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Article Summary: In 1916, Congress passed the Federal Aid Road Act to provide matching funds to help the states develop standardized state highway systems. After World War I, Nebraska automobile registration exceeded 200,000, and Nebraska had to address how to finance its sprawling highway system without going into debt.

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Photographs / Images: June 5, 1926, the installation of the first highway marker: David F Meeker, Burt A George, Charles H Roper, Mont Noble, A A Jones, Robert L Cochran, Adam McMullen, Frank C Zehrung; the laying of the State Capitol cornerstone November 11, 1922, with George Johnson and Samuel R McKelvie and other dignitaries; Robert L Cochran as state engineer, 1924; workmen setting forms on the Lincoln Highway in Douglas County; concrete mixer on Greenwood to Ashland Project; highway flooding north of Lexington, 1929; Highway in Seward County, 1921; Governor Charles Bryan and Leslie Harrop, UP reporter; Arthur Bowring, 1931; *Omaha World Herald* cartoon, April 2, 1929; road grading, 1929

# ESTABLISHING NEBRASKA'S HIGHWAY SYSTEM, 1915-1934

*By Mary Cochran Grimes*

Early Nebraska roads were often little more than trails, following section lines or striking out across country. Their construction and maintenance was a local responsibility. Only after World War I, when Nebraska automobile registration exceeded 200,000, did the state and federal governments begin responding to the need for a coordinated state-wide highway system.

In 1916 Congress passed the Federal Aid Road Act to provide matching funds to help the states develop standardized state highway systems. Most states responded by raising taxes or passing bond issues to fund their share of the highway program. In Nebraska, relying on property taxes to pay for highway construction became increasingly unpopular as the state experienced agricultural depression in the 1920s. Moreover, the state constitution prohibited bonded indebtedness exceeding \$100,000. How the state would finance its sprawling highway system without going into debt, who would control the administration of highway funds, and how the funds would be allocated became major issues in Nebraska politics and government between the two world wars. Under the direction of state engineers George Johnson (1915-23), and Robert L. (Roy) Cochran (1923-34),<sup>1</sup> expenditures for highways became the

largest single item in state budgets during the 1920s and 1930s.

Nebraska's first road law in 1856 made county commissioners or township supervisors responsible for designating and maintaining roads. Road districts were to be established and overseers appointed. An annual poll tax of two days labor from each able-bodied male between the ages of twenty-one and sixty was sufficient to build and maintain the primitive roads of the day and taxation was rarely necessary. By the early twentieth century poll taxes, local property taxes, inheritance taxes, and motor vehicle registration fees all were potential sources of revenue for road construction and maintenance.<sup>2</sup> Because the quality of roads remained primarily a local concern, expenditures were governed by a desire to keep taxes as low as possible.

In 1911 the legislature changed the name of the State Board of Irrigation, created in 1895, to the State Board of Irrigation, Highways, and Drainage. The board, consisting of the governor, attorney general, and land commissioner, chose a secretary who was required to be a civil engineer and who would have the title of state engineer. The 1911 legislature also authorized an annual state property tax levy of one-fifth mill to be administered by the board as aid to counties in building bridges spanning streams more than 100 feet wide.<sup>3</sup> The levy marked the first time that the state assumed a financial obligation to improve Nebraska roads. The first direct state involvement in road construction came

in 1915, when the legislature appropriated \$35,000 to pay half the cost of paving roads adjoining the university's agricultural school in Lincoln. Governor John H. Morehead approved the use of six inmates from the state penitentiary as laborers on the project.<sup>4</sup>

Modern state highway administration dates from the passage of the Federal Aid Road Act of 1916. The act required states to have highway departments and meet minimum standards for highway construction. In order to qualify for federal funds each state highway department was required to submit route selections and construction plans for approval by the U.S. Bureau of Public Roads.<sup>5</sup>

The 1917 Nebraska legislature passed H.R. 722, which accepted the requirements for the Federal Aid Road Act and levied a state property tax to raise the required matching funds. The bill authorized the state highway bureau to cooperate with the counties and the federal government in designating a state highway system.<sup>6</sup> The Lincoln Highway Association and the Good Roads Movement, composed of automobile owners and civic leaders, were among the groups that lobbied the legislature on behalf of better roads.

In developing its highway system Nebraska had the advantage of relatively flat terrain, but it had the disadvantages of a great area (420 miles from east to west and 208 miles from north to south), and a small population (ranked thirty-first with 1,343,756 persons in 1924). Many miles of roads had to be built to serve sparsely populated

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*Mary Cochran Grimes of New Haven, Connecticut, is the daughter of former Nebraska governor and state engineer Robert L. (Roy) Cochran.*

## Nebraska's Highway System



*Attending the installation of the first highway markers in Nebraska on June 5, 1926: David F. Meeker, secretary to governor; Burt A. George, legislative representative of Nebraska Good Roads Association; Charles H. Roper, president, D-L-D [Detroit-Lincoln-Denver] Association; Mont C. Noble, chief, Bureau of Roads and Bridges; A. A. Jones, manager, Outdoor Advertising Company; Robert L. Cochran, state engineer; Adam McMullen, governor of Nebraska; Frank C. Zehrung, mayor of Lincoln. Courtesy Nebraska Department of Roads.*

regions and link rural communities. Weather extremes made maintenance difficult.

In 1914 George E. Johnson, a civil and electrical engineer, sought appointment as state engineer. He enlisted the help of Roy Cochran of North Platte, a civil engineer and graduate of the University of Nebraska, who had been urged to seek the job himself. Johnson proposed that in return for Cochran's support, he "would see" that Cochran was appointed assistant state engineer. Cochran lined up support for Johnson, whom the Board of Irrigation, Highways, and Drainage appointed. However, the

deputy engineer post went to a close friend of one of the board members. Learning "the unreliability of politics and political promises," Cochran accepted the position of state bridge inspector.<sup>7</sup> Two years later when his friend Keith Neville was elected governor on the Democratic ticket, Cochran urged Neville to reappoint Johnson and expressed his continuing interest in becoming Johnson's deputy. When Johnson was retained in office Cochran got the deputy engineer post, which he filled until entering military service in August 1917.<sup>8</sup>

Johnson, who had found only twenty-nine employees in the highway bureau

in 1915, realized that politics would play an important role in developing the state highway system. Most Nebraska legislators were from rural areas and were more interested in farm-to-market roads than in a statewide system of highways. When Johnson learned that nearly seventy-five percent of Nebraska house members opposed federal aid for road building in 1917, he began an "educational program."<sup>9</sup>

Johnson explained that state highways would pass through each county seat and extend to the county lines, connecting with highways from adjoining counties. He argued that the

proposed system would connect federal grant-in-aid roads with those of adjoining states and provide farm-to-market roads centering on the county seats.<sup>10</sup> His arguments must have been persuasive because H.R. 722, the bill acceding to the Federal Aid Road Act, passed the Nebraska house seventy-two to eighteen and the senate thirty to zero. The bill also appropriated \$640,000 from the state property tax levy for the highway program.<sup>11</sup>

H.R. 722 required county boards to accept the bill's provisions as well, and to approve routes for the state highway system to be selected in cooperation with the state bureau of highways.<sup>12</sup> Johnson and Cochran met with county officials across the state to fix the routes that would form the state system. Achieving agreement on the routes was a challenge in diplomacy as well as engineering. As Johnson observed:

No single feature of road work has caused the State Highway Department as much trouble as two problems: that of wanting the highway to 'pass along my door' and securing adequate rights of way properly located.<sup>13</sup>

He recalled that gaining cooperation from some county boards was a "Herculean task" because the boards were made up of many "rugged individualists who often did not agree among themselves and who frequently had different axes to grind."<sup>14</sup> The two engineers managed to get the necessary agreements from most county boards by using "as much tact as we could muster."<sup>15</sup> By 1919 the legislature was able to certify the first 4,500 miles of the state highway system. Counties were required to maintain state highways after they had been constructed, for which they would be reimbursed by the state.<sup>16</sup>

The federal government saw highway construction as a way to stimulate the sluggish postwar economy. In 1918 Congress passed an amendment to the Federal Aid Road Act requiring the war department to turn over surplus equipment to the states. Johnson sent Cochran, who had just returned

from army service in France, to Washington to increase Nebraska's prospects for receiving equipment.<sup>17</sup> Nebraska received fifty large Holt caterpillar tractors, over 400 trucks, 74 touring cars, TNT, and tons of other supplies. The state sold much of the equipment to the counties at bargain prices.<sup>18</sup> Although it was necessary to remove wartime armor plate and overhaul many of the vehicles, some of the equipment was used until the early 1930s, when parts were no longer available.<sup>19</sup>

In 1919 Congress appropriated \$200 million in federal aid for highways of which Nebraska was to receive over \$4 million. The Department of Public Works (which had replaced the old State Board of Irrigation, Highways, and Drainage) increased its staff from 54 in 1917 to 273 by 1920. These employees were responsible for the state highway program for the entire state.<sup>20</sup>

Reflecting its continuing concern with the poor condition of the nation's roads, Congress in 1921 passed a new federal aid act based on the "seven percent system." Each state was required to designate its most important roadways, consisting of no more than seven percent of the state's total highway mileage as accredited under the 1916 act. Federal money could be spent only on these roads, divided sixty percent for primary or interstate roads and forty percent for secondary roads. (In Nebraska 5,619 miles constituted seven percent of the total state mileage.)<sup>21</sup> The 1921 Nebraska Legislature specified that the Department of Public Works should prepare all plans for construction on the state highway system, with contracts to be let jointly by the department and the county boards. If all bids were rejected, the department was authorized to perform the work by "direct labor."<sup>22</sup>

Because a state's population, land area, and miles of rural mail routes determined the ratio of federal funds distribution, western states with large areas and more miles of mail routes

received proportionally more federal aid than eastern states. The 1924 report of the Department of Public Works indicated that Nebraska received \$4.15 in federal aid for each dollar in federal taxes it paid for highways.<sup>23</sup> Nevertheless it became a constant struggle to raise Nebraska's share of matching funds during the 1920s while the state's agricultural economy was depressed.

During a 1922 special session called to cut state appropriations, the legislature reduced state matching funds for highway construction and rejected Governor Samuel McKelvie's bill proposing a one-cent-per-gallon gasoline tax to replace the property tax as a means of financing the highway program.<sup>24</sup> Both houses also passed resolutions condemning federal aid programs that required state matching funds.<sup>25</sup> Representatives who were farmers or small town businessmen provided most of the opposition to the gasoline tax measure. Its supporters included small town editors and bankers and the majority of the Omaha and Lincoln delegations.<sup>26</sup>

McKelvie, in his January 1923 farewell message to the legislature, again recommended a one-cent gasoline tax as a fair way of assessing road users for the costs of construction and maintenance.<sup>27</sup> Without adequate funding the state highway program would languish at a time when there were only about 135 miles of improved (gravelled) roads in the entire state.<sup>28</sup>

Incoming Governor Charles E. Bryan, a Democrat, viewed federal aid as a growing menace and rejected McKelvie's call for a gasoline tax, charging that it was a sales tax to shift taxes from the rich to the poor.<sup>29</sup> In the 1920s the state's population was nearly fifty percent rural and many farmers opposed spending on highways. "The state roads don't do the farmer much good," said Representative Jim Auten of Albion. "Besides, they are a detriment. They promote [the] joyriding of the younger generation."<sup>30</sup>

During Bryan's administration, Ne-



*The present state capitol cornerstone was laid November 11, 1922. Among the dignitaries attending were state engineer George Johnson, seated second from left, and Nebraska governor Samuel R. McKelvie, seated sixth from left. (NSHS-M134-Album 2)*

braska did not completely withdraw from federal-state cooperation but appropriated only \$1.5 million for the highway program in 1923, which was over \$2 million short of matching available federal funds.<sup>31</sup> The unused federal funds would lapse if the state failed to match the full allocation by a specific deadline.

Bryan's antipathy toward federal aid was only one factor working against more funding for the state highway program. Another was his battle with the Republican-controlled legislature over repeal of the 1919 Civil Administrative Code, which had reorganized state government. The controversy focused mainly upon the code's impact on state spending and how government should be structured. Despite wrangling over

the issue that virtually paralyzed the legislative process during the 1923 session the code survived intact.<sup>32</sup>

In the midst of the code battle came an investigation instigated by State Engineer George Johnson involving the quality of stonework for the new state capitol. The capitol commission rejected Johnson's charges, Johnson resigned, and Roy Cochran, who had been a district highway engineer in the Department of Public Works throughout the McKelvie administration, succeeded him as state engineer.<sup>33</sup>

When Republican Adam McMullen was elected governor in 1924, old animosities relating to state highway administration resurfaced. Outgoing Governor Bryan charged former engineer Johnson with "irregularities and falsification of records" in state road and bridge work.<sup>34</sup> In turn Johnson accused Bryan of falsifying reports, not collecting federal funds that were due the state, changing contracts, and misappropriating a "large amount of the federal collections from old contracts by using the money to pay

his administration expenses."<sup>35</sup> The controversy hinged on personal and political differences, contrasting views of the benefits of the state-federal highway program, and varying methods of calculating the highway program's direct impact on the state budget. Eventually the furor died down after the state lost a series of lawsuits against Johnson.<sup>36</sup>

Cochran had managed to avoid entanglement in the Johnson-Bryan clash. Nevertheless his job as head of the Department of Public Works could not have been easy. During Bryan's administration lack of funds forced the Department of Public Works to adopt a low-level construction program, principally of dirt roads. Emphasis was on grading only with surface material to be added later. All state highway work was handled on a pay-as-you-go basis, through public advertising and opening of bids and awards to the lowest bidder.<sup>37</sup> Cochran insisted on open competitive bidding by construction companies in and outside the state, aided by a 1923 legislative act that

defined the state's bid-letting process.<sup>38</sup>

When McMullen took office in 1925 he had to decide whether to reappoint two popular Democrats, Roy Cochran and George G. Koster, the state game warden. Retaining Koster was favored by a number of leading Republicans. Cochran enlisted the support of William E. Hardy, a fellow member of the Nebraska Capitol Commission. (The state engineer also served as secretary of the capitol commission.) Hardy contacted Will Owen Jones, editor of the Republican *Nebraska State Journal* in Lincoln. Jones agreed to write an editorial on Cochran's behalf. Cochran also received help from Omaha banker Walter Head, another capitol commission member. The rumor that Cochran was opposed by Tom Dennison, Omaha's powerful political boss, probably helped him.<sup>39</sup> In the end McMullen retained Cochran, the sole Democratic appointee of his administration, evidence that Cochran's stewardship of the public works department had been perceived as effective and non-partisan.

By 1925, after two lean years for the Nebraska highway program, it was imperative to raise state funds to avoid losing federal dollars. The number of motor vehicles registered in Nebraska had increased from 221,000 in 1920 to 338,719 in 1925.<sup>40</sup> During the legislative debate over a proposed two-cent per gallon gasoline tax, support came from most Republicans (who dominated the legislature), McMullen, Cochran, and from the Nebraska Good Roads Association. The association's field workers promoted better roads to many civic and business groups, such as chambers of commerce and travelers' organizations, as well as to the influential Nebraska Association of County Officials. Cochran argued that the bill would reduce property taxes by

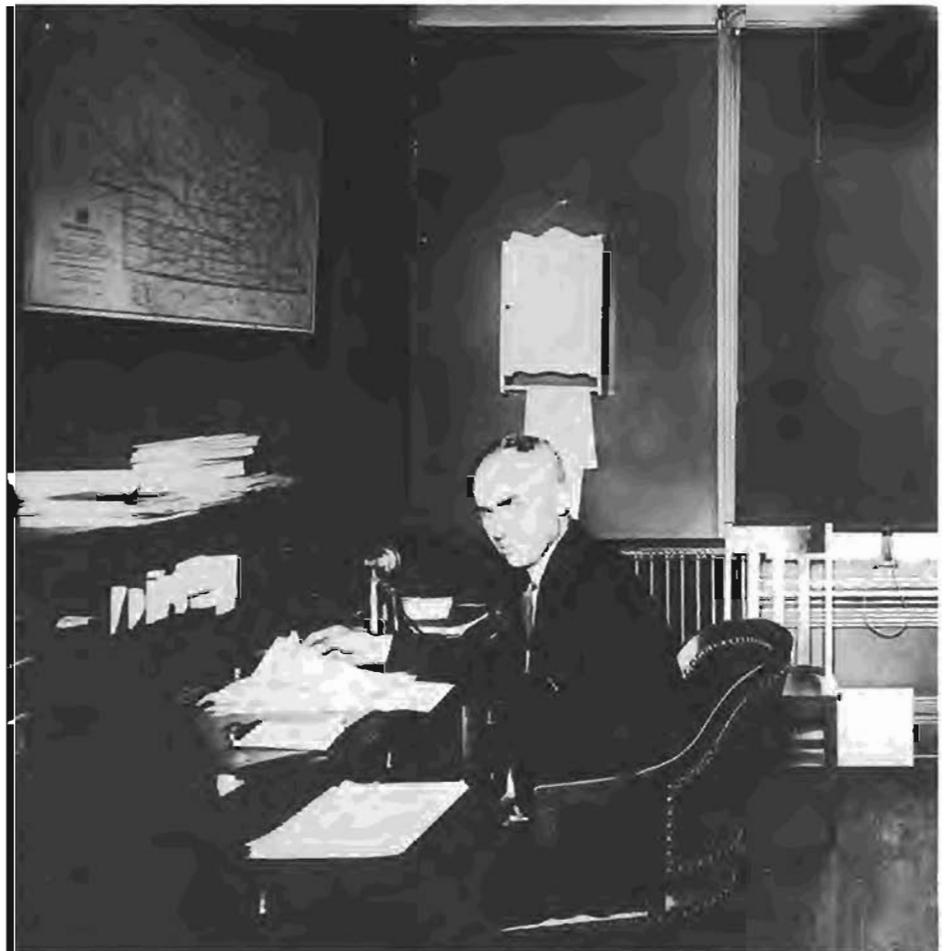
wiping out the state property tax levy that had been in effect since 1917.<sup>41</sup>

Legislators from rural areas, predominantly Democrats, fought the bill because it would give the entire two-cent tax to the state for use on the state highway system instead of giving fifty percent to the counties to be spent on local roads. The bill finally passed both houses by significant margins. In the end the vote split mostly along party lines, although of the twenty-nine senators and representatives voting against the gasoline tax, twenty-two were Democratic farmers or stockmen. Only one Republican farmer voted no.<sup>42</sup>

Probably to ease the passage of the gasoline tax bill, a companion bill (H.R. 114) gave counties seventy percent of

motor vehicle registration fees, with the remaining thirty percent going to the state to be spent on highway maintenance. The bill also provided that after January 1, 1926, the Department of Public Works would take over from the counties the maintenance of roads in the state system.<sup>43</sup> Under the previous system some counties had neglected to maintain their roads.

During 1926 the Department of Public Works had an average of 600 employees, compared to 273 in 1920.<sup>44</sup> Assuming the maintenance of state highways had greatly increased the department's responsibilities and expenditures. Traffic counts showed that improved roads stimulated more traffic, which in turn increased maintenance costs. So alarmed did the Ne-



Robert L. Cochran as state engineer, 1924. (NSHS-C663-85)



Workmen set forms on the Lincoln Highway in Douglas County. Courtesy Nebraska Department of Roads.

braska Good Roads Association become when state expenditures for maintenance increased \$741,544 between 1926 and 1927 that its president called a special meeting June 27, 1928, at which 1,000 representatives were expected. Federal aid did not cover maintenance costs for the 1,800 miles added to the state highway system by the 1925 legislature, and the NGRA president warned that maintenance might have to come out of construction funds. Members voted to support a one-cent-per-gallon increase in the gasoline tax.<sup>45</sup>

The NGRA, organized in 1917, was a potent lobbying force for better roads. Its leadership was dominated by busi-

ness and professional men from many of the state's larger communities who saw the benefits of improved roads in terms of economic development.<sup>46</sup> Its monthly magazine, *Nebraska Highways*, first appeared in June 1927. The association argued that improved roads lowered the cost of operating motor vehicles, increased farmers' income and farm values, benefited school and church attendance, and brought business to small-town merchants.<sup>47</sup> However, some small-town businessmen, who observed that their business seemed to improve when roads were bad, joined farmers in opposing higher taxes for roads.<sup>48</sup>

Because of the economy forced by often limited construction funds, Nebraska became a leader in the design and development of graded earth highways, prompting officials from other states to visit and examine this

method of construction.<sup>49</sup> Engineers from South Africa, South America, Australia, and Cuba also came to Nebraska to learn about its road building program. The *Financial Post* (Toronto, Canada) admired Nebraska's highway system: "Having no debt, paying for the roads out of income as they are built, has kept Nebraska free from expensive splurges of road building."<sup>50</sup>

Cochran was an advocate of gravel surfacing in order to build as many roads as possible at the lowest cost. Sand-gravel surfacing was compatible with the state's modest rainfall and its light, sandy, quick-drying loam. Nebraska had an abundant supply of sand and gravel, particularly from the Platte Valley. With its "sand-gravel program" the state was able to expand its improved road mileage ten times over what would have been possible with a paving program.<sup>51</sup>

*Mixer for concrete on Greenwood to Ashland Project. Courtesy Nebraska Department of Roads.*

However, traffic constantly increased and stressed the gravel roads. In 1926 Cochran recommended that \$50,000 be spent for experiments on more durable surfacing, mostly oil-sand and oil-gravel. That year also saw the first appearance of Nebraska's "covered wagon" highway markers, which had been designed by Cochran.<sup>52</sup> The department began hard-surfaced paving on state highways in 1927. Nebraska had designated by 1928 a total of 8,012 miles of state and federal highways, the twelfth largest mileage in the nation, including 165 miles of paved roads and 3,761 miles of gravel roads. As of November 30, 1928, a total of 6,298 miles were marked and maintained.<sup>53</sup>

By 1929 the Department of Public Works was facing a crisis because traffic, especially busses and trucks, had increased seventy-six percent in four years and the state had not been able to match \$2 million of federal aid during the previous year. The truck traffic was principally of the light, farm-to-market type.<sup>54</sup> Clifford Shoemaker, district engineer of the U.S. Bureau of Roads, remarked that although Nebraska ranked near the top in per capita wealth and ownership of autos, it was near the bottom in its expenditures for highway improvement. He warned that unless Nebraska paved some of its most heavily traveled federal aid roads, the government might refuse to provide funding to the state. Shoemaker advocated using state bonds to pave heavily traveled roads. He argued that hard surfaced highways would save millions in road maintenance expense and vehicle wear, a savings that would enable bonds to be retired. Since 1927 the NGRA had also recommended legislation authorizing counties to use bonds for paving high-traffic roads. They would be financed by the county



apportionment of the state gasoline tax.<sup>55</sup>

When Republican Arthur J. Weaver became governor in 1929, he reappointed Cochran state engineer. Both men supported doubling the gasoline tax from two to four cents per gallon to match a \$6 million federal grant over the next three years. State bonds could not be used without a constitutional amendment lifting the restriction on state bonded indebtedness.<sup>56</sup>

Again, much of the opposition to the

gasoline tax increase came from farmers and farm organizations. The chairman of the Cass County Republican Committee wrote the governor that an increase in the gasoline tax would "sound the death-knell to the Republican party two years hence. The various Chambers of Commerce and Good Roads Association do not fully realize the financial condition of the farmer, and he will surely rebel."<sup>57</sup> There were exceptions: The thirty-five members of the Farmers

## Nebraska's Highway System



*Highway flooding one mile north of Lexington on U.S. Highway 30, April 25, 1929 . . . . (right) Highway in Seward County, 1921. Both courtesy Nebraska Department of Roads.*





Governor Charles Bryan (left) and Leslie Harrop, United Press reporter (NSHS-B914-98)

Union Educational and Co-operative Association. Local 168, in Talmage favored a three-cent gasoline tax, provided that one cent was spent in the county where it originated. But the Farmers' Union in Yutan opposed any gasoline tax increase.<sup>58</sup>

Rural opposition to funding the state highway system seemed to hinge on the feeling that the system did not provide farm-to-market roads. Many rural Nebraskans also seemingly failed to realize that once the bulk of state highway revenues began to come from gasoline taxes instead of property taxes, rural highway construction and maintenance would be subsidized by urban and out-of-state motor vehicle owners. For example, there were some 39,000 automobiles and 6,205 trucks registered in Douglas County in 1925, which had only 116 miles of roadway included within the state highway system. Custer County, with only 6,300 automobiles and 760 trucks, had 186 miles of state highways.<sup>59</sup>

Most of the mileage in the state

highway system was rural, and most revenue was expended on rural highways. However, the gasoline tax was assessed on all gasoline used in the state except that for farm tractors and combines. By 1926 it was estimated that seventy percent of gasoline tax revenues were derived from mileage driven on city streets not part of the state highway system and therefore ineligible for federal aid.<sup>60</sup> A later Department of Roads study indicated that by 1937 fifty-five percent of all cars and fifty-nine percent of trucks in Nebraska were owned by rural residents (those living in population areas of less than 1,000) who paid only forty-four percent of the total revenue collected from motor fuel taxes and registration fees during the year.<sup>61</sup>

To pass a two-cent gasoline tax increase the legislature found the necessary compromise with the Bowring Bill, named for Cherry County stockman Arthur Bowring, who was also president of the Nebraska Good Roads Association. The counties

would receive one fourth of total gasoline tax revenues, distributed on the basis of their motor vehicle registration. These funds would supplement the seventy percent of registration fees the counties already received. The revenue would go into the county road fund, to be spent on local roads of the farm-to-market type. The NGRA had been advocating a gasoline tax increase for this purpose since 1927.<sup>62</sup> According to Governor Weaver, the passage of the Bowring Bill meant that "for the first time in the history of our road legislation we are providing from the gas tax a means of building farm-to-market roads."<sup>63</sup>

The Bowring Bill stipulated that half of the additional cent of gasoline tax money going to the state be used at the discretion of the Department of Public Works to close gaps to provide continuity in the highway system. The remainder of the state's share would match federal aid in which the state was then \$3.5 million in arrears. Revenue for the state highway program doubled with the passage of the four-cent-per-gallon gasoline tax in 1929.<sup>64</sup>

Bowring pointed out that the \$8.5 million projected to be raised by the gasoline tax increase was "not large when compared with the immense sums neighboring states were paying for road work."<sup>65</sup> Whereas in 1929 Nebraska spent \$3 million on its state highway system out of a total \$4,733,717 expended for governmental services, Iowa spent over \$14 million on highways out of a total budget of \$16 million; Missouri spent nearly \$20 million for roads (out of \$21 million); and Kansas spent over \$9 million (out of \$11 million). Only the Dakotas spent less than Nebraska.<sup>66</sup> Bad economic times had driven down the cost of road building materials and wages during the 1920s. Prices for highway work dur-

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ing 1929-30 were lower than those of any previous biennium: thirty percent below 1923-24, fifteen percent below 1925-26, and about ten percent below 1927-28. Pavement cost \$10,000 per mile less than it had during 1923-24.<sup>67</sup>

The first accurate information on traffic on principal highways of the West was gathered in 1929 when the federal Bureau of Public Roads and Rural Engineering coordinated a traffic survey with the states. It revealed that Nebraska's truck traffic had increased 246 percent compared to an increase of only 180 percent for automobiles during the past decade.<sup>68</sup> In response to complaints that overweight trucks were ruining the roads, the 1929 legislature appropriated \$30,000 to initiate a highway patrol to enforce motor vehicle laws, giving special attention to violation of truck weight laws. A three-man force was to police the highways of the entire state, relying upon the cooperation of local officials.<sup>69</sup>

By 1929 after passage of the Bowring Bill, state gasoline tax receipts for the first time exceeded the revenue coming from property taxes: Nearly \$7.5 million from the gasoline tax compared to \$5.8 million from property taxes. The percentage of revenue derived from gasoline taxes continued to increase throughout the 1930s, although the total dollars available for the Nebraska road program remained fairly constant.<sup>70</sup>

When Charles Bryan was reelected governor in 1930, he announced that he would not reappoint Cochran as state engineer. Newspapers rallied to Cochran's support, arguing that his effective administration of the public works department and the highway program deserved to be continued.<sup>71</sup> Bryan, who probably saw fellow Democrat Cochran as a potential political rival, eventually relented.

In the early 1930s relief of unemployment became a primary responsibility of the public works department. To create jobs that did not compete with private business, Congress in 1930



Arthur Bowring, 1931. (NSHS-L514)

voted \$80 million in emergency funds to the states to supplement the regular federal aid for roads. Nebraska received \$4.25 million. Cochran noted that this was the first time in many years that all federal aid apportioned for Nebraska could be spent on construction or placed under contract. To speed up the preparation of plans and estimates for projects, the state hired additional engineers who had been laid off at railroad, architectural, and municipal offices. Regular and emergency employees worked overtime without pay.<sup>72</sup>

The Civil Works Administration, created in November 1933 as a temporary emergency program to put people to work during the winter, had a

significant effect upon the work of the Department of Roads and Irrigation (renamed by the legislature in 1933). W. H. Mengel, an engineer hired in 1933, recalled:

The CWA recognized the highway departments as operating organizations that could put people to work in short order on direct labor projects where plans were available, but had not been used due to a lack of funds. . . . These plans were used all over the state for the beginning of work for local people.<sup>73</sup>

A total of 198 CWA projects were carried on under supervision of the Department of Roads and Irrigation. Of the \$5,538,869 spent on CWA programs in Nebraska, 16.8 percent went to state highway projects. The maximum number of people employed by the CWA on state highway work was 7,446 in January 1934. When the CWA went out of existence on March 31, 1934 (largely because of its high cost), the Federal Emergency Relief Administration (FERA) took over uncompleted CWA projects. An average of 1,000 persons were employed by FERA on state highway projects from April to December 1934.<sup>74</sup>

Nebraska received another \$3.9 million under the Hayden-Cartwright Act in June 1934 without having to put up any state money. This act provided the first specific allocation of federal funds for the construction of feeder, or farm-to-market roads.<sup>75</sup> The 1930s saw the greatest increase in mileage to the state highway system, but seventy percent of construction during the decade occurred during the years of federal emergency funding, which ended in 1936.

While this additional federal money enabled more road construction, federal relief projects were neither efficient nor easy to administer. Relief workers did not always live in the areas where highway work was needed. Employees could not work more than thirty hours a week. Local labor had preference. Wage rates of forty cents an hour for unskilled labor and sixty cents an hour for skilled labor prevailed.<sup>76</sup> Supervisors often complained of the

difficulty of using untrained workers.

A federal requirement that only ninety cents total outlay per hour was allowed for each man employed meant that wages, materials, equipment, and other costs had to be kept within that limit. To employ as many people as possible, most of the highway work had to be done by hand, using shovels and wheelbarrows. Drought-stricken communities petitioned the governor, asking that men and teams of horses be provided for local road work. W. H. Mengel recalled that local farmers were employed by Cedar County to work on roads. The county had a tractor to plow dirt, which was loaded in horse-drawn wagons.<sup>77</sup> Federal expenditure limits made it almost impossible to use relief labor for paving or bridge projects where a large amount of road-building material or heavy equipment was needed.<sup>78</sup>

Nebraska's success in building and maintaining debt-free roads at a low cost during the 1920s and early 1930s was due to several factors. Constrained by the pay-as-you-go system, the Department of Public Works was forced to economize. The threat of losing millions in federal aid stimulated at least a minimum level of state appropriations for highway development. Sand and gravel were plentiful in Nebraska and experimentation with improved road surfacing and maintenance helped to lower costs. Strong leadership maintained a low overhead. Cochran was aware of no other state that kept its administrative costs as low as two percent.<sup>79</sup>

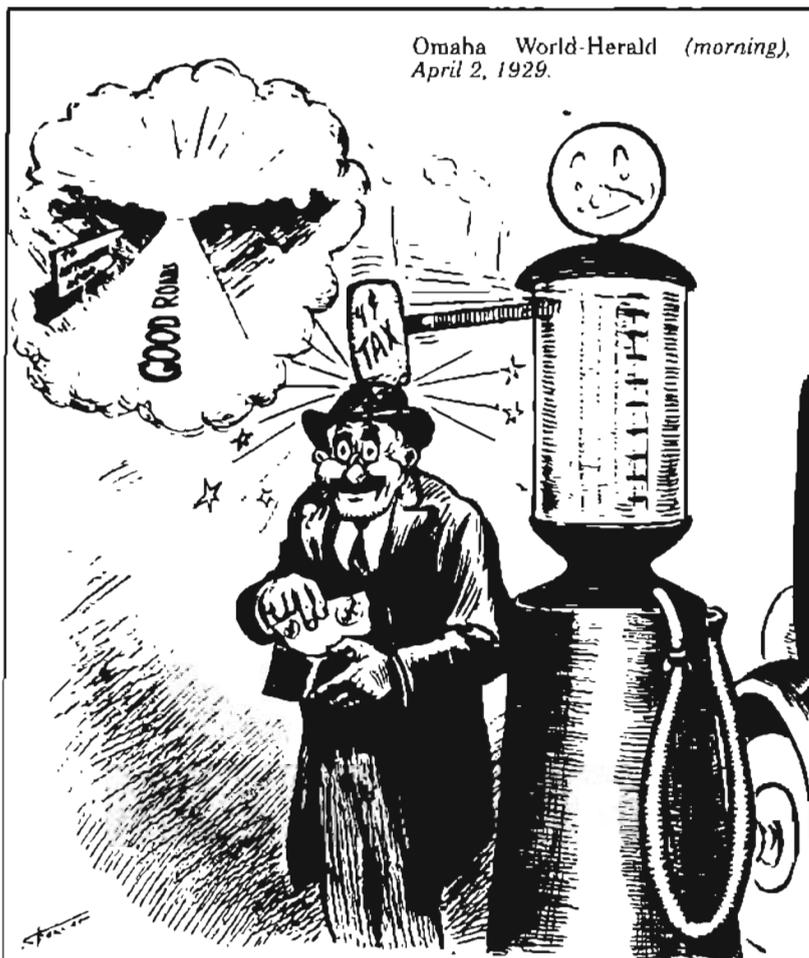
The continuity and dedication of state engineers and highway department personnel were important factors. The role of a strong state engineer was defined by George Johnson, who foresaw development of an adequate highway system, and continued by Roy Cochran, whose long tenure brought continuity to the Nebraska highway program.

Controversies regarding the state highway program often revolved around the goals of the various con-

stituencies that the highway system proposed to serve, how the roads were to be financed, and who would control the expenditure of funds. They involved competing interests such as farmers versus businessmen, rural areas versus urban areas, and the state versus the counties. While political or personal disputes like that between Governor Bryan and State Engineer George Johnson attracted much attention, no deliberate malfeasance in the administration of the state highway program or in the highway department's dealings with private contractors was demonstrated.

Spurred on by the promise of federal funds, Nebraska developed a com-

Omaha World-Herald (morning),  
April 2, 1929.



Oh, Yes! It Hurts, but Keep Your Mind on the Pretty Picture!

prehensive highway system without bonded indebtedness and at a lower cost to motor vehicle owners than the national average.<sup>80</sup> From less than 200 miles of graded road in 1918 (fewer than twenty of which were graveled or hard surfaced), the state highway system by 1934 included 6,791 miles with gravel surfacing, 539 miles with bituminous surfacing, and 792 miles with concrete paving. Between 1918 and 1934, 1,057 bridges were constructed.<sup>81</sup> Federal funds coming to Nebraska amounted to over \$50 million. The state collected over \$63 million for the highway program from property taxes, gasoline taxes, and motor vehicle registrations.<sup>82</sup>

Much of the initiative leading to the development of a modern state highway system came from those who saw good roads as bringing economic benefits to both urban and rural Nebraskans. However, the changes brought by the expanding system proved more fundamental than mere economic development. On the positive side good roads helped get the farmers "out of the mud," provided rural residents with greater economic independence and better access to medical care, and broadened their social and recreational opportunities.

Some of the long term effects of the increased mobility made possible by the motor vehicle and modern highways were less beneficial and may not have been foreseen. Improved transportation hastened the decline of small towns by diverting trade to larger regional centers. Fewer passengers and the advent of trucks to haul commodities led to the abandonment of most branch rail lines. Today most rural areas in Nebraska are totally dependent upon the motor vehicle in an era of rising fuel prices and unstable supplies.<sup>33</sup>

Without ongoing federal support and a significant measure of federal control, it is unlikely that Nebraska and other sparsely populated states could have created or maintained modern highway systems meeting their transportation needs in the twentieth century. Whether this system will remain viable in the twenty-first century remains to be seen.

## NOTES

<sup>1</sup>Cochran, who served longer than any other state engineer, resigned in July 1934 to run for governor. In 1959 he was reappointed state engineer but served only one year.

<sup>2</sup>Addison E. Sheldon, ed., *Nebraska Blue Book and Historical Register* (Lincoln: 1915), 784-85.

<sup>3</sup>*Ibid.*, 785.

<sup>4</sup>George E. Koster, *A Story of Highway Development in Nebraska* (Lincoln: Nebraska Department of Roads, 1986), 16.

<sup>5</sup>W. Stull Holt, *The Bureau of Public Roads: Its History, Activities, and Organization* (Baltimore: The Johns Hopkins University Press, 1923), 16, 19; John Doyle, "Public Highway Administration in Nebraska" (thesis, University of Nebraska,

1951), 4. The federal government limited the cost to \$10,000 per mile of road. It required the states to assume the cost of maintenance of highways constructed with federal funds.

<sup>6</sup>*Laws of Nebraska, Thirty-fifth Session, 1917*, 420-23.

<sup>7</sup>Robert L. Cochran, *Memoirs* (unpublished), 22-23, in Robert L. Cochran Papers, RG1, SG30, State Archives, Nebraska State Historical Society, Lincoln (hereafter cited as Cochran Papers).

<sup>8</sup>*Ibid.*

<sup>9</sup>George E. Johnson II, *The Nebraskan* (Winter Park, Florida, Anna Publishing Co., 1981), 40-41. The author wrote the biography of George Johnson in the first person, "based on statements, notes, and memoranda left by his father."

<sup>10</sup>*Ibid.*

<sup>11</sup>*Nebraska House Journal, Thirty-fifth Session, 1917*, 867-68; *Senate Journal, Thirty-fifth Session, 1917*, 902-03.

<sup>12</sup>*Laws of Nebraska, Thirty-fifth Session, 1917*, 422.

<sup>13</sup>Nebraska Department of Public Works,

*Monthly Highway Report*, Aug. 1919, 22.

<sup>14</sup>Johnson, *The Nebraskan*, 37.

<sup>15</sup>*Ibid.*, 42.

<sup>16</sup>*Laws of Nebraska, Thirty-seventh Session, 1919*, 1035-48.

<sup>17</sup>Aileen Gantt Cochran to author, Mar. 1979.

<sup>18</sup>*Thirteenth Biennial Report of the Department of Public Works, 1919-1920*, 717-19, 724.

<sup>19</sup>Arthur B. Chaplin interview quoted in Koster, *Highway Development*, 24.

<sup>20</sup>Arthur T. Lobdell, *Nebraska Department of Roads: A History* (Lincoln: 1965), 78.

<sup>21</sup>*Fifteenth Biennial Report of the Department of Public Works, 1923-1924*, 14.

<sup>22</sup>*Nebraska Department of Roads and Irrigation, State-Wide Highway Planning Survey*, "History of the Highway Department of the State of Nebraska, 1895-1938" (Lincoln, 1939), 8.

<sup>23</sup>*Fifteenth Biennial Report of the Department of Public Works, 1923-1924*, 14.

<sup>24</sup>*Nebraska House/Senate Journal, Forty-first Session (Special)*, 1922, 157.

<sup>25</sup>*Ibid.*, 49, 135-36.

<sup>26</sup>See *Ibid.*, 157, for house roll call vote to advance the gasoline tax bill. The motion to advance failed 31 to 67.

<sup>27</sup>*Nebraska Senate Journal, Forty-second Session, 1923*, 331-32.

<sup>28</sup>Cochran radio speech, Sept. 27, 1936, Cochran Papers, and *Fifteenth Biennial Report of the Department of Public Works, 1923-1924*, 31. Not until 1926 did a gravel road connect Omaha and Lincoln.

<sup>29</sup>*Nebraska Senate Journal, Forty-second Session, 1923*, 343.

<sup>30</sup>*Omaha World-Herald*, Apr. 4, 1923.

<sup>31</sup>*Fifteenth Biennial Report of the Department of Public Works, 1923-1924*, 18.

<sup>32</sup>Addison E. Sheldon, *Nebraska: The Land and The People* (Chicago: Lewis Pub. Co., 1931), 1005.

<sup>33</sup>*Omaha World-Herald*, Mar. 14, 24, 1923; *Nebraska State Journal* (Lincoln), Mar. 23, 1923.

<sup>34</sup>*Omaha World-Herald*, Jan. 9, 1925.

<sup>35</sup>See Johnson's letter in *Nebraska Senate Journal, Forty-Third Session, 1925*, 142-45; *Omaha World-Herald*, Jan. 15, 1925.

<sup>36</sup>Sheldon, *Land and People*, 1025-26.

<sup>37</sup>Lobdell, *Nebraska Department of Roads*, 11.

<sup>38</sup>*Laws of Nebraska, Forty-Second Session, 1923*, 324-25.

<sup>39</sup>Cochran, *Memoirs*, Cochran Papers. "Every engineer who has been asked to take the place thus far by McMullen is said to have declined on the ground that Cochran ought to be reappointed." *Omaha World-Herald*, Jan. 5, 1925.

<sup>40</sup>*Nineteenth Biennial Report of the Department of Public Works, 1931-1932*, 166.

<sup>41</sup>*Omaha World-Herald*, Feb. 15, Mar. 1, 1925.

<sup>42</sup>*Nebraska House Journal, Forty-third Session, 1925*, 897; *Nebraska Senate Journal, Forty-third Session, 1925*, 118-19. The party affiliation, residence, and occupation of each legislator appears in the journal.

<sup>43</sup>*Laws of Nebraska, Forty-third Session, 1925*, 401-05.

<sup>44</sup>Lobdell, *Nebraska Department of Roads*, 78.

<sup>45</sup>*Nebraska Highways*, July 1928, 4-7, 10.

<sup>46</sup>The names of the NGRA leadership appear in *Nebraska Highways*. The occupations of most can be found in city directories, county histories, or biographical albums.

<sup>47</sup>*Nebraska Highways*, Nov. 1927, 4-7; Aug. 1928, 6, 16.

<sup>48</sup>*Omaha World-Herald*, Feb. 15, 1925.

<sup>49</sup>Koster, *Highway Development*, 22.

<sup>50</sup>From an article written by R. A. Farquharson, published July 23, 1938, and quoted in Lobdell, *Nebraska Department of Roads*, 24-26.

<sup>51</sup>*Seventeenth Biennial Report of the Department of Public Works, 1927-1928*, 60.

<sup>52</sup>Cochran had hoped to use a buffalo in the logo but found that Manitoba, Canada, had already adopted that symbol for its highway markers. George E. Koster, *The Roadrunner*, Nebraska Department of Roads, October 1991, 7.

<sup>53</sup>*Sixteenth Biennial Report of the Department of Public Works, 1925-1926*, 10; *Seventeenth Biennial Report of the Department of Public Works, 1927-1928*, 13.

<sup>54</sup>*Report of a Survey of Traffic on the Federal-Aid Highway Systems of Eleven Western States* by the Bureau of Public Roads, United States Department of Agriculture and the Highway Departments of Arizona, California, Colorado, Idaho, Nebraska, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming (1932), 18.

<sup>55</sup>*Omaha World-Herald*, Jan. 11, 24, 1929; *Nebraska Highways*, Nov. 1927, 9; Dec. 1928, 4-5, 7.

<sup>56</sup>The national average for the gasoline tax was 3.25 cents; six states had a five-cent tax, twelve had a four-cent tax, and fourteen had a three-cent tax. *Omaha World-Herald*, Feb. 2, 1929. Not until 1968 did Nebraska voters amend the constitution to permit state bonded indebtedness for highway construction.

<sup>57</sup>Charles E. Noyes to Governor Adam McMullen, Jan. 13, 1927, Adam McMullen Papers, RG 1, SG29, State Archives, Nebraska State Historical Society.

<sup>58</sup>Letters to Governor McMullen from Talmage, Feb. 21, 1927, and from Yutan, Dec. 28, 1926, McMullen Papers.

<sup>59</sup>*Sixteenth Biennial Report of the Department of Public Works, 1925-1926*, 88, 146, 272.

<sup>60</sup>*Ibid.*, 19.

<sup>61</sup>Nebraska Department of Roads and Irrigation, "Motor Vehicle Allocation Study" (Lincoln: 1940), 20 (Table 8).

<sup>62</sup>An *Omaha World-Herald* editorial, Jan. 22, 1929, sounded the familiar call to "Get primary

roads out of the mud" by raising the gasoline tax to four cents. *Nebraska Highways*, Nov. 1927, 9.

<sup>63</sup>*Nebraska State Journal* (Lincoln), Mar. 30, 1929.

<sup>64</sup>*Ibid.*, *Omaha World-Herald*, Mar. 30, 1929.

<sup>65</sup>*Omaha World-Herald*, Apr. 7, 1929.

<sup>66</sup>U.S. Department of Commerce, Bureau of Public Roads, *Financial Statistics of States* (1929), 100.

<sup>67</sup>*Eighteenth Annual Report of the Department of Public Works, 1929-1930*, 2.

<sup>68</sup>*Report of a Survey of Traffic*, 53.

<sup>69</sup>*Omaha World-Herald*, Apr. 6, May 5, 1929. *Eighteenth Biennial Report of the Department of Public Works 1929-1930*, 103. A fourth traffic officer was added in 1934. Koster, *Highway Development*, 29.

<sup>70</sup>Nebraska Highway Advisory Committee, *Nebraska Highway Needs* (Lincoln: 1948),

Appendix.

<sup>71</sup>See *Lincoln Star*, Dec. 17, 21, 1930.

<sup>72</sup>*Nineteenth Biennial Report of the Department of Public Works, 1931-1932*, iii, 35.

<sup>73</sup>Interview with W. H. Mengel, 1985, quoted in Koster, *Highway Development*, 38.

<sup>74</sup>*Twentieth Biennial Report of the Department of Roads and Irrigation, 1933-1934*, 2, 189.

<sup>75</sup>Doyle, "Public Highway Administrations in Nebraska," 4.

<sup>76</sup>*Twentieth Biennial Report of the Department of Roads and Irrigation, 1933-1934*, 187-98.

<sup>77</sup>W. H. Mengel, interview with author, June 1986. Petition dated Aug. 20, 1931, from Center, Nebraska, to Governor Charles Bryan, asking for a road from Bloomfield to Center to reduce unemployment. Charles Bryan Papers, RG1, SG 28, State Archives, Nebraska State Historical Society.

<sup>78</sup>Cochran Radio Speech, Sept. 8, 1935, Cochran Papers.

<sup>79</sup>*Sixteenth Biennial Report of the Department of Public Works, 1925-1926*, 10.

<sup>80</sup>Sheldon, *Land and People*, 1052.

<sup>81</sup>*Twentieth Biennial Report of the Department of Roads and Irrigation, 1933-1934*, 2.

<sup>82</sup>*Sixteenth Biennial Report of the Department of Public Works, 1925-1926*, 16; *Twentieth Biennial Report of the Department of Roads and Irrigation, 1933-1934*, 18-21.

<sup>83</sup>Philip H. Burch, Jr., *Highway Expenditure Policy in the United States* (New Brunswick, New Jersey: 1962), Chapter I, "The Impact of the Motor Vehicle on America: A cursory Glance." Burch's assessment was made in the absence of such 1990s concerns as the effects of greenhouse gases, depletion of the ozone by CFCs, and U.S. dependence on foreign oil.



Road grading in July 1929. Courtesy Nebraska Department of Roads.