

THE EVOLUTION OF HIGHWAY FINANCING

The annual cost of our highways exclusive of the streets in municipalities is \$11.92 for each person. It averages \$58.13 for each registered motor vehicle. If, however, that part of the total expenditure which comes from the motor vehicle direct in the way of registration fees and gas taxes is deducted, the per capita cost from other sources becomes about \$6.92. Carrying this thought one step further, if the expenditures for 1928 are reduced by the direct income from the motor user and by the amount of the proceeds from bonds, the interest and principal of which are carried wholly from motor vehicle revenues, the per capita cost remaining to be met from other sources becomes \$5.71. Of this amount, the state road systems take \$1.39 and the local roads about \$4.32 per person.

Thus, of the present per capita cost of \$11.92, the motor vehicle supports directly \$6.21 and all other sources \$5.71. These are based on 1928 figures, but the sources and expenditures for 1929 will not be sufficiently different to disturb materially the comparisons.

The two outstanding features in the evolution of highway finance are: (a) the increase in annual expenditure; and (b) the proportion of the whole cost transferred to the highway user through special taxes. Our highways, rural and urban, have become from the public financing viewpoint, large income-producing properties. This transition, from the time that the roads were looked upon

financially as a burden beyond the possibilities of the tax payer to meet adequately, has been rapid, so rapid in fact that it is hardly proper to use the term "evolution" in discussing the subject, since it is more properly a "revolution". That is, the two most important characteristics noted here are both the products of the past decade. These facts are well brought out by the two schedules: The Sources of State Income for Highway Purposes; and, The Sources of Local Income for Highway Purposes.

Broadly speaking, there are two periods in which highways have taken a vital part in our scheme of transportation needs.

During the first period, from colonial days, the highways grew in importance up to the time when they were carrying, say around 1830, an ever growing commerce inland from the waterways. From this high peak the railroads gradually supplanted them. They receded as matters for State or Federal concern, until by about 1850 they were left almost wholly to the care of the localities.

The second period began with the advent of the bicycle in about 1890, but attained only moderate headway until the tremendous increase in the use of motor vehicles prior to but especially following 1914. With the passage of the first Federal highway legislation in 1916 the Federal Government again became concerned in the development of adequate highways, and the tendency now is for the State and Federal Government to take an ever increasing interest in the development of our road systems.

During colonial days, with the population largely centered

around the waterways, there were only small beginnings in the use of overland transportation, especially when compared to the vigorous efforts following the Declaration of Independence and the establishment of the nation to extend commerce inland. From 1775 until 1850 highways were at once the means and the limitations of the development of the country inland from the waterways. Both the States and the Federal Government engaged in the furtherance of through roads. During this period the States east of the Ohio encouraged the establishment of toll roads by granting franchises to private corporations and by buying shares in these companies.

In addition to the encouragement of toll roads, the States at public expense engaged in the laying out and building of roads, and the Federal Government constructed The National Pike from Cumberland westward to the Ohio Valley with funds from the Federal treasury.

1850 to 1890.

Following 1850 the railways had supplanted highways for overland transport, and the highways reverted quickly to local control and financing. During this period there was the beginning of cash taxes specifically levied for road and bridge purposes. One of the first of such taxes, in Baltimore County, Maryland, as early as 1766, provided for a tax of ten pounds of tobacco for each person.

In general, however, the road tax to be paid in labor, a tax which reaches far back into history, perhaps even to the time

when it was an obligation of servitude, was largely relied upon to provide for the roads until long after 1880. As late as 1904 it is estimated that perhaps as much as 50 per cent of the taxes on property for road purposes was permitted to be paid in labor; that is, in 1904 the best available records show that of the total estimated expenditure for the year of \$80,000,000 for road and bridge purposes, 59 per cent was paid in labor, 34 per cent in cash, 4 per cent was received from the proceeds of local bond issues, and 3 per cent from the States as State aid.

During this whole period from 1850 to 1890, the only important progress in highway finance was the levying of property taxes in cash and the growth of sentiment to secure the payment of the equivalent of labor taxes required in cash.

Period of State Aid and Early Federal Legislation - 1890-1916.

A really important milestone was set up in the progress of modern highway financing when the State of New Jersey in 1891 provided for aiding the counties through funds appropriated by the State.

The financial report for 1904 shows that these States had aided the counties during the year in some degree: California, Colorado, Connecticut, Delaware, Maine, Massachusetts, New Jersey, New Hampshire, New York, Pennsylvania, Rhode Island, Utah and Vermont. The total for these 13 States of such aid was \$2,607,000, of which Massachusetts, New York, Connecticut and New Jersey supplied about \$2,000,000, leaving the remaining \$600,000 to be divided between the other nine States.

In 1902 the State of Rhode Island provided for laying out and building at State expense a system of State roads. Other States followed soon after, including Connecticut, Maryland and California. In addition to these, others which did not assume full responsibility for building a system of roads, did provide funds which were required to be expended upon a definite system covering the main traveled routes of the State.

In 1916 the present Federal aid highway legislation was passed, the original appropriation being \$75,000,000 to be expended over a period of five years on the basis of equal participation by the States.

The sources of income of the State highway departments including the Federal funds, 1923 to 1928 inclusive, is indicated by the following schedule - Income of State Highway Departments by Major Sources.

INCOME OF STATE HIGHWAY DEPARTMENTS BY MAJOR SOURCES

	1923	Per cent	1925	Per cent	1928	Per cent
Bonds, Notes, etc.	\$ 88,186,784	18.9	\$141,402,022	21.4	\$121,483,599	14.3
State Taxes	24,348,478	5.2	21,489,004	3.2	11,955,782	1.4
Appropriations	37,461,579	8.0	33,390,642	5.0	42,468,386	5.0
Miscellaneous	15,498,492	3.3	15,051,956	2.3	12,611,916	1.5
Motor Vehicle Fees	147,075,966	31.4	199,845,163	30.1	259,134,820	30.6
Gasoline Taxes	15,872,884	3.4	89,328,340	13.4	234,163,826	27.6
County Funds Used	66,753,265	14.3	71,737,026	10.8	86,709,904	10.2
Federal Aid	72,343,401	15.5	92,180,406	13.8	80,798,355	9.5
Totals	\$467,540,849	100	\$664,424,571	100	\$849,326,598	100

From this schedule it will be noted that bond issues have been an important source of State highway income. Prior to 1913 all issues of State highway bonds were financed from proceeds of general property taxes, fees or other taxes levied by the State. In 1913 Maine established the procedure of issuing bonds at the rate of \$500,000 per year for highway purposes, the issues to be financed from the proceeds of the motor vehicle tax. This plan quickly spread to other States, and at the close of 1928 the total State highway bonds issued since 1894 amounted to \$996,000,000, of which \$670,000,000 are being retired from the motor vehicle income and \$14,500,000 from bridge tolls. The only States that have State bond issues of any considerable size to be financed from general property taxes are California, Maryland, Massachusetts, Michigan, New Jersey, New York, Pennsylvania, Rhode Island and Vermont. The use of this plan of financing extraordinary expenditures above current income is the method through which we are securing now the larger proportion of the annual mileage of paved roads.

The gasoline or motor fuel tax for road purposes was first applied in Oregon early in 1919. The idea was quickly followed in North Dakota, New Mexico and Colorado. It is recorded that this source of revenue was proposed as early as 1915 by President Wilson as a national tax, but the recommendation was not followed and the Federal Government has left this field open to the States. In Oregon the first tax was one cent per gallon on gasoline and one-half cent

per gallon on distillate. At the present time all of the States have levied a gasoline tax but there is no uniformity in the rate which varies from two to six cents, New York being the last State to adopt such a tax which became effective on May 1, 1929. There has been a constant tendency to increase the rate of this tax. The average rate for all States in 1928 was 3 cents and the estimated average rate for 1930 is $3\frac{1}{2}$ cents.

Since 1923, which is the first year for which reasonably complete financial data is available, State highway funds have increased at the rate of \$64,000,000 per year. By far the greater part of the increase has been paid direct by the motor vehicle user. This increase has averaged \$55,000,000 per year, leaving an average of \$9,000,000 from other sources, among which bond sales account for \$5,500,000. Since these bond issues in practically all of the States which now use this method, are financed and retired from the direct proceeds of the motor vehicle, almost the whole of the increase in State funds is met by the highway user as such and not by the property owner as such. The direct taxes on property for State highway purposes show an average reduction for this period of about \$2,000,000.

Not only has the direct income from the use of the highways carried the burden of the increase in State expenditures, but it has also contributed largely to the local income. In 1928 more than \$100,000,000 went to the local units from this source. The legislation early in the year 1928 increased the tax rate on gasoline in about 20 States, and of these the increase in 17 went to local roads. The

reports, therefore, for 1929, will show a much larger percentage of local road income derived from this source.

In brief, therefore, the outstanding development in modern highway finance is the ability of improved roads to earn a large income with which to maintain those already improved and extend the mileage of new construction.

There is one other important method of highway finance which is applicable to specific projects, based on the same principle of the earning capacity of the highway facility provided due to the large and ever increasing highway traffic. This is the revenue bond method, which may be illustrated by the financing of the bridge across the Ohio River at Louisville which has been recently thrown open to traffic. In this instance a municipal bridge committee was established, which was given authority under the State laws to issue bonds against the earnings of the proposed bridge, but without authority to impose any liability for the debt upon the property of the city or to include the debt as a part of the municipal indebtedness fixed by the constitution.

Fortunately, ^a committee of outstanding ability was appointed to act for the city, and in cooperation with a splendid banking house and a first rank firm of bridge engineers, a financial plan was carefully developed which successfully met the scrutiny and received the approval of the courts of the State. This plan basically consists of pledging the revenues derived from tolls imposed for the use of

the bridge to retire the principal and interest of the bonds, and when this indebtedness shall have been met the bridge is to become free to the public or the tolls reduced to the point of providing for maintenance only.

The bridge has been completed well within the estimated cost, and due to the care with which both the financing and engineering operations were administered, it is an outstanding example of the use of this method for financing such expensive structures in the interests of the public. Somewhat similar methods are being used by a number of the States, but the successful use of this principle requires such a high degree of specialized knowledge and experience, particularly in handling the financial set-up, that the same degree of success as that attendant upon the Louisville project has not been secured in a number of other instances.

There have been a considerable number of franchises granted in recent years for building toll bridges by private corporations or by individuals. These included some projects which were sound financial propositions, and many others where the probable traffic could not possibly support the cost of supplying the facility. In part due to the failure of some projects already built to provide an adequate income to carry the outlay, and in part due to the changed conditions of the bond market, bonds for privately owned toll bridges are not now in the favor of the investing public, and it does not appear probable that this method of providing such bridges will be followed to any considerable extent in the future.

As a general commentary, it may be said that the public has become conversant not only with the earning capacity of the highways, including bridges on principally traveled roads, but there are sufficient instances of public financing through bonds to be retired from such revenues that it is probable in the immediate future the public will undertake the financing of all major projects, either of general road building or of specific large individual undertakings.

Source of State Income for Highway Purposes

Source	1904		1921		1925		1928	
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
1. Motor vehicle fees			\$101,284,479	25.1	\$199,845,163	30.1	\$259,134,820	30.5
2. Gasoline tax			3,273,988	.8	89,328,340	13.4	234,163,826	27.6
3. Sale of bonds and notes			111,396,637	27.6	141,402,022 ⁽²⁾	21.3	121,483,599 ⁽²⁾	14.3
4. Transfers from local authorities			35,344,175	8.7	71,737,028	10.8	86,709,904	10.2
5. Federal aid			77,456,687	19.2	92,180,406	13.9	80,798,365	9.5
6. Appropriation from general funds	2,607,323 ⁽¹⁾		34,431,897	8.5	33,390,642	5.0	42,468,386	5.0
7. Miscellaneous			8,079,391	2.0	15,051,966	2.3	12,611,916	1.5
8. Tax levy			32,800,901	8.1	21,489,004	3.2	11,955,782	1.4
Total	\$2,607,323		\$404,068,155	100.0	\$664,424,571	100.0	\$849,326,598	100.0

Sources of Local Income for Highway Purposes

Source	1904 ⁽¹⁾		1921		1925		1928	
	Amount	Per cent	Amount	Per cent	Amount	Per cent	Amount	Per cent
1. Road tax levy	\$53,639,388 ⁽²⁾	67.4	\$348,513,837	46.9	\$412,825,227	60.4	\$416,812,566	49.9
2. Road labor	19,818,236	24.9						
3. Sale of bonds	3,530,471	4.4	323,176,097	43.5	144,413,116	21.2	150,222,357	18.0
4. Transfers from general tax levy							81,948,993	9.8
5. Gasoline taxes			239,472		24,833,979	3.6	53,778,852	6.5
6. Miscellaneous income			54,125,593	7.3	23,966,034	3.5	51,133,653	6.1
7. Motor vehicle fees			15,116,937	2.0	46,545,445	6.8	50,433,055	6.0
8. Transfers from State fund	2,607,323	3.3	2,321,266	.3	30,433,841	4.5	30,997,475	3.7
Total	\$79,595,418	100.0	\$743,493,202	100.0	\$683,017,642	100.0	\$835,326,951	100.0

(1) Amounts for 1904 are expenditures which were approximately the same as income.

(2) A considerable portion - one half or more - of the road tax levy for 1904 was actually paid in labor.