Before the Interstate: The Minnesota Highway Department from 1921 – 1956

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Thesis (M.A.)
University of Wisconsin, River Falls. 1990.
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CHAPTER I

BACKGROUND OF THE MINNESOTA HIGHWAY DEPARTMENT

The story of the building of roads in Minnesota during the nineteenth century has been told in great detail by Arthur J. Larsen in *The Development of the Minnesota Road System*. By 1849, the early pioneers had the benefit of trails that were first used by American Indians, fur traders and oxcart traders. Also, the establishment of Fort Snelling brought some development to serve communication purposes. The vast expansion of the population during the territorial period of the 1850s brought about military and federal government roads. Furthermore, the local counties of the territory established roads, bridges and ferries through legislative authorization.

The early road system was actually a continuation and expansion of trails. "The earliest trails used by the traders were undoubtedly those made by Indians, and perhaps the most famous of these was the Grand Portage."¹ The Grand Portage Trail gave travelers on Lake Superior an

opportunity to continue their journey by canoe on the Pigeon River and, eventually, via Lake Winnipeg on to Hudson Bay. From 1783 to 1803, the Northwest Company had a depot there. By 1816, a road was built for oxcarts that ran approximately thirty-six miles. This was known as the first road of the settlers in Minnesota. Further developments in the trade and military settlements led to a greater need for roads. 

In 1814, Fort St. Anthony, later known as Fort Snelling, was built. The American Fur Company opened a post near the fort. Contact with British traders came in 1819 when some of Lord Selkirk's people came down from the Red River area searching for grain. Contact between the Red River area and the south increased with the use of the oxcart.

Each year a "caravan of carts" would leave the Red River area in May and return in September. There was a trading post established at Traverse Des Sioux where the Minnesota River "could be reached," according to Joseph R. Brown, "with carts from the west without cutting a road through the woods." Brown also elaborated on the advantages of the carts:

2Larsen, Development, 2, 3.
The introduction of carts into the Indian trade shortened water communication and very materially diminished the length of time necessary for the trip to the upper country. The traverse became the depot for the upper trade, and was the first summer trading post above the mouth of the Minnesota.3

By the 1830s there were a few trails leading to the Red River Valley area. In 1847, Joe Rolette had his carts follow a new route to the lower areas in the territory. Instead of traveling to the Minnesota River Valley, Rolette crossed the Mississippi near Sauk Rapids and traveled on the east side of the river to St. Paul which had been earlier known as "Pig's Eye Landing."4

The establishment of Fort Snelling in 1819 marked the beginning of the quest for a road linking Fort Snelling with the Camp Missouri post on the Missouri River (near present-day Omaha and Council Bluffs). Attempts to travel between the two posts were started in 1820 by a small group of soldiers under the command of Captain Matthew J. Magee. Unreliable guides and their unfamiliarity with the land caused them to take a non-direct route. Captain Stephen Klarney reported that route was very rugged and lacked

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3Larsen, Development, 7. For the full account see Minnesota Pioneer, 7 April 1853.

wood and water. Therefore, it was not considered a good route for a military road.\(^5\)

The effort to build a road between the Missouri camp for the upper Mississippi Fort Snelling area was dormant for about fifteen years. In 1836 Congress appropriated $100,000 for a military route looking similar to the earlier expedition of 1780.

The construction of a military road along the whole western frontier from the Red River to Arkansas to the upper Mississippi River between the Des Moines and Minnesota rivers, connecting all the outlying frontier posts.\(^6\)

In July 1838 Captain Nathan Boone arrived at Fort Snelling after exploring the northern area of the proposed frontier road. Construction was started on the southern and middle regions of the road, but work was not started on the northern part of the proposed road. The quarter master general of the army reported that the northern part of the proposed road "represented as an open prairie, that may be traversed in all directions without difficulty."\(^7\) Eventually, the road was completed. These initial efforts of

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\(^{5}\) Larsen, Development, 27, 28.

\(^{6}\) Ibid., 29, 30.

\(^{7}\) Larsen, Development, 30. For a thorough account of military roads, see Grover Singley, Tracing Minnesota's Old Government Roads (St. Paul, 1974).
exploration were the early foundations on which the military road builders of the 1850s expanded. Another frontier development was the movement east from Fort Snelling toward the St. Croix River. Treaties with the Sioux and Chippewa opened formerly Indian-held lands east of the Mississippi. This was the result of activity by the lumber interests. By 1844 a fifty-mile road had been opened from the falls of St. Croix to Fort Snelling. Other accounts noted a road from St. Paul to Stillwater in 1847. The end of the 1840s brought support for territorial status for the portion of Wisconsin Territory west of the St. Croix, which did not accompany Wisconsin into statehood.8

The early roads built by the federal government were constructed by the Interior Department and army engineers. The roads built by the Interior Department were built to "facilitate the business of government." The roads built by the army engineers, in many cases, were of a twofold purpose: (1) to carry out government business and (2) in Simpson's words, to construct "the great thorough-fares sufficiently to answer the wants of the people until they erect themselves into a state, or, at any rate until they

8Larsen, Development, 32-37.
are populous enough and efficient enough to make and foster their roads themselves." The federal government was helpful in building some of the earlier territorial routes, yet, the development of territorial road systems was primarily the product of territorial pioneers and not the federal government.

The early pioneers started with very little in the way of roads. There were some Indian trails, fur trader trails and oxcart trails. As the population grew, earlier trails were improved to meet the increased needs. However, Minnesota's population grew from 6,077 to 32,000 in 1854, and during these years, the territorial legislature laid the foundation for the great development to come.

From 1850 to 1854, the territorial legislature granted ferry boat charters, and authorized the building of a toll bridge near the Falls of St. Anthony to facilitate communication and travel. Furthermore, roads were developed south to the fertile soil of the "sudland" in southeast Minnesota and the settlements in Iowa. This was the opening stage of territorial development that seems almost too limited to be a definite preparation for the events that would immediately follow.

From 1854 to 1858 Minnesota's population grew from 32,000 to 160,000. "During the boom years the territory

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9 Ibid., 117, 118.
found that its preparations for settlers including road facilities were pitifully inadequate. "\(^{10}\) To remedy the deficiencies in the road system, the legislature approved thirty-eight roads in 1855 and ninety-nine in 1856. Furthermore, the legislature approved nineteen ferry charters in 1855, forty-five in 1856 and forty-one in 1857. Also, fifteen bridge companies were approved from 1855 to 1857 mostly for crossings over the Mississippi and St. Croix rivers. These innovations aided travel and communication throughout the territory.

Stagecoach and mail service for Minnesota linked the territory internally and to the outside world.

The opening of roads meant much to the inhabitants of the outposts of civilization; the promoters of frontier towns boasted of the location of crossroads; the opening of a mail route was an event of prime importance; the arrival of a regularly scheduled stagecoach was an occasion for genuine rejoicing.\(^{11}\)

Mail routes started on a weekly basis in Minnesota in 1849. In a year, seven mail routes were maintained in Minnesota and by 1858 more than a hundred mail routes existed. In May of 1849 a triweekly stagecoach route between St. Paul and Stillwater was opened. Routes between St. Anthony and St. Paul and St. Paul and Prairie du Chien were opened later in 1849. A monopoly on mail contracts and stage

\(^{10}\) Ibid., 150.
\(^{11}\) Ibid., 173.
lines developed under James C. Burbank and the Minnesota Stage Company. The desire for stagecoach service motivated local residents to develop frontier roads and eliminate their isolation.

After the early development of frontier roads, the railroad offered a new challenge. Wagon roads were of great importance to the early settlers. These roads were the main arteries of travel in Minnesota.

But with the coming of the railroad, the attitude of the people of Minnesota toward their wagon roads changed perceptibly for the railroads took the place which, in the frontier age, the main highway system had occupied.12

The emergence of the railroad as the main artery of travel developed over different parts of the state at different times. Some of the early wagon roads were created with the thought of future railroads. Businessmen and farmers were concerned over the freight costs of shipping goods over wagon roads. As the railroad moved through the state, towns served by the railroads became akin to river towns which served the earlier frontier. The creation of roads in the Alexandria area in the later 1860s demonstrated the wagon road and railroad interdependence.

In 1866 St. Cloud was the farthest point north for the St. Paul and Pacific Railroad. It was a very

12Ibid., 175.
profitable merchants' town. St. Cloud had developed into a busy center for shipping grain and freight. Many local residents thought that it would grow to rival St. Paul. Ninety miles to the northwest, along the St. Cloud-to-Fort Abercrombie stagecoach road, the residents sought to bring the railroad closer. Shipping costs on rail were one-third the costs of shipping by team. Gradually, as the railroad moved closer to Alexandria, boom towns arose at the end of the rail line. The wagon roads and the railroads worked together in settling the frontier. The wagon roads led to the towns served by the railroad. The railroads became the major link to the outside world while the wagon roads became local links to the mail rail artery.13

The roads of the frontier and territorial periods were primitive by present standards. To serve a growing population, standards were created. These standards were based on the laws of the Territory of Wisconsin. Added to this legacy from Wisconsin was a territorial road bill that became law on 1 November 1849. The law set definite standards for territorial roads. Territorial roads were to be surveyed and marked by mile points. Plats and maps were to be developed which detailed the features of the land.

13 Ibid., 190, 217.
that the road covered. The roads were to be constructed by
the county unit of government. Furthermore, this new law
superseded the parts of the original Wisconsin laws that
were adopted with the organization act. The legislators
also passed an act in 1849 dealing with the responsibility
of the counties in developing roads. 14

Each county was to have a board of commissioners.
Their duties would include: "To layout, discontinue, or
alter county roads within their respective counties, and to
license ferries and fix toll rates." 15 The background of
this plan was part of the earlier Wisconsin law. Each
respective county was to be divided into districts and
each district supervisor was to be chosen by the board.
Each supervisor was to maintain the status of the roads.
All male citizens between twenty-one and fifty were
required to work on the road for at least two days per
year. Furthermore, a road tax was collected based on real
estate values and this tax could be paid through road labor
at the rate of two dollars per day. This system of road
building was revised within two years. 16

14William W. Fowell, A History of Minnesota 1
(St. Paul, 1921), 246, 248, 252; Minnesota House Journal
(1849): 61; Minnesota Laws (1849), 83.

15Minnesota Laws (1849), 53.

16Ibid., 35.
On 1 September 1851, the Revised Statutes became law in the Minnesota territory. The county continued to be the chief road development unit of government although some roads were originally developed at the federal or territorial level. At the local level counties were again divided into road districts. The foundation of local control was found in the process of selecting a local resident to be road supervisor in each road district. As before, the supervisor of each district had to post a performance bond of five hundred dollars. The road supervisor was charged with enforcing the labor tax law by making sure that each able-bodied man between twenty-one and fifty worked on the roadways for three days per year. The supervisor was charged to build roads that had been legally approved, to hire for the building of bridges not supported by poll taxes, to post signs at crossroads which gave the distance to the nearest towns, and to submit a basic inventory of the roads and road work activities in his district to the county commissioners during July of each year. The possibility of changing the road laws of Minnesota grew with the coming of statehood. 17

Statehood brought a subtle change to the road laws of Minnesota:

17 Minnesota Revised Statutes (1851), Chapter 8, Article 10.
It retained most of the features of the territorial law, but, whereas the county commissioners under the territorial form of government had supervised the performance of the road supervisors, the scrutiny of the official performance of the duties of the office was now to be made by the board of supervisors which regulated the affairs of the townships.  

This change in the law during 1858 brought the supervisor of the roads nearer to the citizens. The township level of government was a step closer to the voters than the county board. Some problems with the 1858 law arose over partisan political arguments and the law was altered slightly in 1860. This alteration was a change from the county board of town supervisors to a three- or five-person board of county commissioners. This alteration in 1860 was to be very important for the next thirty years.

The period from 1860 until the end of the 1890s marked a period of consistency in road laws.

It is true that the code of 1894 varies from that of 1873, but again the differences are not in the fundamental rules of procedure; rather they are differences in the methods of expressing the rules for procedures. The fundamental laid down in the laws of 1860 remained the basis for the road code until the closing years of the century.

Modifications arose due to changing situations such as: (1) the judge of district court giving orders to develop roads, (2) the need for cartways to aid the lumber

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18 Larsen, Development, 260.
19 Ibid., 265, 266.
20 Ibid., 277.
industry, (3) the need to limit the blocking of roadways by railroads, and (4) the distance required between planting crops and the roadway.\textsuperscript{21} These minor changes made operations workable for a time, but by the decade of the 1890s, a new approach to road laws was needed.

The 1890s brought a new intense fervor on the part of those advocating upgrading the road system. They were not content with the earlier limited road building systems.

The agitation for better roads assumed the proportions and intensity of a crusade, and the leaders in the movement became apostles of the faith, preaching the gospel of good roads from one end of the land to the other.\textsuperscript{22}

The followers of the roadway movement wanted more government participation in road building on the state and federal levels of government. Better roads were seen as a benefit to the society as a whole enabling better mail service, accessibility to schools, easier marketing of farm products and increased travel possibilities by means of bicycles and automobiles.\textsuperscript{23} Actually, bicyclists were the early supporters of the good road movement.

Bicyclists were running into difficulties on roadways. The roads were filled with horse and buggy vehicles and streetcars. Operators of the more traditional modes of

\begin{itemize}
\item \textsuperscript{21}Ibid., 277, 278.
\item \textsuperscript{22}Ibid., 330.
\item \textsuperscript{23}Ibid., 330, 331.
\end{itemize}
transportation did not always respect the rights of bicyclists on the roadways. Therefore, the League of American Wheelmen was formed to protect the legal rights of members when a roadway dispute was settled in court.  

Beyond supporting the rights of fellow members, the League of American Wheelman was concerned with the quality of the existing roadways.

A writer for the Wheelman magazine summed up what needed to be done to improve the overall quality of roads.

In order to secure good roads in the country, a writer for the Wheelman started in 1882, it is chiefly necessary merely to so change the highway laws as to require all highway taxes to be paid in money, when the well-known shrewdness and closeness of the farmers in dealing with public monies will include them to watch closely after their interests.

The first priority of the League of American Wheelmen was to eliminate the labor tax in order to hire experienced persons for road work rather than leaving road building to amateurs. Their initial efforts started a reaction against the contemporary condition of the roadways; a group of Iowa farmers held a convention to complain about muddy roads in 1883. A road plan broadening the involvement of the state in road building was proposed in New Jersey during 1887 and finally passed into law in 1891. In 1892 delegates from

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24 Ibid., 333, 334.

25 Ibid., 336, 337. For full quote see Wheelman 1: 126, 127, 129.
around the nation met in Chicago to organize the National League of Good Roads with the purpose of gaining public support for an organized approach for rebuilding the roadways of the country. This enthusiasm for "good roads" found its way to Minnesota in the early 1890s.

In January of 1893 a good roads convention was held in Minneapolis. Three hundred fifty-five delegates from the entire state of Minnesota attended the convention. Much of the convention was an exercise in teaching the delegates about what needed to be done to improve the roadways in Minnesota. A. B. Choate addressed what he considered to be the main problems.

The financing of road improvements . . . was difficult partly because the state constitution forbade the state to aid in improving the highways and in the northern part of the state this financial problem was made still more perplexing by the presence of five hundred thousand acres of tax exempt railroad lands. Choate's presentation set the tone for the convention. The system for building roads in Minnesota was considered far less than adequate. Suggestions for improving the roads included: (1) replacing the labor tax with a cash tax, (2) more frequent repairing of roads contracting long-term


\[27\] Larsen, Development, 354. For full quote see Proceedings of the Minnesota Good Roads Convention Held at St. Paul, Minnesota, January 25, 26, 1894 [1893], 5, 6, 7 (United States Department of Agriculture, Office of Road Inquiry).
laborers, (3) using trained engineers instead of untrained road supervisors and (4) increasing state involvement in road building. Beyond these suggestions for improving roads, the establishment of the Minnesota State Good Roads Association was the most significant outcome of this convention. The supporters of good roads had a strong voice that could be heard by the legislature. This organization, along with the farmers of Minnesota, had the potential political influence to effect change.

The farmers of the state would gain from the development of better roads, but some factors cooled their enthusiasm. The Populist Party was reluctant to advocate the spending of money on any new program, especially in view of the economic problems of the time. Furthermore, there was still a rivalry between the city and the county which made the farmers hesitate to support any plan that seemed to originate in the city. However, the economic recession of the 1890s actually worked to lower the price of bicycles substantially and, by 1895, farm families were purchasing the bicycles that were previously available to "city dudes." Suddenly, the city bicyclists who were good

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28 Larsen, Development, 355, 356, 358.
road activists were not as separated from the farmers. Finally, there would be some reform in road laws. 29

Federal involvement in road improvement began in earnest with the creation of the Office of Road Inquiry (ORI) in 1894 by the Secretary of Agriculture. Congress had appropriated $10,000 for the purpose. Roy Stone of the League of American Wheelmen (LAW) was chosen to be the director of this office. Stone concerned himself with setting three goals for the ORI: (1) to be known for technical knowledge, (2) to further the course of good roads throughout the country and (3) to promote cooperation in order to achieve these goals. Stone left the ORI in 1899 and faded from the national scene but the movement for good roads continued. 30

In 1899 the ORI was renamed the Office of Public Road Inquiry (OPRI), and Martin Dodge was appointed its director. Dodge changed the approach to emphasize public promotion. He actively promoted (1) direct involvement with state legislatures, (2) endorsements of privately-held products and (3) the government mailing of National Good Roads Association (NGRA) materials. Dodge overstepped the ethical boundaries of a federal government official by

29 Ibid., 364, 365, 366.

involving his agency in legislative and private sector affairs. Eventually he left the OPRI after criticism of some of his overzealous efforts. Yet, to his credit, he hired Logan Page to head the OPRI laboratory which had the task of researching road construction materials and the latest in road construction methods.\textsuperscript{31}

A new era began with the appointment of Logan Page as director of the renamed Office of Public Roads (OPR). "Logan W. Page, the engineer who had headed the OPRI's testing laboratory, became director of the office in 1905 and transformed it into a model of progressive reform."\textsuperscript{32} Page strove to make the OPR an agency marked for honesty, efficiency, and technical knowledge. The gathering of relevant data in order to rectify highway difficulties was given high priority. He reorganized the OPR into three workable divisions, arranged systematically the data from the 1904 national road census, expanded OPR laboratory testing facilities, dealt with the dust problem associated with damaged macadam-surfaced roads, and worked for uniform standards to be created for road building and building materials.\textsuperscript{33}

\textsuperscript{31} Ibid., 17-20.
\textsuperscript{32} Ibid., 24.
\textsuperscript{33} Ibid., 25-30.
Page believed in actions and considered it a highway engineer's duty to teach the general public about the benefits of good roads. He created a Special Advice and Inspections section in order to send trained federal experts to counties and townships. These federal experts trained local officials in matters of highway finance, administration, construction and maintenance. Furthermore, these federal experts attempted to persuade local officials to end road labor taxes and hire trained personnel through monetary taxes. Page strongly supported improvement in roadway matters on the state level by replacing politicians with engineers.

Historian Bruce Seely has written convincingly about Page's zeal for reform. Road improvement for Page was a moral issue. He believed that the only way to give farmers the same cultural benefits that were enjoyed by city dwellers was by road improvement. In order to promote the OPR philosophy of road betterment, Page ended a two-year ban on public promotions. OPR engineers began to give public lectures and write newspaper articles.34

The passage of the state constitutional amendment of 1898 was a positive step for the cause of good roads in

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34Ibid., 35, 36.
Minnesota. This amendment began an eight-year period of uncertainty and transition before the establishment of the Minnesota Highway Commission in 1906. During this period many political views began to evolve in order for the commission to become a reality. Many of the citizens were uneasy over the creation of a state agency to manage road funds. Also, political representatives were reluctant to allow a state agency other than the legislature to control the funds for state roads and bridges. Farmers were slow to realize that hauling grain over improved macadam roads could drastically reduce the cost of hauling over primitive roads. The leadership role of the Minnesota division of the League of American Wheelmen in the good roads movement lessened greatly; the original urban and united wheelmen gave way to many new members in small rural towns who changed the group from a political group to a social club. What would finally bring the country and the city together behind the good roads movement?  

Farmers had been reluctant to support the good roads movement originally but new approaches to rural life were emerging. More profits were earned when milk and cream were delivered fresh over good roads. Consolidated schools required good roads for longer traveling distances. The federal government began to offer free rural mail delivery  

35 Larsen, Development, 380-384.
over improved roads. The first free rural mail delivery in Minnesota started on 1 January 1897 over four mail routes in the vicinity of Farmington. The remoteness of rural living was tempered by mail service. Also, mail delivery allowed farmers to subscribe to daily newspapers that published daily market prices. Farmers realized that improved roads were necessary in order to take advantage of favorable market prices. New technical advances were also influential in promoting good roads in this era. 36

The automobile evolved from an experimental stage in the 1860s to an actual stage in the 1890s. The first automobile show took place in Chicago in 1894. By 1900 there were three thousand automobiles in the United States and there were 260 in Minnesota. By 1905 there were seventy-eight thousand automobiles in the United States and twenty-six hundred in Minnesota. The growth of car ownership at this time led to the formation of the Automobile Club of America in 1899. Local automobile clubs began forming in 1902 and 1903 in Minnesota communities. In 1907 the local clubs merged into the Minnesota State Automobile Association. The automobile clubs worked to promote common interests, namely, "the procuring of fair and equitable automobile legislation and good roads for Minnesota." 37

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36 Ibid., 384-386.
37 Ibid., 386-390.
There were some, though, that thought that their financial well-being would suffer from the arrival of the automobile. Buggy and wagon manufacturers along with blacksmiths feared the production of the automobile. Over a period of time the blacksmith moved into the role of automobile mechanic.

Under the spreading motor car the village smithy lays. The smithy; a foxy guy is he. He's struck a job that pays. No horse to shoe; no wheel to mend but o'er his door this sign displays, 'Autos fixed from end to end.'

As more people bought automobiles blacksmiths either became automobile mechanics or suffered financially.

The study of civil engineering was advancing on the federal and state levels. Harvard started the first highway engineering curriculum during the 1890s and the head of the ORI, Roy Stone, sought to inform road builders throughout the country by means of circulars and bulletins. As the decade of the 1890s passed, engineering periodicals and visits from trained government agents supported local efforts. In Minnesota, faculty members of the College of Engineering at the University of Minnesota instructed students in the methods of road construction and gave public talks supporting good roads.

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39 Seely, American Highway, 13, 14.
The National Good Roads Association (NGRA) sent out trains which carried road experts, equipment and operators in order to present good roads demonstrations throughout the country. Director Dodge of the OPRI traveled on the good roads train on the initial trip from Chicago to New Orleans. He was impressed by the crowds of at least one thousand people at each demonstration and the attendance of influential citizens and public officials. He concluded that "the good roads train was the most successful campaign ever waged for good roads." A good roads train arrived in St. Paul in time for the 1902 state fair. Many persons were impressed by the good roads presentation. Railroads also had financial interest in the cause of good roads.  

The railroads reaped economic rewards from the extension of roads. In 1902 railroads carried goods from two to five miles on either side of the tracks. Railroad officials realized that improved roads would increase the shipping range twenty or thirty miles away from the tracks and would eliminate the shortage of rail cars during the peak season by enabling the shipping trade to operate twelve months a year. All of the support for good roads was felt in Minnesota.  

\[40\text{Ibid., 17, 18.}\]

A bill to create a highway commission in Minnesota according to the amendment of 1898 failed in 1903. In 1905 a highway commission bill was passed by a wide margin in both the House and Senate. The provisions of the highway commission bill set specific qualifications for members of the commission. There were three members of the commission who were not paid for their services. Only two of the three members could be from the same political party. The first member was from the first, second, third or fourth Congressional district; the second from the fifth, sixth or seventh district and the third from the eighth or ninth district. The commission was required to hire a secretary who was an engineer experienced in road building. This secretary was to be paid $1,800 per year and was required to advise and assist the commission with road construction matters.42

The commission was responsible for the distribution of the state bridge and road funds. The main stipulation was that a county could receive between one-half or 1 percent to 3 percent of this fund. One major problem for some counties was the requirement for each county to spend at least three times the minimum amount of state aid available in order to receive any aid at all. A state constitutional amendment raised the tax levy to one-fourth

42 Minnesota Laws (1905), 198, 199.
of a mill passed in 1906. In 1908 a proposed amendment to pay state aid to counties without a minimum requirement failed to pass. In 1909 an amendment was written that returned a minimum of one-half of one percent of the road and bridge fund to go to each county with the state aid share raised from one-third to one-half. This would make it easier for the counties to obtain state aid. The amendment was passed by the voters in 1910. The establishment of the highway commission set the stage for another short-lived road and bridge fund.43

In 1907 the legislature passed a law that gave the counties $200,000 yearly in road and bridge funds and this amount was raised to $300,000 in 1909. It has been assumed that the legislature was motivated to pass these laws in order to have some type of direct appropriation available for constituents back home. These funds were free of the regulations set by the highway commission. The appropriations were called the "pork barrel" funds and were challenged in court in 1909. Judge H. R. Bull granted a temporary injunction to stop the "pork barrel" funds because their legal basis was not consistent with the internal improvements limitations placed on the state by the constitutional amendments of 1898 and 1906. The

43 Minnesota State Highway Commission, Reports (1908), 4; Minnesota State Highway Commission, Reports (1909-1911), 5.
Minnesota Supreme Court upheld Judge Ball's decision and the "pork barrel" funds were ended. While this challenge to the highway commission was happening, the highway commission was setting its agenda.  

The first highway commission report made specific recommendations to the governor concerning possible changes in the state road and bridge laws. The commission opposed the two-thirds requirement of funding of state-aid roads by the counties which eliminated certain counties that could not afford to pay this. Furthermore, the highway commission made other recommendations to ensure more professional road building at the county level and a stronger position for the commission in the realm of road matters. These recommendations included:

That the office of County Surveyor be abolished and that instead of this official, the County Commissioner be empowered to employ a County Superintendent of Highway who shall be a civil engineer. . . . That the office of Town Overseer be abolished and the Town Supervisors be empowered to employ a Town Superintendent of Highways. . . . That the Statute labor tax be abolished and that all taxes for roads be paid in money.

The first two of these recommendations were passed by the legislature in 1907. However, this law was held to be

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45 As noted before, this provision was changed in the 1910 amendment.

unconstitutional by the Minnesota Supreme Court because the three most populated counties in the state were excluded from the law. Later legislation concerning these points will be mentioned after the passage of the Dunn Amendment in 1912. Even though initial recommendations were slow to be approved, the highway commission's role continued to expand.\footnote{Minnesota, \textit{Laws} (1907), Chapter 458; Minnesota State Highway Commission, \textit{Report} (1908), 3.} The initial activities of the highway commission included: the first payments of state aid road money to the counties, locations of road building materials, reports on road building activities in other states, consultations with the state attorney general, experimental road building and bridge safety.

The first payments of state aid to the counties brought about basic developments on designated state roads such as: clearing and grubbing, grading and ground surfacing. It was reported in December 1905 that sixty-four of eighty-five counties had designated state roads. Macadam roads were only considered near large cities because of a cost of $3,000 to $5,000 dollars per mile. In areas of the state where gravel could be obtained, gravel roads from $500 to $1,500 per mile were acceptable. Yet, earth roads would account for 90 percent
of roadways until improved roads could be funded through the available budget.48

The highway commission conducted a four-year study from 1906 to 1910 to determine where road materials were located in the state. A report entitled "Road Material Resources of Minnesota" gave the location and size of stone deposits and quarries in the state. It was determined that an ample supply of material existed to supply road building needs. Also, during this period, the Great Northern and Northern Pacific Railroad companies hauled large volumes of granite, free of charge, from the St. Cloud Reformatory crushing plant to various road building sites. Recommendations were made to improve the St. Cloud crushing plant and new crushing plants around the state.49

The highway commission reported on the early progress of road building in other states. In 1906 attention was paid to Massachusetts, Connecticut, New York and New Jersey. Highlights of the reports included: the administration of highway commissions in these states, the process of appropriating state road funds and the amount of state road funds spent in these states.50

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49 Highway Commission, Report (1911), 34, 40.

50 Highway Commission, Report (1906), 6-12.
The highway commission received legal opinions from the State Attorney General that answered questions raised over highway legislation of 1905. Opinions from the Attorney General's office included: (1) the right of the counties to buy tools to make approved voluntary road improvements, (2) the counties can only use state road and bridge funds on designated state roads and bridges, (3) the counties may designate more than one road in the counties as a state road, (4) the counties can only use their road and bridge fund for roads and bridges and not to spread out to other county funds, (5) each county auditor was required to submit a yearly report on the amount spent for all roads and bridges in the county including a statement on the amount spent on state roads and bridges. 51

During the early years of this century the automobile became an accepted mode of transportation. Automobiles became available to more persons every year as automotive technology continued to improve. Automobile registrations in the United States rose from seventy-eight thousand in 1905 to 2.3 million in 1916. 52

The first automotive law in Minnesota was passed in 1903. This law required that all automobiles on the roads of Minnesota had to be licensed by the boiler inspectors of

51 Highway Commission, Report (1908), 66-73.
52 Seely, American Highway, 25.
the state. Provisions of this law included: (1) a two dollar license fee, (2) a license number to be displayed on the automobile by figures of at least four and one-half inches, (3) a rural speed limit of twenty-five miles per hour, (4) a city speed limit of eight miles per hour and four miles at intersections, (5) the automobile driver to stop when meeting a team of horses, (6) lights for night driving and (7) a good muffler for the automobile. 53

Two men became identified with good roads in Minnesota and emerged as leaders of the cause during the early twentieth century. Charles Babcock was the Commissioner of Highways from 1917 until the end of 1932. Babcock devoted his personal life as well as his public life to the cause of good roads. Robert Dunn, a newspaper publisher from Princeton, Minnesota, led the efforts for good roads as a state legislator in 1911 and 1913 and as a state senator in 1915 and 1917. These two men were involved with a flurry of developments that affected the Highway Commission and road development. 54

State constitutional amendments, the Elwell Road Law, increased funding and power for the state highway commission and efforts for marking state roads and trails were the highlights of the period from 1910 to 1916. The

53 Minnesota General Laws (1903), 646-648.
54 Larsen, Development, 415, 416.
state constitutional amendments of 1910 and 1912 provided greater revenues and authority for the highway commission. After the adoption of the 1910 amendment, the legislature passed a one-fourth mill levy in 1911. The amendment of 1912 (the Dunn amendment) revised the terms of the road and bridge section of the state constitution. Following the adoption of this amendment, the annual tax levy was raised to one mill, road laws were revised and rural roads were divided into three classifications. These three classifications were: (1) state roads constructed and maintained by the counties with state-aid funding, (2) county roads constructed by the counties and maintained by the townships and (3) township roads constructed and maintained by the townships. Furthermore, the counties were mandated to spend 20 percent of state-aid funds on road maintenance. Three road districts on the state level were created in 1914 and the number was increased to eight in 1916.55

One inconsistency from the general scheme of road legislation was the Elwell Act of 1911. A new system of "state rural highways" was to be created. District courts throughout the state were empowered to create a state rural highway when six or more land owners petitioned for a given road running along their land. Ten-year county bonds were

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approved for upgrading these roads. These bonds were to be retired by 50 percent state road and bridge fund, 25 percent county funds and 25 percent adjacent property owners. This law was repealed by 1915 after fifty highways accounting for 1,134 miles of roadways were improved at a cost of $3,254,000.\textsuperscript{56}

While the Minnesota Highway Commission was busy with state developments, a debate over federal aid for roads was carried on in Congress. The OPR under Logan Page supported a plan for the OPR to serve as technical advisor to the states with cooperation rather than coercion as its main theme. In contrast, some favored a federal road building agency with a large system of federal roads.\textsuperscript{57}

The provisions of the Federal Aid Road Act of 1916 included: (1) federal aid matching up to $10,000 of state funds per mile, (2) direct federal-to-state contact, (3) federal inspection and (4) the establishment of stronger state highway departments based on OPR guidelines in order to receive federal funds. The amount of federal aid was $5,000,000 in the first year increasing in increments of $5,000,000 per year for five years totaling $75,000,000.\textsuperscript{58}

\textsuperscript{56}Ibid., 24.
\textsuperscript{57}Seely, \textit{American Highway}, 40.
\textsuperscript{58}Ibid., 42.
Problems arose for the federal aid program between 1916 and 1920 such as inferior state road plans and strict federal inspectors, federal encouragement of statewide road systems, rural emphasis of the federal road program that encouraged unpaved rather than paved roads and the start of the world war. World War I forced road building down the ladder of importance. Road construction materials were banned from railroad shipments for a time and the use of bituminous materials was curtailed. Furthermore, the Army needed federal engineers for military purposes. 59

The Federal Aid Road Act of 1916 made its greatest impact on Minnesota in regard to the establishment of a state highway system of roughly sixty-two hundred miles to reach every county seat and the larger cities of the state. This action made the state eligible to receive $2,136,000 of federal aid over a five-year period. Second, the Highway Commission was reorganized to a Department of Highways that would be managed by a Commissioner of Highways. The Commissioner was appointed for a six-year term, paid $4,500 per year and was empowered to employ a small support staff. Third, a state constitutional amendment was passed by the legislature in 1919 and submitted to the voters in 1920. This amendment, known as the Babcock Plan, was named after its author, Charles M.

59 Ibid., 49, 50.
Babcock. This plan called for a system of trunk highways that would connect the major cities of the state, be expected to be open the year round, be of improved surface necessary to handle traffic demands and be financed by automobile registration taxes and bonds. This was the plan that would bring Minnesota into the age of modern roadways. This amendment passed by a vote of 526,000 in favor and 199,603 opposed.60

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60 Larsen, Development, 437-462.
The decade of the 1920s highlighted the emergence of an ongoing policy of federal aid to highways.

As a direct result of federal aid requirements, stronger state highway departments took control of construction and maintenance and displaced the counties as the leading road builders.¹

The creation of strong state highway departments improved the overall development and organization of road building throughout the entire nation. County administration of road building was deemed inefficient in the new era of the automobile. From 1921 to 1930 total annual road construction by the states rose from 20,000 to 35,000 miles while the states' total annual highway expenditures rose from $430 million to $1.1 billion.²

The influence of the federal government on the growth was apparent in two ways. The federal government provided a total of $839,000,000 in federal aid between

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²Ibid., 72, 73.
1921 and 1930. Even more important than the aid was the role of the federal government as a standard promulgator throughout the nation.\(^3\)

One significant standard was the establishment of federal numbering of interstate routes on the federal-aid system. Between 1910 and 1920 many private organizations attempted to name and mark various roadways throughout the nation. These efforts met with varying success. In 1925 a plan was adopted that designated the numbering of fifty thousand miles of highways on the federal-aid system.\(^4\)

In characterizing the decade of the 1920s in regard to the Minnesota Highway Department, the fact that motor vehicles were becoming the accepted mode of personal travel established the overriding theme of highway development. The need to provide new and better roadways in order to meet the demands made by the increasing number of motor vehicles is expressed throughout the decade by Commissioner Babcock's recommendations to the Minnesota legislature.

During the years 1921 and 1922, Babcock reported that definite increases of traffic occurred on the trunk highway system, "Analysis of the census figures shows an average traffic on the trunk highway system of 710

\(^3\)Ibid., 73.
\(^4\)Ibid., 78, 79.
vehicles per day as against about 565 during 1921.\textsuperscript{5}

This was a significant gain in traffic and the number of routes carrying from five hundred to one thousand vehicles per day increased from thirty-seven to fifty-six and the routes carrying from one thousand to two thousand vehicles per day increased from twelve to nineteen. Furthermore, Table 1 illustrates the great increase of motor vehicles during the entire decade.

In February of 1925, Babcock reported that highway use was growing at a fast pace.

In 1924 it was nearly 27 percent greater than in 1923. Increased road use necessarily means more road wear and with the latter come greater improvement and maintenance demands. Minnesota registered nearly 510,000 motor vehicles last year, more than ten times as many as a decade ago.\textsuperscript{6}

Babcock used these figures to support the case for more tax money to roadway needs. Babcock stressed that any tax reduction would result in the loss of "desirable service of benefit." He maintained that the roadway taxes actually saved road users' money by allowing them to use their vehicles in the most efficient way.\textsuperscript{7}


\textsuperscript{7}Ibid., 56.
TABLE 1
MOTOR VEHICLES REGISTERED IN MINNESOTA 
DURING THE 1920s

<table>
<thead>
<tr>
<th>Year</th>
<th>Automobiles</th>
<th>Busses</th>
<th>Trucks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>301,166</td>
<td></td>
<td>23,000</td>
<td>324,166</td>
</tr>
<tr>
<td>1921</td>
<td>299,100</td>
<td></td>
<td>24,375</td>
<td>323,475</td>
</tr>
<tr>
<td>1922</td>
<td>341,322</td>
<td></td>
<td>39,235</td>
<td>380,557</td>
</tr>
<tr>
<td>1923</td>
<td>399,404</td>
<td></td>
<td>48,783</td>
<td>448,187</td>
</tr>
<tr>
<td>1924</td>
<td>445,437</td>
<td></td>
<td>58,000</td>
<td>503,437</td>
</tr>
<tr>
<td>1925</td>
<td>524,462</td>
<td>417</td>
<td>44,815</td>
<td>569,437</td>
</tr>
<tr>
<td>1926</td>
<td>558,749</td>
<td>379</td>
<td>71,157</td>
<td>630,285</td>
</tr>
<tr>
<td>1927</td>
<td>565,017</td>
<td>384</td>
<td>81,281</td>
<td>646,682</td>
</tr>
<tr>
<td>1928</td>
<td>584,186</td>
<td>359</td>
<td>89,784</td>
<td>674,329</td>
</tr>
<tr>
<td>1929</td>
<td>630,342</td>
<td>361</td>
<td>99,696</td>
<td>730,399</td>
</tr>
<tr>
<td>1930</td>
<td>624,599</td>
<td>303</td>
<td>108,070</td>
<td>732,972</td>
</tr>
</tbody>
</table>

Source: Figures from Table MV201 issued by Public Roads Administration, Federal Works Agency, May 1947. Trailers and motorcycles are not included.
In February of 1927 Babcock reminded the legislature that the new roadway system was something unique:

The invention and perfection of the motor vehicle during the last quarter of a century has given us a new transportation system different from anything the world has even seen before... But the greater part of automobile travel and a large part of truck traffic is 'new business.'

The number of motor vehicles and the number of vehicle miles traveled was still rising rapidly. This was growth in personal travel and business transport rather than merely moving carriage passengers to automobile and railroad freight into trucks. Motor vehicles allowed a freedom of movement that was unheard of a generation previous to this. Babcock emphasized that the roadway system was not as costly as it might seem.

Continuing his recommendations in 1927, Babcock assured the legislature that,

The total expenditures for trunk highway purposes in 1925, including construction and maintenance, are less than 5 percent of the state's total automobile bill, and the total road expenditures, including state, county and town roads, are less than 10 percent of the automobile expenditures.

Road construction and maintenance were definitely costly, yet, the costs of vehicles, gasoline, insurance and

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9 Ibid., 28.
10 Ibid., 29.
accessories were far more. In 1926, the state of Minnesota spent $19,439,209 on the trunk highway system. On the other hand, the total cost of new vehicles in the state for 1926 was $97,000,000; the total cost of gasoline was $60,000,000; and the combined cost of accessories, repairs, insurance and storage added up to more than $300,000,000.11

With the adoption of the trunk highway amendment of 1920 and the Public Highway Act of 1921, the state of Minnesota gained direct control over the state trunk highway system and some influence over the secondary state-aid road system. The period from 1921-1925 was crucial to the state's growing interest in the developing highway system.

Due to the demands made on the national railroad system during World War I, the trucking industry emerged as a viable alternative for the shipment of goods. There was an ongoing shortage of railroad cars and railroad terminals were overcrowded with freight. Antiquated terminal facilities and inefficient business practices led to long delays in the reception of freight.12

11 Ibid., p. 29.
Trucks were used to avoid the overcrowded city railroad terminals by means of picking up freight shipments that had been sent to small towns just outside of major cities. This diversion removed freight from overcrowded city terminals and set the routine for the use of trucks to haul freight over longer distances.\(^{13}\)

The number of trucks in the nation increased from 326,000 in 1917 to 525,000 in 1918. In Minnesota the number of trucks doubled from five thousand in 1917 to ten thousand in 1918. Table 1 indicates the dramatic increase of trucks through the 1920s. The increased use of trucks had a wearing effect on the roadways.\(^{14}\)

Many early bituminous macadam roads throughout the nation were damaged by the increased weight of truck traffic. Many states began to impose load limits for trucks on certain roads. In Minnesota load restrictions were set in 1921 which limited vehicles to ninety-six inches in height, twelve feet-six inches in width, thirty feet in length for single vehicles, eighty-five feet in length for a combination of vehicles, a limit of 28,000 pounds gross for a single four-wheel vehicle, a limit of

\(^{13}\)Ibid., 92.

22,400 pounds for a single-axle and a limit of eight-hundred pounds per inch width of tire. Some exceptions were made by special permit.  

With the passage of the Highway Act of 1921, the definitions of road classifications were established with specific units of government responsible for each given class. The trunk highways were under the direct control of the state while the state-aid roads were established, improved and maintained by the county boards under the supervision of the Commissioner of Highways. The state had no direct control over state-aid roads, county roads or town roads, yet it distributed sizeable amounts of money to help finance the state-aid or "secondary" road system. In 1921 6,850 miles of roadway were designated as trunk highways and 8,358 miles of roadway were designated as state-aid roads.  

Primarily, roads had to be constructed before there were any benefits for potential roadway users. The greatest plans and designs were only intangible hopes until there was a roadway capable of carrying motor vehicle traffic. In actuality, the construction on the trunk highway system during 1921 and 1922 was a continuation of building projects started in 1919 by the counties.  

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15 *History and Organization*, 87.

16 Ibid., 35.
from which the counties expected reimbursement from the state for the work completed by the counties. During the period from January 1919 to January 1923, the trunk highway system received 2,267 miles of grading, 2,398 miles of gravel surfacing and 350 miles of paving.  

Certain factors were taken into consideration in the design of the early trunk highway system. The subgrade was of major importance for present and future roadways. "In trunk highway design the department has considered that the subgrade is the foundation for future highway development."  

As traffic increased in the future, new demands would be placed on the roadway, an adequate subgrade would make future construction modifications more feasible. Furthermore, roadways between two points would be best to secure the shortest line possible commensurate with other governing factors were light grades and the need for safety in operating motor vehicles. In 1925 eleven potential road hazards were mentioned in the Biennial Report:

- blind curves and road intersections, sharp curves on embankments, unprotected embankments, narrow bridges, sharp convex vertical curves, steep grades, narrow road surfaces, steep crowns, sharp curves at bridge

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17 Biennial Report for 1923, 1924, 8.

and underpass approaches, grade crossings and unsuper-
elevated curves.\textsuperscript{19}

It was hoped that the new construction designs would
reduce these roadway hazards.

Direct state maintenance of the trunk highway system
was mandated by the state Constitutional Amendment of 1920
and the Public Highway Act of 1921. The state followed a
definite plan to maintain trunk highways.

As a means of assuring definite responsibility for all
maintenance operations, as well as securing direct
contact with the actual work in the field, the state
was divided into sixteen maintenance districts and a
superintendent was placed locally in direct charge of
each district.\textsuperscript{20}

The state was divided into these sixteen local areas in
order to make it possible to maintain a workable area of
roads. A superintendent was responsible for the mainte-
nance of each area and each area was broken down into
smaller patrol sections. In 1922 motorized trucks and
tractors were used in some areas of maintenance. However,
the greatest amount of maintenance was carried out by 950
horse team patrols. During the summer season temporary
workers increased the size of the maintenance workforce to
a figure between 2,500 and 3,000. As the 1920s progressed

\textsuperscript{19} History and Organization, 65.

\textsuperscript{20} Report of the Commissioner for 1922, 13.
motorized maintenance and winter maintenance increased rapidly. 21

Bridges were essential in keeping the trunk highway and the secondary state-aid highway systems continuous. Within the Highway Act of 1921, it was stated that: "The words 'road' and 'highway' shall include all bridges thereon which form a part of the same." 22 The Commissioner of Highways could set standards for bridges on the trunk highway system. The minimum width was set at sixteen feet with a minimum of eighteen feet when the bridge was constructed more than three feet above river banks. The Commissioner of Highways was required to carry out yearly inspections of bridges over thirty feet long. In 1925 the Commissioner of Highways was empowered to locate interstate bridges that connected with trunk highways or state-aid highways and to cooperate with officials of other states to construct and maintain bridges in order to provide continuity of the road system from state to state. 23

The tremendous growth in the number of motor vehicles and the development in the trunk highway system led to the need for laws concerned with the safety of

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22 Laws of Minnesota, 1921, Chapter 323.
23 Laws of Minnesota, 1925, Chapter 403.
motorists along with an agency responsible for enforcing these laws. The Uniform Highway Traffic Act of 1927 provided for a standardized type of light on motor vehicles. It "provides for the adoption of suitable specifications as to the amount, color and direction of light to be emitted by head lamps." A total of 175 stations were set up over the state to act as "auto lamp adjusting stations." These stations were operated by men trained through Dunwoody Institute to inspect motor vehicle lamps in respect to the specifications set at the Motor Vehicle Light Testing Laboratory at the University of Minnesota. This was a significant step in the development of motor vehicle uniformity and safety. At this time, however, there was no state agency to enforce state vehicle regulations. The state had to rely on the cooperation of local authorities to enforce regulations.  

In 1929 Commissioner Babcock stated the need for a greater emphasis on safety on the roadways:

Perhaps fully as important as the care and improvement of the highways is the protection of those using the highways. The number of deaths and injuries in automobile accidents is so large that it would shock the entire world if an equal number were killed and injured in a forest fire, a shipwreck or any other disaster. It is only because these accidents occur daily that we have grown callous.  


\[25\text{Ibid., 45.}\]
The situation was becoming more dangerous everyday. A method of enforcing safety regulations and a procedure for preventing reckless driving on the highways was overdue. The answer was the establishment of a state traffic patrol. This patrol would consist of uniformed officers whose primary purpose would be to enforce safety regulations such as the standardized motor vehicle lamp, speed limits and overtly unsafe driving practices. Beyond these matters, the patrol could protect highway property such as the roads from thieves and vandals who destroy signs and equipment.  

The Minnesota Highway Patrol was established under Chapter 355 of the Laws of 1929. The funding of the patrol was an early step in promoting and enforcing traffic safety. The primary function of its existence was to keep traffic moving safely. Over the course of the first year of the patrol, 1,356 arrests were made and 39,043 warnings were given to minor offenders.  

The decade of the 1920s witnessed an ongoing demand for increasing revenue to the highway department and various bonding plans to finance road building projects. A motor vehicle registration tax was first proposed in the trunk highway amendment of 1919. This amendment was

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26 Ibid., 45, 46.

approved by the voters and the registration tax became a realization in 1921. The rate of the registration tax was set at 2 percent of the factory list price with reductions of 25 percent for vehicles four to five years old and 50 percent for older vehicles. There was a minimum fee of $12.00 for cars under two thousand pounds and $15.00 for larger cars. In 1923, the legislature increased the taxation rate to 2.75 percent of the factory list price with reductions of 10 percent for the second year and 20 percent for the third year until the minimum rate of taxation on the vehicle was equaled. Table 2 demonstrates the growth of the registration tax as a source of revenue. Tax collections in 1929 were 190 percent of the total tax collected in 1921.28

A gas tax that was adopted in 1924 was still in the early stages of study in 1921. As Babcock reported,

The committees have taken up the matter of gasoline tax as suggested by Mr. Siverts, but are not inclined to favor that proposition for the reason that a very large percentage of the gasoline used in the state is used for commercial purposes such as power for machine shops, for electric light plants, farm machinery tractors for plowing and any number of other miscellaneous purposes.29

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28 History and Organization, 55.

29 Babcock to Governor Preus, 10 February 1921, J. A. O. Preus, Governor Records, File 649, Box 99, Minnesota Historical Society, St. Paul.
TABLE 2
REVENUES OF THE MINNESOTA TRUNK HIGHWAY FUNDS
FROM MOTOR VEHICLE IMPOSTS 1921 to 1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Registration Taxes</th>
<th>Gasoline Taxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921</td>
<td>$5,616,113</td>
<td>$---</td>
</tr>
<tr>
<td>1922</td>
<td>6,509,005</td>
<td>---</td>
</tr>
<tr>
<td>1923</td>
<td>7,265,531</td>
<td>---</td>
</tr>
<tr>
<td>1924</td>
<td>8,559,630</td>
<td>---</td>
</tr>
<tr>
<td>1925</td>
<td>9,751,027</td>
<td>3,068,208</td>
</tr>
<tr>
<td>1926</td>
<td>9,872,201</td>
<td>4,956,497</td>
</tr>
<tr>
<td>1927</td>
<td>10,222,090</td>
<td>5,035,794</td>
</tr>
<tr>
<td>1928</td>
<td>10,066,726</td>
<td>5,589,972</td>
</tr>
<tr>
<td>1929</td>
<td>10,774,670</td>
<td>5,507,938</td>
</tr>
<tr>
<td>1930</td>
<td>11,007,914</td>
<td>6,242,331</td>
</tr>
</tbody>
</table>

Source: Figures are from Department of Highways records and represent actual net receipts in trunk highway fund and trunk highway sinking fund during calendar years.
At this time, gasoline was associated more with small industry and agriculture than it was with automobiles. However, with the great increase in the number of vehicles on the road, the gas tax would soon become an issue directly involved with roadway funding.

The motor fuel or "gas tax" was first proposed in a constitutional amendment in 1923. The amendment was passed by the voters and a two-cents-per-gallon gasoline tax was levied in 1925. In 1927, the legislature proposed a change in the distribution of the motor fuel tax. Two-thirds would be allotted to the trunk highway fund and one-third allotted to the state road and bicycle fund. The motor fuel tax was raised to three cents per gallon in 1929 with one-third going to the newly established "county aid" roads in the state. Table 2 attests to the increased amount of revenue raised from 1925 to 1929. According to Babcock, these increases would not be enough to meet the increased costs of construction. 30

In 1927, Babcock stated that even with an increase in the motor vehicle tax to three cents per gallon, revenue would fall short:

An increase in the gasoline tax alone will not provide the revenues necessary to speed up construction and make any gain on traffic requirements. Whatever rate is fixed by the legislature one-third of the total

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will go into the State Road and Bridge Fund and two-thirds into the Trunk Highway Fund. A three-cent rate would give the Trunk Highway Fund less money in 1929 than we have received in the past from a two-cent tax.\textsuperscript{31}

The results of a short fall in revenues would result in major cutbacks in the construction of the trunk highway system. The continuing growth of the traffic volume demanded that paving be continued at a rapid pace. Furthermore, Babcock reminded the legislature that payment costs were higher in the initial building of the roads than in their eventual maintenance. Babcock proposed a \$20,000,000 bond issue in order to supplement the amount of revenue needed for road building.

The issuing of bonds was not a new concept. The state had been reimbursing the counties since 1921 for work they had completed on the trunk highway system. Babcock proposed that \$20,000,000 of trunk highway bonds be authorized in 1923 but that proposal was not approved by the legislature. However, state bonding for funds to reimburse the counties was approved in 1923, 1925 and 1927. Finally, the legislature took an extra step in 1929 and allowed the issuance of bonds equalling the total amount of the bonds maturing in 1931 and 1932 along with

\textsuperscript{31}Ibid., 44.
$1,000,000 of the bonds coming due in 1930. Table 3 shows the total number of bonds sold as of February 26, 1931.\textsuperscript{32}

Fair employment conditions for potential highway department workers was the main point of Governor Preus's letter to Commissioner Babcock in June of 1921:

As you are probably aware the recent session of the Minnesota legislature created the Industrial Commissioner of Minnesota. Among the activities taken over by this commission are the free employment bureaus. It is quite desirable, in my judgment, that all departments of the state hiring labor direct do so through this channel.\textsuperscript{33}

This was a direct endorsement of the free employment bureaus by the governor. The governor encouraged his department heads to utilize this system provided by the recent legislature. Furthermore, free bureaus would save prospective workers money in finding a job.

The struggle of labor versus management found its way into the highway department in 1921. The Minneapolis Trades and Labor Assembly voiced its displeasure with the wages earned by roadworkers and the high profits turned by industry.

Whereas it is pretended by advocates of the road construction that it afford relief for the unemployed, and Whereas, workers are being employed on the state roads for wages of $.25 an hour while the contractors and the steel trust are reaping large profits and it

\textsuperscript{32}History and Organization, 59.

\textsuperscript{33}Governor Preus to Babcock, 18 June 1921, J. A. O. Preus, Governor Records, File 649, Box 99, Minnesota Historical Society, St. Paul.
TABLE 3
MINNESOTA HIGHWAY BOND SUMMARY

<table>
<thead>
<tr>
<th>Bond</th>
<th>Amount</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>County Bonds Assumed by the State:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laws 1921, C. 522</td>
<td>$26,305,773.33</td>
<td></td>
</tr>
<tr>
<td>Laws 1923, C. 184,320,346</td>
<td>8,088,628.58</td>
<td></td>
</tr>
<tr>
<td>Laws 1925, C. 410,411,123</td>
<td>241,420.60</td>
<td></td>
</tr>
<tr>
<td>Laws 1927, C. 56,380</td>
<td>146,613.73</td>
<td>$34,782,436.24</td>
</tr>
<tr>
<td><strong>Bonds Issued by State to Reimburse Counties:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laws 1931, C. 168</td>
<td>$1,200,000.00</td>
<td>$1,200,000.00</td>
</tr>
<tr>
<td><strong>Total Reimbursement Bonds</strong></td>
<td></td>
<td>$35,982,436.24</td>
</tr>
<tr>
<td><strong>Refunding Bonds Issued by the State:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laws 1929, C. 412</td>
<td>$13,445,000.00</td>
<td>$13,445,000.00</td>
</tr>
</tbody>
</table>

is evident that under the contract system of construction, the private contractors, for the most part nonunion shoppers, are enemies of organized labor, are benefitting exorbitantly from the construction work. . . .\textsuperscript{34}

The Trades and Labor Assembly accused the construction industry and the private contractors of getting rich off the work of laborers. They called for a new pay plan that would double workers' wages. Babcock replied to the Assembly, but it was not a reply that the Assembly had hoped for:

We have two classes of work, construction work and maintenance work. On the construction, which includes all of the grading heavy gravel, surfacing, pacing and bridge construction, the state and federal laws require the letting of contracts, but on the maintenance work, which includes re-shaping, dragging and re-surfacing the roads and repairing the bridges we are not required to let contracts and have done all of that work with crews employed direct by the state. The compensation for this work is generally at the going rate of wages in the locality.\textsuperscript{35}

Babcock maintained that the letting of contracts on construction projects was required by law, the highway department paid maintenance workers better than what the Assembly claimed and contractors were making small profits from highway contracts at best. Babcock definitely disagreed with the contentions of the Trades and Labor

\textsuperscript{34} Leslie Sinton to Governor Preu, 7 November 1921, J. A. O. Preus, Governor Papers, File 649, Box 99, Minnesota Historical Society, St. Paul.

\textsuperscript{35} Babcock to Sinton, 14 November 1921, J. A. O. Preus, Governor Records, File 649, Box 99, Minnesota Historical Society, St. Paul.
Assembly with a quote from a letter that he received from a citizen in southern Minnesota. This citizen's view was in complete opposition to the Trades and Labor Assembly's view and suggests even further Babcock's feelings against the Trades and Labor Assembly.

In one sense it is none of my business, in another it is. The immense amount of money being spent for good roads is a great benefit, but should it not be economically used? You know the price of farm produce is way down and there is no farmer that has earned and boarded himself seventy-five cents a day during the year. Is it not an injury to those out of employment when you pay high wages? They cannot all work on the roads.36

Citing examples of the plight of farmers while generally assailing the high wages paid to road workers could hardly pacify the members of the Trades and Labor Assembly. The Assembly members felt that they were being treated unjustly to begin with. Babcock's letter that essentially told them to be thankful for what they had, just did not offer empathy for the labor movement. At best, the letter recognized the problems of the unemployed and farmers, but it gave the impression of moving on to business as usual without further delay. The public's view of state control over the trunk highway system led to some misunderstandings over local roads.

Many letters received by Preus or Babcock dealt with a local desire to see action taken on a county or town

36Ibid.
road. Many well-intentioned persons hoped for direct action by the commissioner or governor but were often disappointed. Babcock's reply to Ferdinand Flory in February of 1922 captures the main recommendation that Babcock gave to most persons inquiring about local roads.

Under the present laws in the state of Minnesota, the state authorities have no jurisdiction over county or township road affairs and, therefore, you will have to depend upon the County or Town Board to relieve your situation.37

Babcock stated the best course of action for citizens dealing with local road issues. Many times during the early years of the department, Babcock had to remind citizens that his influence over local roads was quite limited. County and township boards held direct control over the local roadways, so any needs should have been referred to the local authorities involved. These cases dealt with private citizens. Some situations stemmed from the political perceptions of the times.

In June of 1922, a letter from State Representative Henry Miller of Kilkenny, Minnesota, to J. F. Gould of St. Paul found its way to Governor Preus's office. The matter in question was trunk highway #13 from Waterville to Montgomery. Miller contended that his opponents were using the proposed highway as an election issue.

37 Babcock to Ferdinand Flory, 6 February 1922, J. A. O. Preus, Governor Records, File 649, Box 99, Minnesota Historical Society, St. Paul.
This road has been held up by the non-partisans and a few radical democrats, a member of the Co. Board McCarthy. This McCarthy I understand wanted to file against me so (he held) up the road so he would have a telling point if they could open this now before (the) elections. . . . Now they are against Babcock and are condemning me now because I stood for a Commissioner, they call it a one-man power, they are talking a commission and are taking the stand that if I am returned, I will not vote the way they want me to vote.38

Miller was upset that his political opponents were using highway #13 to defeat him. Miller alleged that the county board was holding up action on the project in order to help one of its members, McCarthy, defeat Miller.

Babcock apparently focused his attention on the roadway situation at hand and overlooked the political allegations.

We are working on the plans for this job and as soon as they are completed, we will ask the County Board to advertise the work for letting so that undoubtedly a contract will be entered into this summer. As you know, this being a county bond issue reimbursement project, the contracts will have to be let by the County Board instead of this office.39

This project was being handled by the county through reimbursement bonds from the state. Babcock did not seem to pay heed to Miller's political problems or the fact that


Miller was a political ally. Babcock worked essentially with the practical process of getting the road built.

Another potential political problem arrived in 1923. A letter from Mr. L. R. Becklund to Governor Preus in August of 1923 concerned the local of State Aid Road #9 in Pine County. After Becklund reminded Preus of his past political support, he complained about the decision of the county commissioners and the lack of action by Mr. Forbes, the representative of the Minnesota Highway Department:

You had brought this matter up with Mr. Babcock and the Highway Department and they would have a representative present. . . . after we received these promises we felt that we would get a fair and square deal at the meeting. . . . After the close of the meeting, we felt that we had been handed a very dirty deal at the meeting.40

Becklund was very upset over the vote of the county commissioners as to location of the road. He maintained that the three commissioners who voted against his position never voiced why they voted the way they did. Furthermore, he complained that Mr. Forbes of the Minnesota Highway Department never mentioned the reason why Becklund's people supported the old route. Babcock's view of this situation differed from Becklund's.

40 L. R. Becklund to Governor Preus, 6 August 1923, J. A. O. Preus, Governor Records, File 649, Box 100, Minnesota Historical Society, St. Paul.
Babcock maintained that Becklund did not fully understand the state's limited powers in regard to state aid roads.

He doesn't seem to understand that this is a local proposition . . . this office can do nothing in the premises for the legislature provided that the county should have control of all county and state aid road work excepting to the character of the construction and the maintenance of the roads. We cannot force the county to change a state-aid road location, even though we should consider it advisable to do so.41

Babcock restated the position that the county had final jurisdiction over the state-aid roads even if the state authorities disagreed with the counties over locations. Beyond this, Babcock gave a different account of the meeting in Pine County:

There are two sides to the controversy and while it would appear at first that the road due west from Road Creek would be the most desirable as a state-aid road, there are certain advantages to the other line, which cannot be disregarded, namely that on the other line, there are more resident farmers, there is also the settlement of West Rock including a creamery, two churches, consolidated school, etc.42

Babcock's account of the meeting at Pine County states that the County Board was accommodating in conducting a hearing to hear both sides of the case. Babcock stated that there was a very heated argument indicating that

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41 Babcock to Governor Preus, 9 August 1923, J. A. O. Preus, Governor Records, File 649, Box 100, Minnesota Historical Society, St. Paul.

42 Babcock to Governor Preus, 9 August 1923, J. A. O. Preus, Governor Records, File 649, Box 100, Minnesota Historical Society, St. Paul.
there were strong feelings on both sides of the issue. Becklund's account would make it seem that only his supporters were heard while a majority of the board voted against his position for no expressed reason. Babcock's view seemed to prevail at the state level.

Another problem arose during the administration of Governor Theodore Christianson over a misunderstanding concerning road funding. During August of 1926, a report reached Governor Christianson claiming counties having legislators favoring highway bonds would be favored with highway projects:

I am quite reliably informed that your district maintenance engineer at Willmar told the people at Hector that if they wanted any gravel on highway #70, connecting Hector and Foritan, they would have to get after this senator and representative and get them to vote for a bond issue in the next session of the legislature.43

Favoritism for areas supporting highway department legislation would have been totally out of line with established policy based on legislative acts. Babcock's response to Christianson indicates that much of the problem was due to a misunderstanding:

I have had some discussion of this matter with I believe, the people in Hector with whom Mr. Matthies, our superintendent, had his conversation. In this conversation he made a statement to the effect that if the bond issue had been supported by the

43 Governor Christianson to Babcock, 16 August 1926, Theodore Christianson, Governor Records, File 650, Box 121, Minnesota Historical Society, St. Paul.
Legislature that the road would have been built prior to this time. This in a general way, according to at least two of the people of Hector, was the statement made. 44

Babcock generally seemed satisfied that the person quoted, Mr. Matthies, was not quoted correctly. Babcock went on to state that the department would not use political views as an indicator for highway building policy. The department would continue to serve the entire state on an equitable basis.

A significant development during this decade was the growth of intercity travel by bus. By 1917, the Messaba Transportation was the largest bus company in the Minnesota Iron Range making regularly scheduled trips between Hibbing and Grand Rapids with shorter trips between other Iron Range locations. 45

Technical improvements increased in regard to the motor-coach. Early elongated cars gave way to the vehicle designed as a motor bus. Throughout the 1920s the motor bus was improved with stronger engines, greater seating capacity, air brakes, heating systems and baggage racks. 46

44 Babcock to Governor Christianson, 20 August 1926, Theodore Christianson, Governor Records, File 650, Box 121, Minnesota Historical Society, St. Paul.


46 Ibid., 313, 314.
The business climate of the time led many small bus companies to combine. Mergers, rather than neighborly cooperation between small companies to carry passengers long distances, were essential as bus men broadened their horizons. Entrepreneurs could profitably extend and expand their business only through more unified operating systems, with cost-effective route-planning, timetables and centralized management of vehicle and driver availability.\(^{47}\)

Merger was the way to develop a company that could provide dependable service, pay for the overhead costs of vehicles and terminals, and compete with railroad companies. In 1925 the state of Minnesota began to license motor carriers. Some railroad companies sought to exclude bus lines from certain routes and some sought to limit bus lines through taxation. Yet, thirty-five of thirty-nine bus license applications were granted. Licensing gave bus lines a new level of legitimacy. Furthermore, state regulation over "safety, facilities, accounts, rates, and schedules" favored well-managed and developed bus companies over inefficient and underdeveloped companies.\(^{48}\)

During the years 1926 to 1929 the Northland Transportation Company became part of the Motor Transit Corporation through business acquisitions. This

\(^{47}\)Ibid., 316.

\(^{48}\)Ibid., 318.
connection led to the creation of the Greyhound Corporation. 49

The development of good roads was having a strong effect on the life of the American farmer. Good roads increased farm productivity, opened the door to wider social life with neighbors and made contact with nearby towns more frequent thus enabling the farmer to participate in public events, theatres, churches and recreation more fully. 50

Records of livestock being hauled by trucks to the South St. Paul Market indicate a tremendous growth in the livestock business corresponding to the advancement of good roads. Table 4 shows the twenty-five year growth of the market. During 1925 a total of 47,337 trucks arrived at the South St. Paul Market with an average hauling distance of between sixty and seventy miles driven mostly over trunk highways. 51

In 1920 55 percent of income in the Minneapolis-St. Paul area relied upon business ties with a region extending from northern Michigan to Montana and from the Canadian border to northern Iowa. Railroads were an important part of these ties.

49 Ibid., 319, 320, 321.

50 Minnesota Highway News, 20 January 1926.

51 Minnesota Highway News, 13 January 1926.
TABLE 4
SOUTH ST. PAUL MARKET

<table>
<thead>
<tr>
<th>Stock</th>
<th>1900</th>
<th>1919</th>
<th>1924</th>
<th>1925</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>5,497</td>
<td>17,384</td>
<td>33,708</td>
<td>50,643</td>
</tr>
<tr>
<td>Calves</td>
<td>414</td>
<td>7,127</td>
<td>47,831</td>
<td>76,623</td>
</tr>
<tr>
<td>Hogs</td>
<td>5,484</td>
<td>26,689</td>
<td>150,614</td>
<td>218,640</td>
</tr>
<tr>
<td>Sheep</td>
<td>4,671</td>
<td>3,545</td>
<td>21,572</td>
<td>29,975</td>
</tr>
<tr>
<td>Total</td>
<td>16,066</td>
<td>54,745</td>
<td>253,725</td>
<td>375,381</td>
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</tbody>
</table>

Source: Minnesota Highway News, 13 January 1926.
The industrial-railway belt included the flour mills, terminal elevators, stockyards, and packing plants for which the Twin Cities were well known, but it was also an entrepreneurial seedbed. 52

The Twin Cities supplied many types of goods for the metropolitan area and the region. Products ranging from mouthwash and shaving cream to heating and plumbing equipment were produced in the Twin Cities. The railroad age fostered this growth of the Twin Cities area but the dawn of the automobile age had arrived. 53

The automobile age started a long process of change that affected many old methods of travel and production. The 1920s fostered the disappearance of horse-and-buggies on roadways, a slow decline in street car ridership, the change from horses to mechanical tractors and the gradual increase of farm size, the emergence of larger rural trade centers when farmers could drive longer distances over rural roads, the building of garages next to houses, the building of automobile repair stations and the development of large parking lots. These changes began in response to


53 Ibid., 68.
the growth of automobiles and good roads and continued through the following decades. 54

CHAPTER III
HIGHWAYS DURING DEPRESSION AND WAR

During the decades of the 1930s road building continued to increase throughout the United States in spite of the Depression. "The increase in the pace of road building was almost unchecked during the 1930s because highways became the largest public works program undertaken by the federal government."¹ The federal government, through various relief programs, compensated for the decline in available road funding from state and county governments. Table 5 illustrates the many federal aid programs and amounts of federal aid distributed to Minnesota. Some programs were totally relief programs while others required state matching funds. Jobs were a top consideration at this time but not at the expense of engineering standards.² A general overview of the decade of the 1930s in relation to the state highway department would include two important themes: (1) the need for

²Ibid., 88-93.
Table 5.--Federal Aid Appropriations to Minnesota

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>To States</th>
<th>To Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regular Five-Year Program, Years 1917 to 1921, incl.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1917</td>
<td>$ 5,000,000.00</td>
<td>$ 143,394.06</td>
</tr>
<tr>
<td>Year 1918</td>
<td>10,000,000.00</td>
<td>284,788.12</td>
</tr>
<tr>
<td>Year 1919</td>
<td>15,000,000.00</td>
<td>425,865.40</td>
</tr>
<tr>
<td>Year 1920</td>
<td>20,000,000.00</td>
<td>568,309.81</td>
</tr>
<tr>
<td>Year 1921</td>
<td>25,000,000.00</td>
<td>710,522.33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 75,000,000.00</td>
<td>$ 2,131,879.73</td>
</tr>
</tbody>
</table>

| **Special Three-Year War Program, 1919 to 1921, incl.** | | |
| Year 1919     | $ 50,000,000.00 | $ 1,420,774.52 |
| Year 1920     | 75,000,000.00   | 2,131,161.78   |
| Year 1921     | 75,000,000.00   | 2,131,567.00   |
| **Total**     | $ 200,000,000.00 | $ 5,683,503.30 |

| **One-Year Program, Year 1922** | | |
| Year 1922     | $ 75,000,000.00 | $ 2,123,597.07 |
| **Total**     | $ 75,000,000.00 | $ 2,123,597.07 |

($25,000,000.00 available November, 1921)
($50,000,000.00 available January, 1922)

| **Three-Year Program, Years 1923 to 1925, incl.** | | |
| Year 1923    | $ 50,000,000.00 | $ 1,415,731.38 |
| Year 1924    | 65,000,000.00   | 1,842,800.97   |
| Year 1925    | 75,000,000.00   | 2,120,906.56   |
| **Total**    | $ 190,000,000.00 | $ 5,379,433.91 |

| **Two-Year Program, Years 1926 and 1927** | | |
| Year 1926    | $ 75,000,000.00 | $ 2,124,151.00 |
| Year 1926    | Special         | 19,042.00      |
| Year 1927    | 75,000,000.00   | 2,130,168.00   |
| **Total**    | $ 150,000,000.00 | $ 4,273,361.00 |
Table 5.—Continued

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>To States</th>
<th>To Minnesota</th>
</tr>
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<tbody>
<tr>
<td><strong>Two-Year Program, Years 1928 and 1929</strong></td>
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<td></td>
</tr>
<tr>
<td>Year 1928</td>
<td>$75,000,000.00</td>
<td>$2,120,741.00</td>
</tr>
<tr>
<td>Year 1929</td>
<td>75,000,000.00</td>
<td>2,112,595.00</td>
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<tr>
<td>Total</td>
<td>$150,000,000.00</td>
<td>$4,233,336.00</td>
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</table>

| **Two-Year Program, Years 1930 and 1931** |                |                 |
| Year 1930     | $75,000,000.00 | $2,108,104.00   |
| Year 1931     | 75,000,000.00  | 2,102,986.00    |
| Total         | $150,000,000.00| $4,211,090.00   |

| **Two-Year Program, Years 1931 and 1932** |                |                 |
| Year 1931     | $50,000,000.00 | $1,401,991.00   |
| Year 1931     | Special        | 9,380.00        |
| Year 1932     | 125,000,000.00 | 3,497,306.00    |
| Year 1932--Emergency | 80,000,000.00 | 2,249,993.00$^\text{a}$ |
| Total         | $255,000,000.00| $7,158,670.00   |

| **One-Year Program, Year 1933** |                |                 |
| Year 1933     | $125,000,000.00| $3,426,272.00$^\text{b}$ |
| Year 1933--Emergency | 120,000,000.00 | 3,368,559.00$^\text{b}$ |
| Less refund---| Cr. 16,000,000.00 | Cr. 449,998.60$^\text{c}$ |
| 1932 Emergency |                |                 |
| Total         | $229,000,000.00| $6,344,832.40   |

| **N.R.A. Program, Year 1934** |                |                 |
| N.R. Highway   | ................ | $4,561,011.00   |
| N.R. Municipal | ................ | 3,719,143.00    |
| N.R. Secondary | ................ | 2,376,415.00    |
| Total         | $394,000,000.00| $10,656,569.00  |
Table 5.--Continued

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>To States</th>
<th>To Minnesota</th>
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<tbody>
<tr>
<td><strong>N.R.A. Program, Year 1935</strong></td>
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<tr>
<td>N.R. Highway</td>
<td></td>
<td>$ 2,533,732.38</td>
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<tr>
<td>N.R. Municipal</td>
<td></td>
<td>1,421,494.30</td>
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<td>N.R. Secondary</td>
<td></td>
<td>1,470,324.32</td>
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<tr>
<td><strong>Total</strong></td>
<td>$ 200,000,000.00</td>
<td>$ 5,425,551.00</td>
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<td><strong>N.R. Work Relief, Year 1935</strong></td>
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<tr>
<td>N.R.W.R.</td>
<td>No set figure</td>
<td>$ 900,000.00</td>
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<td><strong>Two-Year Program, Years 1936 and 1937</strong></td>
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<td></td>
</tr>
<tr>
<td>(To be matched with State Funds)</td>
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<td></td>
</tr>
<tr>
<td>Year 1936</td>
<td>$ 125,000,000.00</td>
<td>$ 3,423,306.00</td>
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<tr>
<td>Year 1937</td>
<td>125,000,000.00</td>
<td>3,426,001.00</td>
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<tr>
<td><strong>Total</strong></td>
<td>$ 250,000,000.00</td>
<td>$ 6,849,307.00</td>
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<td><strong>W.P. Program, Year 1936</strong></td>
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<tr>
<td>W.P. Highway</td>
<td>$ 200,000,000.00</td>
<td>$ 5,277,145.00</td>
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<tr>
<td>W.P. Grade Crossing</td>
<td>200,000,000.00</td>
<td>5,395,441.00</td>
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<tr>
<td><strong>Total</strong></td>
<td>$ 400,000,000.00</td>
<td>$ 10,672,586.00</td>
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<td><strong>Two-Year Program, Years 1938 and 1939</strong></td>
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<td></td>
</tr>
<tr>
<td>(To be matched with State Funds)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1938</td>
<td>$ 25,000,000.00</td>
<td>$ 699,036.00</td>
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<tr>
<td>Year 1939</td>
<td>25,000,000.00</td>
<td>680,544.00</td>
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<td><strong>Total</strong></td>
<td>$ 50,000,000.00</td>
<td>$ 1,379,580.00</td>
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<td>(Note: Secondary or Feeder Roads)</td>
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<tr>
<td><strong>Two-Year Program, Years 1938 and 1939</strong></td>
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<td></td>
</tr>
<tr>
<td>(To be matched with State Funds)</td>
<td></td>
<td></td>
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<tr>
<td>Year 1938</td>
<td>$ 125,000,000.00</td>
<td>$ 3,496,178.00</td>
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<td>Year 1939</td>
<td>125,000,000.00</td>
<td>3,402,720.00</td>
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<td><strong>Total</strong></td>
<td>$ 250,000,000.00</td>
<td>$ 6,897,898.00</td>
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Table 5.--Continued

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>To States</th>
<th>To Minnesota</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F.A. Grade Crossing Program,</strong>&lt;br&gt;Years 1938 and 1939</td>
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<td></td>
</tr>
<tr>
<td>Year 1938</td>
<td>$50,000,000.00</td>
<td>$1,342,809.00</td>
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<td>Year 1939</td>
<td>50,000,000.00</td>
<td>1,313,891.00</td>
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<td>Total</td>
<td>$100,000,000.00</td>
<td>$2,656,700.00</td>
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<td><strong>Two-Year Program, Years 1940 and 1941</strong>&lt;br&gt;(To be matched with State Funds)</td>
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<tr>
<td>Year 1940</td>
<td>$15,000,000.00</td>
<td>$405,625.00</td>
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<tr>
<td>Year 1941</td>
<td>15,000,000.00</td>
<td>404,538.00</td>
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<td>Total</td>
<td>$30,000,000.00</td>
<td>$810,163.00</td>
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<td>(Note: Secondary or Feeder Roads)</td>
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<td><strong>Two-Year Program, Years 1940 and 1941</strong>&lt;br&gt;(To be matched with State Funds)</td>
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<tr>
<td>Year 1940</td>
<td>$100,000,000.00</td>
<td>$2,704,164.00</td>
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<tr>
<td>Year 1941</td>
<td>115,000,000.00</td>
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<td>Total</td>
<td>$215,000,000.00</td>
<td>$5,805,618.00</td>
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<td><strong>F.A. Grade Crossing Program,</strong>&lt;br&gt;Years 1940 and 1941</td>
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<tr>
<td>Year 1940</td>
<td>$20,000,000.00</td>
<td>$524,721.00</td>
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<td>Year 1941</td>
<td>30,000,000.00</td>
<td>783,436.00</td>
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<td>Total</td>
<td>$50,000,000.00</td>
<td>$1,308,157.00</td>
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<tr>
<td><strong>Reapportionment of Funds Withheld from States Pursuant to Section 12 of Act of June 18, 1934</strong></td>
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<tr>
<td>Regular Federal Aid (1937) --To be matched</td>
<td>$14,280.00</td>
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<td>Regular Federal Aid (1938)</td>
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<td>Secondary--To be matched</td>
<td>1,467.00</td>
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<tr>
<td>Grade Crossing</td>
<td>4,209.00</td>
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<tr>
<td>Total</td>
<td>$19,956.00</td>
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Table 5.--Continued

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<th>Appropriation</th>
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</thead>
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<tr>
<td><strong>One-Year Program, Year 1942</strong></td>
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<tr>
<td>Regular Federal Aid--</td>
<td>$100,000,000.00</td>
<td>$2,709,402.00</td>
</tr>
<tr>
<td>To be matched</td>
<td></td>
<td></td>
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<tr>
<td>Secondary--To be matched</td>
<td>17,500,000.00</td>
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<tr>
<td>Grade Crossing</td>
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<td>Total</td>
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<td><strong>One-Year Program, Year 1943</strong></td>
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<tr>
<td>Regular Federal Aid--</td>
<td>$100,000,000.00</td>
<td>$2,702,831.00</td>
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<tr>
<td>To be matched</td>
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<td></td>
</tr>
<tr>
<td>Secondary--To be matched</td>
<td>17,500,000.00</td>
<td>472,995.00</td>
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<td>Grade Crossing</td>
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<td>526,346.00</td>
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<td><strong>One-Year Program (Special)</strong></td>
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<tr>
<td>Strategic Highway Network</td>
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<tr>
<td>Advance Engineering Surveys</td>
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<td>270,283.00</td>
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<td>Total</td>
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<td>(Projects to be approved by President)</td>
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<td>Defense Act of 1941</td>
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<td>Grand Totals</td>
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Supplemental appropriation for emergency construction in accordance with Act of December 20, 1930, setting aside $80,000,000.00 for emergency work, which fund is to be returned to the Treasury by a reduction of Federal Aid available over a period of five years, 1933 to 1937, inclusive.

Supplemental appropriation for emergency construction in accordance with Act of July 21, 1932, setting aside $120,000,000.00 for emergency work, which fund is to be returned to the Treasury by a reduction of Federal Aid available over a period of ten years, such deduction to start upon the completion of the 1932 emergency refund.

Refund to Treasury on Emergency Construction Loan of December 30, 1930. (Note: Future refunds of emergency funds have now been cancelled. The above refunds stand but no further deductions of Regular Federal Aid will be made.)

Apportioned to State of Minnesota to date. Additional apportionment may be granted when new projects are added which meet with the approval of the President.
continuation of expanded roadway construction and (2) the economic depression and its effects on revenue and projects.

In February of 1931, Commissioner Babcock reported that construction needs were more necessary in 1931 than even in 1921.

Although we have been making steady progress in road building, the increased use of motor vehicles has created demands for improved highways more rapidly than these demands could be filled, and the amount of construction that would be required to make our highway system adequate to the traffic of today, is probably greater than the amount of construction that would have been necessary to make the roads of 1921 adequate to the traffic needs of that day.³

This is a familiar story of increased traffic needing more and better roadways. From 1921 to 1930, motor vehicle registration increased 129 percent from 332,652 to 750,000; truck registration increased four times, and trucks posed the problem of extra weight and the desire to operate year round. In 1929, the commissioner reported that 1,558 miles of 7,000 miles of trunk highway were either paved or gravel with bituminous treatment. This left nearly 5,500 miles of the trunk highway system still susceptible to spring break up and the hazards of wear on unpaved roads. Babcock recommended to the legislature that highway paving should be expanded to 500 miles per year for the next two years.

At this point, 247 miles were planned to be paved in 1931 and at that rate it would still take twenty-two years to complete the entire trunk highway system. Babcock hoped that an increased paving program of 500 miles per year would complete important cross-state routes to the Dakotas and Iowa. These routes would handle most long distance traffic through the state and save on maintenance costs of unpaved roads. These savings could be used for future construction. Along with his recommendations on construction needs, Babcock addressed the economic depression and its effect on the department.4

Babcock recommended that construction work should be started to aid the unemployed.

While the unemployment situation should not be made an excuse for doing any work which is not otherwise justified, a period of unemployment is an opportune time to do needed highway construction, as well as other necessary public works.5 Babcock believed that construction projects would help to alleviate the unemployment situation in two ways. First, construction projects would provide direct employment to the construction workers. Second, these projects would not only support workers who supplied the equipment and materials but the equipment and material industries as well. By the end of the 1931/1932 biennium, Babcock would

4 Ibid.
5 Ibid., 21.
be facing more challenges in developing the roadway system.\(^6\)

In December of 1932 Babcock reported that 75 percent of the original trunk highway system was up to the standards needed for present traffic and the expected traffic increases in the near future. This opened up the possibility for new routes to be added to the trunk highway system. He hoped, however, that the legislature would be cautious in adding new routes.

Attention is invited, however, to the provision in the same section of the Constitution, declaring 'that no such new routes shall be added until and unless the funds available for the construction improvement and maintenance of such additional routes shall be sufficient therefor, in addition to the construction, improvement, and maintenance of the several routes, hereinbefore specifically described.'\(^7\)

Babcock reported to the legislature that trunk highway revenue was limited. He estimated that without a federal aid grant, the department would be limited to a budget of $7,775,000 for new construction and related activities. He advised that it wouldn't be practical "to add any large number of new routes." After all, many routes in the original system had not yet been brought up to standard. Furthermore, possible new routes would be quite costly because of their unimproved condition. Also, he

\(^6\)Ibid.

recommended that routes be considered in the three largest cities of Minneapolis, St. Paul and Duluth, because the original trunk highway system led routes only to the limits of these cities. Babcock believed that it was time to extend the benefits of the trunk highway system to the urban residents who had been paying taxes in order to improve the quality of rural roads since 1921.\(^8\)

At the end of 1932 Governor Olson had the opportunity to appoint a new highway commissioner for a new term. Instead of retaining Babcock who had served since 1917, Olson appointed N. W. Elsberg who was more attuned to Olson's political and personal views.

Elsberg informed the legislature that Minnesota would have a difficult time obtaining federal highway aid.

The Minnesota Department of Highways will be unable in 1935 and 1936 to obtain Federal highways and allotments authorized by Congress. These allotments, as authorized by the Hayden-Cartwright Act, will amount to nearly $7,000,000 for this state in the next two years. This money will not be given to Minnesota unless it is matched dollar for dollar by State Funds.\(^9\)

Elsberg wanted to impress upon the legislature the importance of receiving the federal aid. The state was receiving less revenue due to the decrease in the vehicle registration tax and the increase in the length of the

\(^8\)Ibid., 30.

trunk highway systems, both set by the 1933 legislature. He also noted that Minnesotans pay federal taxes and will continue to pay whether or not the state provides matching funds to receive federal aid; the federal aid for 1935 and 1936 would total a little more than the amount that Minnesotans would spend on the federal gas tax during that period. This federal aid would serve to employ Minnesotans only if Minnesota qualified for it.10

By January of 1937, the legislature met the challenges that Elsberg presented late in 1934.

There will be $5,537,000 in various federal highway funds available for Minnesota in 1937 and a similar amount in 1938. On the basis of present income, the Highway Department cannot obtain this money for the state.11

Elsberg was asking the legislature to raise more funding to match the federal funds that would be available. He was cautious about the solution that the legislature gave in 1935 when it approved the sale of state bonds in order to raise matching funds for federal aid. He reminded the legislature that more than one-fourth of the Highway Department's income was used to pay for previous bonds and this borrowing policy would not be a good solution for raising funds in the future. Furthermore, forty-five

10 Ibid., 9.
11 Ibid., 7.
hundred miles of county roads were added to the trunk highway system in 1933 without providing for corresponding increases in the vehicle registration tax and the gasoline tax. No decisions had been made concerning the financing of the trunk highway system that was now 65 percent longer than the original system.\textsuperscript{12}

Beyond this general overview of the commissioner's major recommendations to the legislature during the 1930s, many other topics need to be presented in relation to the development of the Minnesota Highway Department in the decade of the 1930s: (1) roadway construction and finance, (2) roadway maintenance, (3) bridge construction and maintenance and (4) the emergence of the highway department as a department of increased complexity with respect to the many divisions and tasks assigned to it in the later 1930s as opposed to the small department at its inception in 1921.

Construction during the 1931-1932 biennium was financed by the usual registration tax and the gasoline tax along with two important supplementary forms of finance which were bonding and emergency federal aid.\textsuperscript{13}


\textsuperscript{13}Biennial Report, 1932, 7.
The bonds approved in 1931 aided this continued construction of the trunk highway system. Along with emergency federal aid, these sources of funds helped to offset the drop in funds collected by the vehicle registration tax and the gasoline tax. The Depression was on and the public was purchasing fewer new cars and buying less gasoline. The trunk highway system received 962 miles of new concrete pavement during the biennium. A strong emphasis was placed on employing as many laborers as possible. Emergency federal aid received in 1932 came with a stipulation that laborers work a maximum of thirty hours per week with contractors establishing two shifts to ensure the hiring of as many men as possible. Construction efforts emphasized the need to improve alignments, eliminate sharp turn hazards, and eliminate the most dangerous railroad grade crossing by the building of overpasses. The next biennium would present an even greater cutback in construction funds.\(^\text{14}\)

The amount of state funds available for trunk highway construction had dropped drastically.

This condition developed because of the reduction in the motor vehicle licenses fee by the 1933 legislature and arises from the fact that in order that there may be state funds available for trunk highway construction the amount of these funds must exceed the total of the funds necessary for interest and principal payments on

\(^{14}\)Ibid., 7-9.
bonds, maintenance, and general administration expense.\textsuperscript{15}

Federal funding came to the department's aid in accomplishing tasks in paving, grading, regrading, graveling and bridge construction. The National Industrial Recovery Act of June 1933 and the Hayden-Cartwright Act of June 1934 provided the department with $16,082,120 for construction purposes. Along with this federal aid came federal regulations that instructed how the money should be spent. The National Industrial Recovery Act stipulated that the funds must be spent on projects covering at least 75 percent of the counties in the state and that 50 percent was the maximum that could be spent outside the limits of municipalities. The Hayden-Cartwright Act stipulated that funds should be spent on projects covering at least 50 percent of the counties along with provisions that 50 percent was the maximum on projects on the federal aid system outside of municipalities, 25 percent was the minimum on federal aid projects reaching into municipalities and 25 percent was the minimum on secondary rural roads feeding into main trunk highways. The requirements attached to federal aid led to greater federal involvement.\textsuperscript{16}

\textsuperscript{15}Biennial Report, 1934, 9.

\textsuperscript{16}Ibid.
The state of Minnesota had agreed to abide with federal provisions of the Federal Aid Highway Act of 1916 through a legislative act in 1917. By the end of 1934, however, the amount of federal aid and the provisions regulating how the state would use this aid had increased substantially. The state was required to plan out projects conforming to federal mandates. This meant more detailed planning and increased administrative effort on the state level. On the federal level, another step toward an integrated national roadway system was being taken.

The construction during the 1935-1936 biennium was financed by a further continuation of federal aid during the great economic depression:

During 1935 and 1936, construction of the trunk highway system has again been limited almost entirely to projects which could be financed by federal grant funds or by state funds in conjunction with federal aid funds.17

Various federal aid funds were allotted to Minnesota to continue trunk highway construction. Grants which did not require matching funds were received from the National Industrial Recovery Acts of 1934 and 1935, and the Works Program. Federal aid funds in 1936 totaled $3,423,306 and with state matching funds resulted in $6,820,000 in construction contracts. Special allotments of aid were received as relief funds. The Minnesota Department of

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Highways developed fifty-six National Recovery Work Relief Projects. Three of these projects were of special note because of their size: (1) the Trunk Highway 100 Project or "Mpls. Belt Line," (2) the Highway 12 and 61 or "Hudson and Point Douglas Road" in St. Paul and (3) Highway 61 in Duluth. The Highway 100 Project was financed by 83 3/4 percent direct federal relief funds, 15 1/4 percent PWA funds, and only 1 percent state funds. These percentages illustrate the impact of federal programs and the need to finance projects with the purpose of relieving mass unemployment. 18

Maintenance of the trunk highway system was affected by the drop in the motor vehicle registration revenue during the early 1930s. The role of maintenance, however, continued to increase:

Proportionately maintenance is a constantly growing function of the State Department of Highways. This is due to several factors among which are: additional 4,574 miles of county roads to the state trunk system by legislative action, constantly growing volume of motor vehicle traffic causing constantly increasing wear of the roadways, greater public demand for wider roads and right of ways to provide safety under traveling conditions consistent with greater speeds. 19

The total length of the trunk highways system had increased by 65 percent. Efforts to maintain the newer roadways on the system were rather costly. Out of $8,909,000 spent on

18Ibid., 9, 10.
19Ibid., 33.
maintaining trunk highway surfaces during the 1935-1936 biennium, $2,500,000 was spent maintaining the newer portions of the system with weaker surfaces. Unless those surfaces were to be upgraded to service higher volumes of traffic, the costs were estimated to rise very rapidly.

The Maintenance Division was also challenged by the need to keep the trunk highway system open to traffic during the winter months. This became a $2,500,000 effort during the 1935-1936 biennium with the greatest costs arising from 6,000,000 feet of snow fence, over 400 pieces of motorized equipment and 20,000 cubic yards of sand. These winter costs were almost 25 percent of the total spent during the biennium on the surfaces maintenance of the trunk highway system. 20

The Maintenance Division was also involved in various refinements of the trunk highway system. The division was involved in a test of thirty-miles-per-hour speed zones in municipalities. New guard rails and warning signs and signals were an ongoing concern of the division. Safety was considered in the elimination of obstructions such as gasoline pumps that were considered too close to the roadway. 21

20 Ibid., 33, 34.
21 Ibid.
The Bridge Division also faced serious financial limitations during the early 1930s.

Due to the lack of State Construction Funds, the Bridge Division in January 1933 found it necessary to curtail design and drafting forces approximately one-third and to effect an even greater reduction in the field inspection personnel.\textsuperscript{22}

Funds from the National Industrial Relief Act made it possible to resume bridge activities on a large scale. The Bridge Division also reach out beyond the Trunk Highway System and made inspections of structures on county and state-aid roads. Various P.W.A. and C.W.A. projects were also inspected. The reception of federal funds for bridge projects meant that some procedures would change.\textsuperscript{23}

The reception of federal aid for bridge construction was made by the state in accordance with some federal regulations. First, contracts would have to be awarded by unit price rather than a lump sum. Second, N.I.R.A. projects required the state to follow federal guidelines in regard to hours and pay rates for laborers. Beyond these regulations, the Bureau of Public Roads advised the state to add more "substantial railings" on bridges and build sidewalks on bridges in or near municipalities. The elimination of dangerous rail grade crossings by overpass

\textsuperscript{22}Biennial Report, 1934, 15.

\textsuperscript{23}Ibid.
construction was also a stated federal goal. Safety was a stated federal goal through various methods of construction and the state expressed its concern over highway safety in the operation of two departmental divisions.24

The Highway Patrol, founded in 1929 as part of the Minnesota Highway Department, continued its efforts to make highways safe for motorists.

The policy of the patrol has not been to cause a large number of arrests, but rather to correct improper driving methods by warnings this system applied as an educational program seems to bring favorable results, and only when a courteous warning is ignored or in flagrant cases is an arrest made.25

The purpose of the Highway Patrol was to serve motorists and make driving conditions better for the general public. Figures attest to the patrol's desire to educate the public. During the 1933-1934 biennium, the patrol gave 209,000 warnings, 125 tags for illegal equipment or registration and made only 3,881 arrests. The patrol actually brought money to the state in the way of fines for traffic violations; $70,000 was paid by those found to have improper licenses and $293,000 was paid by those who had not paid the motor vehicle registration tax. Many vehicles returned to the roadways which had not been driven during the earlier part of the Depression. Many of

24 Ibid., 21.
25 Ibid., 21, 22.
these vehicles were deficient in lighting, brakes or other safety features. Many motorists were unable to keep their vehicles up to top operating specifications because of their economic plight. It was the job of the patrol, however, to check vehicles without a recent test sticker and verify their safety. Those vehicles found unsafe were issued tags requiring needed repairs to be made within forty-eight hours. The patrol was in the process of expansion during the 1930s and with expansion came more duties. 26

The patrol was the chief enforcement agent of laws dealing with the weight of loads carried over specified roads. Compliance with weight restrictions saved the state from costly repairs to damaged road surfaces. The patrol also assisted in enforcing the law requiring drivers to be licensed on March 1, 1934. With a trunk highway system of over eleven thousand miles in the mid 1930s, patrolmen were required to patrol the main stretches of highway at least daily. It was departmental policy at this time that patrolmen "cruised" their areas at thirty-five miles per hour in cars and forty-five miles per hour on motorcycles to reach maximum efficiency. The Highway Patrol officers also supported and installed the school patrol system. The school patrol provided children

26 Ibid.
with the safe crossing of streets and highways when travelling to and from school. 27

With the dramatic increase in the number of motor vehicles on the road from the early 1920s to the early 1930s, some type of system was needed to regulate the operation of motor vehicles. Without some type of standard, roadway chaos quite likely would have resulted. Two legislative acts passed in 1933 provided the basis for standards in the operation of a motor vehicle. The Drivers License Law and the Financial Responsibility Act set the early standards for motor vehicle operation.

Minnesota was the thirtieth state in the Union to adopt a Drivers License Law, which law has been proved by experience over a period of years to be a greater deterrent to careless and negligent operation of motor vehicles on the public highways than any other safety measures. 28

The Driver License Law addressed the need to issue licenses and the need to revoke and suspend licenses was deemed necessary in response to violations of the law. The Financial Responsibility Act required that civil judgments against motor vehicle operators of more than one hundred dollars be satisfied within thirty days or face suspension.


The new Driver License Division required an expansion of office space beyond what the Highway Department already had licensed. Approximately twelve thousand square feet were required to house the workers and equipment required by the division. The division was expected to administer the driving records of all licensed drivers in Minnesota. A total of 930,957 licenses were issued in 1934 which made the tasks of the division quite sizeable. During the first year of operation there were 6,544 recorded convictions for traffic violations and 1,018 licenses were revoked or suspended. The division was financed by the fees that were collected at the time a driver applied for a license. Fees were twenty-five cents per driver and were the sole source of revenue for the Driver License Division in 1934. By 1935, however, a problem arose over the funding for the division. The fees collected were only applicable to the original license application because provisions for license renewals had not yet been signed into law. Therefore, with income only from new applicants, new residents, duplicate licenses and other who did not apply originally; the amount of fees dropped drastically to only $96,000 paid in 1935, as compared to over $664,000 paid in 1934. This caused a cutback in the number of persons employed by the Driver License Division. Federal aid from WPA temporary projects funding, however, aided the division in providing necessary record keeping
services. Beyond the increased safety considerations that were inherent in the Highway Patrol and the Driver License Division, the Minnesota Highway Department was entering into expansion in many more areas. 29

The 1930s was definitely a decade of federal relief aid for highway construction, yet, the decade of the 1930s was also the decade when the Minnesota Highway Department expanded into a complex department concerned with many aspects of development set around the goal of road building and maintenance. With an expanded roadway system of over eleven thousand miles and a budget of millions of dollars, the Minnesota Highway Department needed coordinated systems of planning and administration in order to give coherence to the entire efforts of the department.

Planning was a needed feature of the new expanded department of the 1930s.

A state-wide highway planning survey, conducted cooperatively by the United States Bureau of Public Roads and the Minnesota Highway Department, embraces operations and studies under four major phases, classified as Traffic Survey, Road Inventory, Financial Survey, and Road Life Studies. The Financial Survey is divided into three studies known as Fiscal Studies, Road Use and Motor Vehicle Allocation. 30

The Traffic Survey was concerned with the amount of motor vehicle traffic on a given roadway. The state was divided

29 Ibid., 29.
30 Biennial Report, 1937, 47.
into six "Loadometer Districts" which were further divided into two key districts per Loadometer District. There were eighteen Loadometer Stations within each Loadometer District. Traffic counts were made at each 108 Loadometer Station and 216 key stations. Fourteen eight-hour counts were made at each station between 6:00 a.m. and 2:00 p.m. or 2:00 p.m. and 10:00 p.m. Four counts were made at each station between 10:00 p.m. and 6:00 a.m. The amount of traffic was measured, the type of vehicle classified, trucks and buses were weighed, the types of materials carried by trucks were noted and the beginning point and ending point of motor vehicle trips were studied.  

The Road Inventory activities were carried out by eight supervisors and forty parties of two men each. These forty parties were to inventory all highways in the state which were located outside of municipal limits. The information that was sought included location of the highway, type of highway system mileage, type of surface, width of the highway, condition of the highway, drainage, structures near the highway, railroad grade crossings, curvature of the highway and excessive grades.

Under the Financial Survey, the highway revenue and spending of county and municipal governments in the state

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31 Ibid., 48.
32 Ibid.
was traced and recorded. The Road Use Survey attempted to trace the users of various roads and the purpose for their use. By 1939 over thirteen thousand passenger car operators and seven thousand truck operators were inter-viewed about how they used the roads for business and personal needs. 33

The emergence of the Legal Division of the Highway Department was another attribute of the growing complexity of this organization:

Conducts all the legal proceedings and handles all legal matters for the Commissioner of Highways and the department heads, including the Driver License Division and the State Highway Patrol.34

The Division worked within the Department on land acquisition cases in regard to condemnation proceedings and right-of-way hearings. Bond issues to obtain highway funding were overseen by this division. Workmen's Compensation cases resulting from injuries or fatalities on highway projects were handled by the Division.35

The Division of Purchases and Stores brought centralized authority in the matters of buying and distributing supplies and equipment.

33 Ibid., 49.
34 Ibid., 51.
35 Ibid.
The Highway Department Division of Purchases annual purchases are handled, amounting to several million dollars. It is too large and important a matter to be entrusted to an untrained and inexperienced personnel.36

This new system of centralized purchasing allowed the department to update the methods used in obtaining needed supplies and equipment. Records were kept in a centralized file in order to make information available and to provide useful guidelines for standard prices of supplies and equipment. This was considered an improvement over the old method of allowing the many different groups that were involved in buying which often resulted in duplication of effort as well as overlooking the best products and prices by not thoroughly investigating competitive products and equipment. Efficiency was the central motivating factor in the emergence of the increasingly complex department.37

Through the aid of the federal government, the department drafted a collection of county wall maps and plat maps of the 744 incorporated cities and villages of Minnesota (except St. Paul and Minneapolis).

36Ibid., 43, 44.
37Ibid.
The United States is the most adequately mapped of the progressive countries in the world, with only about 48 percent of the total area covered with any semblance of a countout or topographic map.\(^3\)

Mapping had been low on the priority scale to this point but improvements were being made on the state level. The county maps included the location of state-aid roads, county-aid roads and town roads. Beyond the basic road features, the location of important political, economic and geographic points of interest were mapped such as: county, city and village boundaries; ditches; high tension lines; rural stores and filling stations; airports; creameries; quarries; gravel pits; rivers; lakes; railroads and interstate bridges. The county maps were drawn to a scale of one inch equals four thousand feet. Municipal plat maps included the points of major interest in a municipality such as: railroads, depots, bridges, banks, hotels, libraries, post offices, town halls, schools, airports, radio stations and county or state institutions. The municipal plat maps were drawn to a scale of one inch equals two hundred feet. These maps were financed for the state primarily by federal funding. Out of a total of $330,046 spent on county maps and plat maps, from 1934 to 1938, 95 percent was federal funding.

The state received a bargain in terms of the overall product. 39

The Minnesota Highway Department, as a rapidly growing agency of state government, was not immune to public scrutiny and criticism. During 1933 the department was involved in a taxpayer lawsuit and separate investigations by both houses of the state legislature. In March and April of 1933 the Highway Department was involved in charges related to contract collusion, unfair limitations on open bidding for state projects, and unfair favoritism in steel purchasing. Asa Briggs, an attorney from St. Paul, brought a taxpayers' suit to end $1,800,000 in contracts made with the Minnesota Highway Department. Briggs claimed that these contracts were based on collusion by the contractors and fraud.

The Chief Engineer of the Highway Department, J. T. Ellison, disputed Briggs' charges:

We are of course content that the statements made by Mr. Briggs are absolutely untrue, and no evidence of collusion or combination was present in November 1931. 40

Ellison denied wrongdoing on the part of the highway department or the governor. Ellison hinted that the Senate committee was more interested in causing political

39 Ibid., 37.

problems for Governor Olson than it was in obtaining facts. Furthermore, Ellison mentioned that two variables were most important when considering the cost of paving roads: (1) the cost of the sand and (2) the cost of hauling the proportioned sand and gravel to the concrete mixer. Most other costs were the same from job to job. Therefore, Ellison maintained that the Senate investigator, Green, was wrong in attempting to prove that a construction job near Red Wing on Trunk Highway 3 should have cost more than a construction job on Trunk Highway 20 near Rochester. Green attempted to prove that the contractor on the Trunk Highway 20 job was receiving excess profits. Ellison demonstrated that actually the Trunk Highway 3 job cost less because there was no hauling cost due to using materials from a pit near Red Wing.41

The Supreme Court of Minnesota sent the taxpayers' suit against the Highway Department back to Ramsey County District Court for trial.

Governor Olson, in an unprecedented attack by a Chief Executive on an opinion of the Minnesota Supreme Court, publicly rebuked a justice of that court Tuesday night before the opening hearing of the Minnesota House of Representatives highway investigational committee and charged that the justice had written politics into a judicial opinion.42

41 Ibid.

Olson stated that a Justice Loring's words "highway bidding restrictions against non-Minnesota contractors was an invitation for fraud," were inappropriate in the judicial sense. Olson, making references to his personal qualifications as a lawyer, argued that Judge Loring had crossed over the line between judicial and political realms. Olson continued on the implications of Loring's statement, "Nor can the court passing on something that is not properly before it determine the wisdom or lack of wisdom of the governor in issuing an order." 43 Olson maintained that Commissioner Babcock had placed restrictions on contractors in 1929 and 1930. These restrictions had prohibited contractors from paving contracts of more than ten miles if the given contractor had not previously completed more than ten miles of paving. Olson maintained that he had continued existing practices. Furthermore, he contended that neighboring states had similar restrictions in order to protect resident contractors.

Charges and counter charges continued through March and early April of 1933. William C. Green, counsel for the Senate committee, accused chief engineer J. T. Ellison of incompetence in failing to prepare estimates for

43 Ibid.
construction projects let in 1931. Commissioner Elsberg defended Ellison by stating that Green's statements were self-serving and not factual. 44

Contractor Fred McKenzie had testified to the Senate committee that he had been forced to purchase gravel from a brother-in-law of a highway department official. Members of the House committee challenged McKenzie's testimony by asserting that he was trying to cover up his own poor judgment in his attempt to use his own substandard gravel. 45

Former Commissioner Babcock testified before both investigation committees. Before the House committee, Babcock testified that the department's contract with Paper Calmenson Co. was based on the lowest price and not on the rumors that a Paper Calmenson official was a large contributor to Governor Olson's campaign fund. He testified, furthermore, that stories about construction contractors being in collusion were based on rumors and not on evidence. 46

The findings of the House and Senate committees agreed on only two of eight major points. First, Babcock and all highway department officials were cleared of any wrongdoing. Second, the highway department should improve on the method of making project estimates in order to insure fair bidding.47

Overall the House committee approved of the steel contracts, Governor Olson's pre-qualification directive for contractors, Olson's wage and labor code, bulk purchases of cement and materials to save money, and strong controls over sand and gravel to be used on construction projects.48

In turn, the Senate committee cleared former commissioner Babcock and deputy commissioner J. T. Ellison from having any connection with an alleged collusion of contractors while criticizing the department for poor methods of making estimates for road projects. Furthermore, the committee criticized: (1) the $300,000 steel contract to Paper Calmenson, (2) the high cost of 1931 highway contracts, (3) Governor Olson's labor code, (4) Governor Olson's direct orders for cement, and (5) restrictions of competition by obtaining sand and

47 "Two Committees Disagree On All But Two Points, But Absolve State Officials," *St. Paul Pioneer Press* (16 April 1933): 1, 2.

gravel for highway projects. The Senate committee was highly critical of Governor Olson while the House committee supported him. 49

On 22 April 1939 the state civil service system was enacted into law. This law had a strong effect on all state employees in an attempt to make state employment a matter of merit rather than potential affiliation. Early matters of importance included: (1) a classification and pay plan, (2) employee status, and (3) testing methods. By April of 1940, 635 work classifications were defined for almost 11,000 employee positions. Many employees were granted permanent status in respect to five years of state service or veteran status. Roughly 4,500 state employees were required to take qualifying tests in 1940. 50

The activities of the early 1940s for the Minnesota Highway Department were focused on the national war effort. Congress passed a Defense Highways Act on November 1941 that stressed cooperation between both state and federal governments for a strategic network of roads necessary for moving men and supply in preparing for war. Emergency construction projects coupled with twenty years of peacetime highway construction made it possible to transport raw materials, munitions and workers efficiently. As

49 Ibid.

50 Minnesota Highways (April 1954).
of 30 June 1944, 501 highway department employees were in military service while nearly 1,200 more had taken leaves of absence or resigned in order to work in essential war industries. 51

While the war was the primary concern of the 1940s, important plans were made at the federal level from 1938 to 1944 that would dramatically increase the activities of all state highway departments after the war. It was during this span of six years that two very important highway studies were completed and the Federal Aid Highway Act of 1944 was passed.

Mr. Thomas H. MacDonald, Chief of the Bureau of Public Roads, gave the House Committee on Roads a detailed account of "the highway problem as it was developing in the United States in February of 1938." 52 MacDonald pointed out some of the major trends affecting motor vehicles and roadways in the years preceding 1938.

MacDonald noted the upward trend in motor-vehicle registration and gasoline consumption. In 1899 only 3,000 motor vehicles were registered in the United States. By 1916 the total rose to 3.5 million and in 1936 grew to

51 Biennial Report from July 1, 1942 to June 30, 1944 (St. Paul, 1944): 9, 10, 11.

52 U.S. Congress, House, Committee on Roads, Federal Aid Highway Act, Hearing Before the House Committee on Roads on HR 3388, 71st Cong., 2nd Sess., 1938, 295.
28 million motor vehicles. Along with the growth in the number of vehicles, the amount of fuel consumption rose steadily. In 1925 an average motor vehicle consumed 430 gallons of fuel per year compared to 638 gallons per vehicle in 1936.53

MacDonald also noted the growth in the total miles of highway under the control of state highway departments. The total number of miles increased from 275,000 in 1925 to over 533,000 miles in 1936. During this period of highway systems growth relative road user taxes actually declined from $1,010 per mile of road in 1925 to $1,740 in 1930 and down to $810 per mile in 1936. One of the problems for state highway departments was the increase in total mileage that each state was responsible for, along with the fact that nationally by 1936 over $169 million of state highway user taxes were being used for non-highway projects. Mr. MacDonald told the committee:

Particularly through the years of the Depression a constantly increasing percentage of diversion to other than highway purposes of the road user income. While there has been a large increase in the total revenues derived from the taxation of the highway user, the distribution has been so changed as to place in the hands of the state highway departments a less percentage and a less actual amount of these taxes than in 1929-30.54

53 Ibid., 298.
54 Ibid., 310.
This practice of diversion of road user tax funds led to problems for state highway departments. With fewer funds available state highway departments found it quite difficult to maintain and further develop their state road systems.

Beyond the increasing number of vehicles and diversion of state highway user taxes, MacDonald pointed out another consideration for future road building design in regard to traffic speed.

Higher road speed requires longer sight distance for safe operation. This requires flatter horizontal curves and long vertical curves at the apex of grades. Many roads with reasonably adequate sight distance for slow-speed traffic are hazardous for faster traffic.\(^5^5\)

With faster travelling speeds and greater traffic densities, divided highways were becoming generally accepted as a type of road to move a greater volume of traffic more safely at higher speeds. In cases where traffic volume did not warrant divided highways, the width of lanes were recommended to be eleven or twelve feet wide rather than the nine-foot wide lanes of the 1910-1920 era.

Another voice heard by the House Committee on Roads in 1938 was that of Mr. Brooks of the American Road Builders Association and the Missouri Roadway Commission. He emphasized the connection between highway construction and employment.

\(^{55}\text{Ibid.}, 309.\)
Only when the amount of primary and secondary indirect employment is added to the amount of direct employment resulting from the construction of highway projects, can the benefits of an adequate highway program upon the unemployment problem be properly evaluated. 

Brooks estimated that nearly four million depended on highway work directly or indirectly for employment. Many factors had to be considered in overall highway projects. Materials such as crushed stone, sand, gravel, cement and asphalt had to be available in vast quantities. This meant shipping these materials by railway which accounted for 15 percent of the annual rail tonnage moved in 1936. For example, a mile of asphalt road required fifty thousand gallons of asphalt cement, or six tank carloads; twenty-three hundred tons of crushed stone, or forty-six carloads and one thousand tons of sand or twenty carloads. These significant labor and materials requirements emphasized the importance of highway programs in providing needed employment.

Brooks' figures indicated that 7.8 million to 10.8 million persons were unemployed in early 1937. He stated that the elimination of federal aid to highway funds would cause 244,000 men to become unemployed. Further multiplied by three, he argued that actually 733,098 people, including family members, would be affected by highway fund cutbacks. These persons would be added to the many

56 Ibid., 63.
millions of unemployed who must already depend upon a meager relief check to survive. 57

Brooks noted that the Hayden-Cartwright Act of 1936 had already approved two hundred million dollars for each of the years 1938 and 1939. Holding back any of these funds would force many states into a bind.

Most of the state legislatures met early in 1937 and enacted the legislation necessary to finance and carry out this work. The states therefore have assumed the responsibility of carrying out this program as promised by the Federal Highway legislation of 1936. 58

If the federal government were to cut down on the promised amount of funding to the states, it would cause many problems for state highway departments. The state highway departments having bolstered up their work crews and planning new projects would be faced with layoffs of workers, fewer contracts and less money spent on materials and equipment. Funding cutbacks such as this would delay needed work in the state roadway systems as well as hinder efforts to curb unemployment.

The report Toll Roads and Free Roads was born in the Federal Aid Highway Act of 1938. Section 13 instructs the Chief of the Bureau of Public Roads to report,

57 Ibid., 65.

58 Ibid.
with respect to the feasibility of building, and cost of super highways not exceeding three in number running in a general direction from the system to the western portion of the United States and not exceeding three in number, running in a general direction from the northern to the southern portion of the United States, including the feasibility of a toll system on such roads. 59

The study was divided into two parts: (1) the feasibility of a system of transcontinental toll roads and (2) a master plan for free highway development.

The proposed toll road system was to include 14,336 miles of roadway throughout the United States. This study considered factors such as: (1) geographic distribution in order to serve the highest possible population, (2) popular travel routes, (3) important termini, (4) future traffic increases and (5) overall costs. 60

The study of the proposed toll road system concluded with a consideration of the cost of a toll road system. Estimates were made in respect to the costs involved with the debt service, maintenance, operation and total costs in the year 1960 along with the total costs for the period 1945 to 1960. A total cost of $2,944,861,936 was estimated for the period from 1945-1960. Estimates were also made in respect to the revenue to be raised by the toll


60 Ibid., 16.
roads from 1945 to 1960. The estimate of revenue raised was 39.2 percent of cost. The conclusion of the report was that a national toll road system was not feasible.\footnote{Ibid., 11.}

The second part of the report Toll Roads and Free Roads made a case for the building of a national system of free highways. One consideration would have to be the heavy increase in traffic near major cities on the system and how to deal with these traffic swells. The idea of belt line and bypass highways would enable movement of long-distance traffic which was going beyond the immediate city. The need to acquire adequate right-of-way for roadways also continued to be a problem in 1938.\footnote{Ibid., 78, 79, 80, 84, 85.}

This study made some final recommendations for the future in regard to highway improvement.

The adequate acquisition of land right of way in order to insure the free flow of traffic, cooperation with the states and the War Department in a study leading to the establishment of a system of reasonably direct interregional highways, continued cooperation with the states in improvement of the Federal Aid highway system, and continue the program of secondary and feeder road construction.\footnote{Ibid., 121, 122.}

Two years after the Toll Roads and Free Roads study, the United States entered World War II. "Basic problems--jammed highways and urban decay--continued during the war
years." Huge numbers of men and women were enlisted into the military and war-related jobs. Without the money or manpower for repairs for the roadways, problems became increasingly worse. The bleak expectation of post-war unemployment also motivated the President to plan for the future.

On April 14, 1941, the Interregional Highway Committee was appointed by President Roosevelt. This committee was given the task of planning post-war road construction. The committee made a final report in January of 1944. Their plans included "traffic service--upgrading the highway system to handle more vehicles at greater speed and safety--came first." The main concern of the committee was to build a highway system that could handle the increasing number of vehicles in the United States and allow these vehicles to move safely at high speeds.

The new system would serve all cities greater than 300,000 population. The system would only cross 34.3 percent of the total counties in the United States but these counties included 45.2 percent of the total rural population in the United States. The counties crossed by

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64 Mark Rose, *Interstate Expressway Highway Politics* (Lawrence, 1979), 15.
65 Ibid., 20.
the system contained a much greater density of registered vehicles than areas not crossed by the system. 66

Topographic features were taken into consideration. One difference in the 1944 study from the 1939 Toll Roads and Free Roads study was in the area of route locations.

To a considerable extent the proper development of the recommended system will result in the location of the recommended routes, locally on new lines conforming to no existing highway. 67

The new policy would be to develop new routes rather than to modify old routes. It was decided that it would be less costly to acquire new right of way rather than making many changes in width and right of way of existing roads. These new routes would be an integral part of the growth patterns of major cities. The major cities were beginning to feel the effects of outward migration. As the study reports,

So long, however, as the central area of the cities are poor places to live and rear children, people will continue to move to the outskirts. Undoubtedly a factor that has facilitated this movement has been the improvement of highways. 68

It was the intent of the authors of the report to promote a desirable urban development. With this intended


67 Ibid., 39.

68 Ibid., 54.
goal, the report sets down a series of principles in respect to selecting routes in the cities. First, there should be a connection with city approach routes. Officials of state highway departments, along with officials of the given cities, should determine the routes. Making the interregional routes part of the overall street plan of a given area was the intended goal.

Second, "the routes were to penetrate the cities themselves." Most trips either started or ended in the city. It was demonstrated that nearly 50 percent of approaching traffic entered towns of twenty-five hundred or less while 95.8 percent of approaching traffic entered cities between 500,000 to one million residents.

Third,

locating internally through wedges of undeveloped land. Whatever their cause, existing wedges of vacant land may offer the best possible locations for city-entering routes of the interregional system. These wedges of land had stayed undeveloped. They were usually located between ribbons of development along

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69 Ibid., 55.
70 Ibid., 56.
71 Ibid.
72 Ibid., 58-61.
73 Ibid., 62.
previously upgraded roadways that spawned extended growth outside of the original bounds of the city.

Fourth, the interregional routes were to include "circumferential and distribution routes." There were to be routes that would carry traffic away from the central business area of the city. This traffic could be intra-city traffic that has an origin and destination outside of the central business district or traffic that needs to bypass the city completely.\textsuperscript{74}

Fifth, the interregional roads were to serve "traffic generating loci and terminals."\textsuperscript{75} Locations such as railway terminals, airports, docks and wharves produce a large amount of motor vehicle traffic. In locating these interregional routes in cities, careful planning should be done in association with local groups in order to provide express service to important areas of the city--the business center of the city, main industrial areas, principal residential sections, new housing developments, city parks, stadiums, trucking terminals, airports, bus depots and train stations. All these areas were to be considered in regard to the future layout of the city.\textsuperscript{76}

\textsuperscript{74} Ibid., 64, 65.
\textsuperscript{75} Ibid., 65.
\textsuperscript{76} Ibid., 65, 66.
Sixth,

At cities especially, it is important that the location of interregional routes be so chosen as to permit and encourage a desirable coordination of highway transportation with rail, water and air transportation.\textsuperscript{77}

The study group encouraged development of the inter-regional routes to be done in relation to developments in rail, air and water transportation. Common routes for rail and highways, combined rail and highway tunnels and locations of each type of transportation were needed in order to conveniently serve each other.

Seventh,

the location of interregional routes in cities should be considered simultaneously with the projected location of new housing developments, city centers, parks, greenbelts and other contemplated major changes.\textsuperscript{78}

Major projects such as these require large tracts of land and it would be very wise to avoid any potential conflict considering the costs involved in purchasing the land as well as the planning of projects.

Eighth, "in the operation of motor vehicles we are conscious today as never before of the rubber and gasoline costs of stopping and starting."\textsuperscript{79} Studies had shown the cost, including tire wear, of frequent stops. Stop lights

\textsuperscript{77} Ibid., 66.
\textsuperscript{78} Ibid., 67.
\textsuperscript{79} Ibid.
hinder traffic movement, cut traffic capacity in half of the capacity on a roadway without intersections, typical city accidents at intersections could be reduced, grade separations such as bridges could alleviate the intersection problem.

The war effort was the focal point of the early 1940s. However, what would happen after the war?

And certainly there is little reason for complacency in the face of Department of Labor studies which suggest that probably not less than 13,000,000 will be in need of jobs or some means of support after the fighting stops.\(^80\)

It was estimated by government and business experts that five million jobs would have to be created in each of the two years following the war. Public works projects were considered the answer by many experts. The United States had just reached full employment with the coming of World War II, so what would happen to soldiers and war industry workers after the war? There was a need to provide post-war employment and avoid the economic suffering of the 1930s. The roadways might offer the opportunity for a public works program.

What was the condition of the roadway system at that time? What changes were needed?

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Measured against today's automobiles the few million in existence when we began resurfacing our old stagecoach and horse-and-buggy roads on a vast scale in 1921, were relatively primitive vehicles.\textsuperscript{81}

The original system of roadways was built by planning and technology that was obsolete by the 1940s. It was time to take into account the needs of the automobile with total miles traveled reaching five hundred billion miles a year and rising. New planning and construction would be essential.

Through 1944, it was estimated that the federal government had invested more than seven billion dollars in road construction. Yet, there was contemporary criticism for the road system:

After such fabulous spending and careful engineering, what then, is the matter with our roads? For most of their length they are too narrow, too crooked and run too much uphill and down dale. Furthermore, only in the rarest instances are cities joined by routes which represent the shortest distance between two points.\textsuperscript{82}

The existing roadway system was not built at a standard level to provide optimum mobility for growing numbers of vehicles, economic development and new advances in technology. It was the result of an old non-motorized mode of travel interwoven with the beginning of motorized

\textsuperscript{81} Ibid., 17.

\textsuperscript{82} Ibid.
transportation. With the end of the war becoming more certain, the focus for the future was internal needs.

During the war years, hopes were running high that the postwar era would bring about a transformation of the highway system in America.

Between 1941 and 1944, a rich outpouring of social thought and criticism and traditional application of the commercial spirit ran through the minds of men and women making ready for the postwar scene.\textsuperscript{83}

By early 1943, leaders of AASHO presented a highway construction bill to the chairmen of the Senate and House roads committees. Farm road supporters, northeast road builders and transportation industry officials expressed their own interests above and beyond the original AASHO bill. Furthermore, during 1944 the House and the Senate modified the original bill as well.\textsuperscript{84}

The Federal Aid Highway Act of 1944 was signed into law on December 20, 1944. It provided funds for four federal roadway systems: (1) the primary or trunk, (2) the farm-to-market, (3) the urban and (4) the interstate. This was a federal commitment to the future development of the roadways of America. "But authors of the 1944 act promised fast-moving traffic, jobs and prosperity--not

\textsuperscript{83} Rose, Interstate, 22.
\textsuperscript{84} Ibid., 23, 24, 25.
more. The original enthusiasm involved with funding the roadways of the future overlooked the problems involved with roadway construction. The report of the Interregional Highway Committee was presented to Congress early in 1944. Highway policy makers tended to favor immediate gratification in terms of moving vehicles down the roadway. The in-depth planning for urban areas and land use contained in the report of the Interregional Highway Committee was largely overlooked. This shortsightedness continued during the years just following the war. 

85 Ibid., 27.
86 Ibid., 26, 27, 28.
CHAPTER IV

POST-WAR ERA: 1946-1956

The era immediately following World War II was a period of great development in the realms of highway construction and planning on both the federal and state levels. Following the Federal Aid Highways Act of 1944, this period ushered in the prerequisite for the largest road construction program in history.

Winston Riddick of Columbia University identified major interest groups and the part they have played in federal road policy in the Bureau of Public Roads (BPR):

The continuing and transient interest groups may be divided into five major categories, which are: highway users, highway builders and material supplies, organizations of government officials, miscellaneous transportation groups, and miscellaneous interest groups.¹

Highway users were represented by the American Trucking Association, the National Highway Users Conference, and the American Automobile Association. The American Road Builders Association (ARBA) and the Associated General Contractors of America (ABC) represented the interests of

builders and suppliers. The American Association of State Highway Officials (AASHO) represented the strongest group of government officials. Miscellaneous transportation groups rallied together in Project Adequate Roads (PAR) in their common desire for the building of the Interstate Highway System. Miscellaneous interest groups were mostly organizations such as the Chamber of Commerce of the United States and the National Association of Manufacturers. Primarily, these groups were concerned with short-term special interests. A few groups stood out above the others in terms of importance.\(^2\)

For the purposes of federal road policy, three groups stood out:

A triumvirate dominates the interest group constituency and it consists of the Bureau, AASHO, and the AGC. The Bureau may also be classified as a clientele agency whose major clientele are other governmental units: state highway departments and other federal agencies.\(^3\)

The Bureau of Public Roads was seen by the other two groups as a partner in most road policy issues. ASSHO represented the state highway departments and developed a mutually agreeable relationship with the Bureau of Public Roads.

\(^2\)Ibid., 254, 255, 256.

\(^3\)Ibid., 258.
AASHO has a long history of participation in federal road issues:

Formed in 1914 and composed of the Bureau of Public Roads and all state highway departments, AASHO has been very active in every major policy question affecting the Bureau of Public Roads. AASHO is the only interest group in which the Bureau has official membership. Although the Bureau pays membership dues for its personnel, it usually abstains from voting on AASHO resolutions because, when adopted, they become recommendations to the Bureau. 4

AASHO was almost more of a partner of the Bureau's than an advisor. AASHO had been given a chance to review all major federal highway legislation since 1916, it had supported raising federal spending on highways, it had worked with the Bureau on construction standards and design specifications and was given a definite place in highway policy in the Federal Highway Act of 1956.

Many different groups had parochial interest involved with the type of roadway system which each group favored, yet between 1945 and 1950, truckers, farm group leaders, and everyone else with a stake in highway transportation competed with one another for federal road funds. 5

Farmers supported more aid to rural farm to market roads, while truckers supported gas tax revenue for roads rather than other social needs. Each group supported roads that served the group's immediate area. One movement was

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4 Ibid., 278.

5 Mark Rose, Interstate Expressway Highway Politics (Lawrence, 1979), 15.
founded in hopes of uniting various roadway interest groups. Project Adequate Roads (PAR) was a coalition of state officials, truckers, and motorists.

Ultimately, PAR itself was another political movement. Leaders of PAR recognized that revising state and federal road legislation would prove simpler if members of their own industry united around common goals.  

An overwhelming goal of most members of PAR was to give all roadways sufficiency ratings. These ratings were the result of classifying the condition of a given roadway and the amount of traffic using the given roadway. As it turned out, the sufficiency ratings became subjective in order to promote funding for crowded major roadways whether or not they were in good physical repair. Poor rural roads were classified as good if they were able to handle the lower traffic volumes required of them. The members of PAR were more concerned about major trunk highways and the future highway system.

Within the continued funding of the 1944 Highway Act up for renewal in 1948, the Truman administration gave minimal support to the need for better roads because Truman had other priorities. "Truman's primary thrust in highway affairs was to limit construction in the interest of economic management." Two factors were holding back support for road building funds. First, with the war

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6 Ibid., 42.
recently completed there was scarcity of building materials and equipment. Second, the fear of inflation was directly tied to extensive increases in highway spending. The start of an international incident would prove to be another hindrance to increased highway spending.  

Various interest groups promoted the efforts to obtain more funding for the trunk highways, farm to market secondary highways, and the proposed interstate system. However, the Korean War had an effect on these efforts.

War cost, Chavez told colleagues, justified cuts. But what Truman had in mind for road finance, he reminded them, was what he wanted before Korea. Advocates of economy in and out of Congress, he added, also were pressing for reductions.  

Funding that was exclusively set for the interstate was cut from the budget. Other spending appropriations were set at the 1944 standards of 45 percent for trunk highways, 30 percent for secondary farm to market roads, and 25 percent for urban roads. The interest groups that held power over highway matters supported the 1950 wartime compromise with the knowledge that it was an expedient step considering the war effort but not a final solution to highway problems. The pressing need for urban

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7 Ibid., 35.
8 Ibid., 39.
redevelopment was often in competition with the need to solve the nation's highway problems.

During the late 1940s various persons in upper levels of the Public Roads Administration (PRA) wanted to take charge of urban redevelopment and the road system. Indeed this task was not an easy one politically, since highway engineers composed their principal constituency. But Commissioner of Public Roads MacDonald and his colleagues, were their proposals accepted, hoped to establish themselves as directors of urban resuscitation and American road building.9 The PRA proposed a system of urban roads that would circle the downtown area with other roads that would connect to a road circling the outside of the city. However, Truman cut spending for federal highways and favored the use of building materials for housing over roads. By late 1947, MacDonald of PRA and Philip Fleming, head of the Federal Works Agency, wanted to work toward a joint urban renewal and highway program. As things turned out, the programs were dealt with separately through the Housing Acts of 1949 and 1954 and through various road legislation including the Federal Aid Highway Act of 1952 and 1954.10 The Federal Aid Highway Acts were small steps in the development of the interstate system. The interstate system was scheduled to receive $25 million for each of

9Ibid., 60.

10Ibid., 60, 61, 62.
fiscal years 1954 and 1955 on a fifty-fifty basis with the states. The 1954 Federal Aid Highway Act made $175 million available for the interstate system for each of fiscal years 1956 and 1957 with a 60 percent federal and 40 percent state share. After these preliminary acts, the Clay Committee and congressional reaction led to another step in the development of the interstate system. 11

Eisenhower, as military leader of a conquered Germany, became familiar with German Autobahns.

It was with these experiences in his background—the lessons of the military uses for highways, the model of the Autobahns—that Eisenhower approached the building of the interstate system. 12

The Germans used the Autobahns in the spirit of military expansion (mechanized warfare), as a way to solve the unemployment situation, and to promote their ideas of German national character. Eisenhower was convinced that the interstate highway would bring positive change to the country. Socially it would bolster the spirit of the country. Economically, it would benefit road-related


12 Phil Patton, Open Road, a Celebration of the American Highway (New York, 1986), 85.
industries: automobile builders, construction contractors, plastic, rubber, and steel.  

The Clay Committee and the "National Defense" name on the interstate highways was an affirmation of Eisenhower's military background.

The Clay Committee represented the military way of solving 'the highway problem' that the postwar boom had made more acute: the way of the 'project', 'the operation', the 'task force'. You appointed a task force, worked out a plan of operations, and then launched the project.  

This military approach ran into the Washington political machine with its conflicting points of view between legislators and formal interest groups. Instead of a smooth military operation, it became part of the political pork barrel. The problems encountered were a continuation of a traditional American political controversy.  

How would the interstate highways be planned and paid for?

Lurking behind all the specific conflicts was a larger conflict, the traditional argument over federal power versus state power. It took the form of a conflict between 'pay as you go' and long-term bond finance—raising issues of national debt and centralized monetary power that went back to Alexander Hamilton  

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13 Ibid., 85, 87, 88.  
14 Ibid., 89.  
15 Ibid., 89, 90, 91.
and Thomas Jefferson and the controversy over the Bank of the United States.\textsuperscript{16}

What was passed by Congress in 1956 was the "pay as you go" plan rather than issuing long-term bonds. The Highway Trust Fund was started and would be maintained by taxes on gasoline, tires, and automotive products. From this trust fund would come 90 percent of interstate financing, with the states paying 10 percent. Furthermore, the interstate road standards would be federal, but route selection would be the responsibility of each state.\textsuperscript{17}

Developments on the federal level led to more extensive highway projects on the state level immediately following World War II. Although the amount of money spent on highway projects in Minnesota continued to increase, factors such as increased traffic load and the backlog of physical highway deficiencies hindered the rate of construction progress.\textsuperscript{18}

By early 1952 the trunk highway system consisted of 11,900 miles of main roads and streets throughout Minnesota. According to figures in 1952, more traffic was carried by the trunk highway system than by the remaining

\textsuperscript{16} Ibid., 91.

\textsuperscript{17} Ibid.

109,000 miles of roadway in the state. Some real deficiencies existed on the system at this time: (1) of 3,535 miles of paved road, 500 miles were worn out; (2) of 6,250 miles of asphalt on the system, 3,000 miles were inadequate; (3) over 2,000 miles were still gravel and obsolete; (4) of 2,876 bridges, 542 required rebuilding or replacement. Furthermore, 70 percent of the roadways on the trunk highway system had posted restricted load limits every spring. Construction proposals for 1952 indicated that efforts were being made to improve the situation.19

The construction program on the Minnesota trunk highway system for 1952 was proposed $31,500,000. Commissioner Hoffman reminded observers that this amount was equivalent to $12,500,000 of road building revenues in 1931 and 1932. Furthermore, in the years of 1931 and 1932, the budget for construction was actually $24,000,000 demonstrating the inflated cost of construction with less actual work being completed:

Commissioner Hoffman reminded his listeners that the backlog of improvements urgently needed in Minnesota were so great that present estimates indicated from fifteen to seventeen years will be required to finance and build the trunk highway improvements that various regions and communities are pressing to have scheduled.20

19 Minnesota Highways (January 1952).
20 Minnesota Highways (February 1952).
The 1952 program provided for some limited improvements on the trunk highway system: 570 miles of grading, 96 miles of two-lane construction, modernization of 43 miles of old narrow pavements, and 350 miles of stabilized base construction with bituminous surfacing. These were definite improvements but far from satisfying the needs of the entire trunk highway system. In the spring of 1952 a plan was devised to help remedy some of the deficiencies which required load limitation on the trunk highways.\textsuperscript{21}

A 46.5 percent increase in spending on construction was reflected during the 1950-1952 biennium over the 1948 to 1950 biennium.

Reconstruction of inadequate sections of the trunk highway system to carry more satisfactorily heavy volumes of traffic continues to represent a large portion of the construction program.\textsuperscript{22}

Some obstacles to the efforts of improving the road system had arisen. Labor costs were rising. It was estimated that nearly 30 percent of dollars spent on construction were going to the cost of labor. Labor costs had risen 8 to 10 percent from 1950 to 1951 with increases equal to that from 1951 to 1952. Furthermore, the extremely wet construction season of the 1950 to 1952 biennium slowed down the rate of construction project completion. However,

\textsuperscript{21}Ibid.

\textsuperscript{22}Minnesota Highways (November 1952).
construction companies made diligent efforts to make up lost time. Also, the shortage of steel changed some plans for construction. Bridges had to be left out of some plans. However, bidding on highway projects was still at a high enough level of competition to keep prices from rising excessively.  

The construction outlook for the year 1954 was based on a proposed $34,000,000 construction budget. 

This will be reasonably comparable although perhaps a little less than the trunk highway construction contracts let during 1953 and should accomplish approximately 6 percent of Minnesota's recognized long-range improvement needs on the 11,877 mile trunk highway system. 

The plans included grading contracts, stabilized base construction, bituminous surfacing of existing roads, and the widening and updating of old roadways. Also, 58 bridges needed upgrading. The department had roughly fifty-five million dollars of revenue in 1954, but many deductions were made before the final construction budget was set; roughly twelve million dollars was needed for upgrading presently existing roadways; eight million dollars was needed to fund roadway planning, road engineering, and construction costs other than actual contracts. Maintenance of the existing roadways was

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23 Ibid. 

24 Minnesota Highways (January 1954).
expected to cost 16.5 million dollars including over twenty-seven hundred bridges as well as various property owned by the department, such as business offices and buildings.\textsuperscript{25}

The secondary road system under the administration of the County Division complemented the primary trunk highway system. The County Division was created in 1945 and oversaw a rapid expansion in county road construction and improvements. A major impetus for this division was the creation of the Federal Aid Secondary (FAS) road program and federal aid to urban highways in municipalities of five thousand or more through the Federal Aid Highway Act of 1944. Federal funding was administered through the County Division that dictated the need for accurate records, specific road construction standards, and a close association with the Bureau of Public Roads.\textsuperscript{26}

The 1946-1948 biennium was the first full biennium of operation for the County Division. It was carrying out the tasks set for it by the legislature: "This division was to furnish all possible assistance to the counties, particularly in carrying out the Federal Aid Secondary program of

\textsuperscript{25} Ibid.

\textsuperscript{26}Biennial Report from July 1, 1946 to June 30, 1948 (St. Paul, 1948), 85.
By 1948, seventy-three counties participated in 273 construction projects administered through the County Division. These contracts added up to $8,640,508 in spending. The Federal Aid Secondary System included 10,064.7 miles of county roads in Minnesota at this time.28

By 1952, the County Division had been in operation for six years and its scope was expanding. More than one thousand construction projects with a total cost of $31,000,000 had been brought into being. Half of the total cost was paid by federal funds. Long-range planning at this point indicated that expansion of the county FAS system would be necessary. The counties wanted to add five thousand miles to the 10,960-mile county FAS system. This roadway expansion reflected social and economic needs of the public. Also, federal funds in the form of emergency relief became available to repair roads that were damaged by flooding. During the 1950-52 biennium $441,720 of federal funds became available to aid in repairs estimated to cost $883,000.29

From 1952 to 1956, the growth continued in terms of roadway construction and total cost. During the 1952 to

27Ibid.
28Ibid.
29Biennial Report from July 1, 1950 to June 30, 1952 (St. Paul, 1952), 96-100.
1954 biennium the cost of road improvement contracts equalled $15,580,000. During the 1954 to 1956 biennium the cost of road improvement contracts rose to $22,375,000. The total cost of road improvement contracts from May 1946 to June 30, 1956 was $68,411,000. On February 1, 1956 Minnesota was authorized to adopt the "1954 Secondary Road Plan." At this point, the Bureau of Public Roads turned over the responsibility for standards, plan approval, and award of contracts directly to the state.

There was a problem with the method of distributing state road user funds (gas tax) to the various counties during the post-war period. Motor vehicle registration tax funds were 100 percent state trunk highway funds.

Since the origin of constitutional provisions for allotment of state-collected highway revenues to the counties, neither the state constitution nor legislation carrying out constitutional provisions have established any comprehensive formula to be followed by the State Board of Allotment in allocating highway funds to the respective counties.

There were minimum and maximum guidelines for the amount of aid that a county could receive. Any one county was allotted at least 1 percent and not more than 3 percent of

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state aid funds per year and at least three-fourths of 1 percent and not more than 3 percent of county aid funds per year. Commissioner Hoffman expressed the need for a definite "formula" to aid in the process of allotting funds to the counties. Some type of standard was needed in order to judge what was appropriate. While a standard allotment formula was being considered, the redistribution of road user funds was becoming an important matter of discussion and legislative action.

The issue of redistributing road user funds was presented to the voters of Minnesota in the form of constitutional amendments in the 1948, 1950, and 1952 general elections. The 1948 proposal would have split gas tax revenues with 50 percent going to the state and 50 percent going to the counties. The proposal failed to win a majority by 91,679 votes. The 1950 proposal differed in respect to the previous one by allocating 44 percent to the counties and 6 percent to the cities of Minneapolis, St. Paul, and Duluth. This proposal failed to win a majority by 113,454 votes. The 1952 proposal would have changed the distribution of the motor vehicle registration tax from 100 percent to state trunk highway funds to 65 percent for state trunk highways, 25 percent for counties
and 10 percent for municipalities. This proposal was defeated by a margin of 704,366 to 580,316.\textsuperscript{33}

After the defeat of the proposed 1952 amendment, the Minnesota legislature created a Highway Study Commission to analyze and remedy the problems involved with the state roadway system. During the autumn of 1953 Commissioner Hoffmann made opening remarks to the Minnesota Highway Study Commission.

We in Minnesota enjoy a unique and very costly distinction in that we have the fourth largest total mileage of roads and streets of all the forty-eight states of the Union. Minnesota has 120,000 miles of state, county, township roads and municipal streets and has 20,000 miles more of roadway to be maintained by a population of approximately 3,000,000 people than has the state of New York with a population of almost 15,000,000 people.\textsuperscript{34}

In 1924, roughly 500,000 motor vehicles were registered in Minnesota. By 1953, the number of motor vehicles had increased to 1,300,000 of which 300,000 were trucks. The trunk highway system consisting of roughly 10 percent of the total roadway mileage in the state accounted for 50 percent of the total VMT (vehicle miles traveled) in the state; the trunk highway system represented thirty-two years of highway development with total expenditures of over $800 million. Since 1932 the Minnesota Highway

\textsuperscript{33}Biennial Report from July 1, 1948 to June 30, 1950 (St. Paul, 1950), 23, 24; Minnesota Highways (December 1952).

\textsuperscript{34}Minnesota Highways (November 1953).
Department had encountered slowdowns with the cutback in construction during the Depression of the 1930s and World War II in the 1940s. Total revenue to the department in 1953 was $54 million. Some of this revenue was diverted to needs other than highway construction such as the highway patrol, administration of driver's license and traffic safety programs, and highway maintenance. Therefore, the total revenue available for construction was $31,000,000. With limitations on yearly construction funds, therefore, $500,000,000 would be needed over a long period of time to improve the overall trunk highway system. 35

The Minnesota Highway Study Commission employed the services of the Automotive Safety Foundation (ASF) of Washington, D.C. and the Public Administration Service (PAS) of Chicago for roadway needs data. The ASF dealt with engineering data and the PAS dealt with financial data. After receiving the reports of these two organizations, the Highway Study Commission presented new highway proposals to the 1955 legislature. Primarily, the commission recommended the merger of the Trunk Highway Sinking and Trunk Highway funds into a single Highway User Tax Distribution Fund. Second, distribution of the user taxes would be changed from 80 percent for trunk

35 Ibid.
highways and 20 percent for counties to 67 percent for trunk highways, 29 percent for counties, and 9 percent for municipalities over 5,000 population.\(^\text{36}\)

The 1955 legislature approved a new constitutional amendment that would be presented to the voters in 1956. Furthermore, the legislature established an interim committee to develop standards for disbursing revenues if the amendment were to pass. The proposed amendment would affect more than one part of the constitution, so a ruling was requested of Attorney General Miles Lord.

It is true that the proposed amendment may affect more than one article of the constitution and may have been submitted in more than one amendment, but neither of these propositions in and of itself makes the amendment fail. Courts are inclined to defer somewhat to the judgment of the legislature as to what should or should not be proposed by way of an amendment.\(^\text{37}\)

With Attorney General Lord's favorable ruling, the constitutional amendment was on its way to the voters in November 1956. Before the vote, however, the Interim Committee on Highway Taxes Distribution met to decide how revenues would be distributed should the amendment pass.

\(^{36}\)Minnesota Highways (October 1954); Minnesota Highways (February 1955); for full account, see "Minnesota's Highway Needs," Minnesota Highway Study Commission Report (St. Paul, 1954).

The Interim Committee on Highway Taxes Distribution consisted of five members of the house and five members of the Senate under the chairmanship of State Representative Charles Halsted. Their task in relation to the area of county aid was defined by the 1955 legislature.

The formation of a fair, equitable, and definite formula for use in determining the distribution among the several counties of the state of the proceeds of any gasoline tax or motor vehicle license tax now available for distribution among the counties for highway purposes under Articles 16 and 9 of the Constitution or such as may be available for distribution among the counties by reason of any programmed amendment of the Constitution concerning said matters submitted by this session of the legislature.38

The committee was given the task of designing a formula for the distribution of road user revenues. It would be no easy task to design a formula that would make all concerned parties happy. Yet, it was possible to work toward equitable distribution.

The secondary system consisted of the county-aid highway system which included roughly fifteen thousand miles of roadway covered by the Federal Aid Secondary Road Plan. The committee found strong reasons why the proposed distribution formula would become very important.

These routes include the more important county roads and municipal streets selected with the viewpoint that they connect trade centers, shopping districts, recreational areas, and points of community interest.\(^{39}\)

This secondary road system was a social and economic lifeline to the areas that it served. The residents of any given area depended on these secondary highways for their daily activities that ranged from employment to leisure. The Legislative Interim Committee established four factors for the distribution of funding to the counties: needs—50 percent, mileage—30 percent, registration—10 percent, and equalization—10 percent.\(^{40}\)

\(^{39}\)Legislative Interim Commission, Report, 12.

\(^{40}\)Ibid., 12-26.
CHAPTER V
CONCLUSION

The pre-Interstate Highway era was coming to an end in the mid-1950s. Many changes would occur after the Federal Aid Highway Act in 1956. Yet Minnesota had built an extensive and viable highway system for the needs up to that time.

How were the highways being used in the 1950s?

Among the many problems faced by highway administrators are locating highways and designing improvements which adequately serve the type and volume of travel.\(^1\)

The first effort to determine the kind and amount of highway travel was started with the Highway Planning Survey in 1936. From that time through the 1950s, studies were made on: trip origin and destination, truck size and weight, vehicle usage, speed, and safety.\(^2\)

Detailed travel statistics were available in the 1950s. A total of 10.9 billion vehicle miles were traveled in Minnesota during 1953. Nearly 60 percent of


\(^2\)Ibid.
vehicle miles of travel took place on rural and urban trunk highways which accounted for 10 percent of the 121,000 miles of roads and streets in Minnesota at the time. The highest daily volumes of traffic were measured at 15,000 vehicles on trunk highways in the Minneapolis-St. Paul area. Rural trunk highways served city-to-city trucking business, resort travelers, and local farm to town traffic.3

There were variations in traffic volume in regard to months, days of the week, and hours of the day. Rural trunk highways accounted for fifteen million vehicle miles per day in August which was double the amount in January. Urban trunk highways carried roughly 75 percent of the July peak volume in January. The highest volumes of travel occurred on the weekends in rural areas and on the weekdays in urban areas. The highest hourly volume was from four to 4-5 p.m. in rural areas and from 5-6 p.m. in urban areas.4

Typical travel patterns of the average rural resident and the average urban resident were calculated. The percentage of miles that the rural resident traveled on secondary roads was 43 percent, rural trunk highways 38 percent, urban trunk highways 15 percent, and municipal

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3 Ibid.
4 Ibid., 94.
streets 4 percent. The percentage of miles that the urban resident traveled was 32 percent on municipal streets, 22 percent on urban trunk highways, 40 percent on rural trunk highways, and 6 percent on secondary rural roads. Furthermore, work, business, and professional pursuits accounted for roughly 50 percent of automobile travel.\footnote{Ibid., 96.}

The amount of truck travel was an important factor for contemporary and future highways.

The increase in volumes of these vehicles and in their sizes has influenced the design of highways constructed in past years and will influence the designs of future highways. However, these increases reflect the already large and growing dependence on truck transportation to support the state's economy and the well-being of its citizens.\footnote{Ibid., 97.}

The number of trucks registered in Minnesota rose from 114,500 in 1936 to 215,400 in 1953, and the number of farm trucks rose from roughly 40,000 to 80,000. In 1936 single unit trucks accounted for 87 percent of the commercial vehicles on rural trunk highways while tractor semitrailers accounted for 13 percent. By 1952, single unit trucks accounted for 68 percent and tractor semitrailers accounted for 32 percent. Average weight loads in single unit trucks increased from 9,900 pounds in 1936 to 12,000 pounds in 1952. Average weight loads in tractor semitrailers increased from 26,000 pounds in 1936 to 42,000 pounds in 1952.
pounds in 1952. Furthermore, three-axled tractor semi-trailers made up 97 percent of all tractor semitrailers in 1936, while in 1952 three-axled units made up 39 percent, four-axled units 47 percent, and five-axled units 14 percent. 7

The ongoing growth of the Minnesota Highway Department and the development of the highway system facilitated economic growth.

The people of any region with modern transport facilities can specialize in the economic activities they find they can perform best where they are and they can ship their products to the places where those products are needed. With the same modern transport system they can bring in goods to meet their own varied demands from regions with other specialties. 8

Two major sources of productivity were vital to Minnesota in the 1950s. From the land came farm, forest, and mine production and from towns and cities came non-farm and non-mining manufactured goods and services. In 1950 the total value of farm, forest, and mine production was calculated at $51.4$ billion dollars. Farm production accounted for more than two-thirds of the total. The value of goods and services from urban areas was calculated at $2.5$ billion dollars. A viable road system was necessary to service the farm, forest, and mining areas,

7Ibid., 96, 97.

8Ibid., 85.
as well as bringing together urban production centers in Minnesota with production centers in other states. 

Production generated four types of motor vehicle trips around the state: (1) local rural traffic, (2) inter-county traffic, (3) interstate traffic, and (4) city traffic. Local rural traffic consisted of trips from farm to farm, farm to small town, creameries and grain elevators, and farm to county retail trade centers. Inter-county traffic consisted of trips to reach centers that offered specific services such as: livestock markets, wood processing centers, major area hospitals, major retail and trade centers, manufacturing centers and recreational activities. Interstate traffic consisted of trips to and from: the Twin Cities and Duluth as major collection and distribution points of the wholesale trade, major manufacturing industries, summer vacation areas, and the northeastern United States and the Pacific Northwest. City traffic consisted primarily of the Twin Cities area where one-third of the state’s population lived and worked that accounted for 500,000 cars, trucks, and buses. The travel patterns in the Twin Cities area were working to unify the Twin Cities into a major metropolitan area that went beyond municipal and county boundaries. 

\[9\] Ibid., 87

\[10\] Ibid., 86-92.
The revenues for all roads and streets in Minnesota from 1905 to 1952 totaled $2,000,000,000. The revenues available to the state highway department for trunk highways from 1921 to 1952 were roughly 889 million dollars. Total state trunk highway expenditures from 1921 to 1952 were roughly 853 million dollars disbursed to construction 55 percent, maintenance 27 percent, debt service 13 percent, and administration and miscellaneous 5 percent.\textsuperscript{11}

The highway department staff of the 1950s realized that highway construction and maintenance were continuing processes.

\begin{quote}
In any case, no road improvement is permanent. With the passage of time, roads become obsolete or deteriorate to a point where reconstruction in some degree becomes an economic necessity.\textsuperscript{12}
\end{quote}

In November 1953 it was estimated that it would cost 681 million dollars to bring all state roads and streets up to minimum standards. Three factors were used to measure minimum standards: (1) traffic flow capacity, (2) structural condition, and (3) safety. The condition of the rural and urban trunk highways was of primary importance to the highway department. Immediate needs called for improvements on 2,669 miles of rural trunk highways and

\begin{footnotes}
\item[11] Ibid., 76, 83.
\item[12] Ibid., 47.
\end{footnotes}
improvements on 385 miles of urban trunk highways. Furthermore, projections were made on trunk highway improvement needs for five, ten, fifteen, and twenty years into the future; proposals were offered on reorganizing highway and road classifications into more workable systems; projections were made for the present and future needs of county roads, township roads, and city streets; and the highway department's future needs in areas of personnel, project planning, and right-of-way acquisition were under review. The work of highway construction and maintenance was never completed because as past needs were satisfied, present and future needs were continually arising.\(^\text{13}\)

A real era of highway development was set in the near future for the highway department staff of the early 1950s. It was just a matter of time until the new U.S. Interstate Highway System would receive final approval. As early as 1954, the estimated future needs of the Interstate Highway System in Minnesota were estimated at nearly ninety million dollars. A new central office building, a larger staff, and early route location plans were on the near horizon.\(^\text{14}\)

\(^{13}\text{Ibid., 35, 40, 41, 49, 11-16.}\)

\(^{14}\text{Ibid., 41-46.}\)
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