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PROGRESS AND PRESENT STATUS OF THE GOOD ROADS MOVEMENT IN THE UNITED STATES.

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PERIOD OF COLONIAL EXISTENCE.

When the early settlers first began the colonization of America their settlements were confined largely to the coast and inland waterways, because the water afforded them an avenue of transportation which supplanted for the time the necessity for roads. As the settlements increased and spread over larger areas of territory, however, the necessity for land communication between the various settlements arose, and the need for some form of highway became essential. At first the Indian trails and the paths of wild animals through the forests were used for this purpose, but soon wider roadways were required. The French settlers along the Mississippi River and the Canadian border, together with the Indians, were beginning to contest the westward encroachment of the English colonists from the Atlantic seaboard, and numerous armed conflicts were taking place. Troops, arms, and ammunition had to be moved to the frontier in order to prosecute these wars, and wider roadways had to be provided for their passage. The frontier settlements also demanded a closer communication with the more thickly settled coast colonies, in order that immediate relief might be procured in case of attack from the enemies on the west. Following this necessity for opening up roadways for military purposes, the commerce of the colonies grew to such an extent that better transportation facilities had to be provided. Consequently the colonies early had to turn their attention to the question of road building.

Since most of the colonists were of English descent, it was but natural that the first road laws should be based upon the English precedent. The first of these laws enacted in America was by the Virginia House of Burgesses in 1632 and provided that respect should be had to the course pursued in England. This was followed by other road laws, and in 1662 a stricter law was passed, having for its object the maintenance of highways in good condition. During this year surveyors were appointed whose duty it was to establish a system of highways wherever needed in their districts, as follows: First, a convenient road to the church was to be made, to be followed by the construction of roads to the courthouse, to Jamestown, and,

finally, from county to county. These roads were required to be 40 feet wide. The surveyors in doing this work had the assistance of laborers sent to them by the owners of adjacent estates, who, upon the call of their vestries, were compelled to furnish as many persons for this purpose as they had tithables in their families. Each surveyor was assigned certain work to be performed, and if he showed indifference to the performance of his duties, the county court, upon complaint being offered, instructed the clerk to communicate the fact to the church wardens of the parish through the minister and to command them to enforce the law. There were instances in which private citizens were granted a certain amount of tobacco as compensation for keeping a public road in repair. "In 1670 an annual allowance was made to Mr. Thomas Hunt of one thousand pounds under an arrangement binding him to maintain a good roadbed for highways, foot and cart, over the mill dam at Portam."¹

Road building in Maryland had its beginning in 1625, but the first road law passed by that colony was in 1666. Under this law overseers were to be appointed who could levy tobacco or labor on the taxables of each county for the purpose of building and working the roads. The roads in Maryland, like those in the other colonies, were little more than tracks through the forests. The New York deputies in 1671 were ordered to open one-half of the road from Newcastle to Bohemia Manor and the other half was to be opened by Maryland. In 1674, Cecil County, Maryland, took up road building, opening among others the old Choptank Road, which had been cleared to a width of 12 feet in 1682. New road laws were passed in 1696 and 1704, and the latter law remained in force for nearly a century.

In the New England colonies the oldest road was the Plymouth or Coast Path, which joined the capitals of the two colonies, Boston and Plymouth. This road was established by the general court by way of old Braintree in 1639. At this time, however, very little attention or interest was being devoted to the subject of road improvement. In 1653 the Massachusetts commissioners established the "Kennebunk Road by the Sea" as a highway "between towns and towns for horse and foot."

The following regulation for road building, which had been in force in Pennsylvania until the beginning of William Penn's administration, was established by the government of the Province of New York in 1664:

In all public works for the safety and defense of the government, or the necessary conveniences of bridges, highways, and common passengers, the governor or deputy governor and council shall send warrants to any justice, and the justices to the constable of the next town, or any other town within that jurisdiction, to send so many laborers and artificers as the warrant shall

¹ Economic History of Virginia in the Seventeenth Century, vol. 2, pp. 523-565.

direct, which the constable and two others or more of the overseers shall forthwith execute, and the constable and overseers shall have power to give such wages as they shall judge the work to deserve, provided that no ordinary laborer shall be compelled to work from home above one week together. No man shall be compelled to do any public work or service unless the press (i. e., impressment) be grounded upon some known law of this government, or an act of the governor and council signifying the necessity thereof, in both which cases a reasonable allowance shall be made.

The highways to be cleared as followeth, viz., the way to be made clear of standing and lying trees, at least 10 feet broad; all stumps and shrubs to be cut close by the ground. The trees marked yearly on both sides—sufficient bridges to be made and kept over all marshy, swampy, and difficult dirty places, and whatever else shall be thought more necessary about the highways aforesaid.

This law was slightly amended in 1678 by an order of the court at Upland, so that every landowner was required to build roads on his land connecting his home with those of his neighbors.

Under the government of William Penn the roads of Pennsylvania were given over to the county courts, which appointed overseers, while the grand jury laid out the roads. Control of the roads, however, was given to the townships in 1692, and in 1700 an act was passed whereby jurisdiction over them vested in the county justices. Just a few years later the New Jersey assembly also took up the question of road legislation.

South Carolina enacted its first road law in 1682, constituting a board of commissioners and fixing a labor tax, but very few roads were built prior to 1730. Roads were built by the French in Alabama as early as 1702. These roads continued to serve as mail and stage lines long after French occupation ceased. In Georgia the first road was built in 1735.

Thus it is apparent that all of the colonies early began to realize the necessity for highways. These various laws were very crude and were productive of very little in the way of accomplishing an improvement of road conditions. They all provided for extremely localized systems of administering their road affairs, depending upon local revenues consisting generally of labor taxes. At least, however, they marked the beginning. At that time scarcely more could be expected from the colonies, because they were in an undeveloped condition and were receiving no aid and but little encouragement from the mother countries. They possessed only small means and were thus forced to be content with crude and inferior highways. Their time, energies, and thoughts were consumed in erecting homes and clearing fields, and in repulsing the assaults of the Indians and resisting the oppressions of the old countries; so that for more than two centuries after colonization began nothing more was attempted in the way of road improvement than to meet the most pressing exigencies and necessities of the times.

EARLY NATIONAL EXISTENCE.

The American Revolution, however, established the independence of the colonies, and political and economic conditions began to assume a brighter aspect. Almost contemporaneous with the inauguration of the Federal Government numerous schemes for internal improvements were projected. The population was increasing rapidly, and the Allegheny Mountains, so long the western boundary of the colonies, no longer held back the tide of immigrants. Settlements sprang up west of the Alleghenies and soon an insistent demand arose for means of communication between the East and West. Commerce was also developing among the various States and the necessity for better transportation facilities was becoming more apparent. Consequently early in the nineteenth century the subject of road building became of paramount importance and a decided movement for better roads was begun.

This movement first manifested itself in the construction of toll roads. Many corporations were chartered for this purpose and many excellent roads were built under this system. A notable instance is what was known as the Wilderness Turnpike, extending from the Shenandoah Valley in Virginia westward by way of the waters of the upper Tennessee and Cumberland Gap to central Kentucky. But the first toll road constructed in North America was the Philadelphia and Lancaster Turnpike, begun in 1792. During the first half of the nineteenth century the building of turnpikes or toll roads was carried on actively throughout all of the States. According to the report of the Secretary of the United States Treasury in 1808, there had been incorporated in the State of New York 67 turnpike companies, with a capital of about \$5,000,000, and 900 miles of road had already been completed and 200 miles more were to be completed. This movement grew so rapidly that in 1828 there had been incorporated in the State of Pennsylvania 168 companies for the purpose of building about 3,110 miles of turnpike roads, 2,380 miles of which had already been completed at a cost of nearly \$8,500,000.

It was inevitable, however, that the turnpike system should eventually be abandoned. It was impracticable of successful operation, because it was almost impossible to maintain the roads properly and retain a sufficient amount from the tolls collected to meet the dividend requirements on the capital stock invested. In proof of this, it has been stated that none of the toll roads of Pennsylvania yielded profitable dividends. This toll system, of course, proved very beneficial in the early development of the agricultural and commercial interests of the country, as it resulted in the building of a considerable mileage of improved roads, which could not have been financed in any other way at that time; but with the advent of the railroad as a practical factor

in transportation, about 1832, the building of turnpikes was gradually discontinued. At the present time there are a number of isolated sections of toll roads throughout the country, but these are rapidly being purchased by the States or counties and made free, and it is probable that within a few years there will be no public highways in the United States on which toll charges will be allowed.

There also grew up, immediately after the establishment of the Federal Government, a strong sentiment for a system of National roads, to be built and maintained by the National Government. The advocates of this policy were for a while successful and numerous appropriations from the National Treasury were made by Congress for this purpose. The first appropriation was made in 1806, when a law was enacted providing for the construction of a great National road from Cumberland, Md., to a point which was gradually moved westward to the Mississippi River near St. Louis. This road has become known in history as "the old Cumberland pike." Other appropriations were made from time to time until \$7,000,000 in all had been appropriated for this undertaking. Appropriations aggregating about \$7,000,000 were also made for other National roads, making a total of about \$14,000,000 appropriated by the Federal Government for the construction of highways. The policy of interpreting the Federal Constitution so as to permit these appropriations was not, however, finally abandoned until about 1858, just prior to the Civil War. After the close of the war, the problem of meeting the stupendous National debt engaged the entire attention of Congress and created a drain upon the National revenues, so that the subject of National participation in road improvement dropped out of the public mind.

FROM 1860 TO 1890.

Road conditions in the United States suffered a severe setback as a result of the Civil War. The National Government definitely ceased its participation in this form of public improvement; the turnpike companies for most part passed out of existence; and the States were giving neither aid nor attention to the subject. Local revenues, mostly in the form of statute labor, were depended upon entirely for the construction and maintenance of the roads, and the old system of extreme localization was revived, with the administration of road affairs left to the towns in the North and East, and to the counties in the South and West. During this period many miles of new roads were laid out, but so little attention was given to actual improvement that a road census, made in 1904 by the Office of Public Roads, revealed the fact that there were 2,151,000 miles of public roads in the United States of which only 7.14 per cent were improved.

This census also showed that the total annual expenditure for roads in the year 1904 was \$79,000,000, or an average of about \$37 per mile, and of this amount \$19,000,000 was represented by the wholly inefficient statute or forced labor, which, in fact, reduces the cash expenditure for that year to an average of about \$27 per mile. This entire fund was administered under the system of localized control so long in vogue throughout the country, and it was largely due to this system that so little in the way of good results was accomplished, for the reason that it fails to insure skilled supervision, provides an inadequate revenue, depends upon a purely unskilled and unreliable class of labor, and practically precludes any construction of a permanent character.

STATE AID.

For some time, however, public sentiment throughout the country had been growing in favor of a reform in this old system of administration. This sentiment first found tangible expression in a law passed by the New Jersey Legislature in 1891, providing for an annual appropriation of \$75,000 from the State treasury. This law provided for local initiative and for local surveys, estimates, and supervision, while the State was given the right to accept or reject the petition for State aid and to accept or reject contracts for construction. It also provided that, upon petition, addressed to the board of freeholders of the county, by two-thirds of the property holders along at least one mile of road, pledging themselves to pay 10 per cent of the cost of improving such road and requesting State aid, application could be made to the State Board of Agriculture for aid to the extent of $33\frac{1}{3}$ per cent of the total cost of improvement, while the county was to bear the remaining $56\frac{2}{3}$ per cent of the cost and maintain the road.

While this law gave very little authority to the State, still it was along the right lines, and the ultimate result was sure to be a vesting of greater control in the State and an increase in its annual appropriations. The first important change in the law was made in 1894, when the work was taken from the State Board of Agriculture and placed in the hands of a commissioner of public roads, to be appointed by the governor for a term of three years. The control of the work is still largely in the hands of local officials, but the power of the State highway department to accept or reject petitions and contracts has a most beneficial effect in preventing useless construction and in requiring the work to be done in accordance with proper methods. The State appropriations have gradually been increased each year until the amount available from that source for State aid in road building in 1910 was about \$500,000, consisting of \$300,000 direct appropriation and about \$200,000 derived from the automobile tax.

Following closely the example of New Jersey, Massachusetts in 1892, Connecticut in 1895, and New York in 1898, established State highway departments with State aid, or took steps looking to that end. New York State affords a striking instance of development from a purely local to a highly centralized system. Prior to 1898, extreme localization in the administration of road affairs prevailed. During that year, however, two laws were enacted by the State legislature, one of them known as the "Fuller-Plank" or money system act, and the other known as the "Higbie-Armstrong" or highway improvement act. The "Fuller-Plank" act had for its object the maintenance of the public roads of the State, and provided that towns adopting a system of cash road taxes in lieu of the old labor tax could receive from the State 25 cents for each dollar of taxes so levied and collected. This law was amended in 1902 to allow the amount which was to be paid by the State to be increased to 50 cents on each dollar so raised locally. This was a powerful incentive to the abolition of statute labor and to the raising of cash road revenues, as can be seen from the fact that the annual amount paid out by the State treasury under the act increased from \$34,517 in 1899 to \$1,057,605 in 1908.

The gradual improvement of a system of stone-surfaced roads throughout the State, connecting the county seats and the cities and larger villages, was contemplated by the "Higbie-Armstrong" act. Under this act the State was to pay 50 per cent, the county 35 per cent, and the town 15 per cent of the cost of stone-surfaced roads to be built in accordance with its provisions. Petition for this aid had to originate with the county board of supervisors, upon receipt of which and in accordance wherewith the State engineer and surveyor was required to prepare plans, specifications, and estimates of cost and, if approved by the county board of supervisors and local funds were available, contract was awarded and supervision of the work undertaken by the State engineer. Roads improved under this act were to be maintained by the towns, under directions from the State engineer and surveyor. The appropriation made with the passage of the act was \$50,000, which was increased from year to year. In addition to this the State legislature adopted a resolution in 1905 proposing an amendment to the State constitution authorizing an issue of \$50,000,000 in State bonds for road purposes. This resolution was ratified at the general election in November, 1905, and in May, 1906, an act was passed providing for issuance of the proposed bonds.

In 1907 the New York legislature adopted a further plan whereby the county pays 2 per cent of the total cost of roads for each \$1,000 of assessed valuation per mile in such county, and the town pays 1 per cent for each \$1,000 of assessed valuation for each mile in such town. During this same year, also, a committee was appointed to

undertake a revision of the highway laws of the State, and upon its recommendation the road laws of the State were amended and consolidated. The present law, which became effective January 1, 1909, is the result. Under this new law a State highway commission, consisting of three members, was provided for, together with a system of about 2,800 miles of State roads, to be improved and maintained solely at the expense of the State.

The county roads are to be improved jointly by the State, the county, and the towns; the county is to pay 2 per cent of the total cost of such improvements for each \$1,000 of assessed real and personal property liable to taxation in such county for each mile of public highway therein, and the town is to pay 1 per cent of such total cost for \$1,000 of assessed real and personal property liable to taxation in such town for each mile of public highway therein, but not exceeding 35 per cent of the cost shall be paid by the county or 15 per cent by the town or towns. The town highways are to be improved and maintained by the towns with funds locally raised and supplemented by the State aid apportionment, which is to amount to from one-third to one-half of the entire cost according to the assessed valuation of real and personal property for each mile of highways in the town. The proportion paid by the State is to vary inversely with the assessed valuation.

Under this new law the State highway commission has supervision, either directly or indirectly, over every mile of public highway in the State. For administration of its road affairs, the State is divided into six divisions, with an engineer in charge of each division; his duties are confined to improving and maintaining the State and county roads therein which have no connection with the town highways. While the funds for the town highways are expended locally, still they are under the supervisory direction of an official of the State highway department. Improvement of State and county highways is carried on wholly by contract. Plans, specifications, and estimates are prepared by the State highway commission, and, in the case of county roads, are submitted to the board of supervisors of each county involved for final approval. The State highway commission is given the power to accept or reject the improvement when finally completed. The first deputy of the commission has the direction of the maintenance of State and county roads.

Other States have adopted the plan of State aid and State supervision in some form, among which are Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Iowa, Illinois, Kansas, Louisiana, Maine, Massachusetts, Maryland, Michigan, Minnesota, Missouri, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin. Some few of these have

only State departments for investigation and supervision, others furnish State aid only in the form of convict labor, while most of them furnish State money aid with State supervision.

Among those having State highway departments for investigation and supervision are Iowa, Kansas, Missouri, North Carolina, and Wisconsin. In these States the State highway organization is maintained for the purpose of giving advice to local officials upon any phase of the road question which may arise in any locality throughout the State, but no money aid of any kind is expended in the actual work of improvement. When counties or their local communities undertake improvements, the State highway department furnishes an engineer to supervise the work.

The State of Illinois, in addition to the investigative and supervisory work of the State highway department, extends its aid in the actual work on road improvement by maintaining a crushing plant. It operates it by the use of State convicts and distributes crushed rock for road-building purposes to the various counties throughout the State on application of the county officials. No charge is made for crushing this rock and placing it on board the cars at the crushing plants, but the freight charges have to be paid by the county. The State highway commission, however, makes agreements with the railroad companies concerning what freight rates shall be charged; and, consequently, the counties obtain this prepared material at the lowest possible rate of freight that can be secured.

The State of West Virginia in 1909 passed a law making a direct appropriation from the treasury for the construction of State-aid roads and also placing both the State and county convicts at work upon its highways. Virginia also provides convict labor, and makes an annual appropriation of \$250,000.

Arizona, Colorado, and New Mexico extend aid by the use of convict labor, and also by appropriations from either the State or Territorial treasury for the construction of certain specified State or Territorial roads. The States furnishing only convict labor are Florida, Georgia, Louisiana, and North Dakota. In this form of aid Georgia probably takes the lead of any State in the Union. Both State and county convicts are worked upon the roads each day in the year, and a force of about 4,500 convicts is working a wonderful reformation in road conditions throughout that State.

The States taking the lead in the work of road improvement are devoting considerable attention to the construction of trunk-line roads. This is a very wise move on the part of these States, because any money expended by a State on road construction should be in pursuance of a plan looking to the ultimate establishment of a connected system of State roads. This can not be as easily and success-

fully attained by any other method as by the adoption of the trunk-line system. Among the States adopting this plan of improvement are Maryland, which is to expend \$1,000,000 for trunk-line roads in 1910, New Hampshire to spend \$430,000, New York to spend \$2,500,000, and Washington to spend \$620,000, while at the recent election a law was ratified in California providing for the issuance of \$18,000,000 in bonds for the construction of a system of trunk-line roads throughout that State.

PRESENT TREND.

The present trend of road affairs throughout the various States is toward a reform in administration and the adoption of a more progressive policy. The old system of paying road taxes in labor has proved inefficient and is being rapidly discarded for the better plan of requiring all road taxes to be paid in cash. It is also apparent that the State will ultimately be the unit of administration and will largely control and direct road work in the counties and townships. A reduction in the number of road officials is also inevitable, and knowledge and skill in road building will be required of each official. The necessity for skilled supervision is being recognized in every State, and is being met by the appointment of competent highway engineers. In many States the State highway departments employ a corps of highway engineers, and different counties throughout these States also employ county highway engineers, while in many of the States not having State highway departments the counties are engaging the services of skilled engineers to supervise their road work. This step marks one of the greatest strides yet made toward the abandonment of old and inferior methods of highway administration, construction, and maintenance. All of these reforms, as well as other reforms in methods of construction and maintenance and a gradual improvement of road conditions, are being rapidly brought about, and largely through the agitation and work of the United States Office of Public Roads, the State highway departments, and the various highway associations throughout the country.

During the year 1911 the legislatures of 42 States will be in session, and the outlook for road legislation is exceedingly bright. Already members of the legislatures of various States and of various organizations, having for their purpose the improvement of highway conditions throughout the country, are formulating highway bills with the hope of having them enacted into law. In every State the sentiment is strongly in favor of effective highway legislation, and in most of the States not having already adopted it new legislation, either enacted or pressed for enactment, will embrace in some form or other the principle of State aid or State supervision.