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**DEPARTMENT
HIGHWAYS**

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1921-1971

50th ANNIVERSARY

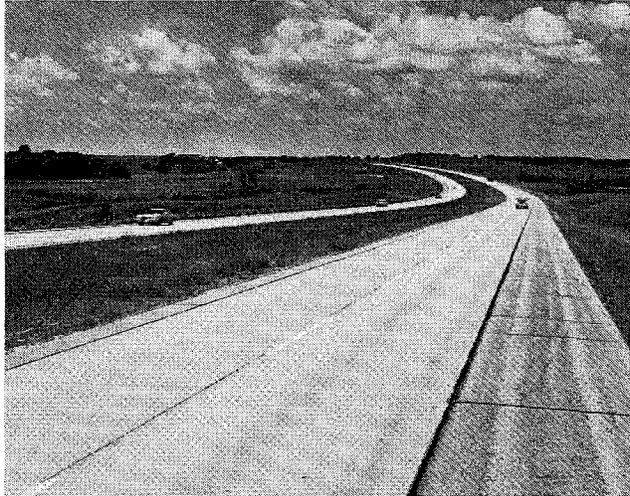
Prepared by Office of Public Information

MINNESOTA
Department of Highways



April, 1971

in the '70s



A modern rural Minnesota highway: Interstate 94 in Otter Tail County, west central Minnesota.

NOW

THEN



A common practice in the '20s was the use of horses to pull automobiles through miry sections.

in the '20s

MINNESOTA HIGHWAY DEPARTMENT

Commissioners



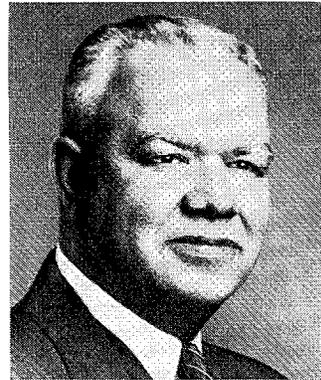
Charles M. Babcock
1917-1932



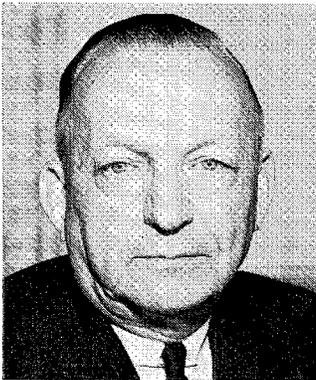
N. W. Elsberg
1933-1938



M. J. Hoffmann
1939-1957



L. P. Zimmerman
1957-1961



James C. Marshall
1961-1965



John R. Jamieson
1965-1967



N. T. Waldor
1968-1971

The Development of the MINNESOTA HIGHWAY SYSTEM

November 2, 1920 to 1971

From time to time, the Minnesota Department of Highways and other state agencies have presented segments of Minnesota road history in the form of pamphlets, articles, news releases, feature stories, etc. This survey history is an attempt to collect, edit, and supplement existing materials and present them in current form to mark the 50th anniversary date of the founding of the Minnesota Department of Highways.



The passage of time has confirmed the importance of the state constitutional amendment of November 2, 1920, in the history of road development in Minnesota. It brought to fruition no less than 30 years of continuing efforts on the part of advocates for better roads. For the first time, it brought new and advanced concepts of highway administration to the state, oriented in a practical way to automotive transportation. It provided for a trunk highway system to be financed entirely from road user taxes — a departure from previous practices when the poll tax and the property tax were the sources of revenue.

MINNESOTA HIGHWAY CHRONOLOGY

- 1789 Trails of the Red River ox carts, coming down from Hudson's Bay and Fort Garry, reached Lake Traverse.
- 1816 First record of a constructed road in Minnesota, built from Grand Portage Bay to Fort Charlotte on Pigeon River, some time previous to this date, probably by British soldiers.
- 1819 Fort St. Anthony (Fort Snelling) established. Soldiers built roads to Lake Calhoun and to the Falls of St. Anthony (Minneapolis). Army chiefs evolved plan for road from Fort St. Anthony via Camp Missouri (Council Bluffs) to the Red River in Arkansas; extensive surveys made but northern portion never built.
- 1823 Ox cart came into regular use in travel between Mendota and Red River of the North.
- 1837 Area north of the Mississippi River and west of the St. Croix River added to Crawford County, Wisconsin, bringing area under Wisconsin road laws which became foundation for Minnesota road laws. Some roads built in this area between 1837 and 1849.
- 1849 Territory of Minnesota organized. Wisconsin laws, with county as road building unit, retained. Federal aid sought and an active road building era begun with federal, territorial and county governments cooperating.
- 1855 Law passed provided that road districts not be greater than election districts.
- 1856 Counties required to maintain federal roads.
- 1857 Office of County Road Commissioner created.
- 1858 Minnesota admitted to statehood. Constitution prohibited state participation in works of internal improvement. Town boards created with general supervision over roads.
- 1860 Separate county and town boards created. All roads declared "town roads."
- 1862 State roads declared "county roads." First railroad built in state; railroad building discouraged road construction.
- 1872 Law passed for establishing roads by judicial proceedings. Internal improvement land fund created.
- 1873 Revised statutes adopted, with new code of road laws in one chapter.
- 1881 Constitutional amendment prohibited the establishment of roads by special acts of the Legislature.
- 1882 Law for payment of railroad readjustment bonds from internal improvement land fund approved by popular vote. Payment of these bonds used up about six-sevenths of this fund.
- 1890 Beginning of a revival of road interest during the 90's.
- 1891 Law passed fixing minimum width of bridges.
- 1893 First statewide "Good Roads" convention.
- 1894 First "Good Roads Day" at Minnesota State Fair.
- 1895 Minnesota Surveyors' and Engineers' Society organized. First automobile in Minnesota exhibited.



MINNESOTA HIGHWAY CHRONOLOGY

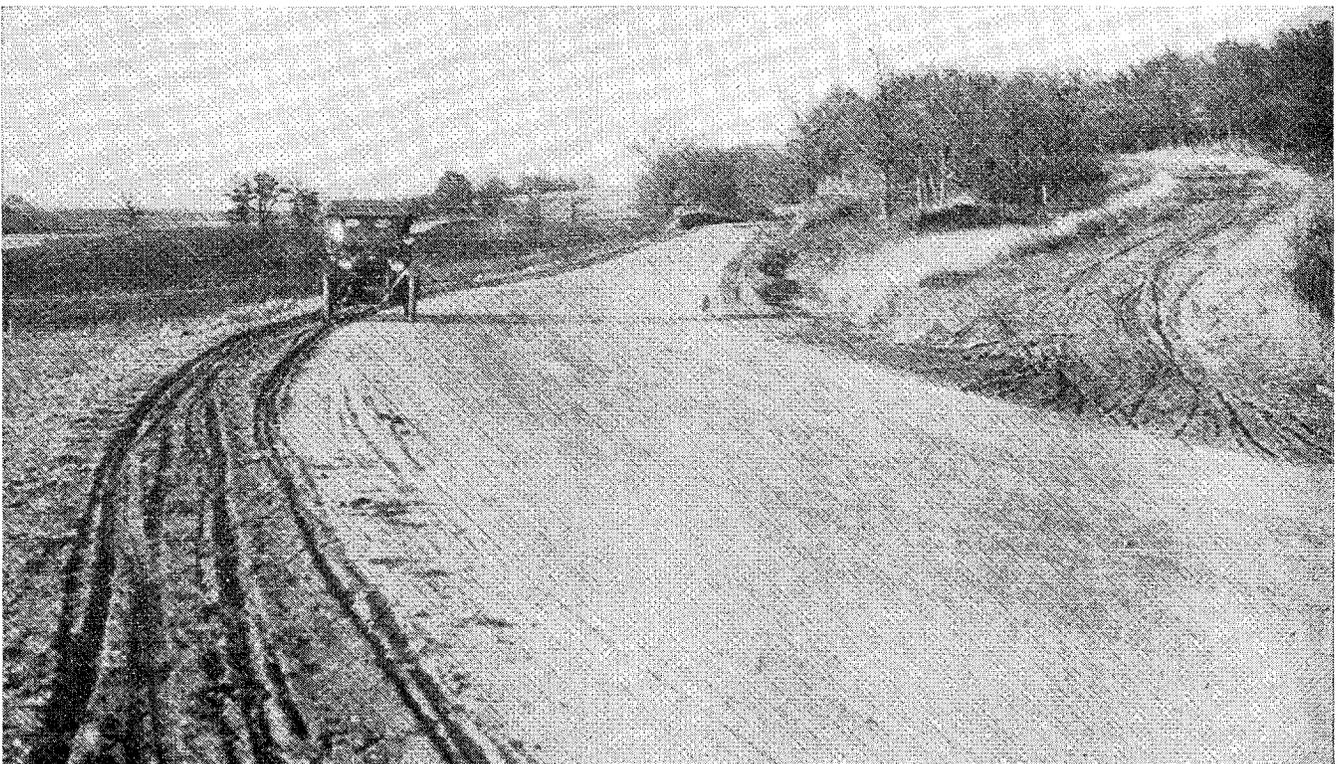
- 1896 Proposal to devote income from remaining funds in internal improvement land fund to road purposes received 6 to 1 affirmative vote at election but failed to get majority of all votes cast. Good Roads Association of Minnesota formed.
- 1897 First rural free delivery routes established.
- 1898 Constitutional amendment passed establishing State Road and Bridge Fund, to include income from internal improvement land fund, and other revenues, and authorizing creation of a State Highway Commission.
- 1903 First law regulating motor vehicle traffic.
- 1905 Law passed creating State Highway Commission and levying 1/20 mill as state aid road tax.
- 1906 State Highway Commission appointed; George W. Cooley elected secretary and state engineer.
- 1909 State registration for all motor vehicles required; 7,065 registered. "Pork barrel" appropriations (made from general revenue fund for road projects) declared unconstitutional.
- 1910 New Road and Bridge amendment adopted.
- 1911 State aid tax levy increased to ¼ mill. State Highway staff enlarged. "Working out road taxes" ended by legislation. Elwell law passed.
- 1912 New state road and bridge amendment passed (known as Dunn amendment for its author, Robert C. Dunn of Princeton).
- 1913 Road laws revised and codified. One mill state road tax levy adopted. Maintenance required for all road systems. Law fixing minimum strength of bridges passed.
- 1915 Elwell law repealed.
- 1916 Federal highway aid law passed. Federal aid system of 6,200 miles established in Minnesota.
- 1917 State Highway Commission abolished and office of Commissioner of Highways created. Charles M. Babcock of Elk River appointed commissioner.
- 1919 Trunk highway plan proposed as a constitutional amendment. Increased county bond issues authorized. State reimbursement of counties authorized in proposed trunk highway plan.
- 1920 Trunk highway plan adopted by vote of the people.
- 1921 General highway act adopted and trunk highway plan made effective. Tax on motor vehicles adopted; 332,652 vehicles registered. State aid roads continued as secondary roads.
- 1923 Further county bond issues for trunk highway improvements authorized.
- 1924 Gasoline tax amendment adopted by people.



This 1924 photo pictures the construction of TH 44 in Houston County, with horse-drawn dump wagons used in a cut of the rocky terrain.

MINNESOTA HIGHWAY CHRONOLOGY

- 1925 Two cent gasoline tax for trunk highway fund levied.
- 1926 System of U. S. numbered highways established.
- 1928 The total of registered motor vehicles was 679,590, more than double the 1921 total and reflected in greatly increasing traffic. A constitutional amendment was adopted placing one-third of gas tax in state road and bridge fund, two-thirds in trunk highway fund.
- 1929 A county aid system was established and the State Highway Patrol was instituted. A firmly fixed policy by this time was that highways be kept open the year around. The gas tax was increased to 3 cents and \$13,445,000 refunding bonds were authorized.
- 1931 \$14,355,000 state highway bonds and \$1,200,000 refunding bonds were authorized.
- 1932 Commissioner C. M. Babcock reports trunk highway system "75 percent permanently improved," permitting enlargement of the system.
- 1933 N. W. Elsberg appointed Commissioner of Highways. A driver's license law was passed. Trunk highway system enlarged by 4,500 miles. Motor vehicle taxes decreased about 40 percent. Regular federal aid suspended and aid granted under the National Recovery Act.
- 1935 \$12,000,000 highway bonds authorized to meet federal aid requirements under the new Hayden-Cartwright Act, but only \$8,000,000 issued.
- 1937 Gas tax increased to 4 cents.
- 1939 M. J. Hoffmann appointed Commissioner of Highways.
- 1940 Gas tax reverted to 3 cents.
- 1941 Gas tax increased to 4 cents and the 1 mill state aid tax was repealed. \$1,200,000 from gas tax funds appropriated annually for continuance of state aid system. Congress passed Defense Highway Act providing special funds for advanced engineering studies in urban areas.
- 1942 Highway construction limited to emergencies due to war. Traffic curtailed by tire shortage. Tire and gasoline rationing put in effect. Reserve fund for post-war construction set up.
- 1943 Further authorization for advanced engineering studies provided by the Defense Highway Act of 1943 extending funds for use on secondary feeder roads as well as city and village streets.
- 1944 Congress passed the Federal Aid Highway Act authorizing funds for three-year post-war programs including separate allotments for urban highways and for secondary rural roads. Minnesota allotments were \$12,400,000 for each of three post-war years.



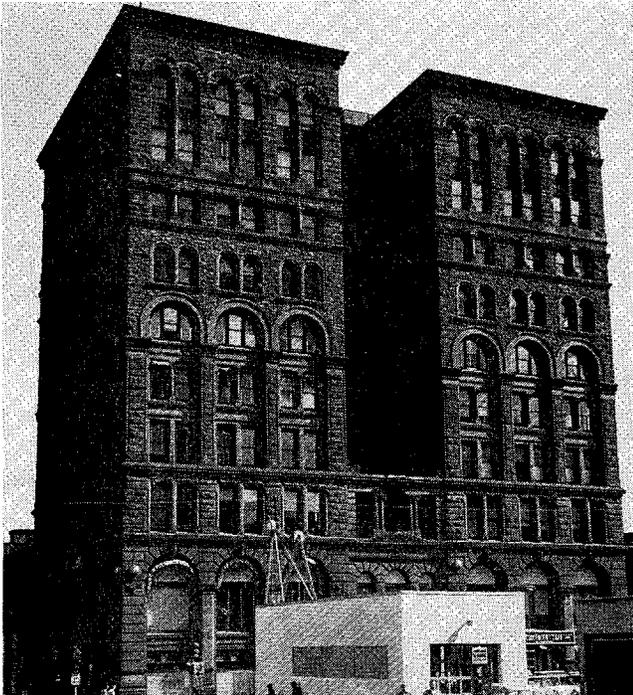
Relocated when paved with asphaltic concrete, this section of State Road No. 1 (now Trunk Highway No. 3) in Dakota County shows the improvement in 1921. The rutted route on the right was the old road.

MINNESOTA HIGHWAY CHRONOLOGY

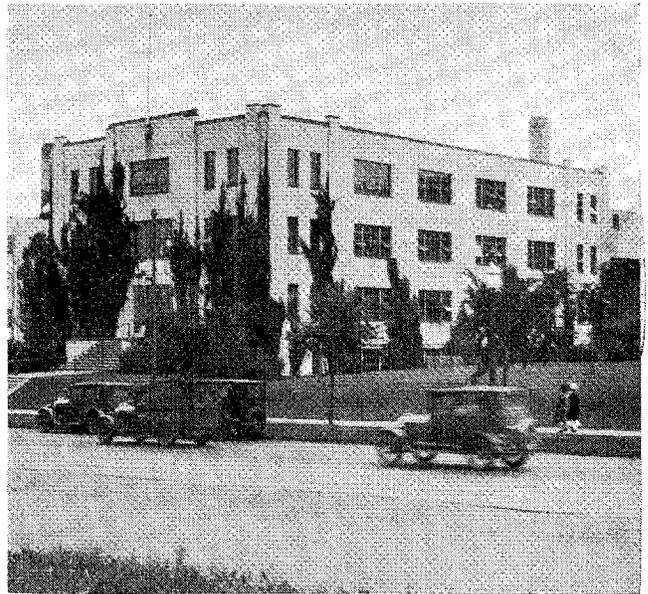
- 1945 State Legislature enacted the Safety Responsibility Act which went into effect on July 1.
- 1946 State resumed full-scale construction and maintenance operations on Trunk Highway system for the first time since the war halted all but emergency projects. County Federal Aid-Secondary program inaugurated.
- 1947 Interim commission launched comprehensive study of road laws, road needs, and finances. Constitutional amendment proposed by Legislature and submitted to the voters, to credit one-half of the motor fuel tax receipts to the state trunk highway fund and one-half to the state road and bridge fund. Proposal was defeated by a small margin in general election of 1948.
- 1948 Congress passed Federal Aid Highway Act authorizing funds for each fiscal year of 1950 and 1951 inaugurating allotment pattern and 50-50 matching formula.
- 1949 Constitutional amendment authorized by the Legislature and submitted to the voters, to credit 44 percent of the net gas tax receipts to the counties and 6 percent to Duluth, Minneapolis and St. Paul. The amendment was rejected by the voters at the general election in November, 1950. The gas tax was increased to 5 cents.
- 1950 Upward revision of motor vehicle license fees restored to levels which prevailed prior to the "depression relief" cut of 1933. Action of the Legislature added 73 new routes to the State system extending it by over 700 miles.
- 1951 The State Trunk Highway System (11,882 miles) consisted of 9,773 miles of hard surfaced routes and 2,109 miles of graveled surfaces. A total of 76 contracts of more than \$4,692,000 was awarded for construction of bridges during the year.
- 1952 Congress passed the Federal Highway Act of 1952 authorizing funds for each of the years 1954 and 1955. Minnesota allotments available for 1953 and 1954 programs total approximately \$13,800,000.
- 1953 The Minnesota Highway Study Commission was established by the Legislature to analyze all phases of highway transportation problems. Created was a new Highway Safety Division incorporating the State Highway Patrol, the Drivers License and Highway Safety promotion functions of the Department.
- 1954 Dollar volume of road and bridge improvements placed under contract by the Highway Department during the 1952-54 biennium reached a new high. Trunk highway contracts awarded totaled \$65.0-million as compared to \$60.5-million in the prior biennium.
- 1955 The Legislature increased the four-year driver license fee from \$1 to \$2. Final working plans approved for the Highway Department new central office-laboratory building in the Capitol area. Legislature proposed amendment to the Constitution which would provide for redistribution of state-collected road user fund: 62 percent to State Trunk Highways; 29 percent to County State Aid System; 9 percent to Municipal State Aid System.
- 1956 Constitutional Amendment No. 2, providing a new formula for distribution of state road-user funds, approved by Minnesota voters. Congress enacted laws to provide first funds for construction of the National System of Interstate and Defense Highways.
- 1957 L. P. Zimmerman appointed Commissioner of



Changes in design, size and colors to provide improved legibility are represented in the route markers on Minnesota trunk highways used through the years. In the '20s, used was the yellow star on a black circular field with the number in black. Later, a white star on a black circular field, with the route number in black was utilized. In the '50s, the marker carried the name of the state with the route number in black on a white base. These signs were 15 inches square. Now, when route markers need replacement, the new blue and gold signs introduced in 1968 are installed. Against a gold band, the outline of the state and the name are in blue. The route number is white on the field of blue. Minnesota's state flag colors are predominately blue and gold. These signs are 20 x 20 inches.



Central offices of the Minnesota Department of Highways were housed from 1918 to early 1922 in the Guardian building, Minnesota and East Fourth Street, St. Paul. The building was razed recently.



From February, 1922, to November, 1958, the central office of the Minnesota Department of Highways was at 1246 University avenue, St. Paul. This structure presently is District Nine headquarters.



The headquarters of the Minnesota Department of Highways, housing central offices and laboratories, was occupied in November, 1958. The State Highway building is pictured as it appears from the east side steps of the State Capitol.

MINNESOTA HIGHWAY CHRONOLOGY

Highways in April. Interstate System became part of the State Trunk Highway system by action of Legislature. Legislators authorized additional construction funds for the new State Highway building.

- 1958 Distribution of state highway user funds under the 62-29-9 formula of Constitutional Amendment No. 2 inaugurated. First section in Minnesota on the Interstate System, an 8.3-mile stretch of I-35 near Owatonna, opened to traffic on August 21. Twin Cities Area Transportation Study (TCATS) organized cooperatively by Highway Department and U.S. Bureau of Public Roads.
- 1959 Duluth-Superior Interstate bridge under construction as joint Minnesota-Wisconsin project involving eight separate contracts. As of this year, Minnesota's share of the cost was \$5,870,871.
- 1960 Interstate Cost Estimate Task Force created to make a revised cost estimate for completion of Minnesota's 898 miles of the Interstate system. Highway Department put into operation first full-time Health Service to be established in state government in Minnesota.
- 1961 James C. Marshall appointed Commissioner of Highways in April. Highway Department instituted policy of direct purchase as principal

method of right-of-way acquisition in lieu of eminent domain proceedings. Duluth-Superior bridge, 52-span structure 7,965 feet long, largest bridge in Minnesota and Wisconsin, opened on route of Interstate Highway 535.

- 1962 Highway Department published its first "Blue Book," a comprehensive highway construction program; initiated 20-year highway needs study.
- 1963 Minimum age for eligibility for driver's license changed from 15 to 16 years. State tax on motor fuel increased from 5¢ to 6¢ per gallon. Top speed limits set at 65 miles per hour.
- 1964 New headquarters building for District 6, Rochester, occupied in February, housing employees in engineering, maintenance, driver license and highway patrol.
- 1965 John R. Jamieson appointed Commissioner of Highways in April. Roadside Environment section created by the Highway Department to implement state and federal highway laws on highway beautification. Legislature enacted laws requiring driver education courses prescribed by Department of Education for applicants under age 18.
- 1966 As of July 1, a total of 269 miles of freeways was open to traffic. Motor vehicle license plates for passenger cars issued for a three-year period.



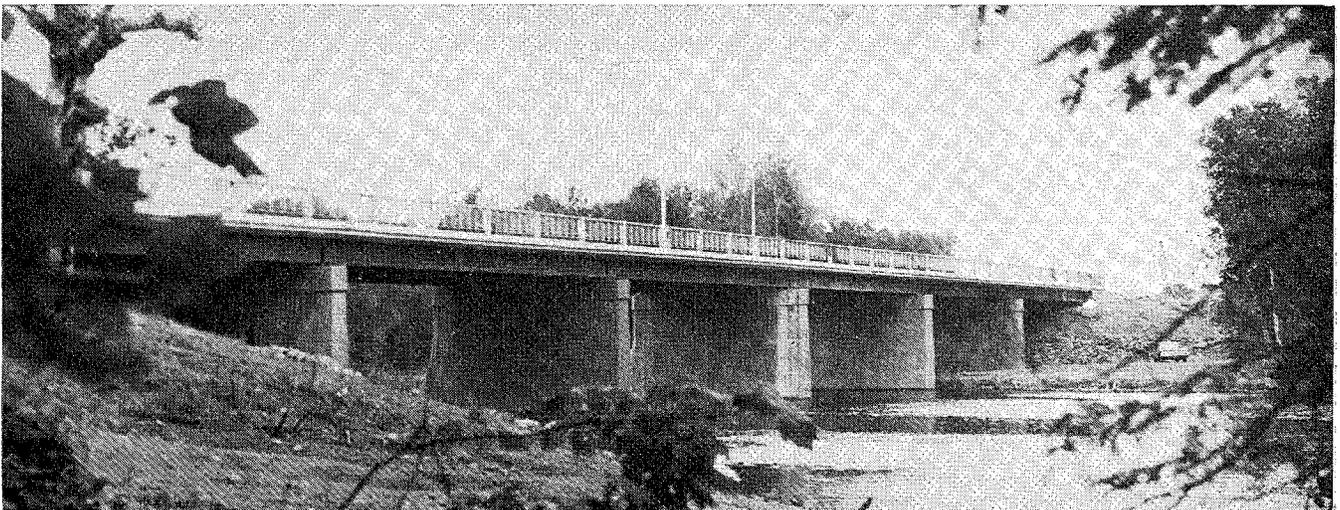
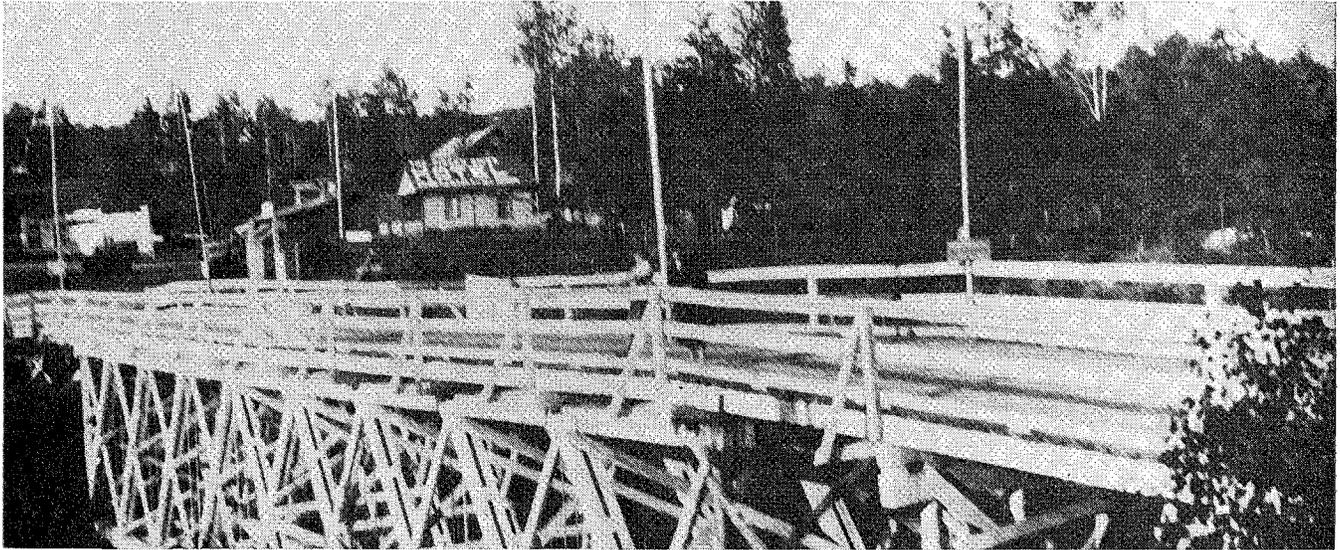
The "Red River Valley" is the only identification of this photo picturing travel on a route in Northwestern Minnesota in the early '20s.

- 1967 Legislature authorized \$100-million bond issue, limited to \$20-million a year, to finance accelerated program to improve state's 12,000-mile trunk highway system. The state tax on motor fuel increased to 7¢ a gallon. Minnesota enacted "spot" inspection system in lieu of periodic inspection of motor vehicles. Special licensing for motorcycle drivers made mandatory, including the wearing of safety helmets.
- 1968 N. T. Waldor appointed Commissioner of Highways in May. Under the Federal-Aid Highway Act, Minnesota received an allocation of 9.4 additional miles of freeways, raising state's portion of Interstate System to 914 miles.
- 1969 Legislature passed State Reorganization Act which created Department of Public Safety to encompass operations of the Highway Patrol and Drivers License Bureau, effective July 1, 1970. First combination Information Center

and Safety Rest Area on the Interstate system in Minnesota opened near Moorhead. Minnesota in cooperation with eight other states contracted for "Laboratory Evaluation of Pavement Damage Caused by Studded Tires, Salt and Abrasive Sands," the research being conducted at Whiting, Indiana.

- 1970 First high mast tower lighting system on Minnesota highways installed at three interchanges of Interstate Highway 90 near Worthington. Five new sections on the Interstate system opened to traffic bringing Minnesota's total route miles of freeway to 573 miles in service.

- 1971 Contracts were let early in the year for construction of seven Safety Rest Areas on Interstate system routes. Included were combination Information Centers and Rest Areas on I-90 near the South Dakota line, on I-35, south of Albert Lea, and Thompson Hill, Duluth.



The first Pigeon River bridge (upper photo) connecting the United States and Canada, was built by Cook County in 1916. Erected in 1930 as a temporary replacement was a steel truss span. Opened to traffic in 1963 was the bridge (bottom photo) constructed "down river" from the site of the old bridge, and carrying TH 61 traffic to and from Ontario and Minnesota.

The Development of the Minnesota Highway System

November 2, 1920 to 1971

Dr. Arthur J. Larsen, author of "The Development of the Minnesota Road System," has done an admirable and effective job of covering the period from Grand Portage (1731) to adoption of the Constitutional Amendment on November 2, 1920. From his vivid and enlightening descriptions, the pioneering efforts in mustering public support for the amendment will be better appreciated.

To understand the need for an amendment, it must be recognized that Minnesota's original Constitution contained a provision which prohibited the state from engaging in "works of internal improvements". Construction and maintenance of highways were considered to be in this category. Therefore, it is appropriate to review conditions which prevailed prior to November 2, 1920.

During the Legislative session of 1917, the three-member State Highway Commission was abandoned in favor of a single Commissioner of Highways to be appointed by the Governor for a term of six years at an annual salary of \$4,500. His duties and responsibilities were aptly described by Dr. Larsen: "The new Commissioner had the power to appoint a Deputy Commissioner and a force of engineers and other employees, and to fix their salaries. With the state treasurer and state auditor, he was to meet in February of each year to apportion the state road and bridge fund among the counties."*

At that time, the Highway Commission occupied rented offices in the Shubert building, at the corner of Ninth and Wabasha streets, in St. Paul.

In 1920, the revenues which accrued to the State Road and Bridge Fund were derived from two principal sources:

Proceeds of a one-mill tax levied on all taxable property.

This amounted to \$1,933,822.

Federal Aid. This amounted to \$2,699,471.

These monies were expended on a State Aid road system comprising about 13,000 miles of the principal rural roads in Minnesota which were actually under the administrative jurisdiction of the several county boards. However, the State Department of Highways established the standards for construction which were required to qualify for State and Federal highway aid. To perform these duties and to enforce the adopted standards, the Commissioner of Highways assigned an engineer to each county. (In some cases, one engineer

represented two counties.) Since their salaries were paid from the State Road and Bridge fund, they were given the title of "Assistant Engineer".

It is of interest to note that when the State Highway system of 6,877 miles was established in accordance with the Constitutional Amendment adopted on November 2, 1920, the staff necessary for its administration, construction, and maintenance was recruited largely from the ranks of "Assistant Engineers".

NATIONAL PIKE INITIATED

Roads have had a significant effect upon the cultural development of all civilizations. The history of this nation and of Minnesota is no different in this respect from the early civilizations of the world.

Each generation had its problems insofar as road building and road administration are concerned. Present problems follow the general pattern of earlier times. Only the setting is different. Road restrictions, for example, were practiced in England as early as 1800. Toll roads, with the limitations upon travel that they imposed, were also known to the engineers and road officials of that time.

During this same early period, the needs for adequate roads were among the major perplexities confronting the Federal Government in the United States. There was a vital want in President Jefferson's time for a road from the vicinity of Washington, D.C., to the West. The Congress in 1811 authorized construction of several short sections which initiated actual building of the "National Pike." Early plans called for construction as far as St. Louis, but it was never improved beyond Vandalia, Illinois. Nevertheless, it hastened the settlement and development of what is now the Midwest. The "National Pike" began as a federal road, but about 1856 it was turned over piecemeal to the various states.

When early settlers arrived in the Minnesota Territory, there were no roads which would have compared with either the National Road or the lesser roads or "pikes" being developed in the East.

Forerunners of the first constructed roads were the Indian trails. Later came the network of oxcart and wagon trails between the Red River Valley and the head of navigation on the Mississippi River. These were paths of least resistance, compacted by hoofs and wheels, crossing rivers by fords, but in no sense constructed roads.

With these types of pre-territorial roads — a sparse network of crude trails, a projected system of military roads, and the county roads in the St. Croix delta—the

*Laws, 1917, P. 147-169; Commissioner of Highways of Minnesota, Reports, 1917, P. 7.

groundwork was laid for the Territorial road systems. Organization of the Minnesota Territory in 1849 was followed by a period of active road building. Wisconsin road laws became the basis for Minnesota road laws. There became officially recognized three classes of roads: Federal, Territorial, and County. Town organizations and town roads were nonexistent.

As an example of the type of roads constructed, the Mendota-Wabasha road, contracted by the War Department in 1855 and 76½ miles long, was built for \$47,000 or \$614 per mile. The Point Douglas-Lake Superior road, 173 miles in length, was built for \$165,000 or \$950 per mile. If either of these routes were to be graded and paved according to present day standards and traffic requirements, construction would be about \$145,000 per mile, or more than 150 times the cost to the pioneers.

In contrast to the few hundred miles of crude "improved" wagon roads and the wheel traces over the prairie, through the forests and across the forded streams, Minnesota today has a network of 127,730 miles of established roads and streets.

ROAD BUILT AT GRAND PORTAGE

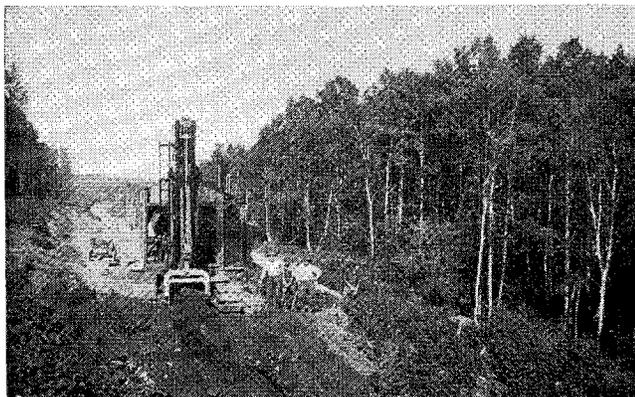
Not where cities now flourish and paved highways criss-cross bounteous farmlands, but in its furthest forest-clad northeast corner, north of Lake Superior — that's where Minnesota's first road construction occurred.

The first record of a constructed road within the present boundaries of the state is of one connecting Grand Portage bay and Fort Charlotte on the Pigeon river. It was built sometime before 1816, apparently not by Americans but by British soldiers.

The wilderness area of its location remains today much as it was then, celebrated now as an unspoiled recreational area.

"Vehicular" transportation had not waited upon the building of that first road by the British soldiers, or construction of any other road.

By 1789, only a few years after the American Revolu-



Originally, the North Shore road flanking Lake Superior was Highway #1. It now is TH 61. Pictured is early construction in the rocky terrain with a steam shovel being used.

tion, trails of the Red river ox carts coming down from Hudson's Bay and Fort Garry (Winnipeg) in Canada, had extended to Lake Traverse on Minnesota's present western boundary.

TRAILS FOLLOW RIVERS

By 1823, the squeaking and squealing of the ox carts' wooden wheels and axles were heard the length of trails between Mendota and the Red River valley. Two trails followed the Minnesota river to Lake Traverse and the Bois de Sioux to the Red river. One trail followed the west side of the Red river to the Bois de Sioux, the Otter Tail and Sauk rivers and the east side of the Mississippi river to St. Paul.

Another trail ran from Pembina, on the North Dakota side of the Red, via Thief River Falls and Elbow Lake to the Sauk. Still another followed the Red river to the crossing of the Wild Rice, then along Detroit and Otter Tail lakes and the Leaf and Crow Wing rivers, and the east bank of the Mississippi. A winter route went via Gull, Leech and Red Lakes.

Following establishment of Fort Snelling in 1819, soldiers built roads to Lake Calhoun and the Falls of St. Anthony (Minneapolis).

A year after the Territory of Wisconsin was organized in 1836 there was added to it the district west of the St. Croix river and the north of the Mississippi, now a part of Minnesota. A road was built from Taylors Falls to Fort Snelling and one from St. Paul to Stillwater. The latter, continuing over a route on the present Wisconsin side of the St. Croix to Galena, Ill., was the only road connecting St. Paul with the outside world when Minnesota was organized as a territory in 1849.

COUNTY, TOWN ROADS BUILT

In 1849, the Territorial Legislature created Boards of County Commissioners. (Laws 1849, Chap. 19, Sec. 13). One of their duties was to lay out roads, discontinue or alter them, license ferries, and fix toll rates. Except as the new laws conflicted, the old Wisconsin laws were retained. These provided for division of the counties into road districts and for selection of road supervisors by the county boards. The supervisors were to enforce the poll tax and collect the property tax for roads. This tax was not to exceed ½ of one percent on the assessed value of real estate, and could be paid in labor. Bridges might be built when the county commissioners determined their necessity.

This same law (Chap. 24) regulated the laying out of territorial roads. These were to be surveyed and marked, and were to be 66 feet wide and "permanent." They were to be "worked" by the counties, but the Territory paid the cost of "laying out" and damages.

Other acts subsequent to 1849 provided for appointment of commissioners to locate the territorial roads described in the acts and, in most cases, provided for

MINNESOTA HIGHWAY HISTORY

expenses to be paid by the county in which the roads were located. These special acts designated the place and the date of the first meeting such as the Chisago House at Taylors Falls, or the store of R. P. Russell.

Any number of these special acts were passed subsequently by the Legislature wherein they would appoint commissioners to lay out the so-called state roads. For instance, as late as 1879, the Legislature provided by special law for construction of a free bridge across the Minnesota river at the borough of Belle Plaine, and the laying out of suitable roads and approaches in connection with it. The cost was to be raised by popular subscription, and by the borough itself through taxation.

Minnesota statutes during the period 1849-1858 contained general laws concerning the establishment of county roads by county commissioners and town roads by town boards. Basically, these laws provided for creation of county roads and town roads by the petition method, somewhat similar to the laws in effect today.

TAXES WORKED OUT

The statutes were revised in 1851 (Revised Statutes 1851, Chap. 8, Art. X; Chap. 13) and provided that roads could be established by the Legislature only when they passed the county lines, and when petitioned for by 12 or more freeholders in each county. All roads were under the care of the county boards, and all able-bodied men of 21 to 50 were required to work three days a year on the roads. A tax of not to exceed $\frac{1}{3}$ of one percent on real estate was provided, and this could

be paid in labor.

Chapter 39, Revised Statutes 1851, set forth regulations for plank roads and turnpikes. Turnpikes were to be 18 feet wide and bedded with stone or gravel. Both plank roads and turnpikes were to be privately owned toll roads. But none were built. County boards were authorized to license toll bridges under the provisions of Chap. 10, Laws 1851.

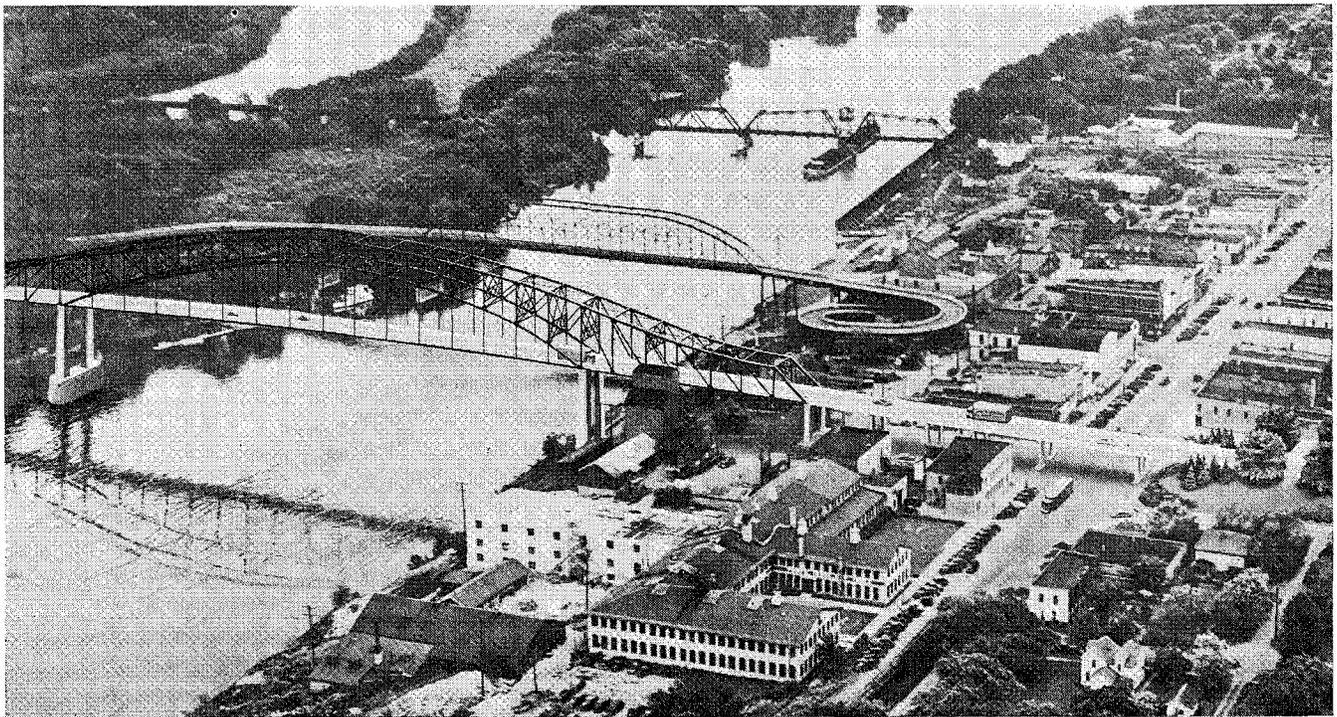
In 1856, provision was made for maintenance of Federal roads by the counties (Laws 1856, Chap. 109).

In an extra session of the 1857 Legislature, Chapter 62 created the office of County Road Commissioner. Two were elected for each county — one each year for two-year terms. With the County Surveyor, they constituted a Board of Road Commissioners with the powers formerly held by the County Board, except that the latter retained the power to levy taxes.

STATE ROAD BUILDING BARRED

In the late fifties, eagerness for railroads superseded interest in highways and there was agitation for state aid for railroad building. To forestall such plans, a clause was inserted in Sec. 5, Art. IX of the Laws of 1857, stating:

“The state shall never contract any debts for works of internal improvement, or be a party in carrying out such works, except in cases where grants of land or other property shall have been made to the state, especially dedicated by the grant to specific purpose.”



The Hastings bridge with its unique spiral approach served for 57 years (1894-1951) in carrying TH 61 traffic over the Mississippi River. In the photo, a drawing of the new bridge is superimposed on a panorama of the Hastings riverfront. The new bridge went into service in 1951, the old bridge being dismantled.

While this clause failed of its intended purpose, it did effectively bar the state from aiding in construction until 1898 and from engaging in road building until the constitution was amended in 1920.

The Territorial Legislature of 1855 had already taken a step toward local control when it provided (Chap. 32) that road districts should not be larger than the election districts.

The first State Legislature created town organizations and town boards. They had general supervision over the roads and bridges in the townships, except that they could not lay out, alter or discontinue state or county roads. They determined the number of days men should work on the roads: not less than one nor more than four per year. The chairmen of the town boards in each county constituted the county boards. They could "lay out, alter or discontinue county roads." (Laws 1858, Chap. 75, Arts. 15, 21-23.)

In 1860 (Chap. 15), separate county and town boards were created. During the same session (Chap. 4), a general road law was enacted. All roads, including territorial, state and county roads, were declared the roads of the towns and might be altered, discontinued, or reopened by the town authorities.

COUNTY BOARDS DIRECT

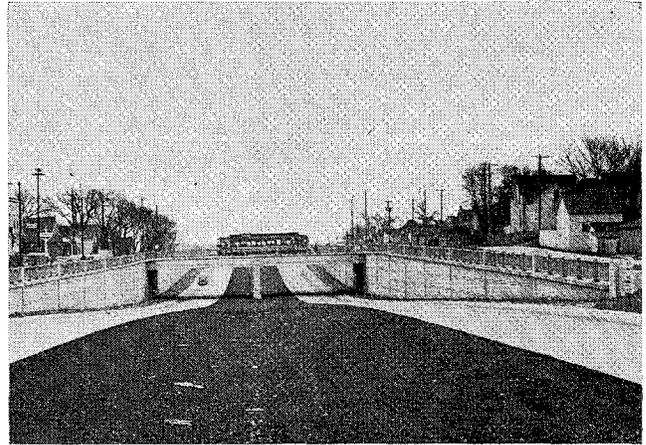
In 1862 (Chap. 68), the state roads were declared county roads, to be altered or discontinued only by the county commissioners. The county boards could appropriate up to \$1,000 in any year, or more by vote of the people, to be expended under direction of the county board. Roads in more than one township could be established, altered or vacated by the county boards. The county boards were to notify the town boards of such action, and the town boards must then open and maintain the roads.

The authorized appropriation was increased by the Legislature to \$1,000 for each \$500,000 of real estate in the county in Laws 1865, Chap. 31.

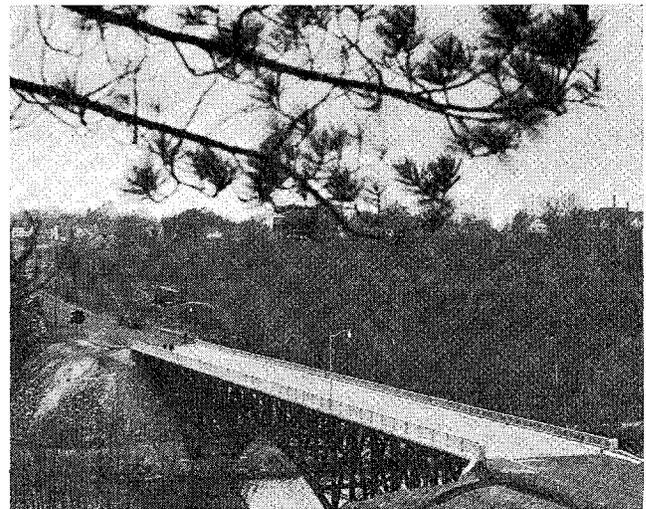
Townships were given the authority to issue bonds for building bridges under Chap. 31 of the Laws 1867; and Chap. 27 provided a method for building free turnpikes by the counties.

Revised Statutes were adopted in 1873, and the road laws were gathered into one chapter. Among the new provisions (Minnesota Statutes at Large, 1873, Chap. 31) was extension of the road tax to personal property and a declaration that section lines in townships where there were no roads should be legal roads. There were now six classes of roads: state, judicial, county, township, free turnpike, and steam traction.

The practice of doing road work in lieu of tax payments was not entirely stopped until 1911, when Chap. 100 of the Laws of that year was passed requiring that all road taxes be paid in cash.



This is Hudson Road carrying THs 10, 12 and 61 on the east side of St. Paul, the divided highway and traffic separation structures at the intersection with Earl street, among the major highway projects in the 1948-50 biennium.



This 400-foot long bridge carries TH 123 over the Kettle River on the east side of Sandstone. The three-span steel arch structure replaced an old four-ton load limit bridge. It was completed in 1948.



This winter view of County-State Aid Highway 1 in Red Lake County (1956 photo) illustrates the improvements counties are undertaking in their construction programs on the Federal Aid Secondary systems.

MINNESOTA HIGHWAY HISTORY

This territorial preoccupation with road building is explained by the census figures of the period, only 6,077 population in the Territory in 1850, grown to 172,023 by 1860.

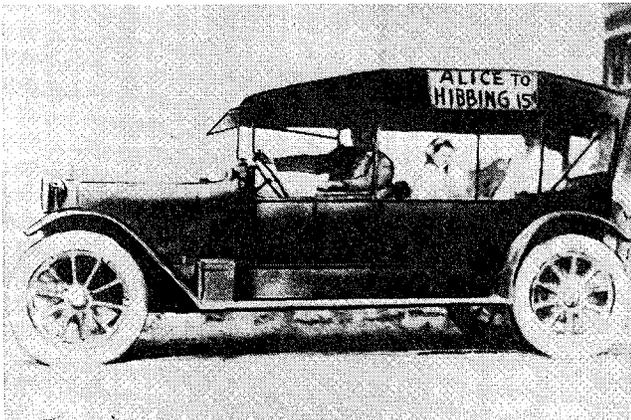
TROLLEY CARS COME

The larger cities, as they spread out from their hubs in the days of carriages and wagons, developed street-car systems. St. Paul delighted its citizens in 1872 by instituting a streetcar drawn by a single horse. Soon teams were used. Streetcar companies were chartered in the Twin Cities and Duluth. Horses did faithful service, but people wanted efficiency beyond their tramping power. Steam engines were tried, but by the 1890's, horsepower and steam gave way to electric-powered streetcars. These became standard in many Minnesota cities and contributed to the business and pleasure of multitudes.

Probably many urban dwellers would have been incredulous if anybody had then predicted that in time trolley cars — a triumph in their day — would disappear from their thoroughfares. The electric railways bound together such cities as Minneapolis and St. Paul, sprawling out into lands that only a few years earlier had been placid farms. The city cars got people to their work, facilitated their shopping, and took them out to parks and playgrounds and lakes — even to such glamorous resort lakes as Minnetonka and White Bear.

At the end of the 19th century, a revival of interest in roads was brought about nationally and in Minnesota by the need for more frequent and regular marketing of farm products, delivery of mail, pressure from bicycle owners and from merchants seeking to enlarge their territories.

In the early 1890's there were more than four million bicyclists on America's primitive roadways. Cycle clubs mushroomed throughout the country, and the clamor began for better roads. Streetcars and trains were helpful, but legs also were propelling powers. The bicycle was known in America as early as the 1860's.



The first private bus line in the nation served Mesabi Iron Range miners on runs between towns and mining locations.

It did not become a fad and sport, however, until the 1870's and 1880's. As manufacturers improved machines, the vogue of the bicycle became universal. The two-wheeled contraption was good for business uses and it contributed to sport and to the pleasure of excursions. It was no easy task to pump a bicycle over bad roads in hilly country. Cyclists naturally asked the logical question: Why should not the State and its communities provide good roads and streets? Thus the invention gave impetus to the movement for improved roadways. Some of the larger cities were quick to build bicycle runways alongside their principal avenues. Cycling grew steadily in popularity. By 1882 Minnesota had a branch of the League of American Wheelmen (made up of cyclist groups throughout the United States), and it soon established a magazine called the *Minnesota Wheelman*.

FARMERS ECHO CYCLISTS

The bicyclists' clamor for better roadways was echoed by the farmers who depended on good transportation to get produce to market on schedule. The situation was particularly bad in the northern states where snow and deep frozen ruts made winter roads virtually impassable, and wet springtime prevented travel by anything except sleds or buckboard. In emergencies, doctors could not easily reach outlying farms; mail delivery was erratic. In the 1890's and early 1900's, the public was becoming aware of a curious coughing, ill-smelling vehicle called the "horseless carriage."

FIRST U.S. AUTO BUILT

One of the puzzles of American technological history is that this country lagged behind the Europeans in developing the automobile. Germans evolved the "four-cycle internal combustion hydrocarbon motor" as early as 1876. In the mid-eighties the first motorcycle was made by the German, Gottlieb Daimler; and a year later an automobile powered by a gasoline engine was



Hundreds of miles of Minnesota highways are flanked by "live" snow fences grown from evergreen seedlings. Pictured is the planting in 1956 by machine of Pine seedlings.

devised by Karl Benz. The French were prompt in applying the new engineering knowledge, but Americans failed to swing into action until the early 1890's when two brothers named Duryea, Henry Ford, Elwood Haynes, R. E. Olds, and others went to work. They more than made up the lag, however, by their energy and their inventiveness. When the Duryea brothers, Charles and Frank, built the first gasoline-fueled automobile in this nation in 1893, and drove it through the streets of Springfield, Mass., this country took the first step forward into the automotive age.

The history of the American motor industry reveals the 1890's as an experimental period, but progress thereafter was fast and furious. In 1900 a dozen companies turned out 4,000 cars. Ten years later the production was 181,000 cars, and there were 69 manufacturers. So far as can be determined, the first auto appeared in Minnesota in 1895 at a bicycle show in Minneapolis. By 1902 Minneapolis had about a dozen

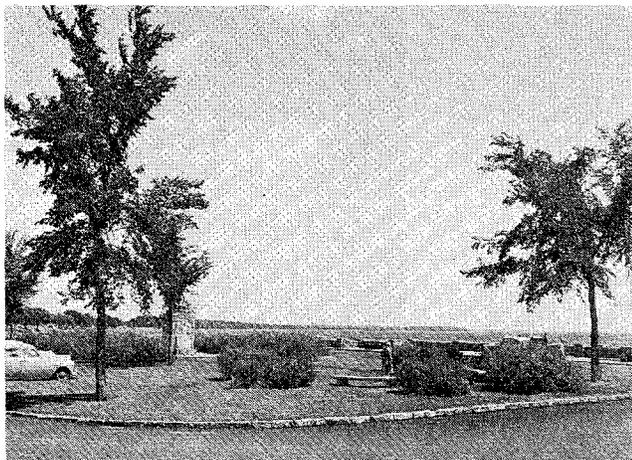
automobiles. In that year Tom Shevlin, son of the lumber magnate, violated the established Minneapolis speed limit of ten miles per hour and was arrested. A year later, the first law regulating motor vehicle traffic in Minnesota was passed.

Experiments in propelling cars were made with electricity, steam, and gasoline, but by 1900 auto races had indicated that gasoline was the most effective fuel. The American ambition for speed was not slow in showing itself. In 1902, two Minneapolis men drove from Minneapolis to Monticello, 42 miles, in two hours and 12 minutes — "actual running time," as a newspaper reported. In the same year, three men achieved the tremendous triumph of driving from Chicago to Minneapolis in six days. The first trip by car across the entire country was made in 1903 — in a Packard car — and the time was a breath-taking 61 days!

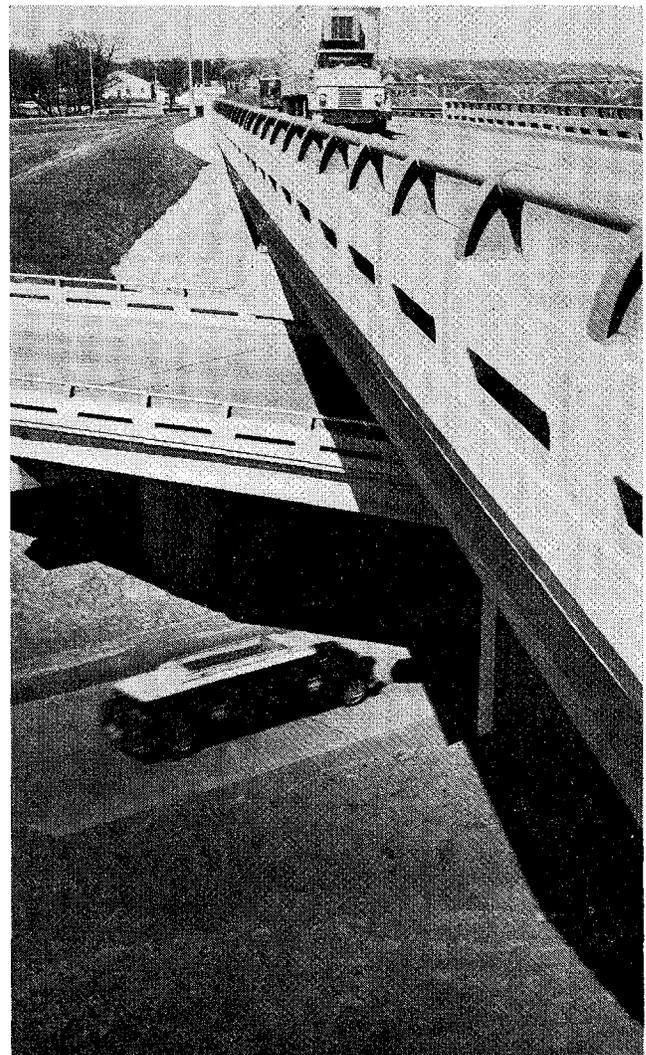
As automobiles reflected the advancing ideas of American inventors and competing companies, they



Relocation of TH 2 with a four-lane divided highway section around the village of Cass Lake was part of upgrading this route from the North Dakota border to Duluth. The new Cass Lake section was completed in 1959.



The Garrison Safety Rest Area, on the northwest shore of Mille Lacs Lake and off TH 169, is one of the 335 waysides and rest areas on the Minnesota state highway system.



Three roadways at different levels and angles mark the entry and exit to the Minneapolis-St. Paul Metropolitan Airport off TH 5. The bridges were built in 1959.

MINNESOTA HIGHWAY HISTORY

changed styles. They gained power and changed from clumsy-looking imitations of carriages to sleek, streamlined, powerful vehicles in their own unimitative right. The early open cars, in which women wrapped cordons of veils around their gigantic hats and their faces to protect themselves from wind and dust, were followed by successively improved cars. As time went on, the new models were enclosed, heated in winter, cooled in summer, and provided with increasing speed as powerful engines replaced those of early days (the car that made the run from Minneapolis to Monticello in 1902 had an 8½ horsepower engine).

AUTO LICENSE INVOKED

The automobile was a monster new on Minnesota streets and roads. It was a curiosity, a contrivance for the rich, a noisy phenomenon that nobody quite knew how to control.

In 1903 the Legislature decided that something had to be done to keep the automobile in check. The law passed that year, the first traffic code enacted by the State Legislature, provided that all automobiles had to have a license to operate on the roads of Minnesota. A license, procurable at a cost of two dollars, was issued by the boiler inspectors of the state. One-half of the fee was turned over to the treasurer of the county in which the owner of the vehicle resided, and the other half was retained by the boiler inspector as his fee for issuing the license. The inspector gave each machine a number, which had to be displayed in figures not less than four and one-half inches high. The speed of cars

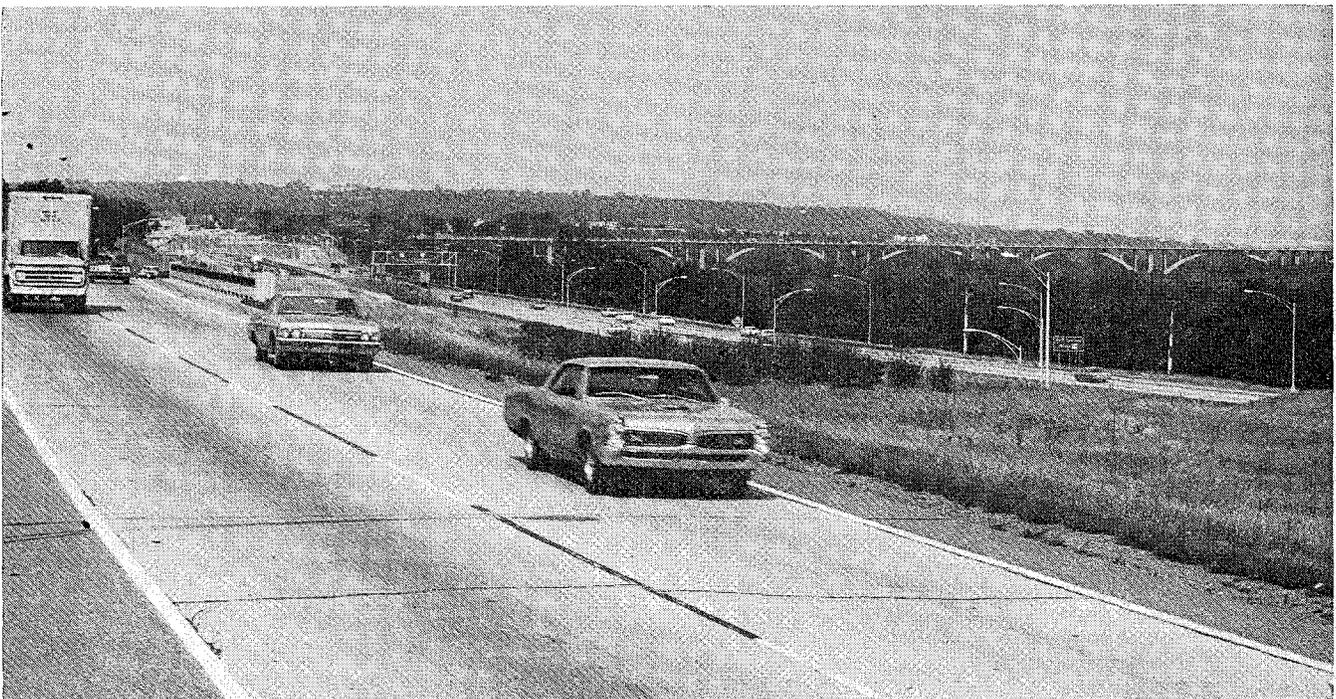
was limited to eight miles an hour in towns and four miles an hour at street crossings. In the country, a speed of 25 miles an hour was permissible, but the operator of an automobile upon meeting a team was required to come to a full stop on a signal from the driver of the horses. For night driving lights were required, and no motor vehicle was allowed to use the roads unless it had an adequate muffler.* A subsequent law placed the duty of licensing automobiles in the hands of the Secretary of State but for almost a score of years the license exacted for the operation of automobiles was simply a registration fee. It was in no way a revenue-raising method. The fee in 1909 amounted to \$1.50 annually. The 1911 Legislative session set it at \$1.50 for a three-year period. In 1915 the fee was raised to \$5.00 for a three-year period, effective in 1918. It still remained a license fee, however, and the proceeds were not used for road purposes.†

In 1909, 7,065 automobiles and 4,000 motorcycles were licensed. Cars contributed to the pressures in the state for good roads, but, as reviewed, public interest in improving the rough roads of earlier times was present before advent of the automobile. At a convention called to forward the cause of good roads in 1893, conferees listened to a speaker who said, "A perfect highway is a thing of beauty and joy forever. It blesses every home by which it passes."

In 1897, the Legislature proposed a constitutional amendment to permit state participation in road build-

*General Laws, 1903, p. 646-648

†General Laws, 1909, p. 305; 1911, p. 493-505; 1915, p. 40-45.



The 4,119-foot (.78 of a mile) Mendota bridge is pictured as it appears from the westbound lanes of TH 5, near Fort Snelling. The 18-span structure, which was built in 1924-26, carries TH 55 traffic over the Minnesota River valley. Deck widening and resurfacing were accomplished in 1968.

ing. This was adopted in 1898, but legislation to carry it into effect was not approved until 1905. (Laws 1895, Chap. 383; *Constitution*, Art. IX, Sec. 16, Laws 1905, Chap. 163.) Section 16, Art. IX, created the "State Road and Bridge Fund." The fund included all money accruing from the income derived from investments in the internal improvement land fund, and permitted the state to levy an annual tax not to exceed 1/20 of one mill. (A legal squabble followed with respect to the balloting for the amendment, but it was upheld by court action.)

CARS LICENSED

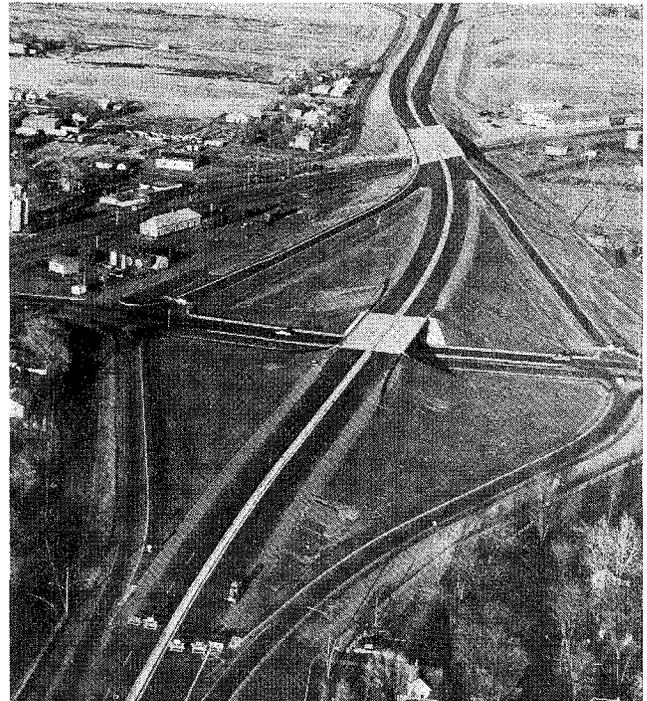
By now the automobile was on the scene and the first automobile to come under scrutiny of the Legislature was driven on Minnesota roads in 1903. In that year, Laws 1903, Chap. 356, were passed requiring motor vehicles to be licensed by the State Boiler Inspector unless licensed by some municipality. State registration of all motor vehicles in the state began in 1909. But roads to the nearest creamery or railroad station were still more in demand than those to accommodate "Sunday drivers."

The State Highway Commission was created when three commissioners were appointed by the governor in January, 1906. George W. Cooley was named commission secretary and state engineer. A 1906 amendment raised the annual tax levy authorized to 1/4 of one mill and also omitted the limitation that not more than 1/3 of such fund should be expended for bridges.

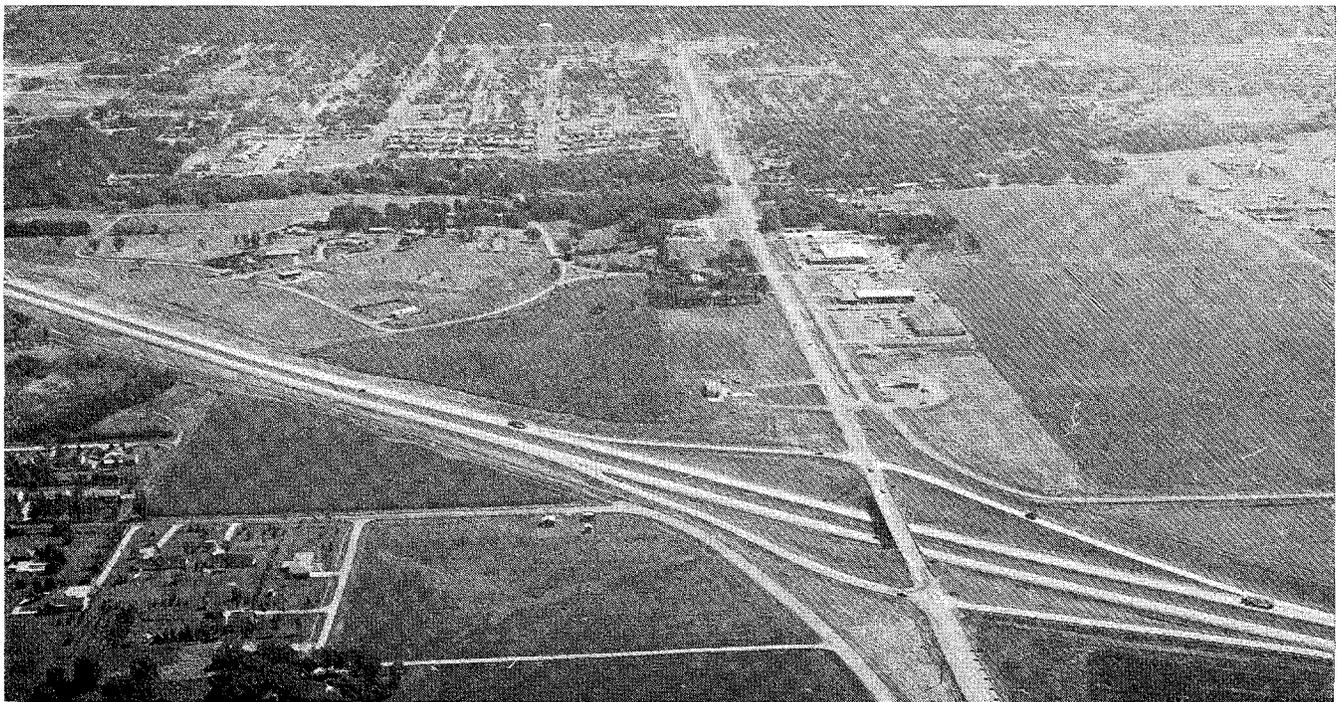
Even with founding of the Highway Commission, improvement of roads moved at a slow pace in com-

parison to need. A major deterrent was that the powers of the commission were limited to distribution and supervision of the state aid funds to the counties for construction and maintenance of state roads.

In 1909, the Legislature (Chap. 229) authorized the State Board of Control to install rock crushing ma-



This air view of the relocated section of TH 10, providing a by-pass about the congested traffic center of Anoka, shows the geometric details of the route. This project was completed in 1966.



A typical diamond interchange is the design of intersecting roadways with I-90 on the northerly edge of Austin, a project completed in 1961.

MINNESOTA HIGHWAY HISTORY

chinery at the State Reformatory near St. Cloud to crush waste rock and furnish it free to the State Highway Commission. Since the railroads were hauling this material at no charge, the 1911 Legislature removed any doubt as to the legality of this practice by passing a law (Chap. 192) authorizing the railroad companies to transport free, or at reduced rates, stone, gravel, sand or other material to be used in building roads.

ENGINEERS APPOINTED

The $\frac{1}{4}$ mill levy authorized in 1906 was not actually imposed until 1911 by the Legislature. Also increased was the annual appropriation for expenses of the Highway Commission to \$150,000, the amount appropriated from the General Revenue fund. The 1911 Legislature also authorized the Commission to appoint a force of assistant engineers to supervise the work on state and county roads. Under this law, 45 assistant engineers were appointed.

The Elwell Act, passed in 1911, provided for designation of so-called "State Rural Highways" by the District Court upon petition of a designated number of freeholders. Issuance of bonds for improvement of these roads was authorized. Half the cost of these improvements was to be paid from the State Road and Bridge Fund, $\frac{1}{4}$ by the Counties, and $\frac{1}{4}$ by the benefited property owners. This act was repealed in 1915 after 50 highways totaling 1,134 miles were designated and improved at a total cost of \$3,254,000.

An increase of the maximum levy to one mill was proposed by the Legislature in 1911, adopted in 1912, and enacted into law in 1913 (Laws 1913, Chap. 235). This bill also provided for a general revision and codification of all state road laws.

The rural roads were divided into three classes:

State roads — those constructed and maintained by the counties with state aid, under rules of the Commission.

County roads — those built by the counties but maintained by the townships, under Commission rules.

Township roads — those constructed and maintained by the townships.

There can be no doubt that the automobile was a spur to the "Good Roads Convention" held in St. Paul in 1893, and the next year the State Fair conducted its first "Good Roads" day exhibit. In 1896, the Good Roads Association of Minnesota was formed, and laws were enacted giving the counties greater power in making road improvements. The "Good Roads" movement was officially blessed in 1913 by inauguration of a Minnesota "Good Roads Day" (the third Tuesday in June).

FIRST AUTO LICENSE ISSUED

In 1907, when the first Minnesota licenses were issued, the number of autos was about 500. In 1909, the number had swollen to 7,000. There were 12,000



A project of 1947-48 was bridge No. 5947 over the Mississippi River at Sauk Rapids. It is 555 feet long with a 27-foot roadway between curbs and a five-foot pedestrian sidewalk. The cost was \$193,600.

automobiles in 1910 and 17,960 in 1911. From 1912 to 1920, registration was for a three-year period. The total was 42,033 in 1912-1914; 200,000 in 1915-1917, and 330,576 in 1918-1920. When World War I was declared in 1917 there were registered in Minnesota more motor vehicles than the entire number of automobiles in the United States 10 years earlier. In 1921, there were nearly 333,000 automobiles in Minnesota. In 1930, the number reached 744,000. Registrations in 1937 approximated 677,000 passenger cars, 112,000 trucks, and 26,000 trailers. In 1960, the count of all kinds of motor vehicles registered in Minnesota reached 1,758,619, an increase of 400% in 40 years. Of this total, more than 1,275,000 were passenger cars. Today's motor vehicle state registrations exceed 2,600,000.

If Americans lagged in grasping the revolutionary potentialities of the automobile in its early stages, they were resourceful in perfecting cars and producing them in fantastic quantities. And they were quick to realize that gas-driven cars, built as passenger buses, opened the way to a novel form of public transportation.

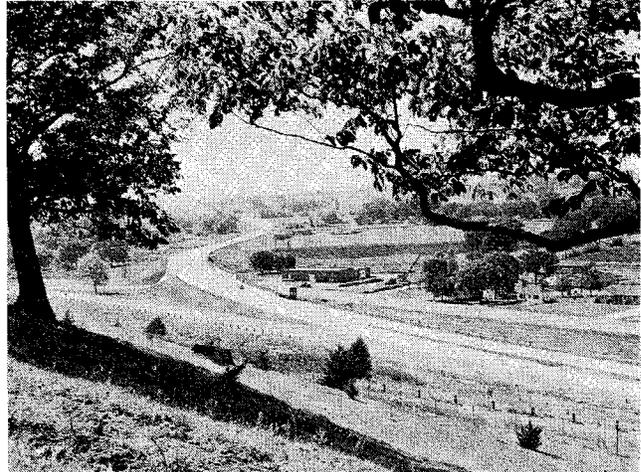
BUS SYSTEM STARTED

In the bus field, Minnesota was a pioneer. Philosophers have written about historical causation, but often they have overlooked the casual circumstances that can set off trains of consequence. For instance, mining operations in 1914 occasioned the removal of a Minnesota town from one site to another. The town happened to be Hibbing. A couple of enterprising young men, Carl Eric Wickman and Andrew G. Anderson, made use of an open car to convey passengers from the old Hibbing to the new. This seemed to them a beginning for a money-making business. They put in an order for a bus — believed to be the first built in the United States — and meanwhile they tinkered with a grocery truck, equipping it with seats and windows.

From these humble beginnings emerged, first, the Mesaba Transportation Company, then the Northland Transportation Company, and finally the Greyhound Corporation. The latter became one of the greatest bus companies of the nation, spreading from Hibbing to countrywide. How fast the system grew may be indicated by the fact that the bus lines in 1927 transported 15,000,000 persons in Minnesota over routes having a sweep of 16,000 miles.

The motorist, in the pioneer stage of automotive history, was a hearty and adventurous soul. Garbed in a long linen duster and looking owl-like in goggles, he cut a gay figure as he "raced" around the countryside stirring up clouds of dust in dry weather, or splashing everyone within range with mud as he drove over the rain-soaked trails.

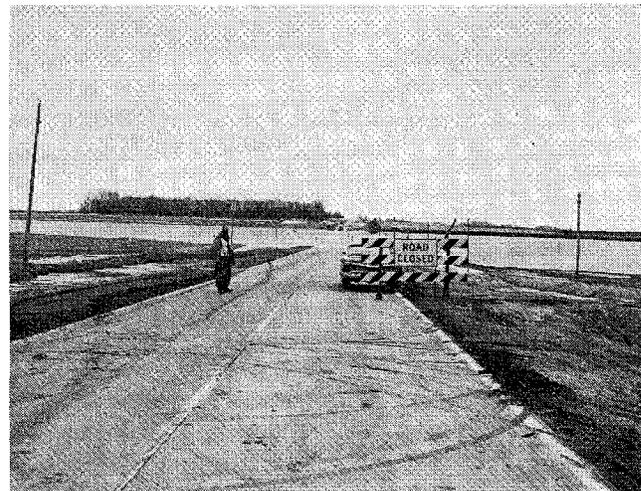
Every excursion was hazardous and uncertain as the new contraptions were whimsical and a menace to man and animal. And the roads were even worse. But with improvements in the automobile, by 1917—two



Sweeping southwesterly out of Jordan, Trunk Highway 169 was one of the first expressways built in Minnesota. This striking view is of the newly-paved highway in 1956.



Rotary snow plows were utilized by maintenance crews to clear snow from highways in western Minnesota (February, 1969) where massive drifts blocked travel.

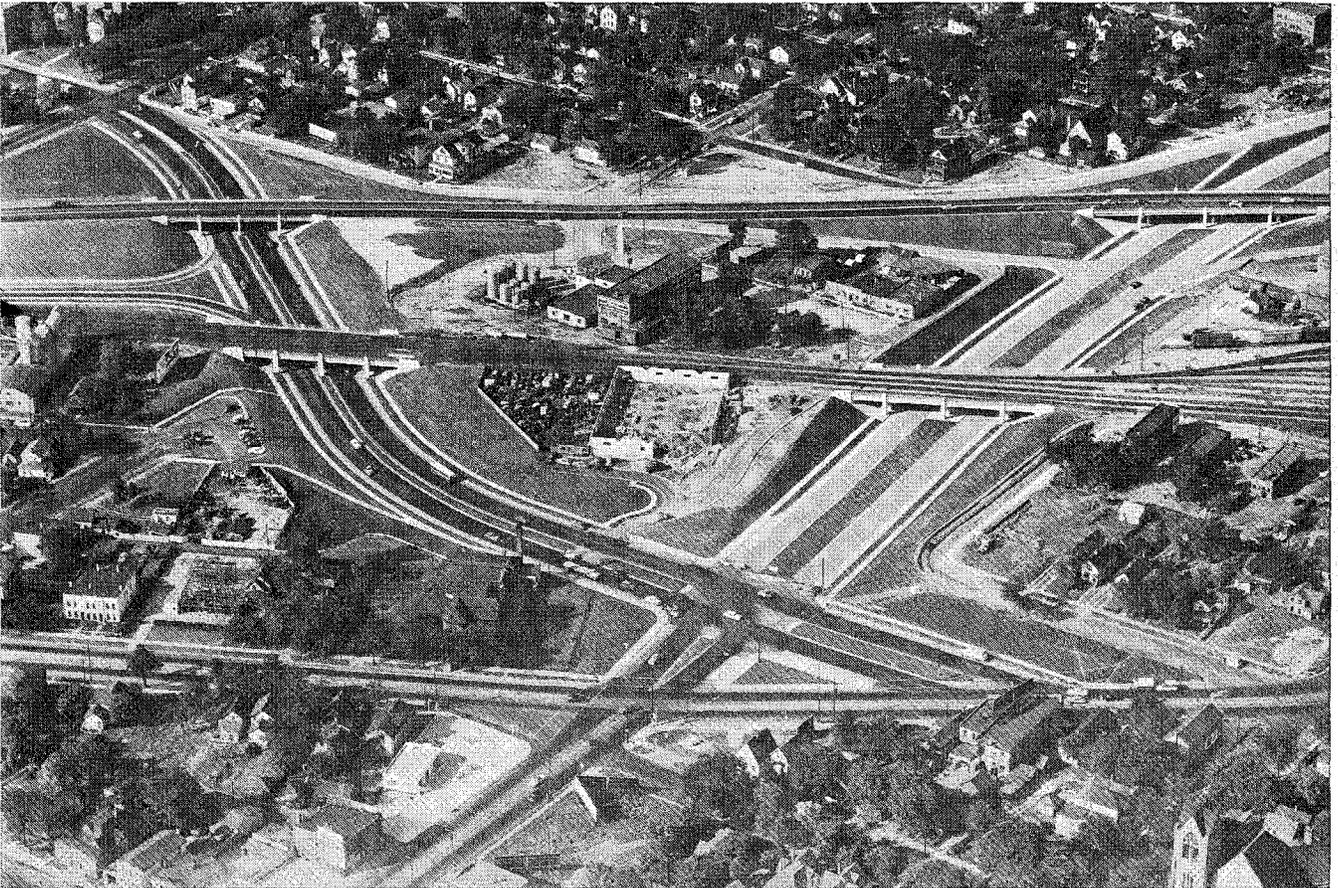


Floods in April, 1965, that in some areas surpassed records for 100 years, followed by tornadoes in May had highway maintenance forces on emergency duty for weeks. Pictured is the flooding of a section of TH 60 near Bingham Lake in April, 1965.

MINNESOTA HIGHWAY HISTORY



Relocated to sweep around Montevideo, TH 7 and TH 29, co-designated for a short distance, rise from the Chippewa River bank in a north-westerly direction before splitting on the north edge of the municipality. The route was opened in 1960.



After more than 50 years of negotiations and planning, the Milwaukee railroad grade separations in Minneapolis became a reality in 1952. Two railroad bridges and two bridges for motor vehicles were included in the project that relocated TH 36 at the intersections of Franklin, Cedar and Hiawatha avenues. The photo shows the complexity of the project as all of the streets and rail lines pictured were relocated. In the early '50s, street traffic averaged 40,000 vehicles a day.

decades after they came into existence—the clamor for better roads became a roar. In the same year, the State Highway Commission was abolished and the office of Commissioner of Highways was created. (Laws, 1917, Chap. 119.) Charles M. Babcock was named to the position.

With the appointment went all of the powers of the former Commission plus more specific authority for making rules and regulations for construction, maintenance, and improvement of state (aid) roads. Expenses were now to be paid out of the Road and Bridge Fund instead of the General Revenue Fund, but they were not to exceed 10 percent of the fund. Still, the Commissioner's powers were limited and progress was difficult.

TRUNK SYSTEM BORN

It was the "Babcock era" that brought the first major move forward in development of today's highway system. And the demand for better roads continued to grow throughout the nation. Minnesota's motor vehicle registrations were heading toward the 300,000 mark. In the 1919 Legislative session, an amendment to the state constitution for an integrated highway system was proposed. In 1920, Minnesotans took decisive action to "get out of the mud" when they voted to adopt the 16th amendment, better known as the "Babcock amendment" (Constitution, Art. XVI, Sec. 1). The "Babcock amendment" gave birth to Minnesota's original trunk highway system which consisted initially of 70 numbered routes comprising 6,877 miles, over which the Commissioner of Highways held authority. The routes connected all the county seats and other principal centers of population. Since that time, the trunk highway system has increased to 12,102 miles.

In 1921, general highway laws (Laws 1921, Chap. 323) were passed to carry out the trunk highway plan. In addition to the system itself, provisions were made for establishment of the Trunk Highway Fund and the Trunk Highway Sinking Fund. The latter consisted of motor vehicle taxes imposed under the amendment. Monies in this fund were used for payment of interest and principal on bonds authorized for issue under the amendment. The Trunk Highway Fund was created to finance the construction and maintenance of the system or to reimburse the counties for later expenditures in improving any of the trunk highway routes. This fund consisted of excess monies from the Sinking Fund plus all federal aid allotted to the state.

None of the trunk highways as described in Article XVI was located through any city of the first class (100,000 or more population). The law did, however, permit the Legislature to add new highways to the system when a new county was created or a county seat changed. The principal reason for this was to provide

Continued on page 25

First Highway Commissioner CHARLES M. BABCOCK

Charles M. Babcock, when he was a country merchant back in 1907 or thereabouts, used to sit in his front yard in Elk River, Minnesota, of a Sunday and watch the new-fangled autos chug by.

As each one passed he would check its vehicle number against the registration list of car owners he held in his hand — and wish the drivers would help pay for the road they were using.

Out of this homely beginning may have come the inspiration for Minnesota's pay-as-you-ride motor vehicle (license plate) and gasoline tax which finance road construction and upkeep today, and, indeed, the inspiration for the state's 12,000 mile trunk highway network.

For Charles Babcock, who was the first Commissioner of Highways (1917 to 1932), literally "pulled Minnesota out of the mud."

As a youth, Babcock decided he wanted to become an engineer. He entered the University of Minnesota in 1892, but gave up his engineering ambitions after a year to enter his father's mercantile business in Elk River.

Because he developed a co-operative farmer-townspeople plan for keeping the road to Elk River open winter and summer, he was elected a Sherburne county commissioner. Gov. A. O. Eberhardt in 1910 appointed him to the three-man state highway commission and Gov. J. A. A. Burnquist made him the first one-man commission seven years later.

Cloaked with authority to map a statewide road system connecting most of the sizable communities, he worked on a plan for two years and it was adopted as the "Babcock amendment" to the constitution.

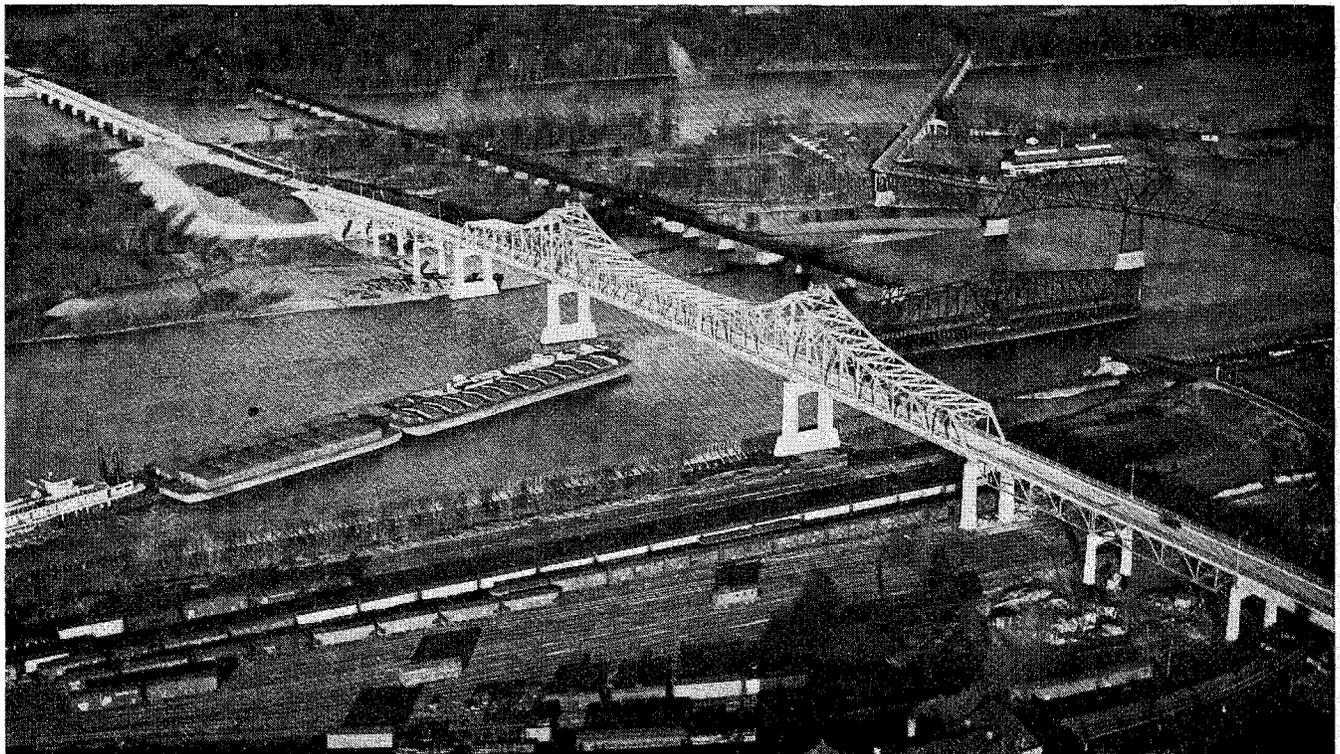
Subsequently he induced the legislature to vote a \$20 million bond issue which, together with motor vehicle fees, provided the funds necessary to start construction of a hard-surfaced road system.

His untiring efforts brought him praise and criticism. Friends and admirers called him the "missionary," the "evangelist," the "apostle" of good roads. Political enemies called him the "czar of the highways."

His fame spread across the nation. He helped authorities to create a federal road system. They adopted his method of marking and numbering routes. President Coolidge sent him to Argentina as an American representative to the Pan-American Road Congress. President Hoover made him a similar offer, but he turned it down.



Minnesota's first section of the National System of Interstate and Defense Highways was opened to traffic on Aug. 21, 1958. It is an 8.3-mile segment from TH 14 at Owatonna to the north Steele county line, near Medford.



Highway, railroad and water barge traffic are represented in this photo of the interstate bridge across the Mississippi River at Winona. Construction of the bridge was described in the 1940-42 biennial report of the highway department as "the largest project of its kind in Minnesota Highway Department history." The bridge contract was \$1,500,000. The 50-year-old structure replaced is seen in the upper right of the photo.

Continued from page 23

routes connecting all county seats. Except for the one provision, no new routes could be added until the original system had reached 75 percent completion in construction or improvement.

The 1921 laws also defined three classes of roads:

State-aid roads—those established, improved and maintained by the county boards under supervision of the Commissioner of Highways.

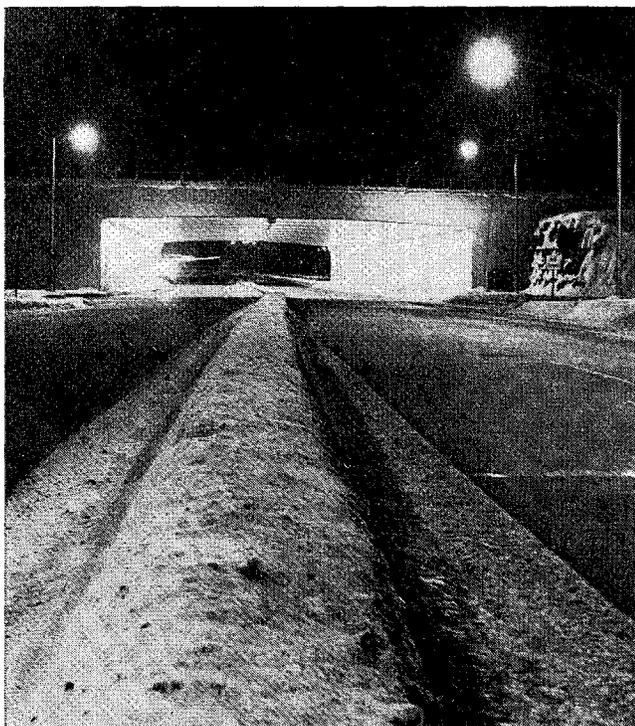
County roads—routes established and improved by the county boards, but be kept in repair by the town boards.

Town roads—those built and maintained by the town boards, but with the aid of the counties.

The organization of the Highway Department was also outlined under the 1921 Act, and three main divisions established: Road Construction, Road Maintenance, and Bridge. Eight Division Engineers were appointed with general supervision over both construction and maintenance activities in their divisions. Maintenance was divided into 16 districts.

ROAD USER TAX LEVIED

The first tax levied against the road user was the motor vehicle tax imposed under the 1921 law which established the trunk highway system. The basic rate was fixed at two percent of the factory list price of the vehicle with a sliding scale of reductions for depreciation.



The first lighted tunnel on a Minnesota trunk highway, completed in the Fall of 1961, carries TH 5 from Ft. Snelling to the southern end of the Ft. Snelling-West Seventh Street bridge, St. Paul, over the Mississippi River.

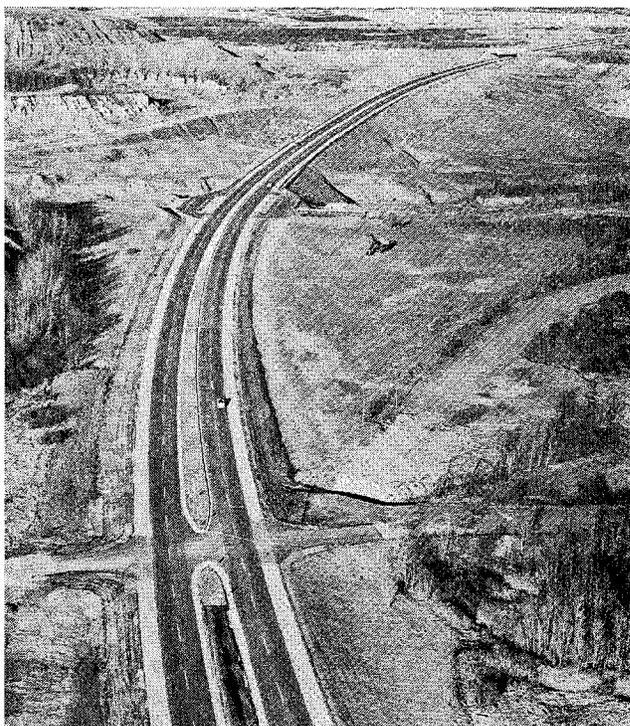
Progress in road building in Minnesota can be measured by the following statistics:

In 1906, the year the three-man highway commission was formed, there were 79,300 miles of roads of all types. Of this total, 67 miles were paved, 6,179 miles were of gravel, and 73,054 were unsurfaced.

Of the 6,877 miles of trunk highways taken over in 1921, only 183 miles were paved; some 5,365 miles of state aid roads were graded or graveled to widely varying standards of that day, and over 1,300 miles were virtually unimproved.

In 1968, there were 110,730.84 miles of non-municipal roads of all types. Of this total, 25,965 miles were paved, 72,387 of gravel, and 12,365 unsurfaced. Of a total of 127,100 miles of roads and streets, 12,029 miles were trunk highways, 30,765 were county state-aid highways, 16,017 were county roads, 54,776 were township roads, 10,322 were municipal streets, and 1,348 miles were forest, game refuge roads, and other state roads, and 1,843 miles were Indian reservation and other federal roads.

There were then, in 1921, registered in Minnesota, as the source of revenue for the support of the highway system, 332,652 motor vehicles of all types. In this regard it is significant that only 50 years earlier, the founders of the trunk highway system freely predicted that the all-time saturation point of motor vehicle ownership would never exceed 500,000 in the entire



A seven and one-half-mile section of TH 169 between Chisholm and Hibbing was relocated and constructed to pass through the old Pillsbury iron ore mine. The route was opened to traffic in the Fall of 1963.

MINNESOTA HIGHWAY HISTORY

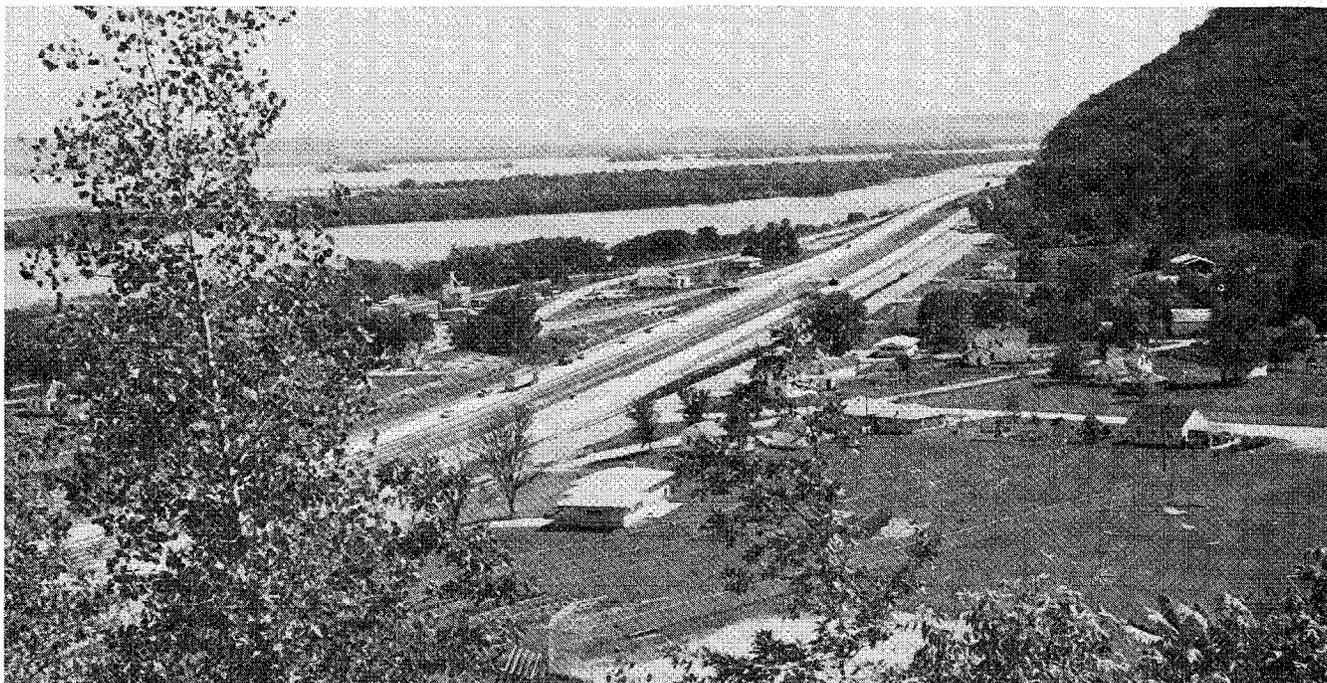
state. Actually this mark was passed within the next four years, as 1924 motor vehicle registrations totaled 507,892.

The state entered road building directly in 1921 after the many years in which the main responsibility rested with, first the townships, and then the counties. The state highway department was reorganized for its new responsibility.

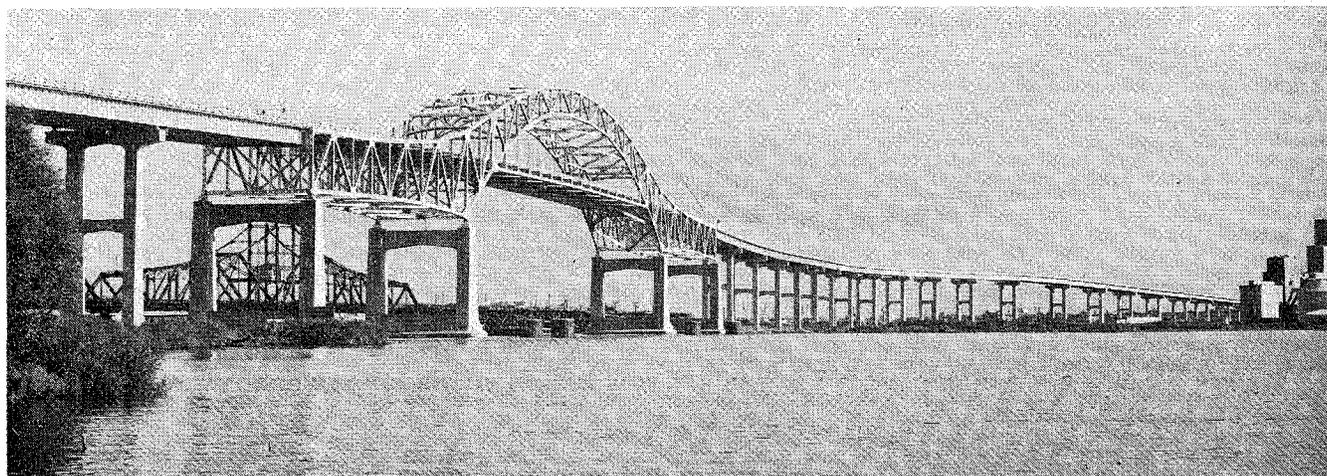
With establishment of the Trunk Highway System and its extension and maintenance, there followed a succession of highway laws: In November, 1924, the constitution was amended (Art. IX, Sec. 5) author-

izing a motor vehicle fuel tax. Subsequently, the Legislature approved a two-cent per gallon tax. The motor vehicle license tax was increased to 2.75 percent and proceeds of both taxes were placed in the Trunk Highway Fund.

In 1925 the motor vehicle tax was reduced to 2.4 percent and, in 1928, a new formula was set up for division of road-user taxes. Effective the following year, $\frac{2}{3}$ of the road-user income went in the Trunk Highway Fund and $\frac{1}{3}$ was allocated to the Road and Bridge Fund. In the same session the Legislature created a system of county-aid roads to which Road and Bridge Funds should be allocated.



In Minnesota's "Hiawathaland", Interstate Highway 90 and TH 61 coincide near Dresbach on the west bank of the Mississippi River. This scenic drive is pictured as it appeared shortly after it was completed in 1964.



In December, 1961, the largest bridge ever built in either Minnesota or Wisconsin was opened between the two states at Duluth and Superior. The \$20-million structure is 7,956 feet long with two 27-foot roadways divided by a four-foot median. At its highest point over the St. Louis River, the bridge is 200 feet above the water. There are 52 spans of varying lengths. The bridge carries traffic of I-535 from its connection with I-35 in Duluth.

Subsequent changes were made in both the motor vehicle and gasoline taxes as follows:

- 1929—Gasoline and motor fuel tax increased to three cents per gallon.
- 1933—As a Depression measure, the motor vehicle tax reduced 50 percent for automobiles under one ton and 60 percent for those in excess of one ton; minimums established at \$5 and \$7, respectively.
- 1935—Motor vehicle tax reduced to 2.2 percent.
- 1937—Motor fuel tax increased to four cents per gallon.
- 1941—The one-mill road tax levy repealed and provisions made for a State-Aid Road System by appropriating \$1,200,000 annually from motor fuel tax receipts.
- 1948—Basis for taxing motor vehicles (passenger cars) changed from value to shipping weight; the amount varied from \$11 per vehicle weighing under one ton to \$75 for those in excess of 4,800 pounds, and depreciation allowance continued.
- 1949—Motor fuel tax increased to five cents per gallon.
- 1950—All vehicles included on shipping weight basis of taxation.
- 1955—Motor vehicle tax increased by five percent to retire bridge bonds, and 25 cents added for reflectorized license plates.
- 1957—By Constitutional Amendment, approved in 1956, the road-user distribution formula was revised by putting yields of both taxes into one fund and effecting allotments as follows: to trunk highways, 62 percent; to counties, 29 percent; and to municipalities with populations of 5,000 or more, nine percent.
- 1963—Motor fuel tax raised from five cents to six cents per gallon, the revenue increase allocated to Highway User Tax Distribution Fund.
- 1965—Earmarked five percent of the net Highway User Tax Distribution Fund as follows: 70 percent to the Trunk Highway Fund, 21 percent to a newly-created county turnback account in the County State-Aid Highway Fund, and nine percent to a newly-created municipal turnback account in the Municipal State-Aid Street Fund. The new accounts would be used to reimburse counties or cities for reconstruction and improvement of former trunk highways that have reverted to or become a part of local road systems.
- 1967—Increased the motor fuel tax rate from six to seven cents a gallon.

Although new routes had been added to the trunk highway system, since it was determined to be 75 percent completed in 1933, it was not until 1956 that the system was reorganized. Article XVI, adopted in November, 1956, provided that the system be limited to 12,200 miles. An exception to the limit was made where additions could be made to qualify for federal aid. The Article also created the County State-Aid Highway System and the Municipal State-Aid Street System.

ROAD FINANCING METHODS

Methods of financing state roads have undergone many revisions since the early days. The 1921 Minnesota Legislature authorized \$75,000,000 in state highway bonds to expedite work on trunk highway routes and the people of the state were on their way to "getting out of the mud." The first tax levied against the road user was the motor vehicle tax imposed when the trunk highway system was created, thus placing the cost of development and upkeep of main highways upon motor vehicle owners. Also removed from the counties and from real estate taxes was the financial responsibility of the established routes.



The first eight-lane highway in Minnesota was the I-94 section from Western Avenue to Snelling Avenue, St. Paul, opened to traffic in 1964. Two diamond interchanges, at Dale Street (bottom of photo) and at Lexington Parkway, rise from the depressed roadway.

Minnesota roads today are financed by a combination of local, state and federal funds. Local funds consist of those monies made available through the collection of county and municipal tax levies. Ordinarily, counties may levy up to 20 mills for road purposes.

State funds available for highways come from state motor vehicle and gasoline taxes, from traffic fines for violations on state trunk highways, from driver's license fees, and from interest on investments. The monies collected in motor vehicle and gasoline taxes are allocated on the 62-29-9 formula.

Federal funds for use on regular trunk highways are made available to the states on the basis of population, area, and the mileage of mail routes in the state. The federal funds must be matched by state funds. For construction of Interstate highway system routes and bridges, the ratio is 90% federal funds to 10% state funds. All highways financed by federal funds are subject to specifications and restrictions of the Federal Highway Administration (formerly known as Bureau of Public Roads).

INTERSTATE SYSTEM CREATED

The National System of Interstate and Defense Highways was born in the Federal-Aid Highway Act of 1944, but because of the war, no definite steps were taken until the mid '50s. The Federal-Aid Highway Act of 1956 actually activated the program and authorized apportionments for its construction.

The Interstate system is a network of super highways connecting every large community in the United States. It is being built as a defense measure as well as for the necessity of handling the ever-increasing highway traffic based on estimates of our needs up to 1990. In total, it will comprise over 42,500 route miles of which Minnesota will build 914 miles.

Construction of freeways has already begun to play a vital role in helping to solve Minnesota's problem of traffic congestion. When completed, the system will allow travel between all major centers of the country over highspeed highways with no grade intersections. Also, because of a controlled access feature, (traffic is not allowed to enter or leave except at interchanges) traffic can move in an uninterrupted flow from coast to coast.

There are three major Interstate system routes in Minnesota. Interstate 90 runs 276 miles west from near LaCrescent to the South Dakota border, west of Beaver Creek. Interstate 35 comes up from Iowa, intersects Interstate 90 at Albert Lea, and extends 223 miles through the Twin Cities to Duluth. Interstate 94 enters Minnesota from Hudson, Wisconsin, goes through the Twin Cities and leaves the State at Moorhead, a total distance of 257 miles.

In addition, Interstate Highway 35 divides in the Twin Cities area. One route, I-35W, runs 41 miles

Congress Appropriates From Highway Trust Fund

Beginning with the 1956 Federal-Aid Highway Act, which established the Federal Highway Trust Fund, proceeds from the following Federal taxes are placed in the Federal Highway Trust Fund: Motor Fuel, 4¢ per gallon; Lubricating Oil, 6¢ per gallon; Heavy Vehicle Use Tax, \$3/1,000 lb. per yr.; Tax on Tires, Tubes, 10¢ per lb., and Retread Rubber, 5¢ per lb.; Tax on New Trucks, Buses and Trailers, 10% of manufacturers' sale price; and Tax on Truck and Bus Parts and Accessories, 8% of manufacturers' sale price.

Appropriations from the Highway Trust Fund are made by the Congress. The apportionment (division of appropriated funds) to the individual states is made on the basis of the formulas contained in the Federal laws which establish the various systems (Interstate, Primary, Secondary, and Urban Extensions of the Primary and Secondary Systems) and programs. Of the amounts apportioned to each state, 1½ percent must be set aside to cover highway planning and research activities.

Current Minnesota laws provide that of the Federal-aid amounts apportioned for the Secondary System, 65 percent shall be allocated to the Federal-Aid Secondary Routes on the County Road System(s). The Federal funds, with the exception of the Interstate highway funds, which are matched on a 90-10 basis, must be matched with an equal amount of local funds on each project where Federal funds are to be used. These funds may be used for engineering and acquisition of rights-of-way as well as construction, but *not* for maintenance.

through Minneapolis. The other, I-35E, goes 39 miles through St. Paul. The two cities are also surrounded by a belt line, designated Interstate 494 and 694, which totals 64 miles. A 1.7 mile section, Interstate 535, extends from Duluth to Superior, Wisconsin. Two additional routes, I-335 and I-394, in the Minneapolis area will serve as connectors between I-35W and I-94 and between I-94 and I-494, respectively.

BUILDING A HIGHWAY

Building a highway takes time and money. And lots of hard work, plus a wide variety of brainpower and skills.

The reason that highways are built or reconstructed is that they serve the basic transportation needs of the people.

Although the grading of the roadbed and paving are most apparent to the public, these are only the climatic stages in a complicated program which began five or more years earlier.

First, the need for the road must be established.

Human beings and their activities determine the need for all new or improved highways. The Highway Department closely watches traffic patterns on all Minnesota highways through vehicle travel counts and traffic surveys. By measuring the current traffic flow and adding data on population, income, housing, vehicle ownership and employment, it's possible to forecast future traffic volumes on specific routes.

Highway Department planners also consider accident frequency, load-carrying capacity, maintenance costs and current surface conditions to determine what type of roads are needed—and where—in Minnesota. Highway construction is then programmed on a priority basis within the limits of available funds.

When a highway improvement has been set, surveys are made from both air and ground. On the ground, location engineers will stake out a centerline for the proposed road. Property corners and government land lines are tied into the proposed highway centerline and are shown on the location map for reference in right-of-way negotiations which follow. All the man-made and natural features of the area are plotted. Actual ground and roadway elevations are determined.

A soils engineer takes sample borings to evaluate load-supporting capacities and for selective use of the various in-place materials in roadbed construction. Design features such as the number of traffic lanes, grade separations and traffic control devices are determined by traffic surveys and estimates.

Armed with this information, preliminary design engineers develop a layout map showing what they believe to be the best location for the highway. The plan is then submitted directly to the public at an open hearing. All opinions are considered by department engineers before a decision is made on selection of a route.

After the final location is set, the project is assigned to a detail design squad. Using the approved preliminary layout as a base map, this team of engineers and technicians produces detailed plans. A computer again is used to figure quantities of various materials required to attain an economical balance of earthwork for "cuts" and "fills."

As soon as designers have established construction limits and right-of-way widths, initial right-of-way work begins. The Highway Department acquires the necessary property for right-of-way by direct purchase or by right of eminent domain (condemnation proceedings). Arrangements also must be made with utility companies and municipalities for adjustment of their transmission lines and underground facilities.

PROJECT BIDS INVITED

The highway project is then ready to be advertised for construction; contractors are invited to submit bids. Bids are opened at a public letting and a contract

awarded to the lowest qualified bidder. Soon after, the Highway Department's plans take a more tangible form.

All major construction on Minnesota highways is done by private industry but under the supervision of highway department engineers. Each project involves numerous field and laboratory quality control tests on materials used to insure conformance to specifications.

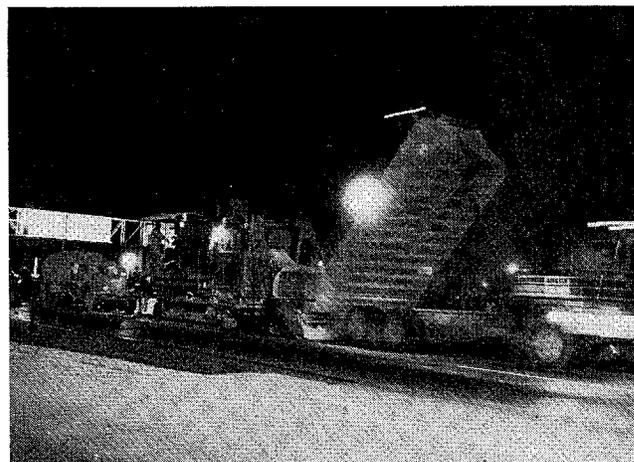
With the right-of-way cleared, the next step is roadbed grading. The sub-base and base are applied followed by placing of the concrete or bituminous surface. The roadside is sodded or seeded to protect it from erosion. Stripes denoting driving lanes are painted on the pavement; signs and guard rails are installed. The highway is completed. The barriers are removed. Often civic ceremonies are conducted to mark completion of another major public improvement.

But the story of the road is not finished. It has passed into a phase as broad in scope and as active in function as the building of the highway itself. The care and upkeep of the road goes into new hands—that of the maintenance men. As soon as the first car is driven on the new highway, the maintenance job begins. Maintenance includes clearing snow off the roadway in winter, mowing grass on the shoulders, repair of the road surface in years ahead.

Thus, the story of the road goes on, a never-ending operation in keeping the highway in prime condition for the safe, efficient movement of people in their motor vehicles.

FEDERAL AID PROJECTS

Often there is reference to "ABC roads" and "bread and butter roads". What do these terms mean? Are they all the same, and are they also the primary, secondary and urban roads of the state? The answer is "yes". They all refer to Minnesota's 38,000 miles of state and county highways for which federal aid is



Paving of a third lane in each direction on I-494, from the intersection with TH 100 in Bloomington to TH 5, near the Minneapolis-St. Paul International Airport, was a major project in 1965. Construction was done at night to avoid interference with heavy daytime traffic.

SOME CHANGES IN 50 YEARS

| MINNESOTA | 1921 | 1971 |
|--|-----------------------------|-------------------------------|
| Population of State | 2,387,125* | 3,805,069† |
| Miles of Roads and Streets | 100,000 (approx.) | 127,730 |
| Trunk Highways | 6,877 Miles on 70 Routes | 12,102 Miles on 335 Routes |
| Registered Motor Vehicles | 332,624 | 2,606,784 |
| Ratio of Persons to Motor Vehicles in State | 7.34 | 1.46 |
| Annual Travel per Vehicle | 2,700 Miles | 8,100 Miles |
| Vehicle Miles Traveled by Road | 890 Million | 21 Billion |
| Round Trip Time, Moorhead to Mankato | 14 hrs., 20 min. | 8½ hours |
| Cost per mile of Building a 2-lane High Standard Rural Road | \$35,000 | \$145,000 |

*1920 Census †1970 Census

received. The "C" roads, however, are not a separate system of roads themselves, but are merely those segments of the primary and secondary roads located within the boundaries of urban classified municipalities. A separate fund was set up for these "urban extensions" to assure that they received attention and were not neglected entirely.

Actually, there are three road systems in this state so far as federal aid funds are concerned. These are the Interstate, Primary and Secondary systems. In construction of Interstate system routes, costs are financed with 90 percent federal funds and 10 percent state funds. The Interstate system program has been in effect since 1956 and will become a part of the Primary system when completed.

The Congress of the United States determines the level of funding for all highway systems. The Interstate system funding level is determined on the basis of cost to complete. Funds are apportioned to the states on the basis of relative cost to complete their respective portion of the system. The federal pro rata share for Interstate projects is 90 percent.

The ABC system apportionments to the states are based on specific formulae after the initial division of funds. The initial division of funds, by law, requires that nationwide 45 percent be allocated to the Primary system, 30 percent to the Secondary system, and 25 percent for their Urban Extensions. The federal pro rata share on ABC projects is 50 percent; the remaining 50 percent furnished by the state or local governmental unit.

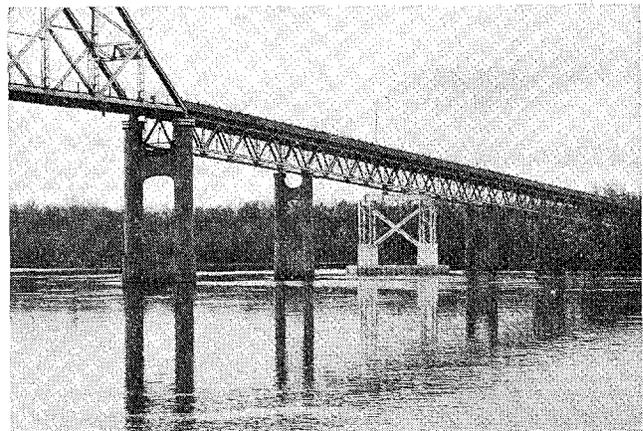
PRIMARY SYSTEM INAUGURATED

The Primary system was inaugurated in 1921 when each state was requested by the federal government to certify the total number of rural highway miles within the state. A maximum of seven percent of the total miles of the heaviest traveled rural roads was authorized to be designated the Primary road system. Since Minnesota has not yet used its full seven percent allowance for roads designated as "Primary" highways,

additional routes may be added to this system if and when traffic counts and other factors support such requests. All such proposals must have the approval of the Federal Highway Administration.

Federal aid funds for the Primary system are allocated to the states on the basis of three factors: The state's population in ratio to the total population of all states, the area of the state in proportion to that of all states and the number of miles of rural delivery and Star mail routes to the total miles of all such routes in the nation.

The Secondary system came into being in 1934 and was established to serve as feeder routes to the Primary system. There is no restriction on the number of Secondary system roads in a state. However, only a certain amount of money in federal aid is available regardless of the number of roads. The Secondary system in Minnesota consists mainly of roads constructed and maintained by the 87 counties. Only 4,103 miles of this system are on the Trunk Highway system. The remaining 26,568 miles are on the County system.



In June, 1968, the Wabasha-Nelson bridge was closed to traffic for three weeks while a supporting pier which had toppled into the river was replaced. Early in 1969, the bridge was closed for nearly two months for repair of span plates under the deck. The 40-year-old structure, which carries traffic on TH 60 over the Mississippi River, stands high on the list of priorities of bridges to be replaced or reconstructed.

THREE-PART FORMULA USED

Federal aid funds are apportioned for the Secondary system in each state on the basis of a three-part formula: The rural population, the state's area and the mileage of rural delivery and Star Mail routes in



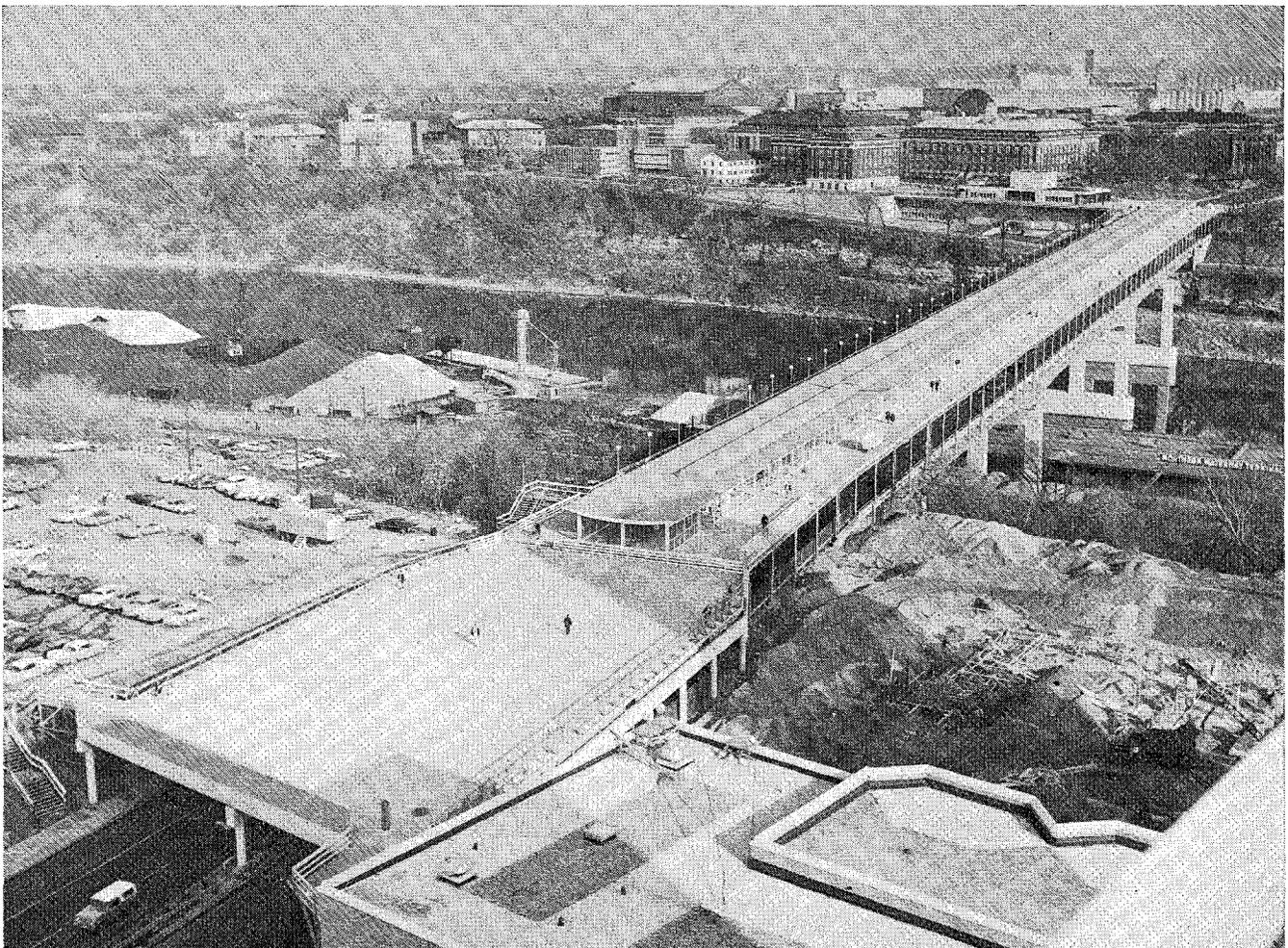
A tot-lot playground was developed in a polygon area formed by a curve of I-35W near 28th street, Minneapolis, an example of multiple land use in design of modern highways.

ratio to such in the United States.

Of the Federal Aid Secondary system (FAS) funds received by Minnesota, state law requires that 65 percent be reallocated to the counties for construction and reconstruction of their portion of the federal aid Secondary system. The balance or 35 percent is used on the 4,103 miles of federal aid Secondary routes on the state Trunk Highway system.

In development of extensions of the Primary and Secondary systems in municipalities, funds designated as "urban" are allocated by the federal government. These are usable in municipalities or urban areas of 5,000 or more population. This portion is allotted to the state in an amount based on the ratio of the population of communities of 5,000 population and over to the total population of like urban centers in the entire United States.

All federal aid is limited to financing of construction and reconstruction of highways on the several systems. The state or local governmental units are obligated for maintenance once the project is completed.

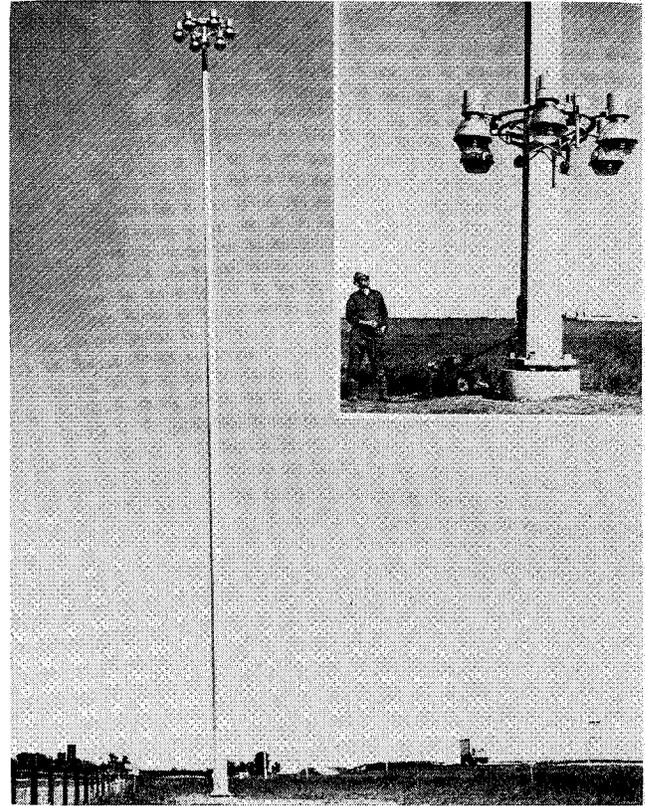


The Washington Avenue Bridge over the Mississippi River, connecting the east and west campuses of the University of Minnesota, Minneapolis, put into service in 1965, replaced a 70-year-old structure. The new bridge features an enclosed walkway on its second (upper) deck. The motor vehicle level carries traffic of TH 52.

MINNESOTA HIGHWAY HISTORY



An innovation in Minnesota in 1970 was the metering of traffic on access ramps of Interstate highways in the Twin Cities area. Pictured is the first metered ramp in use in the state, the interchange of Maryland avenue, St. Paul, on I-35E southbound.



The first high mast tower lighting system on Minnesota highways was installed in 1970 on the interchanges of I-90 near Worthington.



The Kettle River Safety Rest Area, seven miles north of Sandstone on I-35, northbound lane, is one of 11 safety rest areas on Interstate system routes in Minnesota in service by early 1971.

WHAT IS PAST IS PROLOGUE

This history of the road and highway systems during the first 50 years of the Highway Department's service to the people of the State has traced its operation from inception to the present. Great strides have been taken during these years. The condition of state and county road systems far exceeds the dreams and concepts of Charles M. Babcock and the other "good roads" leaders who supported him in his efforts to establish the Department.

Although these accomplishments are monumental—as one looks back—the challenges of today and the future loom large. The necessity of providing much higher types of highway facilities and greater maintenance standards restrict the Department's efforts to improve as many miles of highways as equal expenditures would have permitted 50, 25 or even five years ago. With the emphasis on quality rather than quantity the need for adequate funds becomes of paramount concern. Finances will be a primary factor in the Department's activities in the future.

To provide the highways serving the social and economic demands of our dynamic State, the Department plans call for:

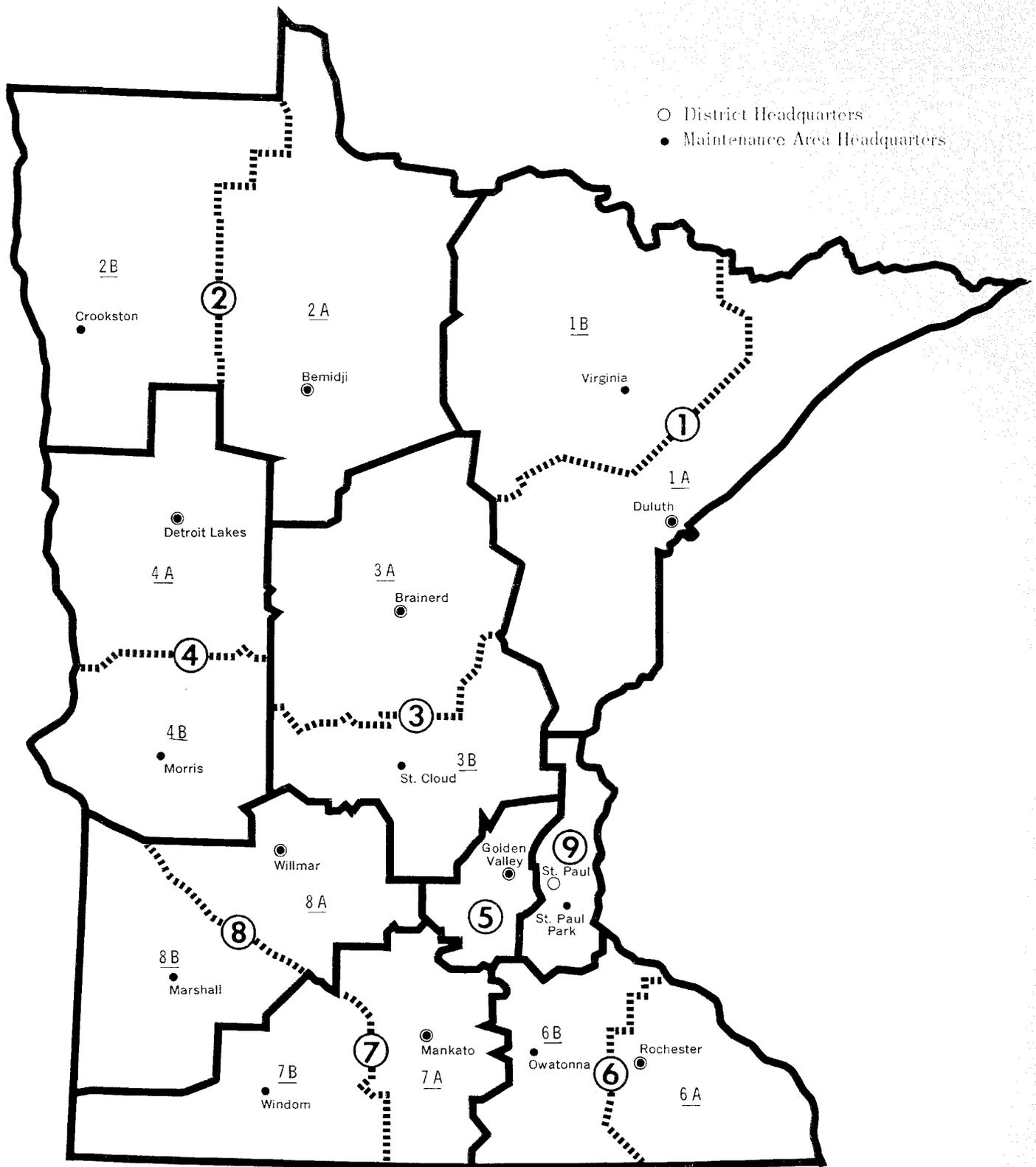
- Four-lane expressways connecting urban and rural regions.
- Nine-ton capacity roads to rural industrially-developed communities.
- Replacement by 1980 of obsolete and deteriorated

bridges, most of them now 50 to 60 years old.

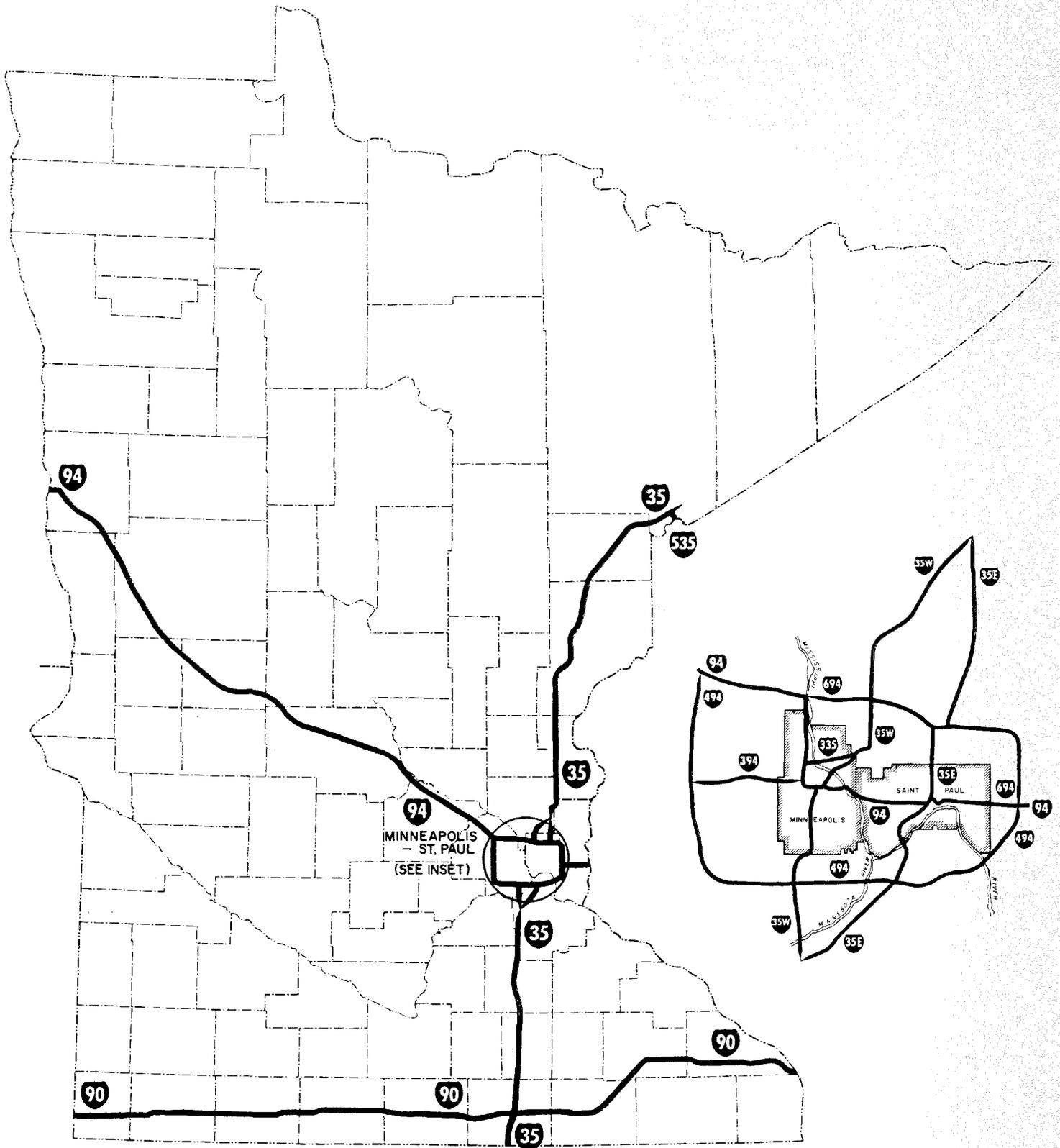
- By-passes to remove congested trunk highways in many communities.
- Major improvements for safety, including median guard rails, right and left hand turning lanes, longer sight distances, truck-climbing lanes and elimination of grade crossings.
- Improved roadway surfaces, by removal of lip curbs and following up with overlays or re-surfacing.
- Lighting, signalization, fencing and improved signing.
- Roadway widening and shoulder improvement to provide escape areas.
- Grade separations at high-accident intersections.
- Construction of additional driving lanes where required to handle increased traffic volumes.

These improvements, in addition to completion of the Interstate system within the state, offer a real challenge to the Department. How it meets and solves these problems will affect the welfare of the people of Minnesota for decades to come.

If these goals are attained, historians of half a century hence will be able to say, "The Minnesota Highway Department truly fulfilled its obligations to the people during the years from 1971 to this date."



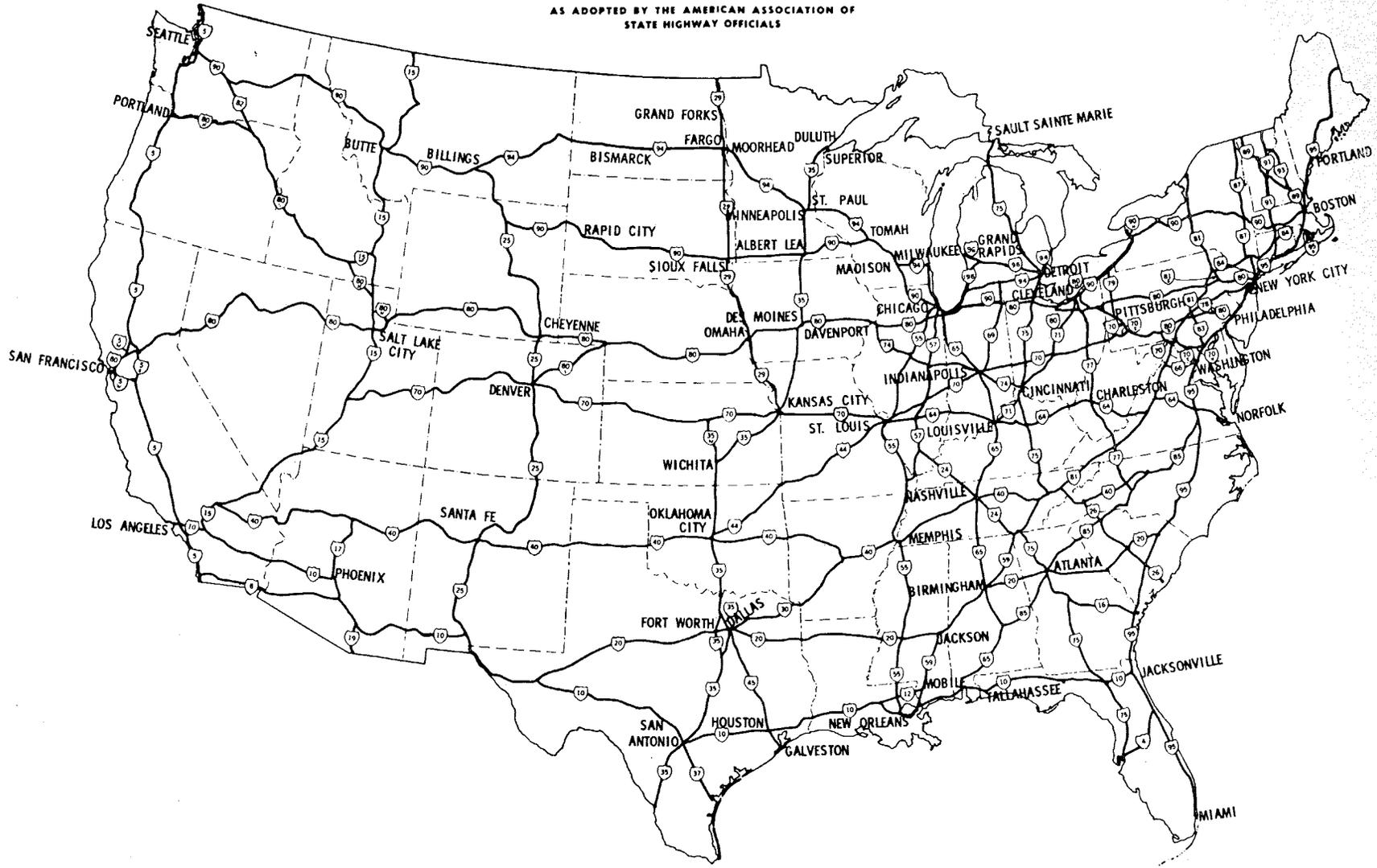
MINNESOTA HIGHWAY HISTORY



ROUTES OF THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS IN MINNESOTA TOTAL 914 MILES

OFFICIAL ROUTE NUMBERING FOR THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

AS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS



THE 42,500-MILE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS