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Committee on Highways
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JEFFERSON CITY, MISSOURI

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October 28, 1943

INFORMATION SERVICE

TO DELEGATES OF THE
CONSTITUTIONAL CONVENTION --

We enclose a "History of the Missouri State Highway Department". Possibly it may furnish you with some information concerning the background of the Department.

Should you desire any information at any time, do not hesitate to request it. We are at your service.

Sincerely yours,

C. W. BROWN, Chief Engineer

By T. Ballard Watters
T. Ballard Watters
Information Service

HISTORY OF MISSOURI HIGHWAY DEPARTMENT

ISSUED BY

THE MISSOURI STATE HIGHWAY DEPARTMENT

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HISTORY OF THE MISSOURI HIGHWAY DEPARTMENT

As great rivers are dependent upon many small streams for their existence, so is the Missouri state highway system indebted to the many small organizations and associations formed during the early 1900's to promote good roads.

There is but little to connect the present Missouri highway system with the early state roads. The routes designated and opened as state roads after the Louisiana Purchase and up until the railroad era properly belong to an earlier chapter: however, sufficient information relating to the early system will be given here to establish proper background.

The first public highway in the state was probabely the road leading from Mine la Motte, near the present city of Fredericktown, to the Mississippi River near the present town of Ste. Genevieve. It is certain this was used as a pack trail by La Motte Cadallic as early as 1717 and was probably used for wheeled conveyances by Renault during the 1720's or 30's. The Rue Royale or El Camino Real, later called Kingshighway, was ordered opened in 1808. It was surveyed and opened from New Madrid to Shawneetown during that year. The historic Boonslick Trail was opened by 1810. Many other state roads were established from then until about 1870.

The early state roads were so designated by acts of the legislature, which also named a commission for each route. The counties through which the road passed were severally charged with the construction and maintenance of same. Funds for such construction were derived from either the common fund

of the county treasury or the three per cent fund, at the discretion of the county court.

The coming of the railroad killed all interest in interstate highway construction and all roads then became county roads by act of the General Assembly in 1868.

The full development of railway system in Missouri provided for the transportation of rural products shipped to more distant markets. There still remained the problem of hauling from the farm to local market or railroad station. This was a local problem--multiplied many times over--in the various communities of the state. It may be said there was little, if any, attempt to provide all-weather roads during this era. Occasionally, particularly bad stretches would be surfaced with local gravel or rock, but no concerted action was made toward permanent improvement of rural roads.

Some road improvement was made during this era by private enterprise in the nature of toll routes. The earliest of these were plank roads which did not prove to be economically feasible. A number of plank roads were constructed during the 1850 to 1860 period but were soon abandoned for a more satisfactory type. The more notable of these were the Glasgow-Huntsville and Ste. Genevieve-Iron Mountain plank roads. The gravel and macadam toll roads proved to be satisfactory and profitable and continued in existence in some localities until the year 1925. The law under which toll road companies operated was repealed in 1931. The counties of Pike, Lincoln, Boone and Cape Girardeau had the most extensive system of toll roads.

The seasonal condition of the roads was merely a source of annoyance and inconvenience prior to the 1890's. If the mud was bad, one either used more horses to the wagon or carriage or deferred the trip. This attitude persisted until mechanical genius began devising "horseless carriages" with some degree of success. In 1893, J. D. Perry Lewis, of St. Louis, built the first self-propelled vehicle in that city. It was capable of a speed of seven or eight miles per hour. A year and a half later he built an electric motor which he installed in his car. The sixth Winton machine manufactured was delivered to John L. French, of St. Louis, in the year 1898, and on Thanksgiving Day of that year Mr. French and George P. Dorris organized the St. Louis Motor Carriage Company, the first automobile factory in St. Louis. The first delivery from this factory was in 1899. These were crude troublesome vehicles in comparison with a later product but they created a desire for faster and more convenient highway transportation.

The turn of the century found Missouri with a goodly number of automobiles operating in various localities. Neither the rural road nor the vehicle was suited for the purpose. Motoring was definitely a good weather proposition, with a total suspension of operation during the winter months. But the seed of good road desire was being sown. The harvest was more distant than many thought; however, the transformation of desire into action commenced slowly with gradually increasing impetus until it finally reached Gargantuan proportions and the desire was then crystallized into a definite and forceful action which "lifted Missouri out of the mud."

No single individual is solely responsible for any great undertaking; and so this was the case in the formation of our good roads movement. "It's the everlasting teamwork, etc." that accomplishes things. Without universal demand there is little action under a democratic form of government. The universal demand for good roads was planted as seed by the advent of the automobile; was watered and cultured by the desire for satisfactory operation of the same and was cultivated and matured under the hot sun of demand for adequate facilities to use the motor car both as a pleasure and a profit.

From neighborhood conversation, the next step was the formation of good roads organizations and groups to give a louder voice to desire.

There was some action as well as discussion during the formative period. Improvement and maintenance of rural roads was to be a local problem for some years, and as it was realized there was neither money nor sufficient sentiment to hard surface many miles of road, some method of improving dirt roads was sought. The answer was the use of a road drag. Mr. F. G. Fulton, of Daviess County, in an article in Farmer's Voice, states he began dragging a particular stretch of road in July 1899, which was soon considered the finest mile of road in the state. The man most prominently associated with the road drag is D. Ward King of Maitland, who in 1894 devised a road drag made of split logs which, when used properly and regularly, made great improvement to the surface of dirt roads. Demonstrations of this drag were made in several localities, some of which took on the

size and magnitude of rallies.

The leaders of the time, realizing that the then present system of local road administration would never create a uniform state system of highways, began an agitation for legislation which would provide adequate finances and state supervision of a state system of good roads. In August, 1906, Governor Folk issued a proclamation relative to an interstate good roads convention to be held in Chillicothe, from September 3 to 8th. This convention was attended by several thousand interested good road boosters and 200 appointed delegates. Many manufacturers of road machinery gave demonstrations on road building and maintenance.

This convention passed the following resolutions:

"First - We favor the creation by the General Assembly of the office of State Highway Engineer, under the jurisdiction of the State Board of Agriculture, to cooperate with the local officers in the furtherance of good roads.

Second - To provide an adequate number of trained men for the supervision of road construction in the various localities of this state, we recommend the immediate establishment of a course in road engineering, and the equipment of a suitable laboratory for the testing of road materials at the State University of Columbia.

Third - All the people of the state being interested in and benefitted by a better system of highways, State Aid should be extended to the various counties for the construction and improvement of the public roads, such State Aid being provided from new sources of revenue other than those now existing or in the treasury.

Fourth - Redress from the present distressing situation in road maintenance and construction can only come through judicial changes in our State Constitution, and such changes being possible move quickly and move surely by the adoption of a new constitution covering adequate sources of revenue than by any amendment to the present constitution. We therefore strongly urge upon the Legislature the calling of a constitutional convention at the earliest possible moment.

Fifth - We strongly endorse the drag as the most effective and practical method of maintaining dirt roads, and would suggest that some law be enacted whereby its more general employment for this purpose may be effected."

No one at that convention could foresee the growth of the motor car and truck industry, but light was beginning to show the path to pursue more clearly. These resolutions are quoted in full as it is important, in order to obtain a clear insight on the motives behind subsequent legislation, to keep them in mind.

Those responsible for the Chillicothe meeting included Governor Folk; S. W. Hudson, President of the State Board of Agriculture; Geo. B. Ellis, Secretary of the State Board of Agriculture; J. D. Hairston, Fayette; P. C. Quinn, Columbia; H. H. Harlow, Onawa, Iowa; Allen Moore, Chillicothe; John Howatt, Clarksville; I. C. Dempsey, Bowling Green; W. R. Goit, Kansas City; Dr. R. H. Jesse, President, Missouri University; Honorable W. J. Stone, United States Senator for Missouri; Benton Gabbert, Dearborn. Speakers for the occasion were: Honorable Norman J. Colman, St. Louis; Honorable Walter Williams, Columbia; F. M. Filson, Cameron; A. N. Johnson, State Highway Engineer for Illinois; Honorable Thos. H. MacDonald Chief Engineer for Iowa (now Commissioner, Public Roads Administration, Washington, D.C.); F. P. Spalding, Professor of Civil Engineering, Missouri University; and Mrs. Mary Tootle James of St. Joseph.

By 1906 the expanding usage of the automobile had raised other questions as well as the good roads issue. The Jefferson City Tribune, in an editorial Sunday, October 14, 1906, urged uniform licensing of automobiles while deploring

the reckless manner in which they were operated; it suggested the method of county licensing be abandoned in favor of a state license. November 10, 1906 the utomobile clubs of Kansas City and St. Louis joined in a request for a bill to be enacted by the General Assembly to regulate and license automobiles. They suggested a registration fee of two dollars to be placed in a state road fund for the construction of state highways. These clubs considered 20 miles per hour as an unsafe speed and recommended such speed be the maximum on state roads; also that there be appointed a state examiner of chauffeurs.

A still more powerful influence for the construction of good roads was soon to be felt. In January 1907 the local press carried articles stating that United States free rural delivery service would probably be discontinued if the rural roads were not improved. And thus the triumvirate was formed--local groups, the state, and the Federal Government. The first was to lose its identity, but the latter two remain prime factors today in Missouri road building.

Answering the desire of the people, as evidenced by the Chillicothe convention, and other important but too numerous to mention groups, Governor Folk in his message to the 44th General Assembly urged new road legislation and the creation of office of state highway engineer with suitable methods of financing same. In that same month, January, 1907, two good road conventions were held on the same date in Jefferson City. The Good Roads Society met, elected officers for the ensuing term consisting of George E. Vogel, President, St. Louis; D. H. Lincoln, Secretary-Treasurer,

St. Louis; Carl Hirdle, St. Louis; and J. F. Mermourd, Monett, as Vice Presidents: they asked the legislature for a bill authorizing the construction of a cross state road from Kansas City to St. Louis, also a north and south state route and appointed the following as a committee on these resolutions: George E. Vogel, D. H. Lincoln, H. W. Stienbess, J. H. Stafford, Roy Britton, of St. Louis; T. W. Maxwell, H. D. Kaste, and Huston Wyatt, of St. Joseph; C. W. Fear, D. M. Bolin, of Kansas City; E. W. Stephens, Columbia; J. W. Mellor, Sedalia; and Cornelius Roach, of Carthage. The other good roads convention had been called by the State Board of Agriculture and met with 150 delegates present. D. Ward King, of Holt County, was elected President and J. H. Houston, Secretary. This convention appointed a committee to work with the senate and house roads committees. This first committee submitted the following resolutions to the General Assembly:

First - For a constitutional amendment to provide revenue sufficient for the state to pay fifty per cent aid to counties to be used in the construction of roads.

Second - A constitutional amendment to enable the counties to raise funds to match the state aid.

Third - A constitutional amendment providing for road districts to raise funds to match state aid.

Fourth - To begin work on a system of permanent roads by appropriating $500,000 for road purposes.

Fifth - Establish a department of road engineering in Missouri University and provide for skilled supervision of roads in each county.

Sixth - Establish a laboratory for testing road materials at Missouri University.

Seventh- To appoint a committee of five to draft the necessary bills.

This committee consisted of John L. Leonard, St. Joseph; John H. Bothwell, Sedalia; E. C. Dameron, Clarksville; and H. J. Waters of Columbia.

It is to be noted that these resolutions followed closely those adopted at the Chillicothe road convention.

The 44th General Assembly witnessed the introduction of many bills relating to state highways and when the session ended a bill--providing for the state regulation and registration of motor vehicles--had been passed and approved. This repealed the county registration bill passed in 1903 and provided for a five dollar registration fee to be collected by the Secretary of State and also required the registration of motor vehicle operators upon payment of a two dollar fee. Another bill provided for the creation of the office of county highway engineer, and still another for the appointment of a state highway engineer by the State Board of Agriculture, and finally the establishment of a state road fund. The state road fund was to be distributed to the several counties and the City of St. Louis in proportion to the assessed valuation of properties established therein for purposes of taxation, provided that no county or city should receive more than an amount equal to five per cent of the total amount accumulating to the general state road fund available for use during that year. These funds were to be used to pay for one-half the cost of construction or other improvements. The act specifically provided that no part of the general road fund should be used to pay for right-of-way. An appropriation of $500,000 was then made to the state road fund; this money was a Civil War claim

paid by the federal government. The act providing for dragging public highways provided a compensation not to exceed five dollars per mile per year, excepting those highways where United States rural delivery routes had been or might be established. Payment not exceeding ten dollars per mile per year could be made for dragging on such routes.

Dragging dirt roads failed to provide all-weather roads and was a temporary remedy; however, it gave the motorists a taste of better things to come. A well dragged earth surface was comparable in riding qualities to a concrete pavement and did much to increase the ever growing demand for good roads.

With necessary legislation provided, the State Board of Agriculture appointed Curtis Hill to the office of state highway engineer. He was to promulgate the good roads movement, assist the county highway engineers in an advisory capacity and administer the state aid fund. The Secretary of State reported license fee collections for May, 1907, to be $1,666. This was during the first month of the operation of the registration law. In June, 1907, Governor Folk issued a statement that he planned a rock road from Kansas City to St. Louis.

The Highway Engineers Association of Missouri was organized February 28, 1908, at a convention held in Jefferson City attended by fifty-eight county engineers. This organization was created "in order to establish closer relations and bring about an exchange of ideas among the county highway engineers." This body functioned for and by county highway engineers and civil engineers until the passage of the Hawes Law in 1917, when it was expanded

to include members of the newly created state highway department. Two years later the county highway engineers law in many counties was repealed. To further the interest in highway matters, the organization then expanded to include members of the county courts, special road districts, county commissioners, city engineers, and any other individuals connected with highway work. This is one of the oldest good roads associations in the United States and is always identified with progressive movements in highway matters in this state. The first group of elected officers of this association were P. S. Quinn, President; N. A. Matlock, Vice President; Curtis Hill, Secretary, and J. M. Clack, Treasurer.

The idea of a cross-state highway from Kansas City to St. Louis advocated by Governor Joseph W. Folk, many good road groups and other individuals, crystallized into form during the administration of Governor Herbert S. Hadley. A misunderstanding in regard to an appropriation for roads had delayed the cross-state highway movement. The appropriation by the Legislature in 1907 of one-half million dollars for road work--to be distributed among the several counties in proportion to their assessed valuation--came simultaneously with the cross-state movement advocated by Governor Folk. A great many citizens conceived the idea that the appropriation had been made expressly for this one particular road and this aroused severe opposition against the route and the state highway department.

Newspapers, various road organizations and historical societies helped to keep alive the movement, and in 1911 Governor Hadley appointed a committee of seven from the State Board of Agriculture to study the feasibility of three routes already suggested by State Highway Engineer Hill. This committee--announced June 27--was composed of N. H. Gentry, Sedalia; Fred T. Munson, Osceola; E. E. Swink, Farmington; W. A. Dallmeyer, Jefferson City; George H. Sly, Rockport; Charles Householder, Thompson, and Allen H. Thompson, Nashua, and was charged with the duty of making an official designation of a cross-state highway across Missouri from east to west.

The three routes suggested as practical by Engineer Hill, who had prepared data and maps covering same, were designated the southern, the central and the northern routes.

On June 28, the committee announced an inspection tour would be made over the proposed routes on July 17, and following this inspection trip the State Board of Agriculture was to meet in Jefferson City for the purpose of selecting the route to be constructed.

The smoldering embers of desire for good roads, which had flared and receded so often in the past, now broke into terrific heat throughout the state. Everywhere along the proposed routes forces worked under pressure to prepare the road for inspection. More work was probably done on these routes in the two weeks preceding the inspection trips than in any previous period. The inspection tour was postponed until July 24 to allow further preparations.

The inspection tour, accompanied by the Governor, the Lieutenant-Governor, members of the State Board of Agriculture, and others, started July 24 and continued until July 28. This trip was epochal in Missouri road History for two major reasons; it awoke the spirit of good roads and demonstrated by mass use of the automobile that the motor car was here to stay.

On August 2, 1911, at the Jefferson Theatre in Jefferson City, the meeting to decide which route was to be constructed commenced. The members of the State Board of Agriculture, acting in the capacity of jurors to decide which route offered the best advantages and would be the better for the welfare of the state, were: Governor Herbert S. Hadley; W. P. Evans, State Superintendent of Schools; F. B. Mumford, Dean of the College of Agriculture; and members representing the sixteen Congressional Districts. Upon the suggestion of the Governor, the advocates of the respective routes appointed a committee--composed of Judge David H. Harris, of Callaway; Frank W. Buffum, Pike; Newland Conkling, Carroll; James J. Gill, Montgomery; N. H. Gentry, Pettis; John R. Hairston, Howard; A. H. Bolte, Franklin; and J. W. Hunter, Lafayette, to draft resolutions expressive of the sentiment of the convention.

The hearing was long to be remembered as a red letter day in Jefferson City. For seven exciting hours over 1600 persons sat in stifling heat, under the spell of Missouri oratory, while the proponents of the various routes plead their cause. John H. Bothwell and M. V. Carroll spoke for the southern route. The northern route was advocated

by John F. Morton and Judge George Robertson. The central route was championed by U. S. Hall and Walter Williams. The Montgomery City cut-off was urged by a Mr. Uptigrove and the advantages of the Higginsville-Oak Grove route were pressed by N. R. Holcomb. Governor Hadley made an address to the assemblage.

At noon the next day, August 3, the State Board of Agriculture announced the selection of the central route from St. Louis to New Florence. The Board met again August 17, 1911, and after hearing a report by Curtis Hill, State Highway Engineer, designated the central route as the "cross-state highway." Engineer Hill made a further report to the Board on September 29, 1911, setting out the progress made and stating that road bond issues in Lexington, Columbia and Fulton had carried to the extent of $330,000.

The central route was a historic one following along the Daniel Boone and Santa Fe trails. Because of its location, it was named the "Old Trail Road." The final designation of this route was from the post office building, St. Louis, through Wellston, Pattonville, St. Charles, Harvester, Cottleville, Dardenne, Wentzville, Foristel, Wright City, Warrenton, Jonesburg, High Hill, New Florence, Danville, Mineola, Williamsburg, Calwood, Fulton, Millersburg, Harg, Columbia, Midway, Rocheport, Fayette, Glasgow, Gilliam, Slater, Marshall (or Rocheport, New Franklin, Boonville, Lamine, Arrow Rock and Marshall), Malta Bend, Grand Pass, Waverly, Dover, Lexington, Wellington, Levasy, Buckner, Independence and the post office building in Kansas City.

the route was formally dedicated as "The Old Trail Road" at Columbia on October 21, 1911. Thus did the seedling take deep root and commence its period of growth.

The administration of state road affairs remained under the supervision of State Highway Engineer Curtis Hill with finances provided as outlined until 1913, when the General Assembly revised the road law and created the office of highway commissioner, replacing that of state highway engineer. Colonel Frank W. Buffum was appointed Commissioner, with W. S. Hawkins, Deputy.

This same session of the Legislature amended the motor vehicle law to provide a sliding scale of registration fees according to the horse power of the vehicle.

The inter-county seat drag law providing for state payments for dragging designated inter-county seat or "state" roads was also enacted in 1913.

By 1914 considerable progress had been made in road improvement as shown by Colonel Buffum's report of mileage and expenditures on roads. The mileage according to surface type was as follows:

Miles	Type
63,370	Unimproved dirt road
54,246	Improved dirt road
3,420	Gravel road
741	Macadam surfaced road
76	Telford surfaced road
600	Macadam binder road
50	Patent surface road
570	Sand clay road
700	Chat road
342	Miscellaneous surface road

The sum of $4,552,815 was paid out directly, exclusive of the cost of supervision, for improvement of highways in 1913, divided as follows:

Amount	Paid by:
$1,407,216	County courts
352,739	Special road districts
387,274	Donations
1,692,102	For bridges
516,160	For new work
197,324	For state aid

Realization had come to the motor car user that good roads were essential and that some effort was being made to provide them, but in the race between automobile usage and adequate highways, highways have never been in the lead. It is in error to say the infant highway department did not or could not have foreseen the phenomenal growth of the motor vehicle. It was their duty to provide the best possible roads with the finances at hand. It was necessary to stretch a few dollars over many miles, and superhighways cannot be built without adequate funds. The major problem in providing good roads has been and still is one of financing. The engineers of the early Missouri highway department had the vision, but they did not have the money to translate their vision into reality.

The following chart shows the lag between revenue, represented by yearly expenditures on state roads, and motor vehicles in use as represented by vehicle miles. Vehicle miles do not account for usage by foreign cars; this latter percentage is practically constant.

The approval of the Federal Aid Act by President Wilson on July 11, 1916, opened up a source of revenue for road construction in all the states. This act provided

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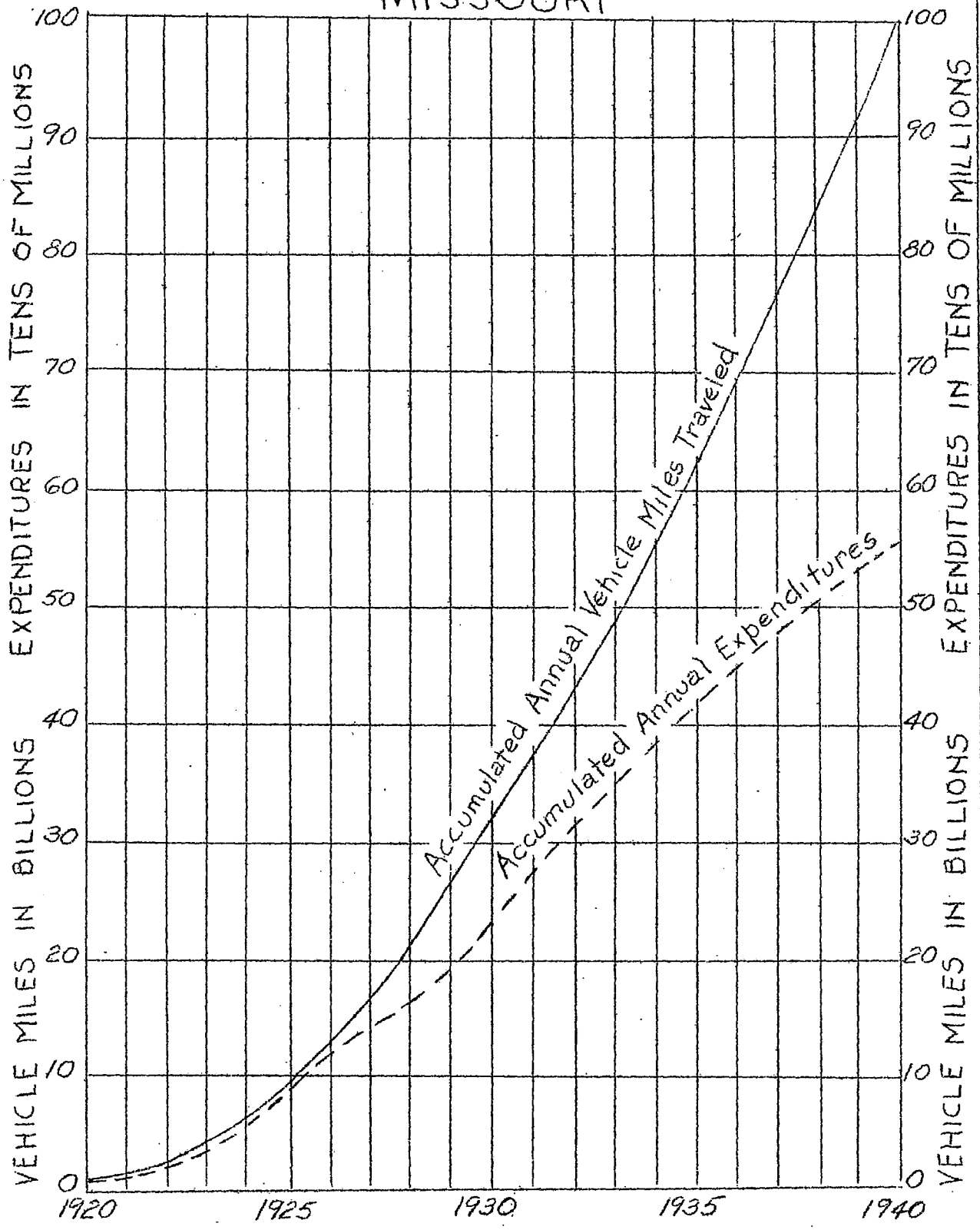
RELATIONSHIP OF TRAVEL AND EXPENDITURES ON THE HIGHWAYS OF MISSOURI



that the United States should aid the states in the construction of rural post roads. It contained many provisions but the most important one from the state's standpoint was the necessity for local funds with which the federal money could be matched.

In order to better carry out the provisions of the Federal Aid act and to make funds provided by the act available, Missouri enacted a new road law in 1917 under the leadership of Harry B. Hawes, a state representative, but afterwards a member of Congress and later a United States Senator.

The Hawes Law accepted Federal Aid, created a bi-partisan state highway board of four members, and brought all road laws down to date. Surveys for 3500 miles of state roads were ordered. An allowance of $15 per mile per annum for dragging inter-county seat roads was made. Under this law it was the duty of the state highway engineer to adopt a uniform system of markings and guideboards on state roads. The first bi-partisan state highway board consisted of E. L. Sanford, Chairman; George E. McIninch, Vice Chairman; C. O. Raine, Member, and A. C. McKibbin, Member and Secretary. Alexander W. Graham, of Mineola, was selected to be Chief Engineer. Mr. Graham immediately began the work of laying out a system of state roads. Meetings were held with the county courts where the new state laws, federal aid requirements and policies of the department were explained; the courts were assisted in outlining their choice for state roads.

After careful investigation, the department outlined and prepared a map showing a tentative state system of roads. This map showed a connected system, joining up all of the counties in the state and embracing the main traveled roads between important points as well as new routes where the need was pronounced and existing routes were not feasible. In outling these roads consideration was given to the mileage falling within each county; the amount being adjusted in relation to the area, population and road mileage of the county. The system as outlined comprised a total of nearly five thousand miles of road instead of thirty-five hundred--the minimum provided by statute--but complied as nearly as possible with all of the requirements of the law.

The Highway Board approved this tentative system of roads on June 21, 1917. Engineer Graham and his assistants then began the task of making more complete and detailed investigations of these state roads and as rapidly as they were completed official designations were made. The official map of the state road system was approved by the board on June 8, 1918. A comparison of this map with the present constructed state system of highways will show the thoroughness and care exercised by the early highway planners of the state. It must also be considered that this was done during a period of war when engineering talent was difficult to secure. The McCullough-Morgan amendments of 1919 to the Hawes Law increased the mileage of the state system of highways,

provided for state aid to the extent of $1200 per mile under certain conditions, with an allowance of $100 per mile out of the $1200 for survey expenses and other provisions. These amendments also provided an allotment of $25 per mile per annum for dragging roads connecting county seats; however, expenditures for this purpose never exceeded $15 per mile per annum.

The McCullough-Morgan amendment also provided for the appointment of a state superintendent of highways who should be ex-officio secretary of the board. The second highway board, as appointed by Governor Gardner in 1919, was composed of E. L. Sanford, Chairman; George E. McIninch, Vice Chairman; S. S. Pingree, Member; and C. O. Raine, Member. Mr. Pingree resigned September 3, 1919, and Major Roy F. Britton was appointed to the vacancy.

The board selected John M. Malang, of Japser County, as state superintendent of highways and ex-officio secretary of the board, and reappointed Alexander W. Graham as state highway engineer.

If there is any one man deserving of special recognition in placing the State of Missouri high in the list of the good-roads states, it is John M. Malang, of Joplin. Malang is justly credited as being the "Father of the Good Roads Movement" in Missouri. Starting as superintendent of the Joplin Special Road District in 1914, wherein was built the first concrete road in the state system--Federal Aid Project No. 2, from Webb City to the Kansas state line--he rose rapidly to leadership in good roads movements. His courage, his vision, good judgment

and insistence upon an equitable and balanced road financing and construction program were embraced by the amendment adopted by the people in 1928. John Malang labored long and vigorously for a cause to which he literally gave his life. He gave unstintingly of his efforts on behalf of Proposition No. 3 in 1928, against the advice of his physician. His efforts proved too strenuous and he passed away September 13, 1928.

Under the Hawes Law, the department was not given authority to initiate road work but depended upon the counties and road districts to match Federal Aid. The McCullough-Morgan Law placed more authority in the hands of the board and called for the surveying of two roads through each county. This made it necessary to expand the department. In order to more adequately administer the law, the state was divided into six divisions with a division engineer in charge of each. The original six division headquarters and respective engineers were: Division 1, St. Joseph, H. D. Judson; Division 2, Macon, M. J. Hanick; Division 3, Sedalia, S. M. Rudder; Division 4, DeSoto, Harry D. Griffith; Division 5, Springfield, H. P. Mobberly; and Division 6, Sikeston, M. S. Murray.

After the enactment of the new law, it became necessary for the department to go into the counties and induce them to vote bonds for launching the new road program. Superintendent Malang and Chief Engineer Graham were kept busy during the summer of 1919 making speeches and contacting the counties. By December 1, 1920, there had been voted the sum of $21,396,978 for road purposes in fifty-nine counties.

Inasmuch as it was mandatory that the state highway engineer make or cause to be made surveys and plans of the entire proposed system by January 1, 1922, a department of surveys and plans was created to supervise this work. C. W. Brown was placed in charge and three methods of obtaining the necessary surveys were adopted:- by contracting with private engineers for surveys and plans at a price per mile; by encouraging local authorities and interested parties to make or cause to be made surveys and plans of state roads in their districts, or by the state highway department. All three of these methods were used and by December 1, 1920, some 5,428 miles of road had been surveyed and 3,127 miles of plans had reached the office of surveys and plans.

Some state road improvements, using prison labor, were made during the years 1919 and 1920. There was considerable opposition to the use of such labor; however, this practice was soon discontinued in favor of the contract system.

With vehicle registration having reached a total of 295,046 in 1920 and less than ten per cent of the designated system of 7,630 miles constructed, it became apparent that additional revenue must be provided or it would take at least three-quarters of a century to complete the system. The rate of progress had to be increased if the people were to derive full benefit from their previous investments of approximately twelve million dollars. This issue was presented to the voters in the fall of 1920 and their answer was the authorization of a $60,000,000 bond issue for speeding up the program.

At a special session of the Legislature in 1921 a new road law was enacted known as "The Centennial Road Law"

in commemoration of the 100th year of Missouri' statehood. This act contained many new provisions, the principal of which were the continuance of a bi-partisan commission of four members to be appointed by the Governor, and provided that the State Geologist act as a member ex-officio; a Chief Engineer be appointed by the Commission and various provisions dealing with the administration of the department and the designation of routes to be constructed. This act placed the administration of state roads entirely in the hands of the Commission.

Governor Hyde, December 1, 1921, appointed as Commissioners: Theodore Gary, Chairman; S. S. Connett, Vice Chairman; Murray Carleton and C. D. Matthews, Members; State Geologist H. A. Buehler as Member Ex-officio.

The Congress of the United States, through the passage of an act in 1921, provided that Federal funds should be concentrated upon 7 per cent of the total road mileage, 3/7 of which was for the inter-state roads and 4/7 for inter-county roads. It was therefore necessary to submit to the Bureau of Public Roads a designation of the 7 per cent of the Missouri road mileage upon which Federal Aid would be sought. A detailed report was therefore made by the engineers of the department during the spring of 1922. This report consisted of a comprehensive outline of recommendations and designations of the state primary and secondary system, as required for Federal Aid participation. The system as outlined connected twenty-five out of a total of twenty-six cities having a population of 2500 or more. One of the more

important and far-sighted provisions of this report was the suggestion that major population centers be connected as directly as possible and that all through-traffic routes avoid passing through intermediate population centers. This report had its inception under the direction of Chief Engineer Graham and Consulting Engineer Rollen J. Windrow. Mr. Windrow was employed by Chairman Gary as his personal consultant. Mr. Graham was replaced by the appointment of B. H. Piepmeier as Chief Engineer on June 1, 1922. The report was then completed by Messrs. Piepmeier and Windrow.

Public hearings on the engineers' report and recommendations for route locations were held in Jefferson City, July 25, 26, and 27, 1922, after which the report was adopted by the Commission on August 1, 1922.

The highway department was again expanded after the passage of the Centennial Road Law and the existing six divisions were increased to ten to better supervise a large program of highway construction. These ten divisions and division engineers were: Division 1, St. Joseph, N. R. Sack; Division 2, Macon, C. P. Ownes; Division 3, Hannibal, H. D. Griffith; Division 4, Kansas City, A. C. Lingley; Division 5, Jefferson City, R. W. Hodson; Division 6, Webster Groves, S. M. Rudder; Division 7, Joplin, Ray Dunlap; Division 8, Springfield, H. P. Mobberly; Division 9, Willow Springs, J. H. Long; and Division 10, Sikeston, M. S. Murray.

In addition to the bureau of surveys and plans, previously mentioned, other bureaus were created within the department for the purpose of efficiency.

The Bureau of Construction was organized under Kirk McFarland and to that bureau falls the task of completing the project after plans and estimates have been issued by the Bureau of Surveys and Plans.

The Bureau of Maintenance was assigned to Claude P. Owens. The maintenance of Missouri highways deserves no comment other than its excellency. The Maintenance Bureau was originally charged with the responsibility of caring for all mechanical equipment; there was later created, however, a Bureau of Equipment in charge of D. J. Colyer. A Bureau of Audits to make a general review of the disbursements of the department's several funds was headed by C. P. Huegel. A Bureau of Bridges was created and placed under the supervision of Chester D. Mann. A Bureau of Tests was also established and headed by F. V. Reagel.

With bond issue money now supplementing the regular registration fees and Federal aid, highway construction in Missouri began in earnest and continued unabated for many years.

After construction came the necessity for maintenance. The Legislature therefore, in 1921, amended Section IV, Article X, of the State Constitution to provide for road maintenance. This amendment was adopted by the people at the fall election in November, 1922.

Despite greatly increased activity in road construction there still was a constantly growing demand for more and more road work. The public was not to be satisfied with anything less than a completed system. To further speed road work a constitutional amendment, known as Proposition No. 5, was voted at the fall election of 1924. This measure placed a two

cent per gallon tax on motor vehicle fuel and a fifty per cent increase in vehicle registration fees.

On December 1, 1924, there had been completed 1633 miles of hard surfaced road, representing 21-1/2 per cent of the entire 7640 mile system. A department adequate to administer the road program had been organized. The highways were being properly maintained. Not one cent of the gas tax or registration fees was being diverted for other than road purposes. The era of hope and frail effort had yielded to decision and action.

When the last five million dollars of road bonds were being expended in 1927, a campaign was started for a new bond issue. Some advocated a twenty million dollar issue and others as much as one-hundred and twenty million. In the ensuing controversy, Governor Sam A. Baker called together a bi-partisan committee to formulate a plan for hastening the completion of the system. This committee recommended a seventy-five million dollar bond issue and a constitutional limitation of the automobile license fees and gasoline tax to existing rates for ten years; also, the construction of a supplemental system of farm-to-market roads. This plan, known as Proposition No. 3 carried at the general election in November, 1928.

Following the passage of Proposition No. 3, the road program continued unabated, the construction of the centennial system was rushed toward completion and some 8,000 miles of farm-to-market roads were constructed.

Income for road uses was sharply curtailed in 1933 by a bill passed by the General Assembly reducing license fees on passenger vehicles. Nearing the end of this ten year period a new plan was submitted for proper maintenance and reconstruction of obsolete or traffic worn sections of the system.

The Citizens' Road Association submitted by initiative petition, Amendment No. 6 at the November 1938 election, a constitutional amendment fixing existing rates of motor vehicle fees and gas taxes for another ten year period and other features. This proposed amendment was defeated.

A plan providing for an increase in the gas tax from two to three cents per gallon was passed by the Legislature, referred to the people and defeated at the general election in November, 1938.

Two road amendments were submitted by initiative petition at the general election held November, 1940. The first, Amendment No. 6, provided for fixing license fees at the existing rate and to finance road construction and maintenance. The second, known as Amendment No. 7, sponsored by the Missouri Farmers Association, provided for reducing motor vehicle license fees, revenue for rural roads and abolishing municipal gasoline taxes. Both of these amendments were defeated.

Recognizing the seriousness of traffic problems arising from the development of good highways and increased motor vehicle use, the 56th General Assembly created a State Highway Patrol.

Owing to the increasing number of motor vehicle accidents, the State Highway Commission created a Bureau of Safety to study conditions leading to such accidents. This Bureau began operating June 1,1937, under Harry D. Griffith.

It has always been sound logic to plan to do "the first things first." In the early days of development of the

Missouri highway system the "first things" were plainly evident. With the completion of the original system the needs became more conflicting. As there are so many things needed for modernization and, relatively speaking, so little funds available with which to perform the work, rational planning of a public highway program in the State is an engineering and economic necessity.

In order to obtain data on which to base a logical highway plan, a committee of citizen members of the Highway Engineers' Association petitioned the Highway Commission in 1934 for a survey of the road affairs of the state. This committee then organized a new good roads group known as the Citizens' Road Association, which has been active in road affairs since its inception. The petition was granted and a survey more comprehensive than ever before attempted was made. The Federal Government, under the Hayden-Cartwright Act of 1934 made the following provision for road studies:

"With the approval of the Secretary of Agriculture, not to exceed one and one-half per centum of the amount appropriated for any year to any state under Sections 1 and 4 of this Act may be used for surveys, plans and engineering investigations for future construction in such state, either on the Federal Aid highway system and extensions thereof, or on secondary or feeder roads."

On September 10, 1935, an agreement was effected between the Missouri State Highway Commission and the Federal Public Roads Administration to jointly conduct a state-wide highway planning survey. J. H. Long was placed in charge of this project.

This survey was divided into three general classifications:- road inventory, traffic counts and financial investigations. Road inventory consisted of an inventory of all roads in the state, showing location and service. Traffic counts were made on all roads--both local and state. Financial data were obtained covering receipts and expenditures for road and street purposes over the entire state. All of these are continuing activities with current information being added to that already tabulated. A complete set of accurate county maps has been drawn showing all physical features, and yearly traffic flow maps have been made. The findings of this survey are always available for road planning.

In the maintenance of personnel, from year to year, the Missouri State Highway Department is unique among other departments of the state. The staff has been selected on a merit basis only and there are many employees now serving who entered the service upon the formation of the department, many of them directly after graduation from engineering college and have devoted their lives to better highway transportation facilities for Missouri.

Credit for Missouri's good road system belongs to many organizations, societies, groups and individuals.

Although the names of John Malang and Theodore Gary will always remain heading the list of good roads enthusiasts, there are many others who were just as untiring in their efforts and invaluable in their services. These, the past and present members of the various boards and commissions which have served to guide the efforts of the highway department, should be given public recognition.

The following have served as commissioners: Curtis Hill, (1907-1913); Frank W. Buffum, (1913-1917); E. L. Sanford, (1917-1921); George E. McIninch, (1917-1921); C. O. Raine, (1917-1921); A. C. McKibbin, (1917-1918); S. S. Pingree, (1918-1919); Roy F. Britton, (1919-1921); Theodore Gary, (1921-1926); S. S. Connett, (1921-1925); C. D. Matthews, (1921-1931); Murray Carleton, (1921-1925); Hugh Stephens, (1925-1927); J. R. Davis, (1925-1929); E. J. McGrew, (1926-1929); R. S. Brownlee, (1927-1933); Louis T. Golding, (1930-1931); Jesse McDonald, (1930-1932); Wm. F. Phares, (1931-1933); Charles Ferguson, (1931-1933); Samuel B. McPheeters, (1932-1935); Scott Wilson, (1933-1935); Arthur T. Nelson, (1933-1938); H. B. Pyle, (1933-1935); Dulany Mahan, (1933-1936); George Olendorf, (1935-1937); H. G. Simpson, (1935-1943); Claude C. Earp, (1937-1942); Edward W. Gray, (1937-1942); Robert B. Brooks, (1937-1942); George H. Davis, (1942-); Baxter B. Bond, (1942-); E. N. Meador, (1942-). The last three names are the present Commissioners. A vacancy, due to resignation, is still to be filled. Dr. H. A. Buehler, State Geologist, has served as member ex-officio since 1921. Other presnet officials of the department are: C. W. Brown, Chief Engineer; S. M. Rudder, Assistant Chief Engineer; Raymond G. Barnett, Chief Counsel; and J. B. Funkhouser, Secretary to the Commission.

To all of these, and many others not mentioned, for their concerted action, resourceful planning and dogged persistence, Missouri and Missourians shall be ever grateful for the benefits they wrought.