after June, 1941, Nebraska counties will receive three-eighths of the gas tax receipts rather than three-tenths. Massachusetts appropriated \$9,600,000 annually for 1940 and 1941 to cities and towns for highway work, while annual allotments of \$800,000 were made to Maine cities for 1940 and 1941 and \$2,750,000 to State-aid and town roads in Vermont. Further allocations of State revenue to local units were defeated in Arizona, Arkansas and Oregon.

³⁴ The Constitutionality of this law has been challenged.

Centralization

Although the trend toward road consolidations and centralized administration has not continued on the scale reached in depression years, several developments occurred in 1939 legislation. In North Dakota the legislature approved a measure to be submitted to the voters in 1940 which would authorize the setting up of procedures for the abolition or consolidation of counties. In Arkansas road districts were abolished, and the administration of local roads was transferred to the county highway commissions. Provision was made in Idaho to include all rural roads in a State-wide system, counties and road districts retaining administrative powers but acting as agents of the State, while in South Carolina the addition of 1,000 miles to the State system was authorized during each of the years 1939 and 1940. Trends toward consolidation and centralization took the opposite direction in Maryland, however, where until this year the roads in all but three counties had been maintained by the State under an optional agreement provided in 1933. Half a dozen counties have now chosen to maintain their own roads.

State Control Over Local Expenditures

Judgment concerning the adequacy of State-aid programs for roads and streets is not so much a matter of the amount of money available as of the degree of State control exercised for its proper expenditure. Although increasing attention has recently been given to means of providing State approval and supervision over local projects financed with State funds, current progress leads more to the realization of things undone than of any far-reaching achievement.

The following information concerning the degree of State jurisdiction over motor vehicle funds distributed to local units of government has in most cases

been abstracted from statements supplied by the State highway departments.

ALABAMA: According to law it is the duty of the State Highway Department to establish standards for maintenance and construction work performed with State aid, and to provide information or assistance when called upon by local officials. The State also is directed to determine the character and have general supervision over the construction and maintenance of all highway work involving State funds.

ARIZONA: The State Highway Department has no lawful power to control the expenditure of motor vehicle revenue distributed to local units of government, and cannot require that the money distributed to the counties be spent for highway purposes.

ARKANSAS: Statutes authorizing the return of State motor vehicle imposts to the counties require that such funds be spent for highway purposes, but the highway commission has no authority to pass upon local projects or to supervise the work.

CALIFORNIA: Statutes require that the portions of motor vehicle fees and gas tax receipts distributed to the counties be used for road purposes. The State Division of Highways is not given authority for supervision or inspection of the work performed by the counties with these funds, but the law does provide that the counties submit an accounting of expenditures to the Division of Highways in order to show that the funds were expended for road purposes. The auditing of these statements is the extent of supervision by the Highway Division. In the expenditure of gas tax allotments to the cities, expenditures are under immediate supervision of the State, the set-up being similar to the relationship between the Public Roads Administration and the States in the expenditure of Federal Aid. The cities are required to submit to the State for approval project statements of work proposed during each year. In the case of allocations for use on State highway routes through cities, the Division of Highways plays an active part in the selection of projects, and in many cases the work is performed by the State.

COLORADO: The statutes provide that State motor vehicle funds received by the counties shall be spent on public highways, but the State Highway Department has no jurisdiction in the matter except that one of the functions

of the State highway engineer is to "furnish plans for all bridge construction of 20 feet or more span on county highways; and also plans for county highway construction when requested." In addition it is provided that the State engineer shall "give county boards and other officials charged with highway work such information and advice as he may have at hand and as may be requested."

CONNECTICUT: The expenditure of all State motor vehicle funds distributed to local units of government is under control of the State Highway Department. The highway commissioner is directed to make agreements with town officials relative to the location, construction, improvement or maintenance of highways with such money.

DELAWARE: All highways are under State control.

FLORIDA: Gasoline tax receipts distributed to the counties must first be applied to annual road bond requirements, but a specified part of any surplus remaining may be used for road construction and maintenance, projects being solely at the discretion of the county commissioners.

GEORGIA: All revenue from motor vehicle license tags is allocated to the Post Roads Division of the State Highway Department, which allocates these funds to the various counties and supervises the work of construction. Such funds cannot be used for other than highway purposes. This system is found to be very effective.

IDAHO: The 1939 act of the Legislature appropriating 20 per cent of motor fuel tax revenues and not less than \$1,000,000 annually to the counties provides that such money shall be used first for highway bond interest and sinking fund requirements, and the balance for current highway expenditures. Under this act all of the highways in Idaho are included in a State-wide system, with local units of government acting as agents of the State. The Department of Public Works has set up a uniform system of accounting, as empowered, and will make periodic inspections of the books of local units to ascertain whether State money is in fact being spent for the purposes stated. It is doubtful whether the Department has "legal power to require that such money be spent on roads and streets" without resort to court action. How far the Department is authorized to control these expenditures may be

determined hereafter by judicial interpretation or future legislation. The local units have thus far manifested a willingness to cooperate with the Department of Public Works and have adopted its forms for a uniform accounting system. They are conscious of the conditions imposed by the Hayden-Cartwright Act, and seem willing to conform to the requirements and suggestions of the Department relative to disbursement of funds allocated to them.

ILLINOIS: The Department maintains full control over expenditure of motor fuel tax funds distributed to local units of government. Requests are made to the Department by counties or municipalities for the improvement of certain highways and after such requests are approved, local units are notified of such approval, after which proposals on the work are requested. No contract is awarded without the approval of the Department. As soon as a contract has been awarded allotments are made through the State Department of Finance for the amount provided. The Department maintains a system of auditing of expenditures made in connection with all contracts in order to see that all moneys are properly expended. General supervision is exercised over construction work as it progresses.

INDIANA: Counties may use State motor vehicle funds for highway purposes only. They also are required to budget these monies, and the budget must be approved by the State Board of Accounts as well as the State Tax Board. This gives absolute control over the expenditures. When this Act went into effect in 1937, the highway commission immediately appointed a County Contact Engineer who exercises the supervision fixed by statute.

IOWA: The Highway Commission does not have direct supervision of the expenditure of motor fuel tax funds which go to the counties for secondary roads, but it does have general supervisory control. Any such funds used for construction must be spent on secondary road programs prepared by the county board of supervisors and approved by the State Highway Commission. Detailed plans for such construction work must conform to standard specifications of the Commission. If any bridge built from such State funds costs more than \$2,000, the contract awarded by the county board of supervisors is subject to approval by the State Highway Commission before becoming effective. Likewise any construction contract aggregating more than \$5,000 is subject to the commission's approval. There are many

ways of avoiding and evading these provisions, and it cannot be said that they are satisfactory or effective. Yet undoubtedly the general requirements of approval by the Highway Commission have had a very beneficial effect in securing better standards of construction and better supervision of the work.

KANSAS: Motor vehicle revenues returned to the counties and townships must be spent for the construction, improvement, reconstruction and maintenance of roads and bridges, but the Highway Commission has had no jurisdiction over the expenditure of these funds since 1929.

KENTUCKY: None of the motor vehicle revenue derived in Kentucky is returned to local units of government. However, something similar occurs in the distribution among the counties of what are known as Rural Highway funds. Two million dollars a year are set aside for Rural Highway Projects. A Rural Highway Department is set up within the State Highway Department to arrange State Highway work in each county with the various Fiscal Courts; the priority of construction of these Rural Highways is generally left to the Courts, although the Rural Highway Department has power of veto if it so desires. While this procedure is not actually a return of funds to local units, it has almost the same effect, and the State Highway Department keeps final control of the expenditures.

LOUISIANA: Motor vehicle revenues are not distributed to local units for highway purposes, the State having assumed responsibility for local work.

MAINE: Wherever State funds are used for highways, it is the intent of the law that the work shall be under direction and control of the State Highway Department. As an example of the many different activities worked in cooperation with towns, the latter each year receive \$670,000 for construction on roads accepted as third class highways by the State Highway Commission. Work must be done on locations approved by the Commission on petition of the municipal officers of the town. All projects are laid out and supervised by the State engineering force and financed by the town, which submits proper vouchers for reimbursement. The State supervisor certifies that the work has been performed in accordance with specifications.

MARYLAND: Methods of motor vehicle revenue allocation to the counties and Baltimore

City are determined by a number of different laws and appropriation bills. Local units must apply these funds to highway purposes, and while State supervision and approval may be the measure of control in some instances, in others the State actually does the work.

MASSACHUSETTS: In general, all acts distributing motor vehicle funds to local units of government provide that the money shall be used for road improvement and authorize the Department of Public Works to pass upon the projects and supervise the work. However, no State control over local expenditures has been provided in the case of the 1940 and 1941 annual distributions of \$9,600,000.

MICHIGAN: Reports must be made by the counties and municipalities to the State Highway Commissioner showing certain priorities required by law in the expenditure of State motor vehicle revenues by local units of government. Such priorities, for example, include debt retirements of various issues, and amounts passed on to cities. The law also requires that a strict accounting of the use of highway monies be made to the county board of supervisors and forwarded to the State Auditor General, defining amounts spent for construction, maintenance, right of way, and so on. The Auditor General is required to make periodic audits of the county books, thus assuring their accuracy. The reports to the Highway Department are of little value in assuring proper control of expenditures, while the reports to the Auditor General, showing what has actually been done with the money, come closer to being a desirable report. However, neither permit improvement in methods of operation.

MINNESOTA: One-third of the money received from the gas tax is allocated to the counties annually for use on county aid roads. The Highway Department has no control over the expenditure of this money. The law does provide, however, that all this money must be spent for highway construction or maintenance.

In Minnesota there is another source of State revenue distributed to the counties, this being known as the State-aid fund collected from a State-wide property tax of one mill per dollar of assessed valuation. At the present time this tax produces approximately \$1,200,000 per year. The expenditure of this money by the counties is under supervision of the State Highway Department. The county must make the expenditure first and then report it to the Commissioner of Highways for approval. If the

work is approved by the Commissioner or his authorized representative, the county is reimbursed.

MISSISSIPPI: The State Highway Department has no jurisdiction over funds expended by the counties, nor the location of any county projects involving State funds. There is a State law which requires the counties to apply a certain part of gas tax receipts toward the retirement of outstanding highway obligations.

MISSOURI: No motor vehicle revenues are distributed to local units of government.

MONTANA: Revenue from the sale of license plates goes to the county in which the licenses were taken out. The State Highway Department has no control over the expenditure of these funds by the counties. No other local units of government receive motor vehicle revenue.

NEBRASKA: The Department of Roads and Irrigation has no power to require that money distributed to local governments be spent for roads and streets, nor can it pass upon local highway projects or supervise the work.

NEVADA: No part of motor vehicle tax revenue is distributed to local units of government.

NEW HAMPSHIRE: There appears to be ample authority vested in the Highway Commissioner under existing laws to designate projects and supervise work performed by local jurisdictions with motor vehicle revenue. There are instances where this authority has not been fully exercised, however, so that results are not quite as effective as might be desired.

NEW JERSEY: State motor vehicle tax money distributed to the counties and municipalities is under the supervision of the State Highway Commissioner and can be spent only after detailed approval by the Department. Such funds cannot be used for any other purpose than the improvement, maintenance and repair of highways and bridges.

NEW MEXICO: The State Highway Commission has no control over the expenditure of motor vehicle tax revenues allotted to the counties.

NEW YORK: Each county has a designated system of highways upon which its share of motor vehicle revenues must be spent. This system is subject to approval by the State

Superintendent of Public Works. Before any State aid money can be spent by the county a project statement showing the place and the length and type of construction must be submitted and approved by the State Superintendent. The same procedure applies to county road maintenance, with the further provision that in the event of unsatisfactory maintenance, the Superintendent of Public Works may withhold approval of any proposed expenditures for construction and reconstruction in the county. The towns receive a limited amount of direct State aid, averaging about \$3,000,000 per year, over which the State has practically no supervision.

NORTH CAROLINA: All highways are under State control, and no motor vehicle revenue is distributed to local units.

NORTH DAKOTA: The Highway Department has no legal authority over the expenditure of motor vehicle revenue distributed to local units of government.

OHIO: State motor vehicle funds are allocated to counties, municipalities and townships without any provision for State control or supervision in their expenditure. However, there is one exception, in case the local subdivision participates in the cost of an improvement on the State highway system, either in the county or municipality. The State then has complete control of the project and must prepare or approve the plans, let the contract, and supervise the work.

OKLAHOMA: The State Highway Department has no control over motor vehicle funds allocated to counties and municipalities except in cases where the counties participate (always voluntarily) with the State Highway Department in an improvement on any part of the State Highway System. In that event the State has complete control of the project, prepares the plans, lets the contract and supervises the work. There is one exception, however, where the State has permitted municipalities to prepare W.P.A. projects for work on the State highway system and has contributed to such work without retaining any further supervision than to check the plans and look over the work and materials furnished by the State Highway Department.

OREGON: The only local units receiving shares of State motor vehicle revenue are the counties. The laws governing distribution stipulate that funds are to be used solely for

road purposes, including the payment of interest and principal on road bonds, but it does not empower the State Highway Department or any other State agency to enforce that requirement or to exercise any control over the expenditure of the moneys or the planning and performing of the work.

PENNSYLVANIA: The 1939 Act of the Legislature allocating motor fund money for second-class township roads provides that expenditure shall be made in accordance with the rules and regulations of the Department of Highways. In addition, a part of gasoline tax revenues are refunded to the counties, and this can be used only for highway purposes. Many counties made grants of this money to townships, boroughs and cities under provisions of the County Aid Act, which requires that all work done under the Act shall be subject to the inspection and approval of the Department of Highways. This means that the work must conform to satisfactory standards and specifications.

RHODE ISLAND: The only assistance to local units in Rhode Island is a small allotment to the towns for maintenance of roads which are on the State Highway System but not constructed or maintained by the State. This amounts to only \$200 per mile annually, but the money must be spent subject to State approval on specified roads in the system.

SOUTH CAROLINA: The law provides that motor vehicle funds distributed to the counties, comprising revenues from one cent of the gas tax levy, shall be used for road purposes, but leaves the expenditure entirely to the discretion of county officials.

SOUTH DAKOTA: By State law motor vehicle funds distributed to counties and townships must be used for highway purposes. The State Highway Commission, however, has no jurisdiction over the spending of this money, the matter being left to the discretion of county and township boards. It appears that these State funds are used for highways, but with no definite construction program in mind, and principally for minor improvements and maintenance. There is no provision that any part of this money shall be used to match Federal aid for secondary roads.

TENNESSEE: The 2-cent gas tax fund distributed to the counties may be administered by the State Highway Department only in those counties in which the County Courts pass resolutions requesting such action.

TEXAS: Statutes allocating motor vehicle revenues to the various counties provide that funds be spent only for the construction and maintenance of county roads. These expenditures are made under the control and direction of the several county commissioners' courts, and the State Highway Department does not in any manner supervise the expenditure of such revenues, nor does it have authority to pass upon county highway projects. When any county does not have an engineer, it is entitled to call upon the State Highway Department for assistance, but this rarely includes supervision of the work.

UTAH: The State Roads Commission's procedure in handling the distribution of motor vehicle revenues to counties and cities is to require a cooperative agreement with the local authority with respect to the location and character of the work to be done, and various other details. Until these cooperative agreements are executed, no funds are released for expenditure by these local units. Accounts are also required showing the purpose, character, location and cost of all work. The law permits the Road Commission to perform the work directly, if so requested by the local authorities, and in quite a few instances this is done.

VERMONT: Direct supervision over expenditures of State money on local highway projects is provided except in the case of \$750,000 which goes to the towns for town roads. The law stipulates that such funds be spent under supervision of a committee of five, including three town selectmen, the town road commissioner, and the State's district highway Commissioner. The district Commissioner supervises practically all the work, and the towns are reimbursed after submitting time sheets and receipted bills covering the work performed. This gives the State sufficient authority to see that all money is spent for highways.

VIRGINIA: The State Highway Department has complete control over the expenditure of motor vehicle revenue except in the case of three counties which have not transferred their road operations to the State. In these three counties the money is expended under control of the County Board of Supervisors.

WASHINGTON: Funds credited monthly to the counties and cities are paid out only in reimbursements of expenditures made by these jurisdictions for proper road purposes, and in the case of cities, for construction and repairs only. Reimbursing vouchers, properly supported by detailed evidence of expenditures,

must be submitted through the Director of Highways. With the reasonable supervisory authority of the State, efforts of the political subdivisions are being coordinated and systematized to produce a comprehensive highway plan.

WEST VIRGINIA: All highways are under State control, and no part of motor vehicle revenue is returned to local units of government.

WISCONSIN: Supervision of the Highway Commission over the expenditure of motor vehicle revenue by local units of government is practically nil. The law in connection with aids to townships provides that expenditures be reported to the county boards and to the State Highway Commission. Very few townships make such reports, and the State has no way of compelling them to do so. The expenditure of aids to counties and cities is not required to be reported to the State Highway Commission. In general it is believed that such revenue allocated to local units is used for highway purposes.

WYOMING: The Wyoming State Highway Department has no jurisdiction over the expenditure of motor vehicle revenue distributed to local units of government. The law provides that such funds be spent for highway construction, and it is up to the State Examiner to find out if this provision is being followed. Although this has been difficult, the legislature has passed a county budget law which is expected to result in a closer check on the counties in their expenditure of motor vehicle money. At the present time the Department is doing missionary work in an effort to have the counties spend State aid funds on State-county cooperative projects, in which case the State has full control over the work. Progress is being made in this direction.

TREND IN THE PROVISION OF HIGHWAY SERVICE

Replacements and Maintenance

A satisfactory standard of highway service involves not only adequate physical plant, but also its proper maintenance and efficient operation. For satisfactory transportation can no longer be conceived merely as the economical movement of passengers and freight, but rather as safe movement with speed and comfort.

In the provision of highway transportation it is fairly evident that emphasis has shifted from expansion of plant to modernization, replacement and maintenance. For example, Federal aid projects today in nearly 60 per cent of all cases are located where previous Federal work has already been done, while much of the remaining work has been reconstruction of earlier undertakings by the States and counties. The increasing importance of the maintenance bill also is evident, State highway expenditure figures since 1921 revealing that while capital outlay in 1938 was less than in

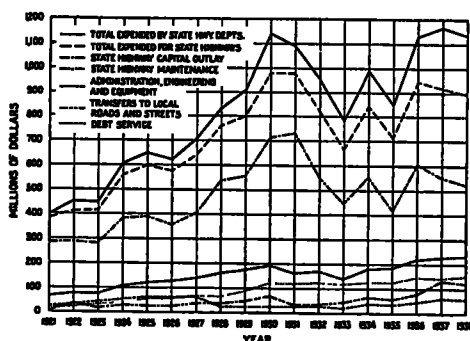


Figure 5. State Highway Expenditures 1921-1938

1928, maintenance expenditures had increased by close to \$100,000,000 (see Fig. 5 and Table 6). Comparing the years 1932 and 1937, when capital outlays were identical at \$551,000,000, maintenance expenditures had increased from \$169,000,000 to \$228,000,000.

Traffic Efficiency

The newest development in highway expenditure programs, however, has been a growing attention to efficient movement of traffic. Experience on the State highway system of California, for example, provides specific data on expenditures for services directly related to public convenience, safety and comfort. It is revealed that these services, including

TABLE 6
STATE HIGHWAY EXPENDITURES¹, 1921-1938

Year	Total expended ² by state highway departments	Total expended ² for state highways	State highway capital outlay	State highway maintenance	Administration, engineering, equipment	Debt service	Transfers to local roads and streets
1921.....	\$ 397,483,000	\$384,381,000	\$284,302,000	\$ 64,833,000	\$24,828,000	\$ 17,067,000	\$ 6,451,000
1922.....	451,775,000	410,901,000	287,461,000	75,340,000	32,046,000	22,257,000	34,669,000
1923.....	447,362,000	414,807,000	279,992,000	75,329,000	41,963,000	32,473,000	17,603,000
1924.....	605,665,000	559,601,000	382,335,000	104,806,000	50,958,000	38,895,000	28,669,000
1925.....	649,125,000	597,902,000	389,327,000	119,303,000	61,110,000	53,808,000	25,575,000
1926.....	621,744,000	576,016,000	356,174,000	125,617,000	60,534,000	55,569,000	23,848,000
1927.....	707,179,000	640,494,000	404,217,000	138,783,000	62,213,000	65,974,000	35,989,000
1928.....	830,264,000	759,318,000	538,043,000	159,807,000	24,516,000	64,653,000	35,885,000
1929.....	910,485,000	799,876,000	557,400,000	173,060,000	23,580,000	88,218,000	45,791,000
1930.....	1,139,676,000	979,997,000	713,117,000	191,683,000	24,528,000	120,172,000	66,897,000
1931.....	1,091,009,000	979,592,000	730,954,000	160,980,000	25,794,000	119,140,000	32,969,000
1932.....	955,446,000	816,765,000	551,445,000	169,479,000	26,547,000	123,671,000	34,324,000
1933.....	782,006,000	666,081,000	446,841,000	138,829,000	19,869,000	116,828,000	42,797,000
1934.....	991,774,000	843,631,000	554,278,000	178,999,000	37,469,000	125,881,000	64,815,000
1935.....	848,355,000	713,066,000	416,412,000	184,458,000	34,472,000	123,674,000	56,938,000
1936.....	1,131,151,000	947,065,000	607,284,000	219,202,000	45,353,000	145,633,000	77,541,000
1937.....	1,166,706,000	918,786,000	551,979,000	227,877,000	60,354,000	141,488,000	130,477,000
1938.....	1,135,122,000	895,132,000	523,738,000	232,388,000	55,984,000	150,033,000	121,262,000

¹ Data compiled by the Public Roads Administration, Tables F-2 (1921-33) and SF-2 (1934-38).

² These columns include sums which may not appear in the various items listed, such as expenditures for State police and non-highway purposes.

pavement markings, signs, traffic control devices, roadside development, snow removal and ice control have trebled in cost since 1930. In the next two years the California Division of Highways expects to use approximately 12 per cent of all maintenance funds to comply with the growing demands for a better quality of highway service.

Other States in their biennial reports are emphasizing this trend toward improving highway transportation by more attention to operations on the existing plant. To mention a few specific cases, Vermont reports that winter maintenance has become an increasingly costly item and that more money is spent to sand the roads than to plow them.³⁵ According to the Highway Department, however, "the more satisfactory travel conditions resulting justify the expense and meet the motorists' demand."³⁶ The Vermont report further emphasizes the public service factor by noting that the marking of all bituminous roads with center lines was believed to have "met with the hearty approval of the traveling public." From Minnesota comes evidence of the same trend in a statement of the Commissioner of Highways: "Public Service, the primary function of which is to control traffic and promote safety, which includes such items as sign erection, center line marking, highway patrol and other safety functions, required an expenditure (1937-38) of \$1,478,000."³⁷

Roadside improvement activities during the past several years provide additional testimony of increasing expenditure for safer and more attractive highways. By October 31, 1939, the mini-

mum one per cent Federal aid provision for roadside development in the States had resulted in projects costing approximately \$16,000,000, of which \$10,000,000 were Federal funds. Emphasis on roadside programs has been directed not only to purposes of appearance, but to erosion control, snow control, roadside parks, turnouts, and tourist accommodations. As one example of progress in this type of highway service, Michigan reports that the number of roadside parks has increased since 1933 from 12 to 131, and the number of roadside picnic tables from 100 to 2,550.³⁸ A system has also been developed for trimming trees to secure proper underclearance and to provide adequate visibility at curves and intersections.

Safety considerations are properly the principal factor in the effort to furnish a better quality of highway transportation, being an important consideration in winter maintenance and roadside development as well as in traffic engineering, signs, signals, markings, highway patrols, accident reporting, vehicle inspections and driver regulation. One of the most widespread developments for highway safety has been that of the State highway patrols, personnel having increased from 5,407 in 1936 to nearly 10,000 in 1939.³⁹ Allotments of State highway user tax receipts for the purpose of supporting the patrols have increased from \$8,751,000 in 1934 to \$23,406,000 in 1938. In the 1939 legislative sessions these trends were continued. Tennessee increased from 5 to 10 per cent the share of motor vehicle funds available for the highway patrol, while in Connecticut 75 per cent of the cost of operating the State patrol

³⁵ In 1936-37, for the U. S. as a whole, States and counties alone spent \$17,000,000 for snow removal and ice treatment on 217,000 miles of highways.

³⁶ Vermont Highways, Eighth Biennial Report, State Highway Board, 1936, p. 25.

³⁷ Commissioner of Highways, Biennial Report, 1939, p. 51.

³⁸ Seventh Biennial Report, State Highway Commissioner, 1939.

³⁹ Highway police agencies of 300 or more officers are operated by 10 States: Illinois, Indiana, New Jersey, New York, Pennsylvania, Iowa, Massachusetts, Michigan, California, and Texas. Pennsylvania has the largest patrol, with 1,596 officers.

will be derived from the highway fund. Minnesota increased the membership of its patrol from 100 to 108 for 1939, and to 116 thereafter.

A forward-looking view of safety responsibilities in the highway transport field was presented by Mr. E. W. James at the meeting of the Highway Research Board two years ago.⁴⁰ This report enumerated some of the auxiliary services which may have to be performed to secure the greatest results in the direction of safer and more efficient highway operation, citing as parallel examples what has already been done in the case of rail, maritime and air transportation. The cost of providing facilities for the functions conceived, such as driver training and licensing, vehicle inspection, accident records and highway patrol, was estimated at between \$76,000,000 and \$124,000,000 for capital investment and between \$169,000,000 and \$366,000,000 annually for operation, depending upon the extent of development. "These services," it was stated, "will become a third grand division of highway costs, added to the division of construction and maintenance."

Urban Highway Service

Financial and administrative developments tending toward the improvement of highway transportation facilities in cities have already been mentioned. Among these have been State assistance in the form of motor vehicle revenue allotments and work done on city trunk-line extensions; and Federal assistance through direct emergency appropriations to municipalities and by the removal of restrictions to the urban use of regular Federal aid appropriations. At the same time there is the current possibility of further assistance to the cities in plans for the acquisition of land and the construction of express routes.

⁴⁰ E. W. James: Accident Records and Traffic Regulation, *Proceedings*, Highway Research Board, Vol. 17, p. 435.

These urban requirements and recent plans to fulfill them have received widespread emphasis. There has been an equally universal neglect, however, of one essential factor in urban highway service; namely, the provision of terminal facilities. This neglect is particularly harmful to a short-run agency of transportation which cannot attain its natural advantage when desirable origins and destinations are denied. At the same time the effects of other measures to improve city travel can hardly be successful while a primary cause of congestion continues to be overlooked. For the storage of automobiles on expensive city pavements constructed for vehicle movement is certainly a factor in the lack of street space for urban traffic, as is also the cruising and maneuvering of hopeful parkers.

Today the parking lot has become a municipal utility.⁴¹ In 1937 at least 33 cities in 17 States had begun to take the problem seriously. In some cases public property has been used for parking lots, while in others real estate has been taken over for nonpayment of taxes, or loaned to the city by the county or State. Land has been acquired by excess condemnation and by lease from private owners. One city has acquired parking space by condemning convenient rearage instead of expensive frontage. Some of these lots are established on a self-liquidating basis by the charging of fees, but most are provided "free" by assessing property in the benefited areas.

Further promotion of parking accommodations has been provided by law, a number of cities having passed legislation requiring newly constructed theatres, apartments, stores and places of amusement to provide on their premises a specific square footage of parking area for each person to be accommodated. In the

⁴¹ See "The Parking Problem in Central Business Districts," Public Administration Service, Publication 64, 1938.

1937 session of the State legislature, Kansas authorized cities of the first class to establish benefit districts for acquiring and improving parking stations for public use, permitting special improvement bonds to pay the cost, while California likewise provided for the establishment of parking places in municipalities. In Michigan parking facilities were added to the activities which may be financed under the revenue bond act.

Although considerable activity on a small scale is being directed toward the provision of parking space, recognition of the problem has been so late that now only drastic methods can provide a remedy. Whatever these may be, it appears reasonable that policies intended to permit easier entrance into cities should be supplemented by provision of parking accommodations after arrival; and that measures for acquiring adequate rights of way should include the acquisition of land for that purpose.

Highway Service Trends—Conclusion

The conception of highway transportation has developed in the past few years to include not only an adequate physical plant, but also efficient operation to provide motoring convenience, comfort, and safety. Appraisal of what has already been done and what remains to be done, especially in regard to safety operations and parking facilities, is convincing indication of further uptrends in expenditure for a higher quality of transportation service.

GENERAL CONCLUSION

In the financing of highways there are logical criteria by which revenue sources, tax rates and expenditure objectives may be intelligently determined. The problem is, in fact, an equation of supply and demand requiring solution in such a manner that financial needs and user revenues may coincide to permit an optimum in highway service and high-

way utilization. The amount of money available in a given year should depend upon established requirements based on the planned attainment and perpetuation of standards considered desirable; and this amount, translated into charges payable by those making use of the facilities, would then determine a rate of tax. Consideration must further be given to probable effects of highway charges upon highway use and highway income, so that revisions and modifications may be made accordingly.

A planned highway program which has taken into consideration all the above factors should then indicate how much money is to be spent, where and for what purposes expenditure should be made, and from whom the necessary income may be derived. Today, however, the reverse is generally true; that is, predetermined financial policies dictate what shall be the highway program.

Obviously the first step in rearranging this relationship is the determination of a physical and financial plan for the highway system. For only the tangible expression of differences between present highway service and future highway objectives can furnish the necessary guidance for public opinion and legislative action. Without such factual guidance the highway financial program can never be more than the product of uninformed or inexperienced opinion.

The ultimate goal of highway planning, as conceived in the current studies being undertaken by the State Highway Departments in cooperation with the Public Roads Administration, is the formulation of plans which may serve as a guide not only to the proper administration of highways, but to the enactment of legislation which will permit such administration on a continuing basis. Already several States have completed or are in process of completing these plans. That the preparation of similar material by other States is essen-

tial to sound financial practices should be amply demonstrated by the quantity of legislation and the quality which results without such guidance. The fact that 10,000 bills on highway transportation were introduced in 1939 legislative ses-

sions, and that 1,200 of these were enacted into law, removes any doubt that further assistance from the Highway Departments in the formulation of highway laws is, from an economic viewpoint, compulsory.

DISCUSSION ON TRENDS IN HIGHWAY FINANCIAL PRACTICE

MR. BURTON W. MARSH, *American Automobile Association*: I would like to ask Professor Morrison if he can explain the trend in Michigan away from property taxes.

PROF. R. L. MORRISON, *University of Michigan*: I think the main reason is that the Michigan farmer is very firmly entrenched in the Legislature. For a number of years attempts were made to put the townships under county administration without success. Finally instead of a bill for administrative change a tax relief bill was proposed which went over with a bang.

MR. WILFRED OWEN, *Highway Research Board*: May I add that in Michigan a large amount of motor vehicle revenue is going to the counties. I think that half of all highway user revenue is being distributed to local units, so that naturally property can be relieved of that responsibility.

PROFESSOR MORRISON: All of the license fees go back to the counties where they are collected—seven-eighths to counties where collected and one-eighth divided among eight counties, in other words, Wayne County where Detroit is located helps out in the Upper Peninsula. The counties also get \$6,000,000 of the gas tax.

MR. MARSH: I think greater attention must be given to the adding of terminal facilities in metropolitan areas. Surely

if we are going to make it easier for persons to get into cities a good many of them are going to want to stop. The record shows that \$250,000,000 was spent on municipal projects from 1933 to October 31, 1937. Is that rate increasing as the years go on?

MR. OWEN: No, a large part of it was emergency funds spent by P.W.A. and W.P.A. It is not part of the regular Federal Aid program.

MR. MARSH: The question of proper control of expenditures is exceedingly important. Mr. Owen pointed out that more States do not have control over local expenditure than have.

MR. L. S. TUTTLE, *Public Roads Administration*: Does the committee see any visible trend with respect to control: Is it going to be better or worse?

MR. OWEN: In the 1939 Legislatures there were more bills of an adequate nature passed on State control than in any other sessions. Also many of the States are now requiring budget reports from their counties and some States which have had legal provisions in the past are only now putting these legal controls into effect. The letters from the highway departments which provided this information are very interesting in that the State highway engineers in many cases have mentioned the fact that matters are improving in their States.