Approved March 15, 1989
Date

MINUTES OF THE House COMMITTEE ON Transportation.

The meeting was called to order by Rex Crowell
Chairperson at

1:30 ~~a.m.~~/p.m. on January 19, 1987 in room 519-S of the Capitol.

All members were present except:
Representatives Gross and Wilbert

Committee staff present:
Bruce Kinzie, Revisor of Statutes
Hank Avila, Legislative Research
Donna Mulligan, Committee Secretary

Conferees appearing before the committee:
Ms. Deb Miller, Kansas Department of Transportation

The meeting was called to order by Chairman Crowell and the publication "Milestones" and a legislative update from the Kansas Department of Transportation were passed to Committee members. (See Attachments 1 and 2)

Bruce Kinzie briefed the Committee on the contents of HB-2014 and said that Section 1 states it is the intent of the legislature that highway projects selected shall represent the top 20 percent of the existing state highway system needs as determined by the Transportation Department's prioritization method. He added that it is also the intent of the legislature that priorty bridge projects shall be increased by 25 percent.

Mr. Kinzie discussed bonding requirements in HB-2014, and said it provides the aggregate principal amount of such bonds, at any one time, shall not exceed $700,000,000. The maturity of the bonds is limited to 15 years.

Mr. Kinzie said Page 11, Sections 15 through 23 is the increase in registration fees, and said passenger cars have been cut down to two classes, $25 for vehicles with a gross weight of 4,500 pounds or less and $35 for vehicles having a gross weight of more than 4,500 pounds.

Ms. Deb Miller, Kansas Department of Transportation, discussed programs for the elderly and handicapped, and said there are two programs KDOT administers, one is 16B2 for elderly and handicapped and the other is called Section 18.

Mr. Kinzie continued briefing the Committee on the contents of HB-2014.

The meeting was adjourned at 2:20 p.m.

Rex Crowell
Rex Crowell, Chairman

COMMITTEE: Transportation DATE: 1-19-89

PLEASE PRINT

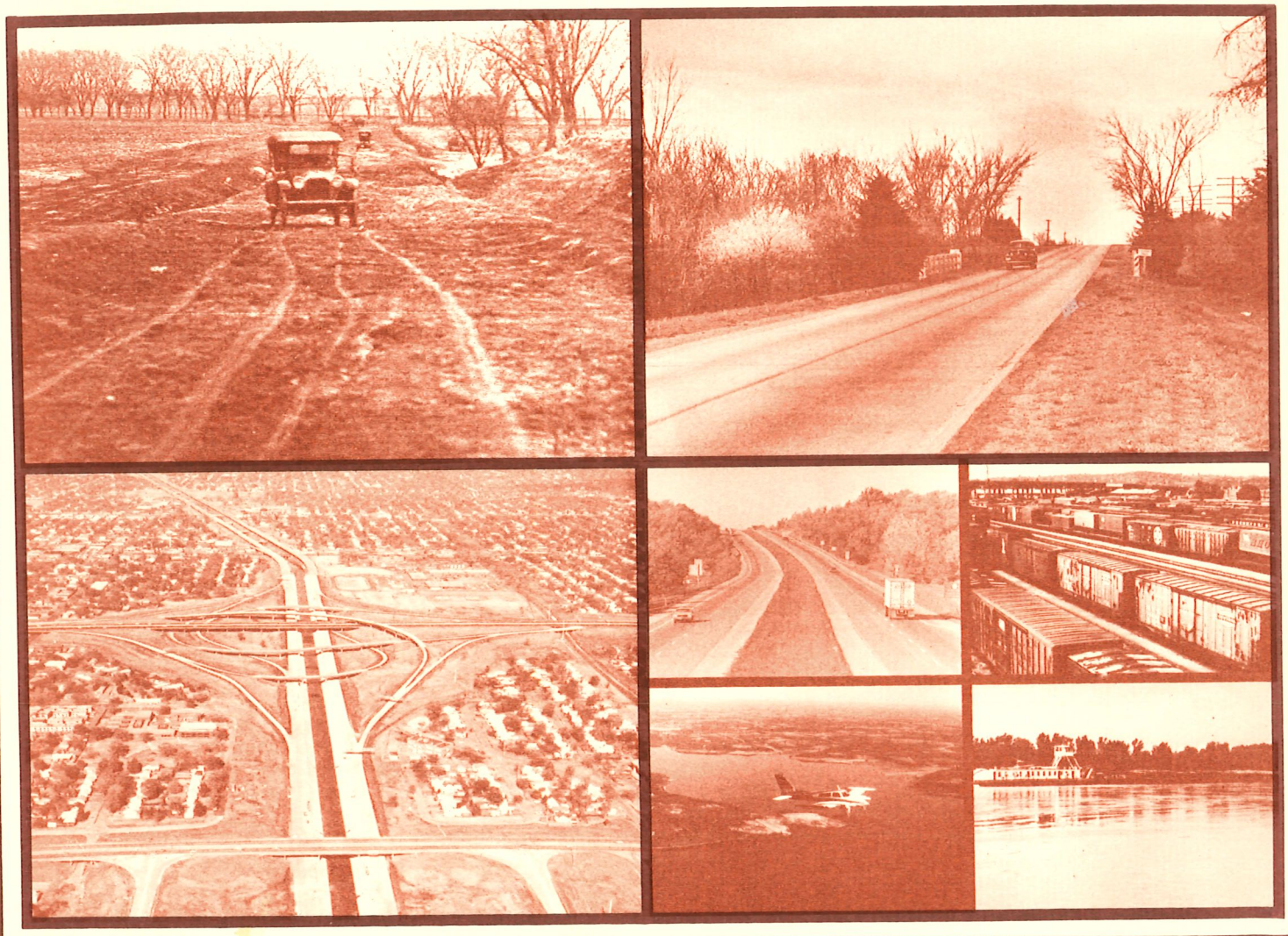
NAME	ADDRESS	COMPANY/ORGANIZATION
Darryl C. Richardson	RT. 1 Box. 234, Lawrence	DCCRD
Tom Whitaker	Topeka	Ks Motor Carriers Assn
Tom Humphrey	Topeka	KMHA
Brian Larson	100 E Park Olathe, KS	JBM & Assoc.
DON SEIFERT	BOX 768 OLATHE, KS. 66061	CITY OF OLATHE
PATRICK J. HURLEY	Topeka	McGinness Hwy Contrs

1-19-89

4-1

MILESTONES

A History of the Kansas Highway Commission & the Department of Transportation



December 1986

Attach. 1

PREFACE

Identifying and documenting past efforts to construct and to maintain an efficient transportation system for the citizens of Kansas is of great value. The perspective gained from past actions is a valuable management tool for leaders of the department in the future.

The aim of the project was something decidedly more sophisticated than a "typical" anecdotal compilation of information about an agency or institution. As you are no doubt aware, projects of these types are of limited value unless they are conducted by the highest of ethical standards. The Department of Transportation determined it would be necessary to contract for professional researchers and historians with qualifications that would yield a reliable and independent analysis of past activities. We are grateful to Dr. Joe Lee, Director, University of Kansas Transportation Center, and his staff, for providing the professional and administrative support to our principal investigators, Ms. Sherry Lamb Schirmer, a doctoral student and an experienced historian who possesses an excellent grasp of the relationships of organizational life, and Dr. Theodore A. Wilson, Professor, University of Kansas History Department, a historian of national prominence, who also serves as the Director of the Hall Center for Humanities at the University of Kansas.

Secretary John B. Kemp

ACKNOWLEDGMENTS

When the opportunity was presented to study the complex history of highway transportation in Kansas and its present incarnation, our multimodal transportation system, we accepted the assignment with casual confidence. Little did we know how complex and how challenging would be the task set out for us by Secretary John B. Kemp, the individual most responsible for ensuring the project was launched. After two years of living with the highways and byways of Kansas, we possess, if nothing else, a fuller appreciation of the adage, "Fools rush in where wise men fear to tread." The experience, nonetheless, has been tremendously rewarding.

Our gratitude for assistance with the issues and sources relating to the history of the Kansas Highway Commission, and KDOT extends to the entire staff of KDOT. In particular, we thank for their support Secretary Kemp, Ken Stodgell, and the current staff members who read the manuscript several times and gave helpful suggestions. Former staff member who read the manuscript were John D. McNeal, Robert Slease, Dick Peyton, and Walter Johnson, and they also deserve thanks. Assisting ably with production were Regina Caylor for word processing, Harvey Hofstetter for artwork, and Roy Hillebert for layout.

We wish to thank Dr. Joe Lee, Director, University of Kansas Transportation Center and his staff for their support and assistance in carrying out this project. Without the generous help and suggestions of the staff of the Kansas State Historical Society and Archives, the Kansas Collection, and Janice McEvoy, KDOT Librarian this work could never have been done. Also invaluable were those individuals listed on the following page who gave interviews describing their experiences working to bring an improved transportation system to Kansas.

Richard McKinzie contributed in important ways to this study and conducted many of the interviews. Sherry Lamb Schirmer was responsible for chapters one through five; Theodore A. Wilson was responsible for chapter six.

We wish to stress that any errors of fact or interpretation are ours alone, since this study was undertaken as an independent inquiry.

Sherry Lamb Schirmer
Dr. Theodore A. Wilson

December 4, 1986

Glenn Anschutz, Assistant Director, Division of Engineering and Design
Dick Biege, Retired Director of Administration
Wauneta Boerger, Secretary to Director of Engineering and Design
George Boyd, Director, Division of Aviation
Jack Brubaker, Operations Engineer, Bureau of Design
Verne Craig, Chief, Bureau of Transportation Planning
Larry Cowdin, Management Analyst, Bureau of Management and Budget
Carl Crumpton, Engineer of Research, Bureau of Materials and Research
Dale Dugan, Inspector General
Cliff Heckathorn, Assistant Bureau Chief, Bureau of Materials and Research
Dr. Arland Hicks, Senior Engineering Advisor to the Director of Administration
Walter Johnson, Retired State Highway Engineer
Robert Jones, Chief, Office of Project Selection
John B. Kemp, Secretary of Transportation
John D. McNeal, Retired, Director of Planning
Mike Lackey, Director of Operations
Bill Ogan, Technology Transfer Engineer, Bureau of Materials and Research
Ray Olson, Chief, Bureau of Rural and Urban Development
Roger Patterson, Senior Plan Files Technician, Bureau of Design
Dick Peyton, Retired Assistant State Highway Engineer
Bill Predmore, Director of Engineering and Design
Joe Reid, Chief, Bureau of Traffic Engineering
Ted Roberts, Chief, Bureau of Design
Harold Shubert, Procurement Officer, Bureau of Fiscal Services
Bob Slease, Retired Chief, Office of Public Information
Maxine Spangler, Secretary to the Director of Operations
William Stuenkle, Retired Squad Chief, Bureau of Design
Dean Testa, Chief, Bureau of Construction and Maintenance
Fern Wagstaff, Secretary to the Secretary of Transportation
William H. Wright, State Transportation Engineer

CHAPTER 1

Climbing Out of the Ruts:
Prologue to the Kansas Highway Commission

Americans who pushed westward in the decades before 1850 found little about the future state of Kansas to attract them. Having explored the Kansas River's watershed for the Army in 1806, Zebulon Pike declared that the land resembled "the sandy deserts of Africa." Like Zebulon Pike, Major Stephen H. Long brought his Yellowstone expedition to the Great Plains during a dry period in its weather cycle.[1] He too condemned the prairies beyond the Kansas River as "uninhabitable for want of timber and water" and "characterized by aridity and barreness." After Long completed his explorations in 1821, he published a map with the words "The Great American Desert" emblazoned over the region west of the 96th meridian.[2] The label stuck. For three more decades, most Americans assumed much of the would-be state to be a wasteland -- a mammoth waystation important only for the trails that crossed it.

Later another use for the barren plains occurred to missionary Isaac McCoy, who explored eastern portions of the future Kansas in 1828 and later opened Indian missions there. McCoy assumed that white settlers would avoid the area for many years. By transplanting Indian tribes from the eastern states to the empty plains, McCoy argued, the tribes could be isolated from greedy white traders, land-grabbers, and liquor dealers.[3] Old Indian fighter President Andrew Jackson, and others like him, finally approved McCoy's plan for less charitable reasons. Relocating tribes to the wilderness, they reckoned, would free the Indian's eastern lands for settlement and make the tribes easier to supervise. With passage of the Indian removal act in 1830, some 26 tribes were transferred to land reserves in what would become Kansas and Oklahoma -- reserves from which all but a few designated white traders and agents were prohibited. A dumping ground for unwanted Indians, an interval on the way west, Kansas would keep its image as an uninhabitable desert for two more decades because the federal government wanted it that way.

The first private travelers to cross Kansas were looking for profit not prairie homes. In 1821 William Becknell led a pack train from Franklin, Missouri, to Santa Fe and confirmed reports that the New Mexicans had silver aplenty and not much to spend it on, since the few goods to reach them came 1500 miles from the port of Vera Cruz. American traders began hauling goods by pack train and wagon to New Mexico -- so many by 1824 that they won from Congress a bill to establish a highway from Missouri's western border to Santa Fe. In 1825 federal commissioners secured the agreement of Indian tribes to a road and safe passage of traders through their lands, and a survey party marked out the route and located streams and springs.

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1 Henry C. Hart, Dark Missouri. (Madison: University of Wisconsin Press, 1957), pp. 31-40.

2 Quoted in William Frank Zornow, Kansas: A History of the Jayhawk State. (Norman: University of Oklahoma Press, 1957), pp. 39-40.

3 Isaac McCoy, History of the Baptist Indian Mission. (Washington, D.C.: William M. Morrison, 1840).

By 1842 caravans of 50 and 60 wagons were toting some $130,000 in goods over the trail each season and returning with boxloads of clinking silver.[4] The towns of Independence, Westport, and Kansas City, grew prosperous on the Missouri border selling or transhipping cargoes of cloth, cutlery, cookware, tools, coffee, flour and bacon to fill the trader's caravans. Setting out from these outfitting points, the Santa Fe drovers crossed the border near the site of present Olathe and headed west-southwest to Council Grove. There the wagons organized into caravans, for passage through the Indian territory ahead was imperiled by local tribes and white desperadoes. From Council Grove the trail led southwesterly to the Arkansas River and thence along its north bank to a point called Cimarron Crossing in present Gray County. The trail divided there, with the government-surveyed route heading for the Cimarron and other trails taking a shorter but more arid route.[5] Drovers made a 550 mile trek diagonally across Kansas before facing the still more daunting hazards of mountain and desert that lay between them and Santa Fe. Neither signposts nor bridges aided their passage. Crude maps and the wagon tracks of previous caravans were all that marked their way.

In the mid 1830s the US government undertook a more ambitious road building project through Kansas. By 1840 removal of Indians was to have deposited some 17,000 tribesmen along the western borders of Missouri and Arkansas Territory. To control this population were 431 officers and men at Fort Leavenworth and another 491 troops at Fort Gibson 250 miles away in Indian territory (Oklahoma). Accordingly, Congress authorized a military road running from the upper Mississippi to the Red River in 1836. A route was laid out running south from Fort Leavenworth and hugging the west side of Missouri's border to the Marais des Cygnes River and thence to Fort Gibson on the Arkansas. Its Kansas portion completed by 1840, the road linked the two military installations for more efficient policing of relocated tribes and white Indian traders.[6]

This road sported grading and some bridges, including a 275 foot span over Sugar Creek, but it was prey to hazards later Kansans would curse. Summer downpours made the roadway a swamp and washed out bridges. Still, the road had a civilizing influence since ferry crossings and fords became nuclei for settlements such as Fort Scott, which operated as an Army post at the road's midpoint between 1842 and 1853. Later the Army put through military roads from Fort Leavenworth to Fort Riley and Fort Kearney in Nebraska.

Long's map to the contrary, nothing would deter itchy Americans once the news of Oregon and California lands reached the east. From the mid 1830's, reports of Oregon's fertile richness sent by missionaries sparked curiosity about the region.[7] Publication in 1837 of Captain Benjamin de Bonneville's notes on his successful trip, with wagons, through the Rockies stirred more interest, but the Great American Desert still loomed between potential settlers and the black soil of Oregon. In 1843, however, John Fremont returned from his second expedition to find a usable route to the northwest. Fremont reported

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4 Robert E. Riegel and Robert G. Athearn, America Moves West, 5th edition (New York: Holt, Rinehart and Winston, 1971 [1930], p. 325.

5 Zornow, Kansas: A History of the Jayhawk State, pp. 59-60.

6 Louise Barry, "The Fort Leavenworth-Fort Gibson Military Road and the Founding of Fort Scott," Kansas Historical Quarterly 28 (May, 1942), pp. 15-129.

7 Riegel and Athearn, America Moves West, pp. 334-335.

that a route existed, and he called the Kansas region along it "beautifully watered with numerous streams," fertile, well-timbered, and "altogether" suited to occupation.[8] Few readers cared to test Fremont by sinking roots in Kansas, but they were emboldened to cross the plains enroute to glory land.

Oregon Fever flared in 1843; by 1847 it was an epidemic. That year nearly 5000 emigrants left Missouri River towns for the Oregon Trail, a goodly portion of them hopping off at Independence, Missouri, and heading through Kansas toward the Platte River to the northwest. Six years after the fever took hold, Oregon had a population of 9000 whites -- enough to organize itself as Oregon Territory -- and the emigrants kept on coming for another decade.[9] Another malady struck in 1849 with the reports of a gold strike in California. Bent on a quicker means to wealth, tens of thousands joined emigrant farm folk on the Oregon-California Trail. An estimated 200,000 seekers of gold and land passed through Kansas by 1852.[10]

Their route followed the Santa Fe Trail through today's Johnson County, then veered northwest to turn parallel with the Kansas River south of Lawrence. Most emigrants struck the Kansas River at Pappan's ferry near Topeka's site. After resting on the north bank, parties followed the Kansas to St. Marys, then moved north on a number of branch trails -- most emigrants choosing to ford the Big Blue River at Marysville. Now 174 miles from their start at Independence, the trains rested and regrouped once more before driving north to leave Kansas (Washington County) for the push through Nebraska.[11]

Troubles awaited them as they approached the mountains, but their passage through Kansas was scarcely a picnic. There emigrant families got their first experience of bone-shaking travel over the rough track, nights spent sleeping in the open and meals cooked over cow pat fires.

River crossings posed a greater hazard, for a swollen stream could sweep away a man's wagon, possessions and loved ones. Ferries grew up at main crossings, but these involved risks of their own. Pappan's ferry carried wagons across the Kansas River near Topeka's site for a dollar fee; however, travelers had to swim across with their teams. Francis Marshall ferried travelers over the Big Blue near Marysville's site for the whopping sum of $5 per wagon, and $1 for man and beasts. For another dollar the cunning ferryman served his customers hard bread, a slice of bacon and a cup of bad coffee. Those who wanted to skip this meal could spend their buck on a dram of equally bad whiskey.[12]

Aside from a few shrewd entrepreneurs such as Louis Pappan and Francis Marshall, the emigrant passage yielded little permanent settlement in Kansas, but trekkers' reports that the area appeared habitable helped dispell its image as a wasteland. In 1854 the Kansas-Nebraska Act opened those regions to settlement with the proviso that settlers would vote to decide whether their

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8 Zornow, Kansas: A History of the Jayhawk State, p. 62.
9 Riegel and Athearn, America Moves West, pp. 334-335.
10 M. Evangeline Thomas, "Roads: Symbols of Progress," in Kansas: The First Century, Vol. II, John D. Bright, ed. (New York: Lewis Historical Publishing Company, 1956), p. 305.
11 Zornow, Kansas: A History of the Jayhawk State, p. 61.
12 Joseph Wade, "A History of Kansas Trails and Roads" (unpublished M.S. thesis), Kansas State Teachers College, 1947, pp. 20-21.

territories would permit slavery. The act touched off settlement -- by tight-lipped New Englanders bent on keeping Kansas soil free, by rock-jawed Missourians bound to save Kansas for slavery -- and touched off a powderkeg when these two forces met. The matter was fought out in a murderous scrap between 1854 and 1859 that earned the title, "Bleeding Kansas", for the territory and pushed the nation closer to civil war.

By 1859 Kansans put aside their rival legislatures and their fraudulent elections along with their guns. A constitution was drawn up preparatory to statehood. Meanwhile a gold strike in Colorado drew more gold seekers through Kansas, journeying along the Kansas River to its junction with the Smoky Hill and thence to Denver.[13] When prospectors went bust in the Colorado gold fields, a number of them recalled the fertile soil they had traversed, and, retracing their steps, they came back to settle in Kansas.[14] With the close of the Civil War, the Homestead Act and railroad expansion across the continent brought more settlers to Kansas. The state's promoters set about to replace the desert legend with the equally fanciful myth that Kansas was Eden rediscovered. Some settlers found out otherwise. In the 1860s and 1870s, wagons headed east were emblazoned with the message:

In God we trusted.
In Kansas we busted.

But Kansas was now a destination and not merely a waystation.

Amidst the bloodshed and the contention of rival legislatures, the free-state assembly meeting in Topeka in 1855 found time to enact the first road laws for Kansas. One of these allowed for the establishment of territorial roads. Beyond designating these routes, however, territorial government took little responsibility. No territorial funds, the law stipulated, could be applied to pay for territorial roads, since free staters feared taxes nearly as much as they did Missouri bushwhackers. A general road law framed in Topeka in 1855 reflected the same pinch-penny attitude and set the pattern by which roads would be built in Kansas for another half century. The law gave authority for establishing roads (other than territorial) to "the tribunal transacting county business," which could approve or deny petitions by twelve householders for opening new roads. Road overseers, appointed in each district by the county commissioners, would supervise construction and maintenance by work crews made up of male residents aged 16 to 45, each of whom were legally obligated to the district for one month of road work. The law set minimum qualifications for work on road crews: crewmen must be "able-bodied." The general road laws of 1855 also established the first body of standards and specifications for construction by requiring that wetlands and streams be bridged, so long as no bridge cost more than $50. Roadways must be no less than twenty feet and no more than forty feet wide and cleared of trees that would truly "incommode" a horseman or carriage. No stump higher than eight inches could be left in the roadway.[15]

Succeeding territorial legislatures ordered 38 more territorial roads to be laid out and designated all military roads as territorial routes, but other more ambitious enactments were lost in the battle over slavery. A pro-slavery

13 Ibid., pp. 25-26.
14 Thomas, "Roads: Symbols of Progress," p. 309.
15 Ibid., pp. 29-32.

legislature met in Lecompton in 1857 and framed a constitution providing for state aid in highway construction. Recognizing that "a liberal system of internal improvements being essential to the development of the resources of the county, [these] shall be encouraged by the government of this state," and state funds were appropriated for improving roads, canals and navigable streams.[16] Machinations, vote fraud, and anti-slavery sentiments among a majority of Kansans finally scuttled this document, and, as well, its liberal approach to road building.

The men who met in convention in Wyandotte (now Kansas City, Kansas) in summer, 1859 were a sober, pacific lot. The constitution they drafted was ratified by Kansas voters in October, 1859, and, after a bitter wrangle in Congress, was approved as the basis for Kansas' admission to statehood on January 29, 1861.[17] Unfortunately, the Wyandotte constitution also sealed the state treasury against road construction by providing that "the state shall never be a party to carrying on any works of internal improvements."[18]

The stingy Wyandotte delegates believed they had good reason for caution. So-called "internal improvements" (highways, canals, railroads) had become a growth industry following the success of the Erie Canal. Entrepreneurs of every sort promptly won charters for improvement projects and besieged their state governments for subsidies. State legislatures had handed out aid in land grants or cash, fearing that any region tardy in building roads, rails, and canals would become the economic backwaters of the nation. Some of these projects actually were built, a few turned a profit, but most existed only on paper. Some states had nearly beggared themselves.[19]

Provisions for road construction enacted by the territorial legislatures became the basis of the new state's road law, and, with only minor tinkering, remained the system by which Kansans acquired their highways until the next century. It was a simple and thrifty system based upon the premise that any fool could locate, build and repair a road. A second principle was that authority over road matters properly was a local matter.

A road began when twelve householders within a given vicinity petitioned their county commissioners to have one laid out. While the commissioners were given the power "to lay out, alter, or discontinue any road," they could do nothing until they had received a petition. To prevent nuisance requests, an 1863 law required that one of the petitioners give bond, from which would be paid the costs of proceedings should the road in question not be approved.

Having received a road petition, the commissioners next appointed "viewers." On the appointed day, it was the job of these good citizens to meet with landowners whose land would be crossed by the route, or lay adjacent to it, and to assess what damages were owed them. Viewers were cautioned that "they should remember that farmers are not all college-bred, and that the majority of

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16 W. S. Gearhart, "Kansas Roads, Past, Present, and Future," Nineteenth Biennial Report of the Kansas State Board of Agriculture. (Topeka, Kansas, Department of Agriculture, 1915), p. 56.

17 "The Wyandotte Constitution," pamphlet, Kansas State Historical Society, n.d.

18 Quoted in Gearhart, "Kansas Roads, Past, Present, and Future," p. 57.

19 Wade, "A History of Kansas Trails and Roads," p. 35.

them are neither logical nor practical men of affairs."[20] Curious advice, since most viewers were themselves farmers. Allowable damages included the cost of building or moving a fence or payment for injury to a property (as when a road intruded between a man's barn and his cow pasture). Costs of the land on which a road ran could not be allowed since the public acquired only the right to use it; the land still belonged to the owner. From the damages owed a landowner, the viewers subtracted any benefits he might receive because of the road, as when his marsh was drained during construction. Clearly the viewer's task required tact.

The viewers went over the ground of the proposed road and selected the best route, pointing out to the surveyor where to place markers. The surveyor measured the key distances and recorded a description of the road's course. The viewers were now ready to report to the county commissioners whether the potential road met the necessary criterion of having "public utility." Usually a road that looked to be useful to the original petitioners was considered to be useful; but should the viewers have heard a preponderance of outcry against it they might submit an unfavorable report. Their decision was final. Once a road was approved, the viewers' report, plat and survey were recorded by the county clerk, and the commissioners ordered the trustees of each township to open the road to public travel.

The actual opening of a road fell to the road overseers. Every township was divided into districts, each with an elected road overseer. He too was usually a farmer, earning paltry remuneration for a task "which is not perfectly free from trouble and annoyance, nor even from danger."[21] Besides opening roads in his district and keeping them in good repair, the road overseer had the nasty job of collecting road taxes from neighbors. In large part, the taxes he collected were paid in sweat. When enacting the first road (or poll) tax the Lecompton territorial legislature had permitted land owners to work out their poll taxes by laboring on the roads over and above the two days labor required of each male. The amount of tax which county commissioners were required to levy varied between two and five mills per dollar assessed value of the owner's land and usually exceeded the farmers' supply of ready cash.[22] Most chose to work out their obligation at the rate of $1.50 a day.[23]

Each man who supplied a team, wagon or a plow for the project at hand earned bonus pay because these constituted the sole implements available for the job beyond the few scrapers and plows the county bought from its road taxes. Working under the direction of the overseer, a perspiring citizenry laid out the road according to the markers left by the surveyor, draining marshy areas and setting culverts or building bridges over streams. The overseer then posted signs (for which he received $1.00 each) on trees or posts to mark each cross-road or fork of a route within his district.

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20 G. C. Clemons, A Manual of the Law of Roads and Highways in the State of Kansas, second edition, (Topeka: Crane and Co., Printers and Binders, 1887), p. 37.

21 G. C. Clemons, A Manual of the Law of Roads and Highways in the State of Kansas, fifth edition, (Topeka: Crane and Co., Printers and Binders, 1900), p. 37.

22 Gearhart, "Kansas Roads, Past Present, and Future," p. 58.

23 "Road Law of the State of Kansas, 1864", pamphlet in the collection of the Kansas State Historical Society, pp. 8-9.

Over the years, legislators made several alterations. In 1861 they designated the first highways to be surveyed by state-appointed commissioners. Besides the usual signs at crossroads and forks, state routes had to be marked by a row of double stakes or stones down their center, but little else in the manner or means of their construction varied from the county and township roads. Since their cost was limited to $3 per mile, supplied out of county funds, they were not distinguished by excellence of design or construction.[24] By 1875, 340 state highways had been so designated, but 30 years later few still existed.[25] Because every farmer wanted a road to run near him without crossing his crop land, the legislature began declaring the section lines to be public highways in 1869.[26] A safety-conscious assembly enacted the state's first speed limit by exacting a $5 fine for crossing a bridge at a speed above a walk. The state's bridges simply could not take the stress of trot or canter. Because farmers liked to clean their plow shares by plowing through the public roads, a law passed in 1883 banned (but did not stop) that noxious habit.

By the late 1880's, crude dirt tracks constituted the only highways to be found in Kansas. Looking for a way to build durable thoroughfares without strapping county treasuries, the legislative session of 1887 embraced the benefit district. Householders who wanted better roads could petition for one to be built, for which the county would pay a third of the improvement costs. The remainder would be apportioned according to the presumed benefits accruing to land owners within a half mile of the road. Payments were collected in the same manner as taxes so that residents of a benefit district might work off these assessments. Residents also let the contract to the low bidder. The contractor's work was supervised by a road commissioner appointed from among district members.[27] This was but one step above the usual do-it-yourself system of road construction and too expensive for most Kansans. Still, no road legislation of importance issued from Topeka before the century's turn.

The roads Kansans received for their trouble were appalling. Initial construction was the rudest sort. Seldom did a road overseer have more than native wit as a guide; untrained and ill-equipped, he experimented with one homemade implement or "surefire" technique after another. When he learned his work his neighbors usually threw him out of office or he quit rather than endure further insults.[28] A construction crew knew as little as the overseer and were a good deal less energetic. Farmers looked forward to road work as a day for getting together with friends and were often found sitting on fences or shooting craps. Even the draft animals ranked as slackers since farmers preferred not to wear out their good teams and gear on road work.

Once surveyed and opened, Kansans' roads tended to go astray. True, the county clerk kept a record of a road's location, and "monuments" marked its course. But the farmer who reckoned he could get a crop of wheat or rich pasture where the road ran sowed his seed where he pleased. If he had an

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24 Wade, "A History of Kansas Trails and Roads," pp. 29-31.
25 Gearhart, "Kansas Roads, Past, Present, and Future," p. 58.
26 Bliss Isely and W. M. Richards, Four Centuries in Kansas (Topeka: The State of Kansas, 1937), pp. 208-215.
27 Clemons, A Manual of the Law of Roads and Highways, 1900, p. 50.
28 W. S. Gearhart, in Good Roads Clippings, Vol. 1, collection of the Kansas State Historical Society [KSHS], pp. 81-82.

appreciation for legalities, it was a simple matter to get his neighbors to petition for a route change. County commissioners readily appointed the men petitioners suggested as viewers -- usually men friendly to petitioners' interests.[29]

James Hanway, a newspaper columnist and state legislator, complained that the traveler, "has no rights on the public highway that an honest (!) farmer is bound to respect." Legend had it that the man who took to a Kansas road on Monday would be unable to retrace his steps on Friday, and quite possibly would fail to find his way back. Highways which began as reasonably straight paths of ten or fifteen miles between villages within a decade crooked twenty or more miles up summits, down gulches, and through swamps for which farmers had no use.[30]

Neither overseers nor residents took gladly to maintenance work and, as often as not, left a roadway in worse shape as a result of their repairs. Poor drainage plagued most routes, but the overseer who finally tired of complaints about mud holes usually filled them in without eliminating the drainage problem. The slightly more conscientious sort, knowing that a crown was necessary to good drainage, sometimes heaped sod, dirt and brush down the middle of a road, then placed poles and logs along the outer edge so that traffic would be forced into the center to smooth down his "crown."[31]

Gumbo, mire -- "those unfathomable mud holes which are becoming one of the fixed institutions of our public roads" -- plagued Kansans. James Hanway traveled the highways often and denounced their condition angrily -- particularly after one trip in 1870 in which the rough track caused his carriage seat to give way. Hanway "plunged backward into the black alluvial deposits which had there accumulated" and had to be scraped dry by strangers.[32] A story going the rounds concerned a traveler on a Kansas road who spied a hat floating atop the mud hole before him. Thinking it a pretty good hat, the traveler picked it up to find a head beneath.

"Whillikers," said the traveler. "Do you need some help?"
"I don't think so," replied the head. "I'm on horseback."[33]

Still, Kansans got precisely what they wanted -- cheap roads and the local exercise of power. For them it was an article of faith that governmental authority belonged at home to be wielded by men who knew each other and each other's problems, men who wrestled face to face over the issues and, having reached decisions, had to live day to day with those whom their decisions affected. Many Kansans belonged to religious denominations which held to the belief that no distant church hierarchy should judge the manner in which a congregation worshipped. That the neighborhood school should be governed by its local patrons remained a firm conviction and a source of bitter conflict well

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29 James Hanway, "Scrapbook," Vol. 2, 1844-1870, collection of the Kansas State Historical Society, n.p.
30 Ibid.
31 Gearhart in Good Roads Clippings, Vol. 1, KSHS, pp. 81-82.
32 Hanway, "Scrapbook."
33 Roger Welsch, Shingling the Fog and Other Plains Lies (Lincoln: University of Nebraska Press, 1972), p. 50.

into the 20th century. The average Kansan believed devoutly that his rights as a free man, indeed, the well-being of the Republic itself, depended upon keeping the exercise of power within his reach.

Because early Kansans had little need for any but local roads, local authority suited them. Few travelers took to the highways except to visit the nearest market village, usually no more than ten miles from the average farm. For longer trips Kansans boarded the trains that connected every town of moderate size.[34] Consequently, the average road rarely extended over 20 miles, and few crossed county lines. As late as 1908, Kansas had not one highway which crossed from one of its borders to another.[35]

If they spent little cash, Kansas farm folk paid a heavy penalty for their roads in isolation. Amidst their quarter sections of land, the farmhouses sat cut-off and lonely, with scarcely a tree to shade or shield them. The farming man punctuated this isolation with trips to the elevator or rail depot, with trips to town for seed and tools, with haying and threshing on his neighbor's fields, and even with his road work days. The penalty of isolation fell heaviest upon his wife and children.

Farm children met their fellows at school, of course, but sodden roads sometimes made even this short trip impossible, and absenteeism was chronic in bad weather. For the mother, neighboring meant a trip over miles to the nearest farmhouse. Sunday worship brought a break in the isolation, and, given the state of travel, involved a full day of fellowship. Even these welcome outings could be eliminated by impassable roads, however, and the society of other women denied to the farm wife.

Without telephones, radios, or frequent callers, farm families depended on the mails for news of the outside world. The postmaster, often a merchant, collected the family's mail to be picked up on the infrequent trips to town. Few farmers subscribed to any but a weekly newspaper. What good to him were daily reports that only gathered dust on the postmaster's shelves before reaching him? When the state of the roads prevented travel to town, the family's mail sat uncollected for weeks, so that word of the death of a beloved parent sometimes reached Kansas long after the loved one had been laid to rest. By the late eighties neighboring Kansas farmers were organizing clubs whose members picked up and distributed each other's mail whenever they were in town.[36] This shortened the intervals between mail delivery but communication remained poor.

Surprisingly, it was not the farmers who began agitation for better roads but another altogether eccentric breed. In the late nineteenth century, the cycling fever seized many American males and shortly reached the towns of Kansas. Cyclists boasted a fanatic devotion to their sport since mounting and riding their high-wheeled machines took courage. Nor were cyclists easily tolerated. Ladies were so scandalized by the tight-fitting jerseys wheelmen preferred for long distance pedalling that cyclists had to cover themselves with dusters while riding near town. Once on the open road, wheelmen suffered the insults and assaults of farmers who claimed the machines spooked their teams and

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34 Isely and Richards, Four Centuries in Kansas, pp. 208-215.

35 Arman J. Habegger, "Out of the Mud: The Good Roads Movement in Kansas 1900-1917," unpublished M.A. thesis, University of Kansas, 1971, p. 95.

36 Isely and Richards, Four Centuries in Kansas, pp. 208-215.

dried up their milk cows from sheer terror. But the most galling hazard for cyclists was the roads they pedalled. The high wheelers negotiated ruts and bogs with difficulty. In 1890 cyclists organized a Kansas division of the League of American Wheelmen, in part to protect the rights of cyclists and to encourage interest in the sport, but in large measure to press for improvement in the state of Kansas roads. The league promptly appointed a five member committee to study the problem.[37]

In 1896 rural mail carriers joined the fight for good roads. That year the United States Post Office inaugurated rural free delivery. Offering free delivery of the mail was one thing; getting it to the farmhouse was another matter. Ruts, gullies, and fences across his route delayed the mail carrier, while extreme negligence with regards to road repairs sometimes prevented delivery on parts of his route -- a circumstance that cost the carrier a part of his wage. The Post Office Department determined in 1899 that mail routes would not include unserviceable roads. Wielding this leverage, rural mail carriers spurred the locals into making repairs by cancelling service on routes they judged unfit. Historian Wayne Fuller noted that "country roads which in the past had rarely received more attention than some farmer's hearty curse were suddenly vigorously worked."[38] In some parts of Kansas, farmers vied with each other to improve their mail routes.

Rural mail carriers became key figures in their counties' road planning. In 1901 the postal service began a program of periodic inspection of routes. Local road overseers, rural delivery patrons and postmasters were told which sections to fix if they wanted continued service. Gadfly and promoter, the rural carrier secured promises from county officers to improve the roads. One enterprising carrier in Jefferson County even marshalled his own platoon of volunteers to work the roadways.

The Post Office Department also fell in with the Department of Agriculture's Office of Road Inquiries to encourage the good roads movement then awakening throughout the country. The Office of Road Inquiries (renamed the Bureau of Public Roads in 1905) constituted a major advance in federal assistance to highway construction. The agency had no federal funds to distribute, but it provided the expert advice on local roadbuilding projects and turned out enough printed information and public speakers to keep the interest in improved roads brewing.[39] In 1900 that interest was just beginning to bubble in Kansas.

By the century's turn, "townies" began to lend their hands to the good roads agitation. Most were commercial or professional men who recognized that their particular towns' fortunes, and hence their own, would improve if folks could come more easily to shop and trade. Towns where travel was difficult would attract few of the new businesses and residents that spelled growth. In other, more lyric words, these men were boosters whose character Leslies Magazine captured in rhyme:

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37 Habegger, "Out of the Mud," p. 13.

38 Wayne E. Fuller, "Good Roads and Rural Free Delivery of Mail," Mississippi Valley Historical Review, 42 (June, 1955), p. 71.

39 Ibid., pp. 68-73.

The booster boosts
You bet your life!
His town comes first,
And then his wife.[40]

Overlapping with the town promoter was the motorist, a breed more maligned than the cyclist when he first appeared on Kansas byways. But Kansans quickly laid aside their prejudices. In 1900 the state ranked tenth in the nation with 220 autos. By 1910 Kansans owned 10,490 cars of the half million cars and trucks in the nation and were driving 30,000 cars by 1912. That year the Kansas State Automobile Association was organized to press for good highways and within another year boasted a chapter in 75 of 105 counties -- evidence that a goodly number of farmers had joined townsfolk in operating the infernal machine.[41]

The motorist needed reliable surfaces as much as the cyclist and he pushed to get them. Wichita auto manufacturer J. J. Jones thought the motorist advocated good roads for another reason. Auto travel, Jones recalled, caused a man to curse conditions elsewhere which he once had excused in his home district. He came to object to road problems near home because he learned "that the conditions of the highways in any locality are an indication of the degree of citizenship in that locality."[42] As a result of his travels, a booster's heart came to beat inside the autoist's duster. To press his point that motorists had tipped the balance for road improvements, Jones noted that between 1911 and 1916, the year when the number of autos increased markedly in his state, surfaced highway mileage in the United States increased by 53% and in Kansas by 360%. Expenditures on roads increased in the same period by 91% in the nation as a whole, compared to a 250% jump in Kansas.

This conglomeration of wheelmen, mail carriers, boosters, and motormen populated the good roads movement which had its official start in Topeka in 1900. That spring Topeka's Commercial Club sponsored meetings on the road question that prompted similar gatherings of township trustees and officials, town streets committees, and road advocates in eastern Kansas locales. From the Topeka sessions came a call for a state road convention to meet in September, 1900.

Five hundred delegates, 10,000 visitors, and national press coverage were expected for this first roads convention to be held in the West. To assure turnout the Topeka Commercial Club offered a $100 prize to the Shawnee township having the most residents in attendance, and railroads offered reduced fares to all comers.[43] Over four days, enthusiastic conventioneers heard long speeches from the U.S. Postmaster General, the Director of the Office of Public Roads Inquiries, their governor and other notables. When time permitted, visitors gawked at a display of vehicular wonders including bicycles, cars, and rock crushers, or they witnessed a demonstration of macadam road construction using locally available materials. The most important event of the gathering,

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40 Reprinted from Leslies Magazine in The Progressive Autoist 1 (December, 1911), p. 2.

41 Habegger, "Out of the Mud," p. 174.

42 J. J. Jones, "The Influence of Motor Cars on the Development of Good Roads," printed copy of speech given to the Kansas Good Roads Association, Beloit, Kansas, April 24, 1919, KSHS.

43 Habegger, "Out of the Mud," pp. 14-20.

however, was the formal organization of the Kansas Good Roads Association [GRA]. Armed with the resolutions of the various counties' roads organizations and the advice of the speakers, the GRA persuaded the 1901 session of the legislature to approve a new road act.[44]

According to the new statute, any county with a population of more than 8000 was declared a road district and its county commissioners empowered to call elections for approval of a 2 mill levy, assessed up to five years, for the purposes of road improvements. Roads built under the statute required the usual legal process (petition, viewing, and commission approval), with 15% of costs to be borne by property owners within a half mile of the road and the remainder by the county. However, the county now was responsible for road maintenance.[45]

However, the GRA failed to get enough legislators behind two other proposals. Good roads advocates fuming over the wasteful and slipshod work of the citizen roadbuilders introduced a bill to permit the use of convict labor on the highways. Though prison inmates knew as little about construction, proponents expected the convicts to be a better disciplined labor force than recalcitrant farmers. A second measure would have banned payment in labor of the road tax.[46] Both bills foundered.

With the brass bands of the state roads convention silenced, the Good Roads Association fell quiet, too. State meetings ceased between 1901 and 1904, when local auto and cycle clubs, commercial clubs, and mail carriers were joined by representatives of the railroads and the Kansas State Agricultural College in agitating through the GRA.[47] Still, no really important road bills made the statute books before 1909. The roads issue by itself lacked sufficient political punch to induce legislators to upset the status quo. In the early years of the century, the good roads movement, like road construction itself, flourished at the grassroots.

At the local level the movement acquired the passion of a missionary crusade which fastened first upon the drag -- a crude, homemade implement of road repair. By 1904 good roads advocates had determined that the drag answered the essential problem of poorly drained dirt roadways. Any farmer or blacksmith could knock one together from split logs or planks, which were cut to a length of nine feet and braced together in parallel about two and one half feet apart, with the front plank extending a foot beyond the trailing plank on one side.[48] By hitching the drag to a team and standing on its cross pieces to lend weight, a man could cut down ruts and scrape loose soil into potholes. Frequent dragging gave the roadbed a crown and a surface hard enough to resist soaking.

The implement became a local vogue once D. Ward King took to the missionary circuit. This Missouri inventor expected no profit from his King Road Drag. It was altogether too simple to copy. But King spent years preaching before club meetings, farmers' gatherings and roads associations throughout the state. Listeners came in droves to hear King's message, some on reduced fares offered by the railroads. They left committed to the cause. In 1905, the Commercial

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44 Ibid., pp. 20-24.
45 Ibid., pp. 30-31.
46 Ibid., p. 33.
47 Ibid., pp. 145-153.
48 Gearhart, "Kansas Roads, Past, Present, and Future," p. 82.

Club of Hiawatha, Kansas awarded a $125 prize to the man achieving the best results with a drag that summer. The Topeka Daily Capital offered free subscriptions to members of its own drag club. Similar clubs sprouted in other locales, especially in the eastern part of the state.[49]

Communities adapted the old system for huskings and barn raisings to the campaign. By 1910 "road bees" drew local citizens out on designated "good road days" to drag as much as 50 miles of surface while the womenfolk watched over pesky children and laid on the traditional chicken supper.[50] A Montgomery County journalist thought road bees contributed much to community spirit when he described work on the Independence-Coffeyville highway in 1911:

> "It was a great sight. Try to imagine, if you can, men and teams with road-building machinery of every description lining the highway for eighteen miles between these two cities. Here were lawyers and doctors, preachers and politicians, day laborers and millionaires, bankers and clerks, printers and mechanics, friends and enemies, shoulder to shoulder, without wage or price, working in a great public enterprise for the common weal."[51]

The drag's appeal was compounded of civic enthusiasm and financial good sense. Hard surfaced roads cost $2,000 to $7,000 a mile to build compared to $10 a mile for dirt surfaces. Thus, Kansans were stuck with dirt for a good while. By 1917, 90% of the state's 111,500 miles of roadway had earth surfaces. If used often enough, a drag costing $3.00 to construct and $4.00 per mile to use gave approximately the same effect as poorly maintained macadam.[52] Little wonder that thrifty Kansans with a yearning for dependable travel took to exhorting their fellows with the dragster's war cry:

> We will drag our roads,
> Yes drag! drag!! drag!!!
> And quit chewin' the rag.[53]

Regular dragging, however, could not prevent dirt roads from turning to mire with frustrating frequency. Oiling a dirt surface was an alternative. It was first tried on a sandy stretch in Finney County in 1905. Professor Albert Dickens of the Agricultural College experimented effectively with mixtures of oil and dirt to give a firm, waterproofed surface. Towns that tried spraying oil on heavily traveled stretches got fair results, while some residents in the sandy central and southwestern portions of the state successfully mixed their sandy soil with clay and allowed it to bake hard before oiling.[54] At a cost of around $500 a mile for construction, however, these tactics exceeded most road districts' budgets and so contributed only 20 miles to the state's system by 1913.[55]

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49 Habegger, "Out of the Mud," pp. 75-77, 89.
50 Good Roads Clippings, Vol. 1, KSHS, p. 51.
51 Ibid., p. 37.
52 Habegger, "Out of the Mud," p. 84, 96.
53 Good Roads Clippings, Vol. 1, KSHS, p. 51.
54 Habegger, "Out of the Mud," pp. 78-81.
55 Gearhart, "Kansas Roads, Past, Present, and Future," p. 91.

More reliable were macadamized or graveled highways. The macadam road began with excavation of a roadbed with a three inch layer of crushed stone added. Layers of gravel and smaller stone were laid on next. After soaking, each layer was compacted with a ten ton roller to make it water-resistant.[56] If the road were graded and shaped correctly, the right materials used, and repairs made regularly, macadamizing gave an all-weather surface. Botching the job left the road in worse shape at 200 to 700 times the cost. Only a few communities were invested in macadam surfaces after the tax levy statute of 1901 gave them the means. In 1902, Shawnee County paved a main route leading to the capitol; Lawrence businessmen pooled $11,500 for rock roads in their vicinity; and Bourbon County invested $125,000 in 1907 to rock 31 miles of rural roads and a route to Fort Scott.[57]

Help came for the great majority of Kansas towns with the Hodges Rock Road Law in 1909. Its sponsor, State Senator George Hodges, claimed the bill originated in his own experience as a bridegroom some years before. On the way to his wedding, Hodges had ruined a new pair of patent leather shoes in the muddy streets of Olathe and had vowed then to do something about the state of the roads.[58] The act required county commissioners to comply with any petition for road improvements costing more than $500 per mile, so long as the petition had the approval of 60% of the owners of half the property along the route. Since no previous legislation existed which permitted such costly improvements, proponents expected the law to spur hard surfacing.[59]

The 1909 statute constituted the first significant legislative victory for the good roads movement, but its results were disappointing. The law required a county to pay one-fourth of road construction costs and costs of all bridges and culverts requiring more than $200 to install. The remaining three quarters, a heavy burden, fell to the small number of landowners in the benefit district. Few Kansans could carry that kind of tax load, and just 180 miles of Kansas road had been hard surfaced by 1912.[60] But good roads men had gotten a law on the books after nearly a decade of frustration. What gave their cause political weight was its inclusion in a broader program for change. Progressivism had emerged to reshape Kansas politics.

In general, "progressives" sought to right a society they found out of joint. Americans had entered the new century with a burgeoning population but one divided among the languages, religions, and "alien ways" transported from Europe and Asia. Industrialization had fractured American society along class lines; cities festered with poverty, crime, and vice. Rapacious business combines seemingly outgrew anyone's ability to control. All these problems Americans had to address with institutions forged in the eighteenth century. Progressives in all their various manifestations hoped to enlist government, whether local, state, or federal, in the crusade to solve national problems and to modernize these governments in the process.

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56 Habegger, "Out of the Mud," p. 107.
57 Ibid., pp. 108, 111-112.
58 Wade, "A History of Kansas Trails and Roads," p. 41.
59 Habegger, "Out of the Mud," pp. 39-40.
60 Ibid., pp. 114-115.

The reform strain infecting Kansas in the early twentieth century won the title "managerial progressivism" in Mary Scott Rowland's excellent study. These men hailed from the business and professional class. They were practical men of affairs who were scandalized at the waste, inefficiency, and inequities with which the state's government was shackled. Should its overlapping administrative agencies be streamlined and staffed by experts, state government might operate as efficiently as did their own business enterprises. The state would realize a profit in better, more equitable service at less cost to taxpayers.[61]

No area of governmental responsibility begged the managerial progressives' attention more than the roadbuilding system. The infusion of progressive principles energized the good roads agitators. The GRA began to publish a newsletter, the Kansas Good Roads Advocate, in 1912. In 1916 the association launched a five year public education campaign and vowed to raise $10,000 annually to fund enough local petition drives to add a thousand miles of hard surface to the system each year.[62] A second advocacy group, the 365 Days Roads Club, joined the fight in 1915. Its members pressed for surfaces they could motor in any season. The mail carriers, too, entered in by sending lobbyists to Topeka to press for improvements in 1771 rural mail routes.[63]

Railroads lent impact to the public education campaign with "good roads trains." Seemingly, railroads were promoting a competitive transportation system, but their first concern was ensuring that farmers be able to move their harvests to the depots. Rail lines had joined the fight, a Santa Fe Railway official said, "because good roads are next to good crops in the railroad traffic man's calculations."[64] A participant described a typical Santa Fe venture which sent Kansas highway expert W. S. Gearhart and five college lecturers into 75 Kansas towns in March, 1912. Over 9000 listeners turned out for the train's stops. More would have attended had it not been for the awful state of the roads that spring. Guests saw demonstrations in roadbuilding and heard exhortations that "so waked them up" that newspapers reported a later flurry of roads meetings wherever the train had passed.[65]

Keeping up a steady barrage of stump-speaking, newspaper and magazine publication, and political lobbying, good roads advocates developed a recurring line of argumentation. Bad roads, ran their theme, exacted a heavy penalty they called the "mud tax." The mud tax fell heaviest upon the farmer, since "the worst conditions of the roads generally prevail at the time of year when the farmer has to move his crops to take advantage of the conditions of the market, so as to secure its profit if there is any."[66] The average haul from barn to rail line was 9.4 miles in Kansas and cost the farmer 30 cents per ton/mile over bad roads but just 10 cents per ton/mile on good ones. That meant that he spent 6 cents a bushel more for wagon transport than did his European competitor and so took a beating on the world grain price. In fact, the 9.4 mile haul to the

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61 Mary Scott Rowland, "Managerial Progressivism in Kansas, 1916-1930," unpublished Ph.D. dissertation, University of Kansas, 1979.

62 Habegger, "Out of the Mud," pp. 157-161.

63 Ibid., pp. 164-165.

64 Ibid., p. 170.

65 Charles J. Dillon, "Santa Fe's Good Road Special," The Earth 9 (May, 1912), p. 16.

66 George Washington Glick, "Public Highways and Their Improvement," Kansas State Board of Agriculture Quarterly Report. (December, 1892), p. 111.

railway cost the grower 1.6 cents more per bushel of wheat than it cost him to ship the same bushel from New York to Liverpool.[67] The farmer shelled out another mud tax in stagnating land values. Good roads advocates pointed out that improved roads had increased land values by $50 an acre in sections of Bourbon County.[68] Other locales reported a 25% increase in prices of land along good roads.[69]

The mud-plagued farm community suffered further in its declining quality of life. President Theodore Roosevelt had instituted a study of rural life in 1908, which found bad roads to be a prime cause of dissatisfaction among country folk. Unable to attend club meetings, church services or social events in bad weather, farm families endured continued isolation while their city cousins enjoyed an expanding range of entertainment and urban amenities. Not only was divine worship curtailed, but one Kansas physician thought frequent miring in mud threatened the very body and soul, for "such an experience upsets a man for a week, increases his wicked thoughts, and shortens his life."[70]

School attendance dipped wherever a farm community's roads turned bad; efforts to improve rural schooling bogged down in the same morass. By 1908, state educators were attempting to consolidate rural schools on the grounds that larger districts would provide graded instruction, improved curriculum, trained instructors and better materials, but their work was obstructed by the fact that rural pupils were hard put to reach nearby schoolhouses -- let alone a distant consolidated school.[71]

Worry over what harm bad roads did to rural life focused on farm youth. With increasing numbers of youngsters leaving the farms each year for work in the towns, it appeared that fellowship and an end to loneliness awaited in town. Said Topekan Charles Dillon, "no boy or girl wants to live in a county where the only way to reach a place is by telephone."[72] Good roads, on the other hand, restored vigor to country institutions. Former governor George Washington Glick argued:

> "Good highways make all the surroundings more pleasant; the easy intercommunication adds pleasure to the social conditions; friendships are nurtured and preserved; love of home and its surroundings is instilled into the minds of the young, and in such localities family homesteads are occupied for years by descendants of the founder, who regard it, and love it, as the most valued and beautiful place on earth. ... Poor teams, muddy dooryards, no barns, hungry cattle and a score of yelping curs are the unfailing sights exhibited to the unfortunate wanderer who is compelled to pass that 'vale of despond' where poor roads prevail."[73]

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67 George H. Hodges, "The Price of Bad Roads," The National Good Roadster 1 (September 1, 1914), pp. 12-14.
68 Habegger, "Out of the Mud," p. 132.
69 Good Roads Clippings, Vol. 1, KSHS, p. 11.
70 Habegger, "Out of the Mud," p. 133.
71 Rowland, "Managerial Progressivism in Kansas," p. 45.
72 Habegger, "Out of the Mud," p. 133.
73 Glick, "Public Highways and Their Improvement," p. 113.

Townsfolk had only to observe the effects of the harsh winters of 1909, 1910, and 1915, when snow-packed and boggy roads kept farmers confined to their barnyards for a month at a time, to calculate the financial costs. Rural merchants lost vital trade, and farmers subsequently tried to recoup their own winter losses by cutting back on purchases. A traffic study done near Emporia on the new Santa Fe Trail highway in 1917 showed that dry roads averaged 258 vehicles daily (including 147 autos) but plunged to 47 vehicles daily (just four of them autos) on wet roads. That same year, Topeka's Chamber of Commerce estimated that local merchants were losing $5,000 a month in potential business so long as Shawnee County commissioners delayed paving a portion of the highway from Fort Leavenworth to Fort Riley.[74] On the other hand, North Topeka merchants found their business increased five fold after certain routes were macadamized in 1908, and downtown merchants began to clamor for similar improvements.

Since town dwellers could calculate the benefits of good roads so clearly, they tended to be easily convinced. Road propagandists thus aimed at rural residents. Farmers tended to resist change which might raise their taxes for what they considered a benefit to city motorists and, in Kansas, the farm vote counted above all else. "In addition to controlling the Legislature," ex-governor Glick said of farmers, "90 percent of the county commissioners, township trustees, and road overseers have been farmers, and these are the parties who have direct control of the public roads. The roads tell how sadly they have neglected their duty."[75] By 1910 rural mail delivery and an increase in auto purchases by farm families had converted a few thousand farmers to the good roads cause, but the majority remained suspicious.

The existing system of construction and repair, roads campaigners protested, dribbled away 80% of the state's road expenditures in sheer waste for lack of "distinct, united, constructive road policy."[76] The amount Kansans wasted each year on roads and bridges equalled combined expenditures on other functions of the state government, according to George Hodges. Governor Arthur Capper estimated in 1915 that taxpayers had thrown away over $26 million on temporary, poorly done road work since 1905.[77] What was needed, wary farmers were told by speakers on the "good roads trains," was not more money but "getting the right kind of men to spend the money."[78]

Agitators sought to excite Kansans' expectations for a better life via roadways. By 1909 the movement had devised a legislative agenda for meeting those expectations. The Hodges Rock Road Law amounted to an opening gambit. Next, the movement hoped to put skilled, disciplined crews to work on the roads. Eliminating the "working-out" option for payment of road taxes and applying convict labor to the job would stop what W. S. Gearhart called "pawing the earth into all sorts of senseless shapes by way of settlement of the road tax."[79] The

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74 Habegger, "Out of the Mud," pp. 129-137.
75 Glick, "Public Highways and Their Improvement," p. 113.
76 Hodges, "The Price of Bad Roads," p. 12.
77 Good Roads Clippings, Vol. 1, KSHS, p. 159.
78 Dillon, "Santa Fe's Good Road Special," p. 16.
79 Good Roads Clippings, Vol. 1, KSHS, pp. 81-82.

Kansas legislative session meeting in 1909 approved a half measure which banned payment in labor of the road tax levied against property owners but preserved the work option for payment of the poll tax.[80]

The roads movement also hoped to oust the district road overseer, who was frequently elected "because he neglects the roads" and lacked training. Roads proponents thus aimed to require that the more populous counties, at least, be required to hire county engineers to supervise the work. As one writer commented, "No one would think of building a railroad without the assistance of a competent civil engineer, and skill and special training are no more necessary in railroad construction than in road-making."[81] Accordingly, the 1909 legislative session stipulated that commissioners in counties with a population over 20,000 appoint a county engineer of bridges and highways to superintend their repair and improvement.[82] The statute did not specify qualifications for appointees to the post, but legislators expected that commissioners would hire men with working knowledge of the road-maker's art. In most cases the county surveyor took over the engineer post.[83]

Road construction was fast becoming a technical and exacting science. If it required an expert, that was a self-evident proposition only to the managerial progressives, who urged employment of professionals to carry out each of the state government's responsibilities. Their critics charged that they were trying to raise taxes so as to give someone a soft job.[84] Professionalism also threatened another deep concern of Kansans. A technocrat in Topeka likely would wrest decisions from local control.

Conscious of prerogatives, roads advocates found a back door to their goal. The 1909 session appropriated $52,000 for the extension department of the Kansas State Agricultural College and empowered the school's board of regents to employ a state highway engineer.[85] Regents promptly hired W. S. Gearhart, probably the most skilled and vocal highway professional in the state. A newspaper editor recalled of Gearhart that "the state had to wheedle around the law to find authority to employ him, but it made no mistake."[86] With Gearhart in position, the roads movement girded for the fight to make the highway engineer's office a genuine state highway department. The demise of the well-meaning amateur, they hoped, was at hand.

A state engineer's office furthered one additional goal of the movement in helping to tie together the disjointed pieces of the state's road construction system. As late as 1915, some 9000 officials of various sorts had a hand in road planning.[87] The result was an uncoordinated tangle of routes, not one of which crossed the entire state before 1909. Local routes meandered or followed section lines regardless of topography. Roadbeds received a drag crew's

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80 Gearhart, "Kansas Roads, Past, Present, and Future," p. 58; Habegger, "Out of the Mud," p. 41.
81 Habegger, "Out of the Mud," p. 36.
82 Ibid., p. 41.
83 Gearhart, "Kansas Roads, Past, Present, and Future," p. 59.
84 Rowland, "Managerial Progressivism in Kansas,"; Good Roads Clippings, Vol. 1, KSHS, p. 1.
85 Habegger, "Out of the Mud," p. 42.
86 Good Road Clippings, Vol. 1, KSHS, p. 36.
87 Ibid., pp. 81-82.

attention without concern for priorities. Illogical, overlapping, and wasteful, the democratic method produced nothing resembling a system of roads for Kansas. Progress had to begin locally by collapsing small planning units into larger ones.

The ground-breaking 1909 legislative session approved a statute requiring the township boards to decide which roads were to be dragged and when, to hire dragmen and provide drags, and to see that the roads were kept in repair. The measure empowered the county engineer's to designate certain roads as county, township, or mail routes and to plan their improvement according to set priorities. Thereafter, Gearhart hoped, "not a shovelful of dirt" would be moved on those roads unless the engineer approved.[88] The assembly meeting in 1911 elaborated on this scheme by adding "state roads" to the classification system. These routes were to be laid out by the state and improved or repaired by the county engineer at the county's expense.[89]

One last item on the good roads agenda belied disclaimers about tax hikes. The movement decided to seek additional sources of highway funds to pull their state out of the mud. What Kansans spent on roads by 1913 came from the $3.00 poll tax, a maximum 3 mill county road levy against property and a 3 mill township road levy. The state constitution ruled out state aid to highways. The yield was paltry compared to the state's needs, but removal of the constitutional ban proved beyond the skills of progressive campaigners.

Driven by the mounting energies of progressive politicians, the good roads movement picked up momentum in 1913. The legislature considered a flood of road proposals, among which were bills for a state highway commission and an amendment to the constitution allowing the state to fund internal improvements. Both measures failed, the proposed amendment because critics dreaded opening the treasury to porkbarrel politics,[90] but legislators did approve a vehicle licensing fee. For an annual charge of $5.00 per car and $2.00 per motorcycle, vehicle owners received their number plates and license certificates. The county received $4.25 for each car registration and $1.50 for each motorcyclist's fee, all of which had to be set aside by the county for maintaining state and county roads.[91] Members of the Kansas State Automobile Association had lobbied hard for the privilege of paying the fees as the one way they could secure decent roads for themselves.[92]

Kansas voters boosted the highway campaign in 1914 by electing Arthur Capper governor. Capper embodied the manager turned politician. By the end of his two terms he would fine-tune Kansas government by securing a Commission on Efficiency and Economy and a State Board of Administration that promoted proficient management of charitable, correctional, and educational institutions. Anxious to replace inept political appointees with trained professionals, Capper

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88 Habegger, "Out of the Mud," pp. 41-42; Good Roads Clippings, Vol. 1, KSHS, pp. 81-82.
89 Gearhart, "Kansas Roads, Past, Present, and Future," pp. 59-60.
90 Habegger, "Out of the Mud," pp. 44-46.
91 Gearhart, "Kansas Roads, Past, Present, and Future," p. 61.
92 Habegger, "Out of the Mud," p. 174.

won a Civil Service Commission for the state, although the merit system existed in little but name until 1921. He was considerably more effective in redeeming platform promises for good roads made by able men.[93]

When Capper took office his fellow road advocates confronted daunting obstacles. The state of the roads had deteriorated despite the best efforts of the legislature. The 1913 general road law made dragging mandatory and imposed a stiff fine on road officers who failed to comply; yet the work had been neglected or botched in many communities. A frustrated governor had to revert to amateurism by advising his fellow Kansans to "take two days off to repair the roads." Road Days were set aside in July, 1915, and dutiful Kansans turned out to sweat for the common good.[94]

The movement was hampered by a split in its ranks. Adherents agreed that the state system required a central planning agent, but rival factions now contended over whether that agent should be a state highway engineer located in Topeka or a three-man state highway commission serving at the Agricultural College.[95] The clash stemmed from a contest between the boosters of Topeka and Manhattan and proved an unfortunate handicap to a movement now facing organized opposition.

The Good Roads Association sought an alliance with the State County Commissioners Association to work jointly to secure its prime objective, a state highway commission. Instead, the GRA received a harsh rebuff from county officers who foresaw the erosion of their power by a state highway agency.[96] County commissioners sent their own lobby to Topeka to work against the highway commission bill, and a meeting of county commissioners in December, 1915, opposed a state highway commission. Creation of such an agency, they warned, would place authority over expenditure of local road funds in the hands of three men who knew nothing about local problems. To co-opt the efficiency in government slogan, they claimed that they as locally elected officials, they were better able to deal with real needs.[97] Governor Capper was willing to settle for a state commission existing only on paper to satisfy requirements for federal highway aid, but the drive for a state commission foundered because of opposition from the rural areas. The movement for a constitutional amendment failed at the same time.

Bad as the situation looked to battered highway promoters, changes were underway that would convince a sufficient number of Kansans that their road system was no longer a strictly local problem. These changes owed much to a new kind of American, the tourist eager to see his nation's wonders from his own flivver and willing to spend good money for the privilege.

By 1911 tourists were thick enough in Kansas to make the "honest tourist dollar" worth going after.[98] Pleasant touring, of course, required that the visitor be able to drive from one end of the state to the other without losing himself in a wheat field -- required, in other words, a system of cross-state

93 Rowland, "Managerial Progressivism in Kansas," pp. 10-13.
94 Wade, "A History of Kansas Trails and Highways," p. 45.
95 Good Roads Clippings, Vol. 1, p. 103.
96 Habegger, "Out of the Mud," pp. 49-50.
97 Wade, "A History of Kansas Trails and Roads," p. 46.
98 Good Roads Clippings, Vol. 1, pp. 52-53.

highways that linked him with other states and provided the traveller's necessities en route. Meeting these requirements relied on private individuals and private initiative.

Wichitan Woody Hockaday exemplified the quest for tourist dollars. Hockaday, an auto accessories dealer, paid out of his own pocket to have routes marked in Kansas and the Southwest with signs bearing a big red "H". Hockaday recognized that the traveling stranger's problem lay in negotiating the fitful, meandering local roads. Unfamiliar with the area and without signs to guide him, the hapless tourist might wander the backroads for days before reaching any sort of destination. Hockaday obligingly directed him along routes which, coincidentally, brought him through Hockaday's hometown. By 1919, Hockaday's red "H" was so familiar to touring motorists that a national highway association adopted it and gave him a contract to mark a 3500 mile route from Washington, D.C. to Los Angeles.[99]

The lone wolf, Hockaday, was somewhat unusual. Other cross-state highways in Kansas developed from associations of town boosters who plotted touring courses. The first of these in Kansas began when the energetic promoters of Hutchinson and Reno County called a conference in 1910 to map a route from Newton to the Colorado border. Choosing a combination of existing roads that provided a roughly direct course (later the route of U.S. 50), conferees dubbed their highway the New Santa Fe Trail and soon began improving its roadbed. By spring of 1910 promoters to the east had mapped a link between Newton and the state's eastern border at Kansas City. When the Touring Club of America incorporated it in its own coast-to-coast route in October, 1910, the New Santa Fe Trail became the Kansas leg of a highway stretching from New York to Los Angeles.[100]

The following year, trails associations mapped two north-south highways. One, called the Meridian Road, roughly followed the present course of U.S. Highway 81, while the Sunflower Route connected the New Santa Fe Trail to an Omaha-Denver highway. A shorter eastern link was established between Kansas City and the New Santa Fe Trail along what is now U.S. Highway 56. Since this route took the general course of the old traders, promoters named it the Old Santa Fe Trail. A year earlier, a route had been marked between Junction City and Salina which its promoters extended in 1911 to link Kansas City and Colorado Springs. Their newly named Golden Belt Road would become one of the most important of the seven highways crossing Kansas by the end of that year.[101]

Initially, these highway associations intended their handiwork to benefit motoring Kansans, whose numbers mounted once farmers caught the "motor car 'bug'."[102] But the advent of national touring raised these routes to country-wide significance. Many Americans desired to put their feet to gas pedals. Touring and automobile clubs obliged by publishing guidebooks directing them from state to state, while magazines like Progressive Autoist logged routes of interest.[103] Thus, by 1912 the popular New Santa Fe Trail reached into New

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99 Wade, "A History of Kansas Trails and Highways," p. 45.
100 Habegger, "Out of the Mud," pp. 190-193.
101 Ibid., pp. 194-195.
102 Good Roads Clippings, KSHS, pp. 31-32.
103 James J. Flink, America Adopts the Automobile, 1895-1910. (Cambridge, Massachusetts: MIT Press, 1970), pp. 208-210.

Mexico and boasted an administration by representatives of four states. The Golden Belt won future designation as part of the Automobile Association of America's (AAA) National Midland Trail in 1912.[104] Shortly, the Golden Belt connected at Kansas City with the Old Trails Highway to the Atlantic Coast and the Trail to the Sunset out of Chicago. Via the Midland Trail, it reached the Pacific, connected with the Lincoln Highway to Salt Lake City, and figured in Triple A's Blue Book as part of the Trans-Continental Route.[105] Promoters of the Rock Island Highway (along the present route of U.S. 36) joined representatives of Colorado Springs, Colorado and St. Joseph, Missouri in 1914 to plot a route that would rival Denver and Kansas City in drawing travellers. By merging their roadways, they forged a national highway which they called the Pikes Peak Ocean to Ocean Highway to advertise its tourist attractions.[106] Triumphs of this sort spawned more roads associations. Some thirteen of these groups, given enticing names like Red Line, Blue Pole, and Oil Belt, crossed Kansas in 1913. Twenty highway associations posted their markers across the state in 1915.

That promoters called their highways "speedways" totally misrepresented the nature of travel on these routes. Patched together out of existing roads, the highways were no more than paper constructions by which association members mapped the most logical courses they could devise. The actual roadbeds, almost exclusively dirt, remained the responsibility of the townships and counties they traversed and varied according to local tastes or the association's ability to pressure county commissioners for upkeep. The highway organizations generally included boards of officers and representatives of the towns and counties along the route, whose job it was to inspect the roads and nag or cajole where repairs where needed. A prototype of these highway association officers was A. Q. Miller, publisher of the Belleville Telescope. Miller ramrodded the organizations backing the Meridian and Pikes Peak Highways, which intersected in his city, spent lavishly from his own funds to mark his favored routes and used his editorial pages to boost highway improvements across the state. Having seen what benefits road development brought his hometown, Miller became a lifelong gadfly for state highway aid.[107]

An association sometimes mounted an endurance run to check conditions over the entire course and to demonstrate that motorists could indeed maintain a 20 miles per hour pace over its speedway. As a result, the tourist networks surpassed most other Kansas roads for reliability and safety -- but only by a modest margin. Because the typical route jogged, veered or turned every few miles, each association marked the course with its distinctive emblem and supplied a log book telling the traveler how to chart his way. Occassionally danger signs warned of particularly perilous corners, stream crossings and the like. Otherwise, the tourist was on his own. Besides his wife's complaints about the heat and the backseat quarrels among his offspring, the touring dad usually contended with at least one road hazard that put him in the ditch or a wrong turn that stranded the voyager in the middle of nowhere.

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104 Habegger, "Out of the Mud," pp. 197-198.

105 Official Log of the Golden Belt Road. (Kansas Division of the Midland Trail, n.d.), collection of the Kansas State Historical Society.

106 James D. Callahan, Jayhawk Editor: A Biography of A. Q. Miller, Sr. (Los Angeles: Sterling Press, 1955), pp. 83-87.

107 Ibid., pp. 73-93.

The log book that was intended to spare the visitor these discomforts came larded with advertisements directing him to the touring essentials -- good food, clean lodging, a reliable mechanic -- to be found along the route. Enterprising towns included descriptions of their schools and social and business institutions in the fond hope that the passing stranger would be so taken with a host city that he would decide to settle down. The infant tourist industry paid pleasing dividends for the businesses beside the highway. A tourist might be worth about as much as a load of corn, promoters reckoned, but he was a darn sight easier to pick.

So appealing were the rewards, in fact, that Topeka and Ottawa sent special trains full of boosters to a conference to set the Old Santa Fe Trail route in 1911 -- each trainload intent on putting the highway through its town. The conference gave both rivals a spur connection after the contest turned into a fracas one reporter described as being fought with "packing house rules."[108] That tempers were pitched so high indicated the character of these interstate systems. Devised to benefit the nation's traveling public, they were, in fact, private promotions of local roads.

The highway associations served a public end, Governor Capper declared, when they provided as practical demonstrations that "lead men to action rather than talk."[109] Initially, that took place in Washington, D.C., where the highway association interests confronted the farm lobby. Farmer organizations long had argued that Congress erroneously assumed federal highway aid to be unconstitutional. Rural free delivery of the federal mail now gave Congress the justification it needed to invest federal money to improve postal routes, agrarian representatives claimed, with undeniable social and economic benefits to farmers.[110] Coming late to the debate on Capitol Hill, in 1912, the newly formed National Old Trails Road Association demanded instead that the federal government invest in a national highway system stretching border to border.[111]

Agrarian interests succeeded in drawing first blood. The Shackleford Bill, passed by the House in 1912, was a fairly mild measure which left road supervision to the states and merely encouraged better construction standards. However, the bill would direct federal funds almost exclusively into improving farm to market roads. The auto interests took the second round by stopping the bill in the Senate. It would be a criminal waste of money, they charged, to aid short dirt roads going nowhere instead of paving transcontinental routes.[112] The stalemate continued through 1914. Nonetheless, it was now clear that both town and country wanted some form of federal highway aid, and Congress had moved a step closer toward stretching the constitution to accommodate them.

Missouri Congressman Dorsey Shackleford introduced another measure in 1916 aimed at satisfying both lobbies. The new bill appropriated $75 million to be spent over five years for improving rural post roads (the necessary ingredient for constitutionality), but its language did not prohibit use of the funds for intrastate routes connecting with other states' systems. Of great significance was the requirement that a state organize a state highway department in order to

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108 Good Roads Clippings, Vol. 1, KSHS, pp. 45, 56.
109 Ibid., p. 49.
110 Fuller, "Good Roads and Rural Free Delivery of Mail," pp. 76-78.
111 Habegger, "Out of the Mud," p. 197.
112 Thomas, "Roads: Symbols of Progress," pp. 323-324.

receive funds and obtain the approval of the Bureau of Public Roads for any project on which federal dollars were spent. Requirements that states put up a 50% match of federal funds on a project and limit costs to $10,000 per mile aimed at getting maximum value from the federal investment. With the prospect looming of America's entry into the World War, Congress had a further reason for upgrading the nation's highways. The Federal Aid Road Act received final approval on July 11, 1916.[113]

If rural and urban interests could compose their differences in Washington, rivals in Kansas figured they could do the same, especially now that the carrot of federal monies dangled before them. Highway associations and the more populous counties totted up the half million dollars Kansas stood to get as its five year share of the federal fund and determined to get a goodly portion to pave the cross state roads. Within a few weeks of the federal act's passage, one coalition of counties was planning a concrete highway linking Leavenworth and Manhattan via Tonganoxie, Lawrence and Topeka.[114] Other groups had prepared petitions for macadamizing enough mileage to exhaust the state's anticipated share in the first year.

Federal dollars scarcely would suffice in the task of paving the gigantic network of Kansas roads, and state aid remained under constitutional ban. Consequently, hard-surface advocates in 1917 won approval for a measure that allowed for these more costly works. The act loosened the benefit district definition, making it easier to win approval for a petition. The benefit district would now pay 25% of the costs, townships another 25% and the county the remaining 50%. If the county commissioners should designate the route a main thoroughfare, however, the county must pay 60% of costs.[115] By lifting the burden of 75% of expenses charged to the benefit district under previous law, the act enabled construction of hard surfaced roads. It also reduced farmers' resistance to paving projects by spreading the expense more equitably within larger benefit districts. By the end of 1917, Sedgwick County was proposing a bond issue for more than $2.25 million to pave its county system, and commissioners of various other counties had requests for a total of 200 miles of paving before them and petitions for 150 more paved miles still circulating.[116]

Getting a federal ante for these projects demanded diplomatic maneuvering in Topeka, for the state could not qualify without overhauling its road-making structure. Men who had rubbed sparks over these same issues for nearly a decade must resolve deeply rooted conflicts of principle or face a stiff financial penalty for their state if they failed. Money proved the long awaited lubricant.

Two omnibus road bills came before the legislature in 1917. Both would enable the state to codify and revise its chaotic road laws to provide for a connected system of county roads (necessary for receiving federal aid); both provided for appointment of a state highway engineer and creation of a three-member state highway commission. According to one bill, the commission would consist of the governor, the secretary of the Kansas State Board of Agriculture

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113 John B. Rae, The Road and the Car in American Life. (Cambridge, Massachusetts: MIT Press, 1971), pp. 36-37; Fuller, "Good Roads and Rural Free Delivery," pp. 82-83.
114 Habegger, "Out of the Mud," p. 118.
115 Ibid., p. 57.
116 Ibid., pp. 122-123.

and the dean of the Agricultural College. The alternative measure proposed seating the governor and an appointee from the eastern and the western halves of the state.[117]

County commissioners advanced a counter measure that showed their willingness to compromise for the sake of federal aid. They would accept a state highway commission so long as it functioned merely as a figurehead without state-wide authority. A nasty wrangle over charges of county commissioners' complicity with bridge contractors marred the attempt at amity for several days, but the omnibus measure passed on February 24, 1917.[118] With it Kansans got their highway commission (consisting of the governor and appointees representing the east and west of the state), and the county commissioners retained their authority, for the state commission would serve only to pass federal funds along to the counties. In the absence of state aid, the counties would provide the requisite 50% match from their own coffers.[119]

It was a hybrid (some would have said a mongrel) system. Having trusted so long in local wisdom and local will, Kansans were reluctant to give obedience to Topeka or to Washington. They were unwilling to meet the spirit of the federal law. Whether they had met the letter of the law remained a question for federal judgment. Kansans had a state highway commission, but no one could rightly say in February, 1917, what they or the bureaucrats in Washington would make of it.

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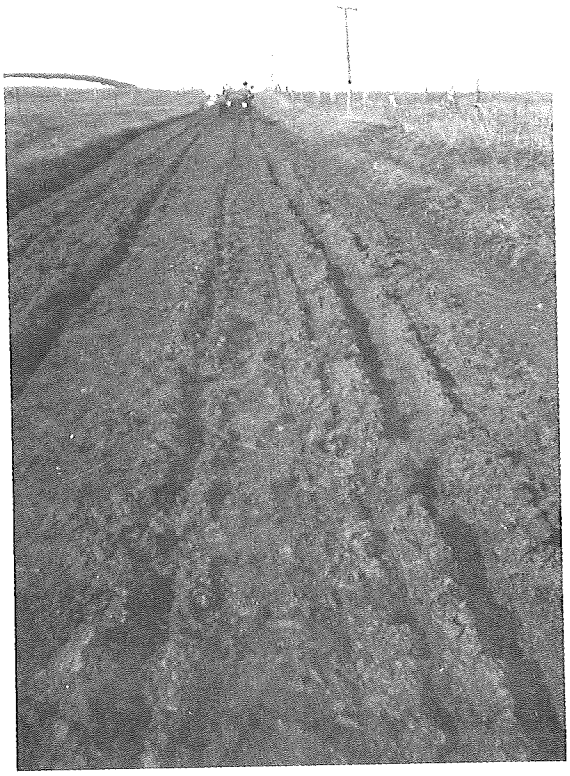
117 Ibid., p. 54.
118 Ibid., pp. 55-57.
119 Wade, "A History of Kansas Trails and Highways," p. 50.

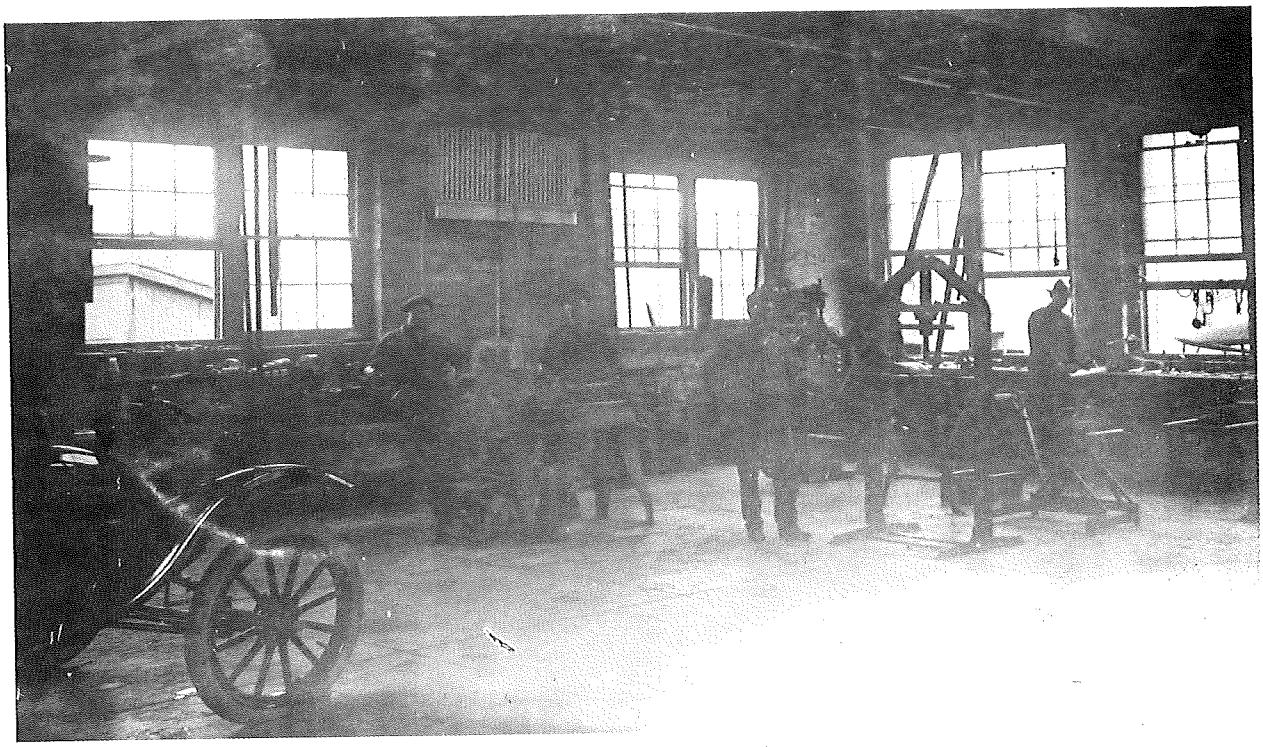


Boggy in wet weather, rutted in the dry season, roads like this one drove Kansas motorists to demand highway improvements in the early 1900s.

Credit: KDOT

Passable when dry, wet weather made busy roads and streets like this one in Junction City into quagmires.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

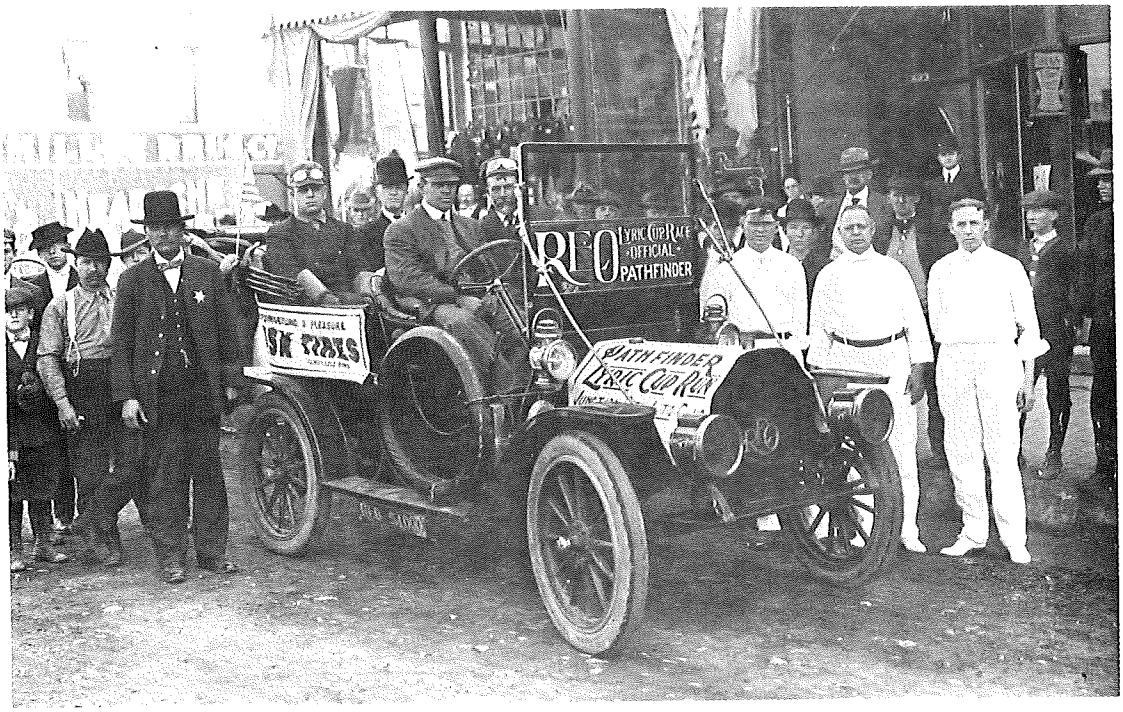


Gretner and Sons Garage of Junction City was one of several businesses that emerged to serve the autoist in 1920.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

A growing business in auto sales and service signified the coming of the car to Kansas. Wetzig Brothers display their stock of Reo autos at their shop in Junction City in 1908.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries



Auto endurance races helped to publicize the need for better roads for a growing number of automobile owners. Here spectators in Junction City gather around the Pathfinder car for the Lyric Cup Run in 1909.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

Cyclists, the earliest "good roads advocates," gather in Leavenworth in 1898.

Credit: Leavenworth Public Library Collection, Kansas Collection, University of Kansas Libraries

Local farmers turn out to clear a snow-packed road near Junction City in 1912.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

Farmers near Junction City "work out" their poll taxes by removing boulders from a road in 1912.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

On a trip to inspect conditions on the border-to-border Meridian Road, an inspector car pauses in McPherson in 1912.

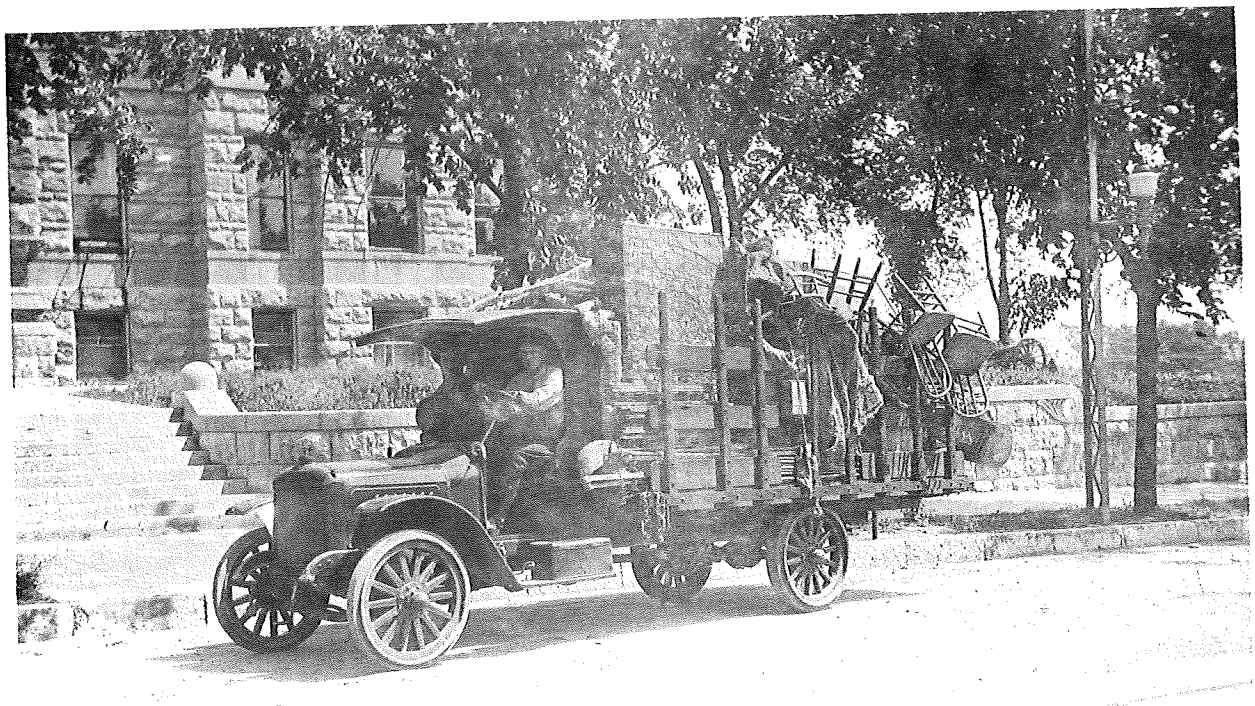
Credit: Merle Miller, Belleville Telescope

Voluntary highway associations were the backbone of road improvement programs before 1916. Here Kansas Governor George Hodges (left rear) and good roads advocate A. Q. Miller (center rear) prepare to log the Rock Island Highway for the Automobile Blue Book in 1913.

Credit: Merle Miller, Belleville Telescope

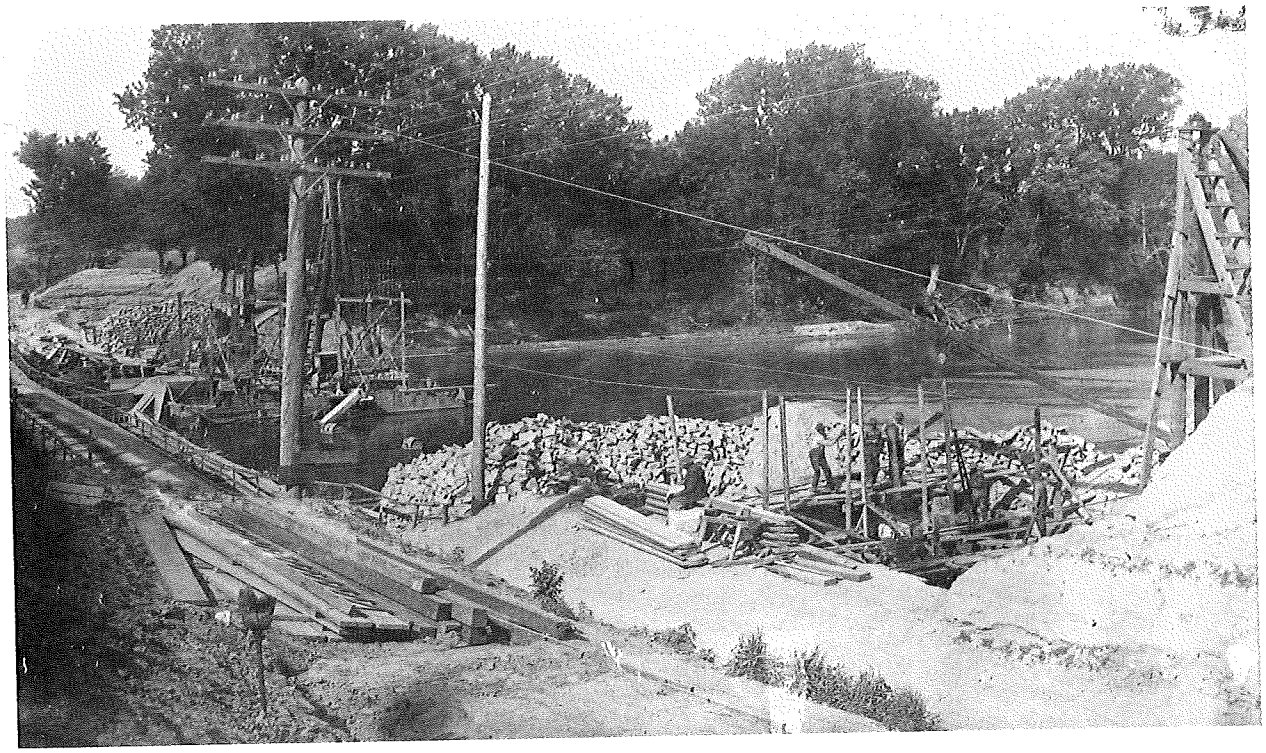
A horse-drawn road grader flattens a rutted Kansas road in 1919.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries



A growing trucking industry demanded improved roadways following the First World War. Here the Victor Truck Company supplies a moving van in Junction City.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries



The Republican River Bridge under construction near Ft. Riley in 1918 represented the first highway project in Kansas to receive federal aid.

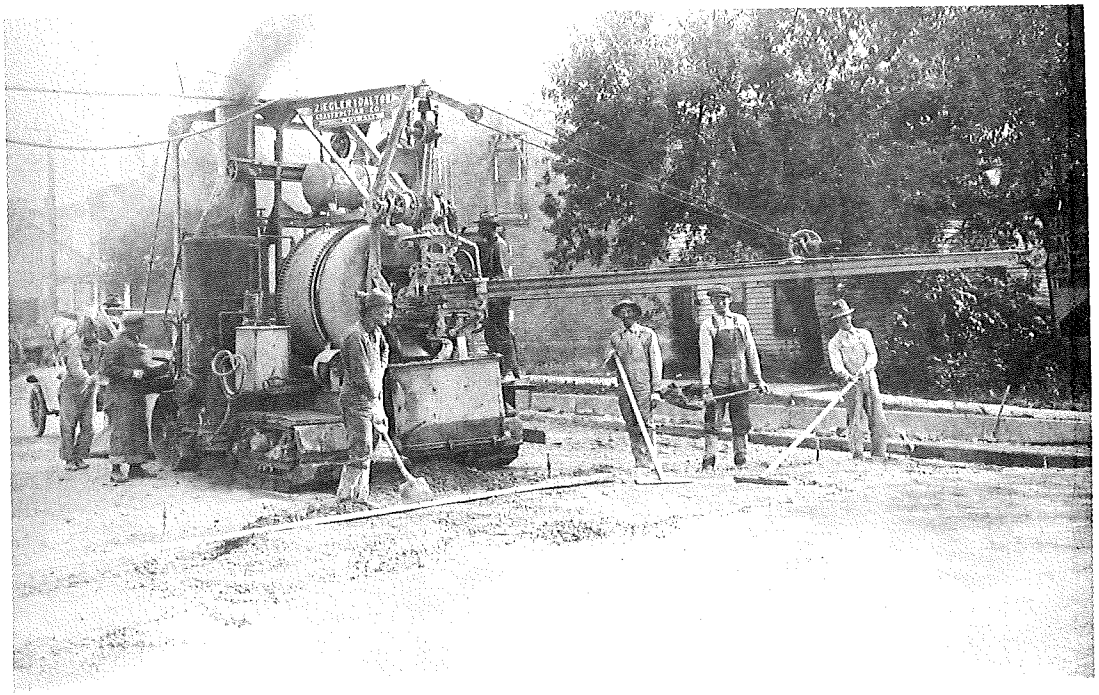
Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

When finished in 1919, the Republican River Bridge near Ft. Riley completed the first federal highway aid project in Kansas.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

A paving mixer pulled by automobile pours concrete in Junction City in 1919.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries



A paving crew pours concrete in Junction City in 1919.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries

Above: Bituminous surfaces, relatively uncommon when this road was surfaced in the 1910s, would become an important alternative to costlier materials in Kansas by the 1930s.

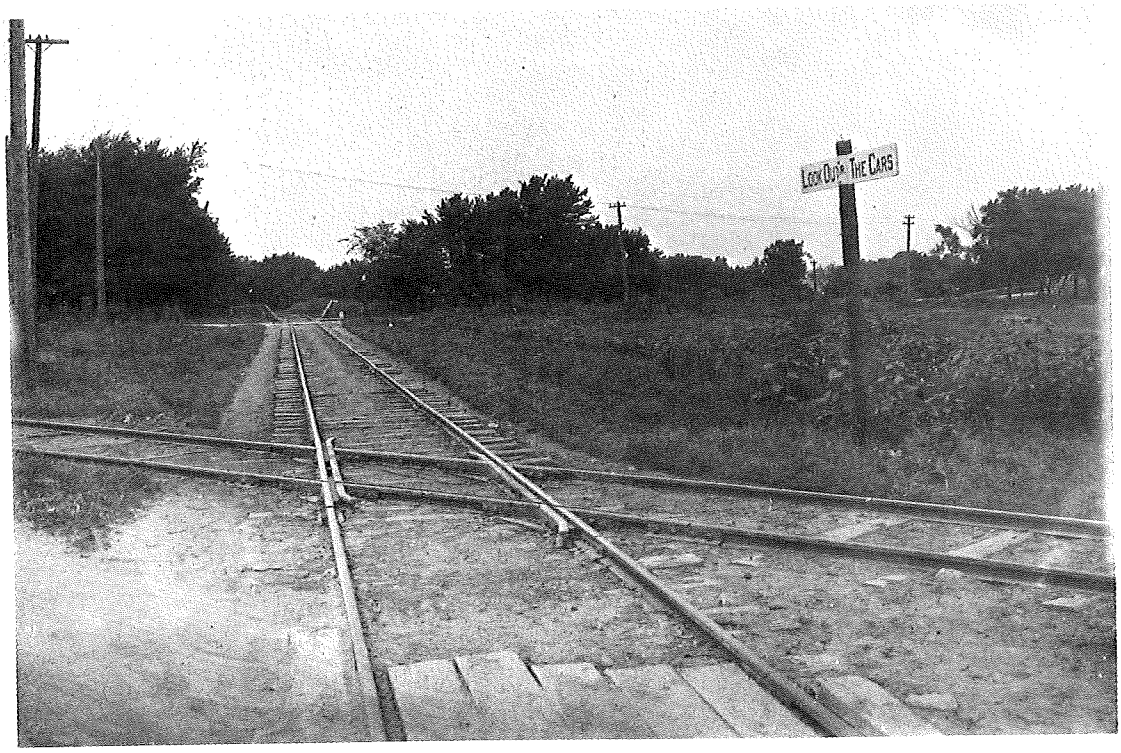
Credit: KDOT

Right: Brick highways like this one under construction in Reno County in 1920 stirred controversy for the young State Highway Commission.

Credit: KDOT

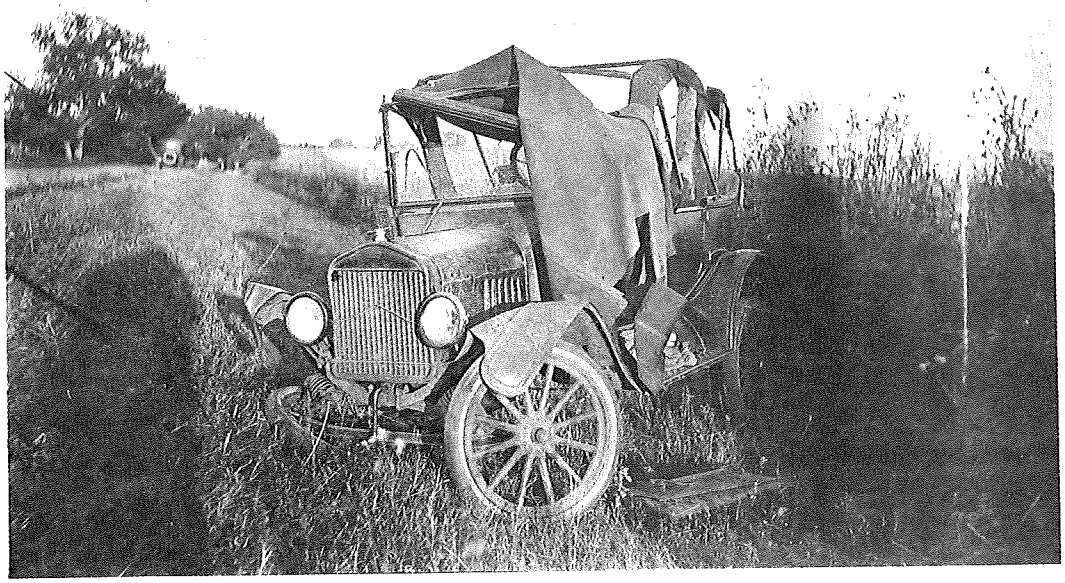
Below: Brick paving required a highly skilled work crew. Bricklayers sometimes held contests to see who could pave the most roadway in a day.

Credit: KDOT



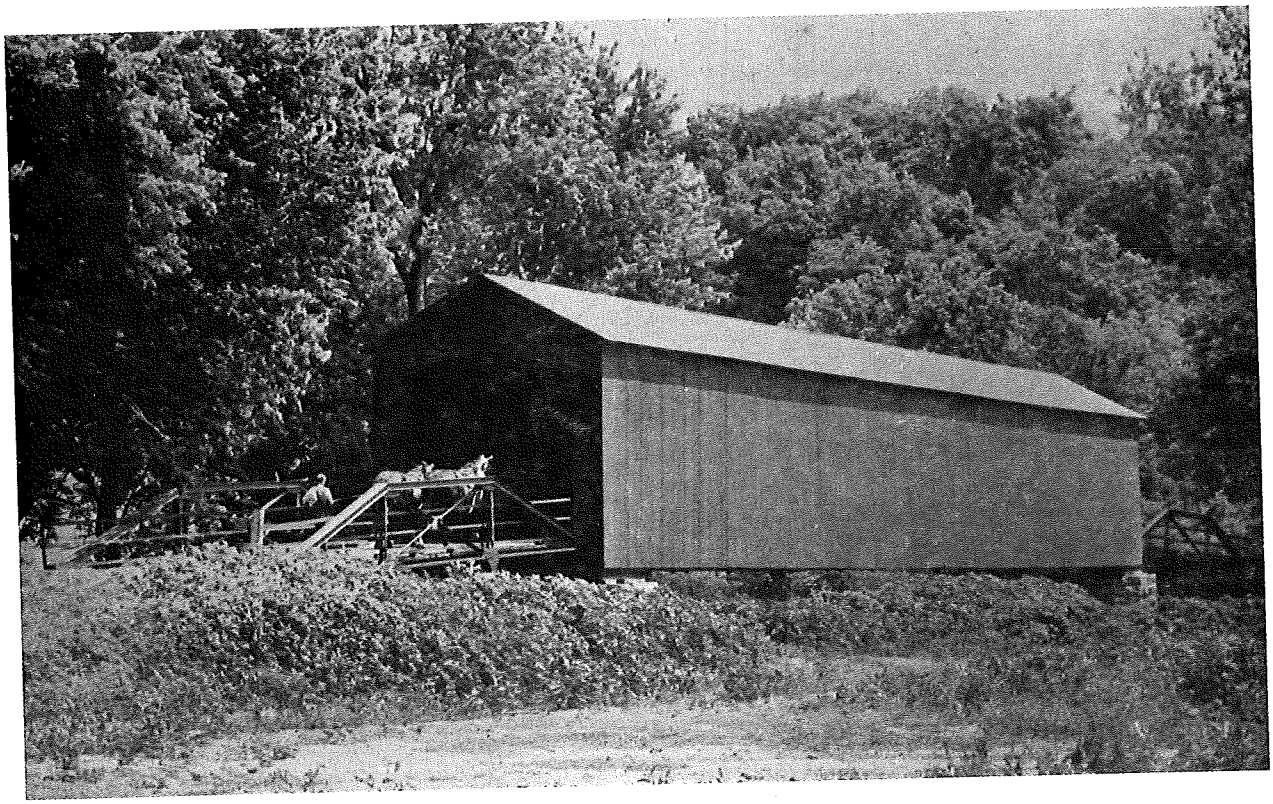
Tiny signs like this one were the motorist's only protection at dangerous railroad crossings in 1912.

Credit: Joseph J. Pennell Collection, Kansas Collection, University of Kansas Libraries



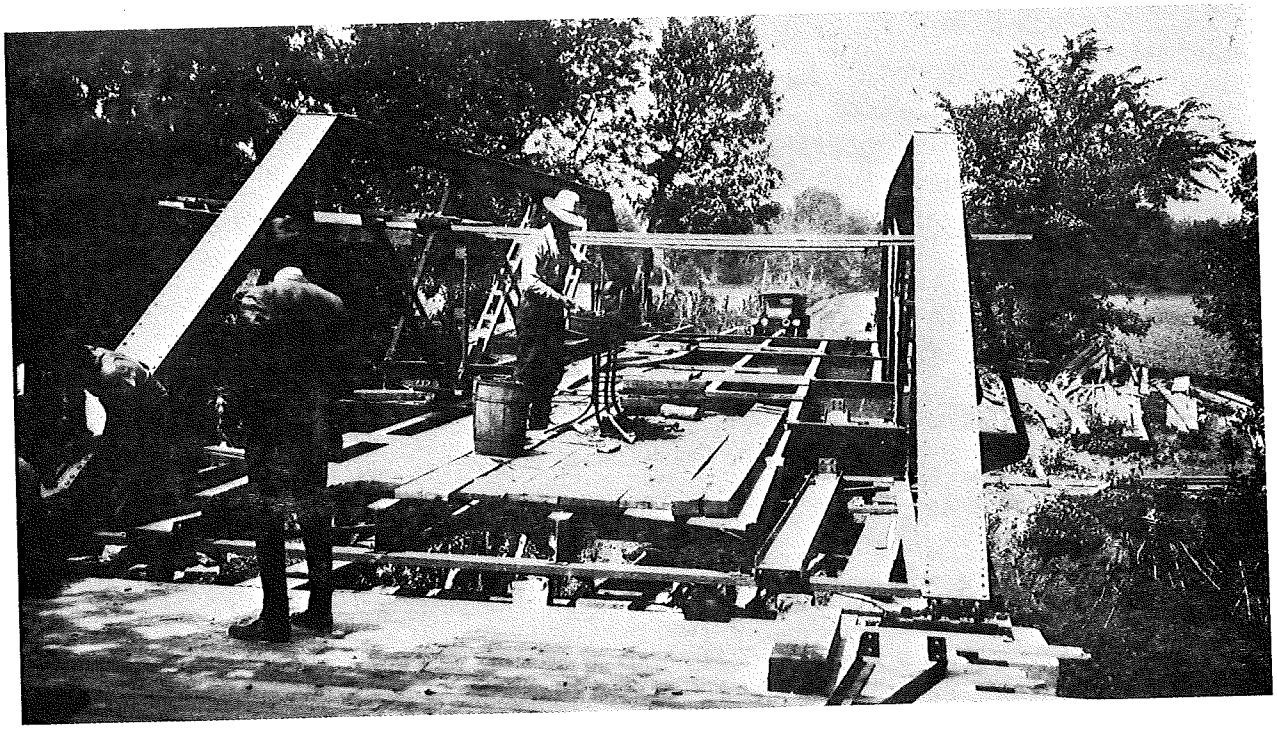
Without a uniform traffic safety code, mishaps like this one were frequent on Kansas highways.

Credit: KDOT



With or without a cover, Kansas' noisy tin bridges wore out quickly.

Credit: KDOT



Repairing and replacing bridges were an important component in bringing the Kansas state highway system up to standard in the 1920s.

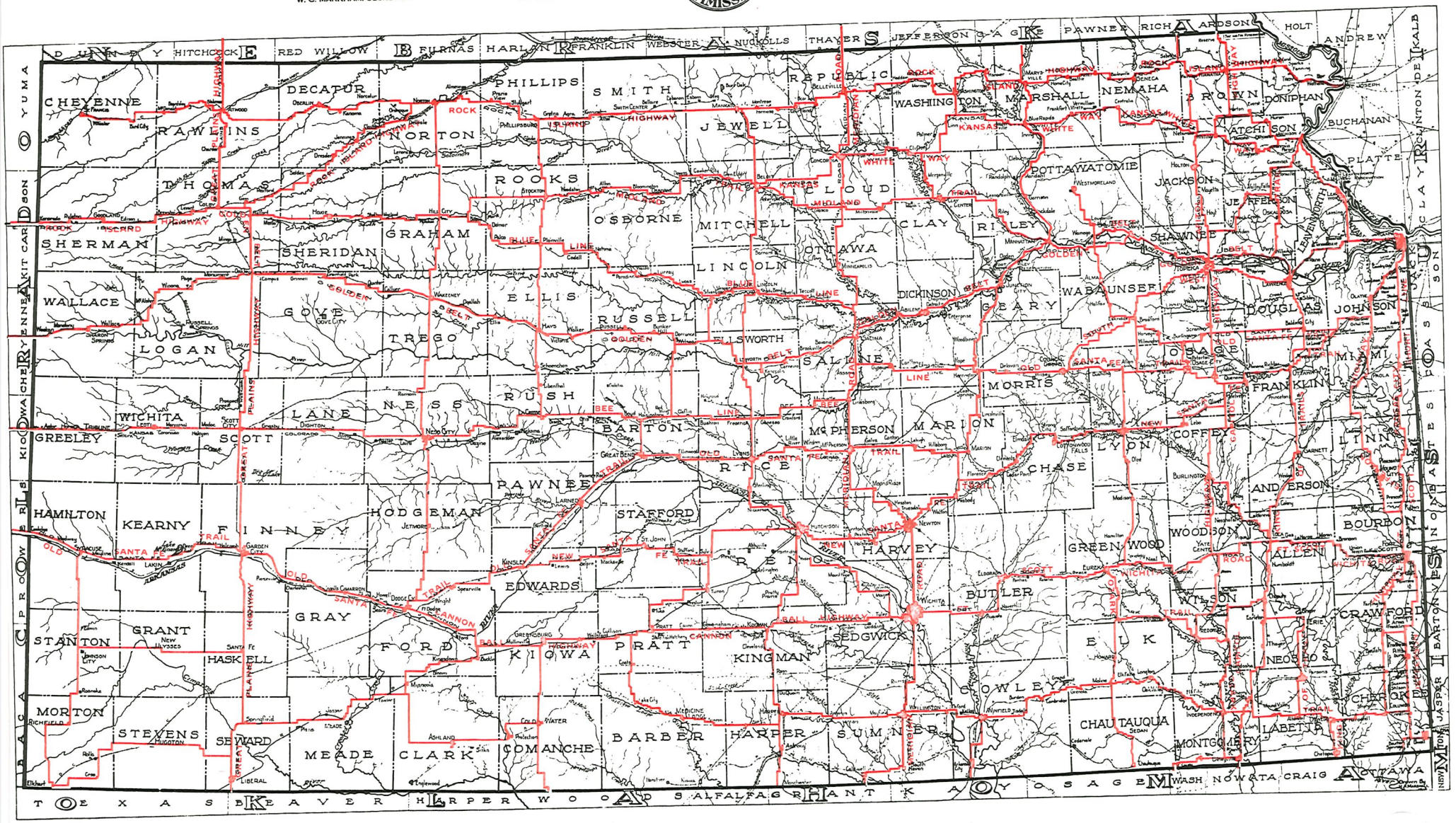
Credit: KDOT

ARTHUR CAPPER, GOVERNOR
CHAIRMAN EX-OFFICIO
E. R. MOSES, COMMISSIONER
R. S. TIERNAN, COMMISSIONER
W. C. MARKHAM, SECRETARY

OFFICIAL MAP

KANSAS STATE ROADS

W. S. GEARHART,
STATE HIGHWAY ENGINEER
M. W. WATSON,
ROAD ENGINEER
F. W. EPPS,
BRIDGE ENGINEER



Approved August 7, 1918

OFFICIAL STATE SYSTEM MAY 1918

Credit: KDOT

CHAPTER 2

Circuitous Routes: The Highway Commission's Hesitant First Years, 1917 - 1929

On April 4, 1917, as America drifted toward war, two men strode into Governor Arthur Capper's office to take their oaths to serve with Capper as members of the first Kansas State Highway Commission. After decades of pushing, tugging, and occasional orneriness, there were statutes on the books to haul Kansans out of the ruts and a highway commission to make the statutes stick. The new commissioners were to be pardoned if they allowed themselves a little celebration in the midst of war worries, for they expected to make (literally) concrete the dreams of good roads advocates.

The Kansas State Highway Commission claimed little but the name, however, and the landmark road laws of 1917 would fall far short of solving the state's enormous highway needs. It would take twelve more years of tinkering and tussling to bring Kansas up to national standards. Meanwhile, the old enmities would burn as fierce as ever. Jealousies over local authority and the contest between town and country, if anything, would grow more heated, and the highway department would find itself dealing with irate taxpayers, suspicious farmers, sharp-tongued legislators, drunken drivers, and even the occasional scalliwag. By the time Kansans acquired a modern highway department in 1929, they would have learned an uncomfortable truth: the development of a taste for federal road dollars entitled Washington to determine what the department did.

The men who served as state's first highway commission seemed well-suited to the job. Arthur Capper, who as governor sat as ex-officio member, had a solid record as a campaigner for a modern road system. To represent the counties west of the sixth principal meridian, Capper appointed a plain spoken road booster, E. R. Moses of Great Bend, to a two year term. The governor's selection for the state's eastern representative went to R. S. Tiernan from Fort Scott, one of the most aggressive road-building cities in the state. Tiernan received a four year term to provide continuity and was promptly elected vice-chairman to preside over commission meetings.[1]

The 1917 statute creating the highway commission banned naming anyone to the commission who already held an elective or appointive office. Still, politics tinged choices to a degree. Capper set an example that succeeding governors would follow by selecting men who shared both his philosophy of road building and his party allegiance and who were friendly to the governor's interests among local voters. Membership scarcely counted as a rich reward to cronies (commissioners received no salaries and were given the barest travel expenses for their monthly trips to Topeka). The governor simply looked for men he was confident would work cooperatively and who had the influence to win public support for highway programs.[2]

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1 First Biennial Report of the Kansas Highway Commission, April 4, 1917 to January 1, 1919. (Topeka: Kansas State Printing Plant), pp. 14-15; Minutes of the Kansas Highway Commission, v. 1, April 4, 1971.

2 First Biennial Report, p. 14. Correspondence in the files of Governors Capper, Allen, Davis, Paulen and Reed indicated that they appointed to the commission fellow party members who either were known to them or were

The commission took a similar tack by electing William C. Markham secretary. Markham had been secretary of the Republican State Central Committee and, as editor and publisher of the Baldwin Ledger, had campaigned hard for good roads and for Capper's election. Without much real power to wield, the commission would have to woo public support, and Markham was a remarkably self-confident spokesman and a persuasive writer.[3]

The commission's choice for state engineer seemed an obvious one, regardless of politics. W. S. Gearhart had held the nominal position of state highway engineer for the Kansas State Agricultural College from 1909 to 1914. He was the state's leading expert on road construction, highly principled and outspoken on highway matters, and confident -- perhaps too confident -- of his right to leadership. He had stepped on enough toes that men Gearhart had called "scoundrels" and "enemies" had pressed the Agricultural College to fire him in 1913.[4] Capper had already received letters opposing Gearhart's appointment but the commission duly elected Gearhart state engineer at its first meeting.[5] The resulting combination of five strong personalities made for an organization a trifle short on diplomacy. Its members would tend to rile each other and provoke the good citizens in many local communities.

By the end of April, the Kansas State Highway Commission began employing a state highway department of engineers, clerks, stenographers and field men, including M. W. Watson, state highway engineer, and C. I. Felps, state bridge engineer.[6] This tiny band moved into offices in the State House and prepared to take on one of the toughest "systems" of highways in the country. With over 110,000 miles of roads within its borders, Kansas ranked second only to Texas in existing mileage.[7] Had all of them been connected, Kansas roads could have circled the equator almost four and a half times. Nearly all were farm-market routes, "beginning nowhere and ending nowhere" as the saying went, and in such bad shape that Kansas' reputation as a "mud state" cost enormously in embarrassment and tourist dollars. The new commission had the spirit necessary to tackle this gargantuan problem. What it lacked was a state aid fund, genuine authority, and a clear policy on road planning.

Lack of a state road fund had nearly cut Kansas out of the federal aid program from the first. Originally, highway experts in Washington had insisted that federal aid should go only to states that placed their highway systems

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recommended by party members and whose position on road issues matched the governor's. See the collected Records of the Governor's Office, Correspondence Files, Department of Archives, Kansas State Historical Society [KSHS].

3 William C. Markham, The Autobiography of William Colfax Markham. (Washington, D.C.: Ransdell, Inc., 1946), pp. 124-126. For a sample of Markham's public relations work see W. C. Markham, The State's Duty Toward Her Highways. (Topeka: Kansas State Printing Plant, 1920).

4 Letter of March 30, 1919, Gearhart to Allen, Records of the Governor's Office, Correspondence Files, Governor Henry J. Allen, Box 10, Folder 14, Department of Archives, KSHS; also Records of the Governor's Office, Correspondence Files, Governor Arthur Capper, Box 10, Folder 12, Department of Archives, KSHS.

5 Governor Capper's correspondence, Box 12, Folder 69, KSHS.

6 Markham, Autobiography, p. 127; Minutes, Vol. 1, April 25, 1917.

7 First Biennial Report, p. 16.

under a central agency and matched federal monies with state funds. Otherwise, federal dollars would be thrown away on ill-planned, badly constructed highways which lax maintenance would shortly leave in ruin. Even then, some experts believed a federal-state partnership was a poor compromise and argued for a border-to-border interstate system of a few very good highways which the federal government would plan, finance and build entirely on its own.[8]

When the Federal Road Aid Act incorporating the federal-state partnership had come up for debate in 1916, U.S. Senator Charles Curtis had recognized that his Kansas constituents would not easily sacrifice their tradition of local responsibility for roads. To ensure that Kansas was not left out, Curtis had attached an amendment to the aid act which exempted states from the state aid fund requirement for three years if their constitutions banned such a fund. In effect, this gave Kansas a three year grace period.[9]

As a result, the highway commission in 1917 received a tiny appropriation for its own operating costs and not a dime to spend in the actual construction of a road or a bridge. Nor did it have the money to maintain existing works. Construction funds in Kansas depended almost entirely on three sources: the vehicle registration fee and county road tax levies (collected by the county treasurers and spent by the boards of county commissioners) and the money raised for particular projects under the benefit district law of 1917. The latter monies came from the pool of funds contributed by the affected townships, the landowners in the benefit district, and the county, which raised its 50 percent to 60 percent share from county road funds or, more often, from a county bond issue. Thus the counties held the purse strings.

The U.S. Department of Agriculture, which administered the federal aid program, agreed to accept county road funds as the state's match of federal dollars during the grace period. In effect, the Kansas "state road fund" consisted of 105 separate treasuries, a totally inadequate reservoir.[10] The combined funds could not raise enough to support the county roads let alone the state system. Sloppy accounting, uncoordinated planning and waste by the counties were inevitable. Further, the system would produce severe inequities between the wealthy urbanized counties and the western counties.

Without the power of the purse, the highway commission had to rely on statutory authority. But its authority was as meager as its budget, because the compromise of 1917 had left initiative in local hands. To carry out its paramount role, the division of federal funds among the counties, the commission designated a 3,270 mile system of roads eligible for improvement with federal funds in 1917.[11] However, the commission could not direct where and when improvements would be made but must wait for proposals from the county commissioners -- proposals which originated most often as petitions from benefit

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8 Wayne E. Fuller, "Good Roads and Rural Free Delivery of Mail," Mississippi Valley Historical Review 42 (June, 1955), pp. 79-83.

9 Governor Allen's correspondence, Box 11, Folder 1, KSHS; see also, "We May Cooperate With Federal Government," Kansas Highways 2 (May, 1919), pp. 8-9.

10 L. W. Page, "Need of Centralization in Highway Control," Kansas Highways 1 (October, 1917), p. 5; "We May Cooperate With Federal Government," Kansas Highways 2 (May, 1919), pp. 8-9.

11 First Biennial Report, p. 17. The commission was required to designate such a system by the federal act.

districts. This arrangement reduced systematic planning to a hit and miss proposition, whereby improvement money was put into small projects along the eligible routes regardless of traffic priorities.

A project proposal came before the highway commission for approval after the state engineers inspected the proposal and the county commissioners verified that the benefit district petition was in order. At that point, the highway department drew up a project statement for preliminary approval by the Department of Agriculture's Bureau of Public Roads. A competent engineer then would draw up plans, specifications and estimates for approval by the state highway department and the Bureau of Public Roads [BPR].[12] When the federal go-ahead arrived the counties entered into actual contracts or hired day labor to do the work using county equipment. Thereafter the counties hired resident engineers to supervise construction. The highway department did little more than approve contracts and inspect the work in progress.[13]

Since the department's staff and budget were miniscule, supervision was necessarily sketchy. Throughout the process, from proposal to ribbon-cutting, Kansas law placed highway commissioners and department engineers on the sidelines. The commission's power to pass on or reject the counties' claims for federal payment gave it only a little more leverage. Still no federal money actually passed through the commission, for it was paid directly into county treasuries. Historian Clarence Hein correctly called the commission a "clearinghouse for official correspondence."[14] Kansas law left so little initiative in its hands that it could only push paper between Washington and the county commissioners.

The commission's second key function -- establishing high standards of engineering -- conferred a little more authority. The commission took seriously its responsibility to approve appointments of county engineers, and it regularly rejected unqualified candidates and ousted a few incompetents already in office. Another of its responsibilities took up much time and energy, since budget-minded railroads invariably protested commission orders to eliminate grade crossings or install safety devices. In most respects, however, the commission could do little but encourage good workmanship. The highway department was empowered to draw up standard specifications for roads, bridges and culverts and supply them to county engineers, to devise reporting and accounting procedures, and to put out pamphlets, bulletins and reports on construction methods. It could educate, hector, cajole and plead, but it could not require professional standards except on federal projects.[15]

Although the commission needed solid public support to accomplish by persuasion what it could not do by statutory power, the compromise of 1917 only papered over the conflict between urban and rural Kansans about the kind of road

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12 Ibid., pp. 18-20.

13 Ibid., pp. 18-20; see also "How to Secure Federal Aid for Road Building in Kansas," Kansas Highways 1 (October, 1917), pp. 14-15.

14 Clarence J. Hein, State-Local Relations in Kansas: The State Highway Commission. Special Report #60. (Lawrence, Kansas: Governmental Research Center, 1954), p. 2.

15 Minutes, v. 1, inclusive; First Biennial Report, pp. 15-16.

system they should have. Because the compromise gave the commission a divided constituency, the commission's somewhat muddled idea of its mission merely fanned opposition to its work.

By justifying federal grants as an investment in postal roads, by instituting a federal-state partnership, and by lodging the BPR and fund supervision in the Department of Agriculture, the Federal Road Aid Act had won support from farmer organizations for what was expected to be an investment in farm-to-market roads.[16] When BPR director Logan W. Page wrote Governor Capper in 1917, he assured Capper that Congress had meant to give priority to the rural roads that carried the most produce to market.[17] Certainly, the marketing advantage of dependable roads had been the carrot held out to Kansas farmers before 1917.

Thus, it appeared that the Kansas Highway Commission was in business for the purpose of directing federal money to rural dirt routes. Governor Capper announced in October, 1917 what looked to be a policy in line with farmers' expectations. Launching the commission with a hard surface program would only antagonize taxpayers, Capper asserted, but "get a farmer accustomed to driving over a well-maintained earth road, and see to it that this earth road connects with the gravel or asphalt road near the town or city, and you have at once a good roads enthusiast."[18] That left hard surface to the future.

Not surprisingly, the message out of Washington became garbled. The BPR emphasized to the commission that federal dollars were not to be wasted on "nowhere" routes but should be spent wisely on "365 days, cross-state" roads.[19] Consequently, the commission assumed erroneously that hard-surface projects on main routes would get federal approval while proposals for dirt roads would face heavy odds.[20]

That thinking, in turn, influenced the commission's understanding of the Kansas Statutes of 1917. At its second meeting, April 25, 1917, the commission ordered Markham and Gearhart to draw a map for a tentative state system of roads to be presented to county delegates at public hearings in Topeka in May. Delegations won some modifications in the system in regular commission meetings through the summer, but the 6000 miles of roads the commission designated as a state system reflected its belief that the 1917 legislation was intended to establish a network of county roads joining the leading market centers and serving the interests of the entire state. The network linked 85 percent of the state's population and 92 percent of its taxable property, and it boasted interstate connections with the systems of Kansas' four neighboring states.[21] Of course, it would remain a paper system until Kansas had a state aid fund, but the lines on the map showed that the commission expected to put its energies into the main-travelled routes clustered in the more populous eastern half of

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16 Fuller, "Good Roads and RFD."

17 Letter, Page to Capper, Governor Capper's correspondence, Box 12, Folder 69, KSHS.

18 Arthur Capper, "The Kansas Highway Commission," Kansas Highways 1 (October, 1917), pp. 3-4.

19 Page, "Need of Centralization in Highway Control," p. 5.

20 Letter of September 5, 1924, Luther Tillotson to Davis, Records of the Governor's Office, Correspondence Files, Governor Jonathan M. Davis, Box 4, Department of Archives, KSHS.

21 Minutes, v. 1, April 25, 1917; First Biennial Report, p. 16.

the state. It intended to leave the tiny hamlets and outlying farm routes to local devices. "The western third of the state will never need the expensive work necessary to make the roads passable at all seasons of the year," Secretary Markham stated in a magazine article. "But the eastern two-thirds must do much permanent road work if her people wish to get full measure of their joys."[22]

Soon the commission had to pare down the system of roads designated for federal aid because it could not hope to improve 6,000 miles of road with the state's five year allotment. Furthermore, the commission was deluged from its start with applications for aid. In order to select winners and losers quickly and get the paperwork underway, the commission selected a 3,270 mile federal aid system made up entirely of routes sponsored by associations.[23] These were the same associations that had carried the good roads fight before 1917; at the first promise of federal aid their local members had organized benefit districts and prepared petitions for the commission's immediate approval. In forging a federal aid system solely from the trail associations' routes, the commission disregarded the most suspicious sector of its constituency and ignored the ostensible purpose of federal grants. While continuing to speak to farmers of the economic benefits of market roads, the commission prepared to direct federal dollars into cross state routes for the tourist and the town-bred autoist. It would not take long before rural folk reckoned they had been hoodwinked.

The commission gave its first approval for a federal aid project statement on August 8, 1917, for a road "running north from Fort Scott" in ambitious Bourbon County.[24] By October commissioners had put their stamp on a fist full of proposals, nearly all proposing concrete or other hard surfaces.[25] State Engineer Gearhart informed the commission that he expected most of the state's five year federal allotment to go for hard surfaces because "the men from the different counties with whom I have talked are not considering and will not consider the cheaper types of roads." The result, Gearhart warned, was that the commission probably could not buy more than 650 miles of brick or slab with the entire year kitty.[26] Soon, the commissioners would be dodging bricks of another sort.

Just two days before the Kansas State Highway Commission's first meeting in April, 1917, President Woodrow Wilson asked a special session of Congress for a declaration of war against Germany and its allies. Long range plans changed dramatically as America geared up to enter the struggle "over there." In February, 1918, federal authorities asked the commission to name the federal aid projects considered top priority in 1918.[27] The commission duly listed four, including the Bourbon County road and a project section of road between Fort Leavenworth and Fort Riley. By April, another order had made that exercise fruitless, for the Army wanted a different stretch of road altogether.

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22 William C. Markham, Editorial, Kansas Highways 1 (October, 1917), p. 12.
23 Minutes, v. 1, June 7, 1917; First Biennial Report, p. 17.
24 Minutes, v. 1, August 8, 1917.
25 First Biennial Report, pp. 53-63.
26 Letter, Gearhart to Kansas Highway Commission, Governor Capper's Correspondence, Box 12, Folder 69, KSHS.
27 Minutes, v. 1, February 17, 1918.

The Army's top priority was training raw recruits and dispatching them to the front. Camp Funston was built near Fort Riley to handle an overflow of new soldiers. Every day some 8,000 vehicles passed over a section of the Golden Belt Highway in Geary County ferrying troops and equipment between Camp Funston and the fort and from both posts to the rail station at Junction City. The traffic quickly pulverized the old macadam. The highway commission, on April 3, 1918, voted to approve paving the Golden Belt between Junction City and Fort Riley -- even though there was no benefit district organized to improve that portion. Thus, when the first spade was turned on a federal aid highway project in Kansas, it was turned on a road to which no one had paid much attention before.

The first bids on the project were rejected as too high, but estimates were raised to allow for wartime hikes in freight and labor costs. On July 14, 1918 second bids were opened and the contract awarded for a project that included a stretch of two course reinforced concrete and another segment of monolithic brick. Work began in August. Ironically, the brick paving was not finished until a month after the war ended and the concrete section was not completed until spring, 1919.[28]

In fact, the war could not have ended too soon to please the highway department, for it produced headaches aplenty. In December, C. I. Felps took a leave of absence to enlist and was replaced as state bridge engineer by F. W. Epps. M. W. Watson became acting state engineer in June, 1918, when Gearhart was given leave "to take up war work" as a captain of engineers.[29] The overworked highway department also dealt with the loss of key men to military service or to other employers willing to pay the high wartime salaries which the highway department could not match.[30]

Many counties' construction projects nearly ground to a standstill during the 1918 construction season. Available crewmen were hard to find while building materials grew still more scarce, at first because U.S. railroads were so overloaded by freight necessary for the mobilization that non-essential cargoes were not shipped. When a fuel crisis developed, the government cut coal supplies to cement plants and effectively stopped concrete construction. Then in May, 1918, the federal government organized the U.S. Highway Council to handle war-related highway problems. The Council promptly dispatched a long list of essential construction materials to the Kansas Highway Commission with orders that it limit or deny use of essential materials for each separate road project and that it restrain use of bond issues for public works. Not only did the order add to the slender staff's already heavy work load, but it restricted construction in Kansas to those few projects necessary to the war effort.[31]

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28 Minutes, v. 1, April 3, 1918; First Biennial Report, pp. 63-66; M. W. Watson, "Kansas Highways, Yesterday, To-day, and Tomorrow," Kansas Highways 3 (July, 1920), pp. 5-12.

29 Minutes, v. 1, December 11, 1917, January 18, 1918, August 7, 1918.

30 First Biennial Report, p. 24.

31 Second Biennial Report of the Kansas Highway Commission, January 1, 1919 to January 1, 1921. (Topeka: Kansas State Printing Plant), pp. 11-12; Kansas Highways 2 (October, 1918), p. 13; First Biennial Report, p. 86.

Still, the commission calculated that some good had come of the war. Members hoped that mobilization had given Kansans a national perspective on the importance of good roads and had helped quiet local jealousies. Too, the breakdown of the overworked rail system brought an unprecedented number of trucks onto Kansas highways.[32] In Kansas before 1917, motor transport scarcely existed. But, when Kansas City wholesalers found they could not ship orders by rail to retailers across Kansas, they began sending goods by truck. The highway commission investigated the trucking situation and found a small but growing number of transport companies appearing in the state. They also found that trucks punished already poor road beds, and truckers had trouble getting return loads that would keep their costs down. Recognizing that more motor freight meant growing interest in highways, the highway commission helped open return-load bureaus in several Kansas cities, and it began a heavy public promotion of a motor transport industry and the tough, wide road beds to support it.[33]

Despite wartime frustrations, the Kansas Highway Commission and its department scored some impressive achievements in their first two years. Of the $2.15 million Kansas was to receive in federal aid over five years, the commission had already set aside over $1.6 million for 29 specific projects. Because at least seventeen of these would involve cement or brick surfacing, materials seldom used in the state before 1917, the department's engineers had handled plans, specifications and estimates of unprecedented sophistication and were prepared to touch off a minor technological revolution.[34] State engineers compiled a detailed manual of standards and specifications for fourteen types of hard surface roads, for steel and concrete bridges and for culverts. Meanwhile the Testing Laboratory of the Department of Applied Mechanics at the Agricultural College managed to carry out a wide range of tests of materials for the highway department despite the budget and manpower woes inflicted by the war.[35]

The department found the upgrading of performance by county officialdom harder to accomplish. In February, 1918 the highway department and the agricultural college staged a four day road school for county engineers, county commissioners and other functionaries. Nearly all the county engineers turned up for instruction that ranged from the most technical aspects of road building to an "Exhibit on Tapes and Levels and a Discussion of Their Uses." The road school proved so successful that the department decided to make it a yearly event. Other attempts to increase efficiency at the county level, however, met stubborn resistance. The department introduced new forms, reporting systems, and administrative methods for county and township officials to use for road projects and maintenance. The predictable response to red tape followed. County officials dawdled and delayed over paperwork, and the highway department had to ask the legislature to prod them.[36]

In 1917 a committee of county engineers had been created to devise a workable system of accounting for road funds. When the new system was introduced in 1918, several township officers quit rather than use the burdensome

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32 First Biennial Report, p. 24.
33 Kansas Highways, 1 (July, 1918), p. 10; First Biennial Report, pp. 22-24. See issues of Kansas Highways for 1918 and 1919 for promotion of motor freighting.
34 First Biennial Report, pp. 20, 53-63.
35 Ibid., pp. 37-52.
36 Ibid., pp. 29-33, 83.

regulations. Others assaulted the governor with letters reminding him that they earned a pittance for their troubles and had just a county school education. Acknowledging the rebuke the department worked to simplify the system's arithmetic.[37] By the end of 1918, some county commissioners and treasurers had come to appreciate the system for pointing out the ratholes down which their funds had been disappearing.

Because the highway commission's success depended greatly on the average Kansan's desire to do the right thing, the commission decided in August, 1917 to publish its own magazine. Commission secretary William Markham happily took the job of educating the public as editor of a very impressive quarterly. Slick, entertaining, generously illustrated, and always informative, Kansas Highways provided articles on a host of highway matters -- from choosing the right road surface to keeping up with the road laws. When the first issue came out in October, 1917, all 7,500 copies were taken immediately, and Markham was never able to print enough copies of succeeding issues to meet the demand.[38]

The highway department entered the new year, 1919, with heady expectations. Its initiation period had shown there to be problems in the 1917 statutes that the new legislative session was likely to fix, and there was high hope for a constitutional amendment to establish a state aid fund for highways. New governor, Republican Henry J. Allen, was as solid on the road question as Capper had been.[39] Unfortunately, when Allen set about organizing his own administration, he found that members of the highway commission and the department had been engaging in trench warfare of their own.

The situation boiled over in early 1919, when W. S. Gearhart proposed to return to his post as state engineer. Although Gearhart had told Governor Allen "that I considered life too short to work with a man like Mr. Moses," he decided to end his leave of absence in January.[40] Instead, Moss and Tiernan denied Gearhart a soldier's welcome by advising Allen that it would be unwise to re-elect him state engineer, despite the fact that Gearhart had been promised his old job when he ended his war work.[41]

Aware of complaints from several boards of county commissioners about Gearhart's high-handed treatment of them, Governor Allen decided to make a fresh start with a new state engineer. The dismissal did not reflect on Gearhart's work, the governor stated, but rather, "I do not wish to inherit any of these old troubles." Gearhart replied with a bitter letter of resignation, charging that "Mr. Moses is a damn rascal and is being supported by the same scoundrels

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37 Ibid., pp. 35-36; Kansas Highways 2 (January, 1919), p. 19.

38 Minutes, v. 1, August 8, 1917; First Biennial Report, p. 21. According to Markham, a vengeful legislature cut out funds for Kansas Highways in 1919. However, the magazine continued publication through 1920 under Markham's editorship. Publication of Kansas Highways was resumed in 1924 through 1929 by a private publishing firm, but the magazine now included advertisements and was of considerably lower quality than the original.

39 Mary Scott Rowland, "Managerial Progressivism in Kansas, 1916-1930," unpublished Ph.D. dissertation, University of Kansas, 1979, pp. 15-17.

40 Letter of March 10, 1919, Gearhart to Allen, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

41 Letter of March 25, 1919, Allen to Gearhart, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

who have fought all proposed highway legislation in Kansas, the highway department and me in particular." Further, "there is no place in the organization for the type of secretary the commission has had in the past," alluding to Markham. Gearhart gave himself credit for having fought the road campaign almost single-handed to 1917 and declared he had made his last fight "worth the candle" in Kansas. If the governor wanted to put a stop to bickering, Gearhart warned, he must sit in on all commission meetings to arbitrate conflicts between the commissioners and the state engineer and put the secretary under the state engineer.[42]

Gearhart's ouster left Allen with thorny problems. By April rumors were flying all over the state to the effect that friction was so intense among commissioners and staff that Allen intended "to fire the whole bunch." Markham later recalled going to work every day for weeks wondering if that day would bring his dismissal. Because of the rumors, towns and counties with projects approved and ready for bids waited to see if a new commission might overturn the approvals. As one distressed letter writer observed, everything was on hold while "the commission is out of commission."[43] Allen acted in April. Despite Gearhart's charges, E. R. Moses had been a staunch supporter of highway legislation and the department, but his two year term was up. For the sake of a fresh start, Allen named his own man, A. C. Blair of Lyons, to replace Moses. The governor asked Markham to remain.[44]

In June, the commission voted to make M. W. Watson state engineer.[45] Watson had been acting state engineer for nearly a year and had Gearhart's recommendation for the job. In fact, he resembled Gearhart in his objectives for the department and his blunt speech. W. V. Buck became assistant state highway engineer. In July, the commission cut the state into three divisions and made returning veteran C. I. Felps engineer for the eastern division, C. C. Jones southwestern division engineer and L. G. Scott engineer for the northwest.[46]

At last the machinery was back in commission, though there were many who disliked its composition. The editor of the Kansas Grange Monthly complained to Allen that the commission still had no member who stood for the farmer's interests. That very fact, he claimed, caused "the bad faith the farmers have in the whole matter." The editor also had hoped for a new state engineer who had some "tact," who would not spend all his time drawing maps and would pay attention to "the business intrests (sic) of the farmers of the State in preference to the tourists and joyriders."[47]

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42 Letter of March 30, 1919, Gearhart to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS. The commission accepted Gearhart's resignation, without comment in the minutes, on April 2, 1919.

43 Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Markham, Autobiography, pp. 130-131.

44 Ibid.

45 Minutes, v. 1, June 4, 1919.

46 Minutes, v. 1, July 2, 1919.

47 Letter of May 3, 1919, Editor, Kansas Grange Monthly, to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS.

Despite all the quarreling and confusion of the first months of 1919, the commission had gotten a satisfying slate of bills approved by the legislature. Salaries for county engineers were brought into line with those paid to engineers by other states and private business. Since costs for road building and materials had skyrocketed, the legislature authorized the state geologist to begin a geological survey to find sources of native materials that could be used on the roads more cheaply than imported materials. Other provisions encouraged counties to substitute a county unit plan for their township and road districts and forced the counties to maintain benefit district roads built with federal funds. To keep road and bridge work from falling entirely into the hands of big, heavily-capitalized contractors, counties were authorized to pay contractors up to 90 percent of their costs while work was in progress. In all, the legislature approved over twenty-five road and bridge laws.[48]

The biggest challenge lay in pushing a state aid fund through the legislature. The previous legislature had tried to bypass the Kansas constitution by appropriating a token $5,000 for a Shawnee County project as a test case in 1917. A suit was filed instantly and the case taken to the Kansas Supreme Court to determine whether legislators might continue the practice without a constitutional amendment. The court declared they could not.[49] There would be no state road aid without a constitutional amendment. In 1919, the matter grew critical. Only four states still had no such fund. Three of them lay in the Deep South where prejudice against public spending was older than the Confederacy; the other was Kansas.[50] In another year the grace period would run out and Kansas would lose its federal highway funds.

That kind of threat impressed the legislators, who approved a constitutional amendment to allow the state to participate in road building but no other kind of internal improvement. The state's contribution would be limited to 25 percent of the costs of the road up to $10,000 per mile. It would fund only 100 miles of road in all but the wealthiest counties, where the state would support up to 150 miles of highway.[51] If the amendment should be approved by the voters in the general election in 1920, it would be up to the next legislature to decide the source and handling of state aid.

These enactments passed with such speed and near unanimity that it seemed the highway commission had sound support in the legislature. Instead, the solons turned on the commission and savaged its budget, cutting the appropriation for operating expenses to $15,000 and lowering salary requests for fiscal years 1920 and 1921. Meanwhile the highway department's costs and duties were rising, and federal highway authorities were beginning to worry that the budget gap would keep the department from filling its already limited role of supervision. The commission decided to put its energies into winning passage of the

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48 Kansas Highway Commission, Laws Relating to Highways and Bridges. (Topeka: Kansas State Printing Plant, 1921), pp. 10-53; "Changes in Road and Bridge Laws," Kansas Highways 2 (May, 1919), pp. 3-7.

49 Governor Capper's Correspondence, Box 12, Folder 104, KSHS.

50 First Biennial Report, p. 25. The other three states were Georgia, North Carolina and Florida.

51 Third Biennial Report of the Kansas State Highway Commission, To June 30, 1922. (Topeka: Kansas State Printing Plant, 1923), p. 13.

amendment. State highway officials divided the state among themselves and stumped their districts to organize supporters and win voter approval in the 1920 election.[52]

None of them could mistake what a hard campaign they faced, since many Kansans were growing short-tempered over road problems and would soon be enraged. Trouble started in early January, 1919, when Barton County's commissioners opened the bids on what was to be the state's first federal contract since the Fort Riley project. Estimates for the project -- a 27.5 mile length of monolithic brick paving 20 feet wide along the Old Santa Fe Trail -- originally called for costs of about $30,000 per mile. County commissioners were dumb-struck when they discovered the low bid to be $53,000 per mile. Within a few months, other county boards were finding similar bombshells in their bids. Angry bellows sounded from taxpayers and commissioners alike.[53]

Much of the problem stemmed from the war, the effects of which lingered well past the Armistice. A labor shortage persisted so that the costs of common labor in Kansas rose by 75 percent to 100 percent between 1917 and 1919 and stayed high through 1919. Wages for skilled labor made the same leap. Counties were entitled by law to use convict labor on road work, but all the state's available prisoners were employed in coal mines and the state-owned twine factory. the state's progressive act mandating an eight hour day for all state employees was meant to benefit labor. In fact it drove workers away from state-contracted projects. They preferred jobs where they could work more hours and so earn more pay.[54] "Labor," the highway department grumbled, "has been rather shiftless and inclined to be indifferent towards the work."[55] Meanwhile farmers griped that road work took the farm hands they needed to get in the crops.

During the war, counties and contractors had turned to using more machines in place of manpower, but equipment prices had doubled since 1919. Meanwhile costs for nearly everything else needed to make a road had gone up too. Cement prices had doubled and brick prices had increased by half. Railroad shipments were slow and freight rates high.[56]

In all, State Engineer Watson judged in 1919 that the combined expenses for road work had increased 75 percent. To keep ahead of prices, the commission voted to raise the portion of federal aid for a single project first from 15 percent to 25 percent, and then to 50 percent of costs in 1919. The move brought applications "to the front right royally," Moses commented. In 1919 and 1920, the commission put 461.93 miles of federal construction under contract, but shipping delays, the shortage of labor and experienced highway contractors,

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52 Rowland, "Managerial Progressivism," pp. 76-77; Markham, Autobiography, pp. 132-133; Fifth Biennial Report of the Kansas State Highway Commission, To June 30, 1926. (Topeka: Kansas State Printing Plant, 1926), p. 9.

53 Watson, "Kansas Highways," p. 6; First Biennial Report, p. 54.

54 Letter, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 12, KSHS; Letter of December 23, 1919, Watson to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Governor Capper's Correspondence, Box 12, Folder 69, KSHS.

55 Second Biennial Report, p. 12.

56 Letter, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

and high prices prevented completion of all but 155 miles.[57] Meanwhile prices continued climbing. In 1922 Watson noted, "Prices that were predicted to fall after the close of the war seemed to take a new lease on life and climbed a few rounds further up on the ladder, until now it is realized that the bid in Barton County was considerably lower than they would be able to get were it to be advertised for the same type of road at the present time and probably for some time to come."[58]

Few taxpayers excelled at economic analysis. When they saw sky-high bids, they suspected trickery. The Barton County paving bids brought cries of graft, collusion and swindle, which spread wherever projects met the same obstacles. Shortly Governor Allen was receiving angry charges that a conspiracy of brick manufacturers was at work to bilk the public. A Salina contractor, for example, pointed to a combine of brick manufacturers and suppliers which he believed made it impossible for the small operator to bid on road construction projects "unless he is in the ring." The combine decided which contractors were to get the jobs and froze out anyone who crossed them, he alleged. Others accused both brick and cement manufacturers of conniving with local materials dealers to set high prices secretly, then rigging the bids to be sure their high prices prevailed. The highway department, protestors complained, drew up contracts which favored the materials combines and so was in league with them against the public.[59] A representative from Barton County later told the governor he thought that the people had been "hit hard by a gang of Boosters, Boodlers, Grafters and Paved Road Promoters. Their business all goes through the highway commission office. I believe the thing should be investigated."[60]

Far from abetting the alleged swindles, the department was just as alarmed. Watson suspected that there was collusion among the materials interests in Barton County, where he thought the manufacturers of brick and cement had agreed to supply only a few favored contractors and thus had reduced the number of competitive bidders. He suggested that an investigation by the legislature and the glare of publicity would stem the graft in road work. His own inquiries to other state highway departments showed that several state engineers suspected similar collusion in their areas, but they had been unable to provide compelling proof. Watson, too, failed to turn up hard evidence.[61]

Other factors helped drive up material prices. Regulations for federal aid projects required use of brick that met certain minimum test standards. Because few Kansas brick yards made a product that met the test, the supply was limited

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57 Governor Allen's Correspondence, Box 9, Folder 20, KSHS; Second Biennial Report, p. 11.

58 Watson, "Kansas Highways," p. 6.

59 Letter of January 4, 1919 to Allen, Governor Allen's Correspondence, Box 10, Folder 12, KSHS; Letter of May 31, 1919, Rodney Edward to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Letter, 1919, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

60 Letter, 1922, S. J. Williams to Allen, Governor Allen's Correspondence, Box 11, Folder 2, KSHS.

61 Letter, 1919, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 12, KSHS; Letter of June 5, 1919, Wise Highway Commission to Allen, Governor Allen's Correspondence, Box 15, Folder 17, KSHS.

to the wares of three Kansas manufacturers and big out-of-state brick makers. Nor would federal authorities accept so-called "natural cement" made from local materials by small cement plants.[62] Thus thrifty Kansans' tendency to make do with what was at hand collided with the highway professionals' mandate to upgrade quality and made them appear as accomplices in graft.

A contributor to the brick scandal -- and a source of great frustration for rural taxpayers -- lay in the peculiarities of the benefit district law. According to the statutes, citizens who originated a benefit district petition could specify the type of improvement to be made, subject to change only by the county commissioners. Regardless of traffic volume or any other consideration, the highway department was stuck with the road type named in a successful petition and could only act to see that it would be built to standard.[63] This opened juicy opportunities, which the city engineer for Topeka suspected the paving industry had seized in 1919 by sending its own representatives to draw up and promote petitions for improvements.

The system practically guaranteed misunderstandings. The petitions circulating for signatures stated an estimated cost for the project to allow potential signers to estimate their own assessments. However, by the time a project reached the bid stage, inflation had driven costs way beyond the figure signers had approved and left many signers feeling they had been deceived. The department considered putting dollar per mile limits on petitions to guard signers against inflation and requiring county commissioners to let contracts close to the state engineer's estimates.[64] Further, Watson urged that the law set controls on the types of road construction slated in petitions so that the department could impose some semblance of rationality. The Barton County project, for example, called for a wider road to be built on a deeper base than Watson thought necessary.[65]

Road boosters in Barton County replied that they were building for the future. With more and more trucks taking ever larger loads onto the highways, it would be cheaper in the long run to provide the width, durability and long-radius turns suited to modern traffic than to construct a road that would need continuous upgrading as traffic mounted.[66] Elsewhere, towns recognized that traffic and commerce would flow into those cities providing the most up-to-date arteries, and they planned accordingly. All the highway department could do in light of urban ambitions was to plead and to print detailed advice in Kansas Highways instructing citizens how to match road planning to traffic flow and genuine needs.

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62 Letter, 1919, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Letter, 1919, Topeka City Engineer to Allen, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

63 "How Federal Aid May Be Secured," Kansas Highways 2 (May, 1919), p. 15; Kansas Highways, 2 (August, 1919), pp. 14-15; Letter, 1919, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 14, KSHS.

64 Letter, 1919, Topeka City Engineer to Allen, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

65 Letter, 1919, Watson to Kansas Highway Commission, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

66 Ibid.

The benefit district originated in the belief that those who stood most to gain from a road -- the owners of the land through which it passed -- should pay most. The benefit district had been designed in the interests of fair play. The real trouble with the system was that it favored urban interests, a fact protestors complained about loudly but to little effect. Rodney Elward, self-appointed spokesman of what he called "the sovereign squats," tried to set the commission straight on the problem in 1919, but he despaired of ever getting its city-bred members to understand. The benefit district petitions, "have their sources in the towns, are planned for the benefit of the towns, and are controlled by the towns."[67] It took as few as 200 signatures to secure a successful petition, which thereby obligated the county to fund a road project from existing funds, or worse, from a bond issue. Thus a handful of landowners could saddle a county's taxpayers with half the costs and all of the interest on a project they had no chance to approve. Because many landowners lived in the towns and rented out their farms, they cheerfully signed petitions and then added the ensuing assessments to their tenant's rents. When an election was held on a bond issue (or a county-wide election was held on a project over thirty miles in length), a city sometimes had enough favorable votes to carry the election over the protests of rural residents. Yet the city-dwellers were themselves immune from benefit district assessments.[68]

Another protestor's letter assured the governor that the farmers could not compete with the town boosters in pushing petitions. Farm families wanted roads built -- the farm to market routes they had been promised -- but they were afraid to initiate petitions. The law required the original petitioner to post bond. If a petition failed, the bond would be forfeited, and few farmers could afford the loss. Consequently, the writer's family still went to church and school over the dirt track his grandfather had carved when he homesteaded their place.[69]

Elward summed up the problem in an angry letter to the governor:

> The law is absolutely autocratic, and would have been [more] in place in Berlin than in Topeka. It means minority rule, and it is certainly adapted to promote grafting. I told you in our conversation at Wichita that it ought to have been entitled 'An act for aid to grafters' and the more I see of it the more I realize the truth of that assertion.[70]

By mid 1919, Governor Allen had acquired a regular correspondent in Rodney Elward. As head of the Taxpayers League of Reno County, Elward served up the most caustic expressions of a belief -- widely held in rural parts -- that the farmer was unjustly weighted with the paving costs fastened on him by a combina-

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67 Letter of June 10, 1919, Elward to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS.

68 Statement of Taxpayers League of Reno County, Governor Allen's Correspondence, Box 10, Folder #12, KSHS; Letter of June 10, 1919, Elward to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Letter from Kansas farmer to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS.

69 Governor Allen's Correspondence, Box 10, Folder 12, KSHS; see also "Supreme Court Upholds Road Laws," Kansas Highways 3 (February, 1920), p. 4.

70 Letter of June 10, 1919, Elward to Allen, Governor Allen's Correspondence, Box 10, Folder 14, KSHS.

tion of "engineers, contractors, manufacturers of material, bond brokers and city autoists. These hard surfaced roads are of no value whatever to the farmer. A dirt road is much better to haul over with a team," said a rural banker.[71]

Neither the highway commission or the highway department paid much attention to solving these inequities. Governor Allen had made it his original policy that the commission would grant federal aid only for hard surface roads, largely in the eastern two thirds of the state. Highway dollars were "wasted on dirt roads," he believed.[72] Professionals within the highway department believed it their proper mission to bring Kansas into the twentieth century with a connected system of paved roads. They were either unwilling or unable to admit the justice of the rural taxpayers' grievance.

Highway authorities did recognize that they faced a battle over constitutional amendment in this bitter atmosphere. They hit the campaign trail with a will in 1920, canvassing and promoting along with the Kansas Good Roads Association and its fellow boosters among tire companies, gasoline refiners, trucking firms, bankers and Chambers of Commerce. The outcome repaid them handsomely. In the general election of 1920, Kansas voters approved the constitutional amendment by a three to two margin.[73] Kansas clearly wanted to spend a portion of their tax dollars on highways.

Still to be answered was who was to be the beneficiary. That issue split the legislature that met in January, 1921 and pitted the highway commission against powerful rural interests who fought hard to keep tax money out of the commission's control. The opportunities for graft would be compounded, they warned, if the state fund were placed in state hands. Urban representatives argued that city folk would pay a greater share of the auto tax (the agreed source for the fund), but not a penny of it could be spent on city streets. They feared for their constituents' interests if the county commissioners retained the purse-strings.[74] For its part, the highway commission "was almost entirely helpless in the fight which was made upon it during the legislature," Governor Allen complained.[75] The state's tradition of local control convinced a majority of legislators to give the counties control of state highway revenues.

The resulting aid formula was another Kansas hybrid. Legislation established the motor vehicle license fees as a "state-aid road fund." County treasurers would still collect the fees. Except for a small portion sent to the

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71 Letter, 1923, Butler County banker to Davis, Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.

72 Governor Allen's Correspondence, Box 10, Folder 14, KSHS; Letter of December 30, 1918, Highway Commissioner E. R. Moses to Allen, Governor Allen's Correspondence, Box 10, Folder 12, KSHS.

73 Rowland, "Managerial Progressivism," pp. 80-81.

74 Governor Allen's Correspondence, Box 11, Folder 2, KSHS.

75 April 5, 1921, Allen to Highway Commissioner R. S. Tiernan, Governor Allen's Correspondence, Box 11, Folder 1, KSHS: see also Governor Allen's Correspondence, Box 11, Folder 2, KSHS.

state to cover the cost of license plates, the entire amount would remain in the county treasuries to be apportioned between the state-aid road fund and the drag fund.[76] Nothing had changed except the name of the fund.

The highway commission would have little determination of how this state aid would be spent. Only plans, specifications and estimates for construction and vouchers for expenditures needed the commission's stamp. After the amount of federal and/or state aid was subtracted from a project's costs, half of the remainder was to be charged to the township and benefit district, and the other half to the county. Counties were empowered to raise their share with a one mill levy or a bond issue.[77]

Masquerading 105 county funds as state aid put Kansas in a precarious position. Worried legislators began telegraphing the Department of Agriculture during debate over the bill in March, 1921, asking if the formula would pass federal muster. The replies chilled them. Already concerned that the commission's paltry budget kept its staff from supervising federal work adequately, the Department of Agriculture would not accept the Kansas legislature's newest enactments as a substitute for a state-controlled road fund. If limitations with regards to the commission's funds and authority were not removed, BPR chief Thomas H. MacDonald warned, "we cannot legally pay over federal funds" to Kansas.[78]

Kansas managed to dodge a cut-off of its federal funds, thanks to its senior senator in Washington. In May, Senator Curtis told an anxious Governor Allen that the Federal Road Aid Act was coming before the Senate for renewal. Curtis promised to do his best to tack another amendment onto the Senate bill extending the original three year grace period another five years. Curtis succeeded. Kansas, the only hold-out on state aid by 1921, would have until November 9, 1926 to bring its constitution and laws into compliance.[79]

In July, 1922, Agriculture Secretary Henry C. Wallace implied to Governor Allen that the Curtis amendment was all that had saved Kansas from termination of federal funds in 1921. A lengthy letter from Wallace that month informed Allen that his state's road aid fund did not provide truly state revenues for highways and so did not meet requirements of the federal act. The act further demanded that a state highway department supervise federal projects. Instead, the Kansas Highway Commission's powers were so limited that it could take no action independent of the county commissioners. Wallace's greatest concerns were that the commission could select neither the roads to be improved nor the type of improvement; its engineers did not make original surveys, estimates and specifications for projects nor could it advertise or award contracts. Its sole authority lay in approving plans already made. In the vital area of maintenance of federally funded roads, the commission was limited to yearly inspections by the state engineer, who merely informed county commissioners where repairs were needed. It was left to the county boards to levy the taxes to pay for the

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76 Laws Relating to Highways and Bridges, 1921, pp. 38-40; Third Biennial Report, p. 13.

77 Third Biennial Report, pp. 49, 52-54.

78 Summary of correspondence from Department of Agriculture, Fifth Biennial Report, pp. 9-10.

79 Letter of May 21, 1921, Senator Curtis to Allen, Governor Allen's Correspondence, Box 11, Folder 1, KSHS; Third Biennial Report, pp. 12-14.

repairs and to do the actual work, without state supervision. While the federal act insisted on a state fund under direct state control, the commission did nothing but approve vouchers after the fact for expenditure of federal and "state" monies. Kansas must correct these problems before 1926 or lose federal dollars, Wallace concluded. Plainly the state could not rely on one more hat trick from Senator Curtis.[80]

Amidst the trauma over highways in Kansas between 1919 and 1921, Governor Allen squared off against a second roads crisis. In July, 1919, Allen had called representatives of six central states (Iowa, Nebraska, Kansas, Oklahoma, Arkansas and Texas) to meet in Kansas City. These states shared a common problem of open spaces which required a network of enormous road mileage. Compared to small, industrialized eastern states, the plains states had fewer dollars to spend on many more miles. Kansas was typical, having enough project proposals on hand in 1919 to absorb its entire five year federal allotment of $8 million. County boards in Kansas, Allen asserted, were reluctant to vote further bond issues without assurances the federal dollars would be available. Allen therefore got six states' support for a $400 million increase in the total federal appropriation for 1921 to 1924. Senator Curtis already had introduced a measure for such an increase when the federal act came up for renewal in 1921, and ex-governor and now Senator Arthur Capper headed for Washington to plead the central states' case.[81]

What the Kansas-led movement faced in Washington was a proposal that would not increase the states' shares but terminate them altogether. The so-called Townsend bill would sever the federal-state partnership and eliminate the Bureau of Public Roads. In its place, a National Highway Commission would establish an interstate highway system to be built, maintained and operated by the National Highway Commission. There would be no federal highway money for the states, but backers of the Townsend bill assured that each state would be crossed by at least two federal trunk lines.[82]

One map for a proposed federal system showed how thin that promise was. Arkansas's share of the system, for example, would amount to a short stretch of highway across its far northeastern corner. In fact, the Townsend measure had a distinct regional bias. The wealthy industrial states of the northeast had nearly paved their entire, small state systems and had less need of direct federal grants. Since they contributed a larger share of federal revenues, the northeastern states believed they would be better served by a system of fast, modern interstates linking principal urban areas border-to-border. Their representatives joined lobbyists from the various trails associations, the Automobile Association, the Federal Highway Council, the Highway Industries Association and assorted automotive industries in pushing speedways for the motoring public -- that is, well-heeled tourists.[83]

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80 Third Biennial Report, pp. 12-14.

81 "Governor Allen Leads in Call For More Federal Aid," Kansas Highways 2 (August, 1919), pp. 3-4; Markham, Autobiography, p. 136.

82 "Secretary Houston on Federal Road Commission Bill," Kansas Highways 2 (August, 1919), pp. 6-8.

83 "Continuation of Federal Aid the Issue," Kansas Highways 3 (July, 1920), pp. 3-4.

The agricultural states quickly grasped the threat. The states would lose the federal dollar and control over the routing of traffic flow within their own borders. An article in Kansas Highways predicted that federal trunk lines "would begin at some Atlantic seaport and wander withersoever they desire."[84] Nor would a federalized system be built simultaneously in all states. As Secretary Markham observed, "every member of the present Congress will be mouldering in his grave before this automobile speedway has kissed the bank of the Mississippi."[85]

In December, 1919, a worried Governor Allen dispatched Markham to the national meeting of the American Association of State Highway Officials. AASHO had been wavering on the issue, but Markham's intensive lobbying won a three to one margin among the states in support of Allen's six-state declaration and continuation of the federal-state partnership. Markham proved so effective that, in 1921, AASHO named him its first full-time lobbyist in Washington. The Kansas Highway Commission ceased publication of Kansas Highways and gave Markham a leave of absence to take up the battle. In April, 1921, Markham helped re-write the federal road aid bill, making the changes that five years of experimenting indicated, and he won endorsement for his version from the Department of Agriculture and President Warren Harding. While Capper, Curtis and like-minded Congress members pushed the bill, Markham dispensed argument and persuasion on Capitol Hill.[86]

The bill President Harding finally signed into law November 9, 1921, took almost 90 percent of its language from the version Markham and his legislative committee had written. It preserved the federal-state partnership and extended increased appropriations for five more years. An AASHO official recalled in 1923 that "it was Mr. Markham more than any other one person outside of Congress, who steered that bill through the tortuous and dangerous channels of the two Houses of Congress."[87] At its Kansas City convention in 1922, AASHO made Markham its Executive Secretary, a post he held through 1942. Politics had spawned another of its peculiar paradoxes. Kansas -- one of the most backward and ineffectual states in terms of its own road legislation -- had produced Allen, Curtis and Markham, who played a decisive hand in shaping federal highway legislation.

Beneath the cloud of battle smoke that obscured highway issues, the Kansas Highway Commission and staff had managed to do its job. This was especially surprising since the commission's budget was sliced again from $61,000 in the fiscal year ending June 30, 1921 to $50,000 in the following year. Even the Department of Agriculture was frankly surprised at the good results the highway department achieved with its meager funds.[88] Since 1917, the commission had allotted over $9 million in federal aid and approved vouchers totaling almost $5 million. Members also had received resolutions from 22 counties for expendi-

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84 Ibid.

85 Letter, 1920, Markham to Allen, Governor Allen's Correspondence, Box 11, Folder 1, KSHS.

86 Address given in 1942 by Fred R. White, President of AASHO in 1923, quoted in Markham, Autobiography, pp. 133-141; see also pp. 146-152.

87 Ibid., p. 139.

88 Third Biennial Report, p. 11; Fifth Biennial Report, p. 9.

ture of state aid on 336 miles of roadway.[89] Still progress on both the federal and state systems was spotty because the counties were not compelled to propose work on portions of the designated mileage within their borders.

The commission's chief accomplishment in that biennium had been to comply with a requirement in the 1921 Federal Road Aid Act that each state redefine its federal aid highway system. The new system was limited to seven percent of total existing mileage in each state (further evidence that federal aid was no longer meant to be "squandered" on thousands of farm-market roads), the mileage to be classified as primary (interstate) and secondary (intercounty) routes. The seven percent rule would entitle Kansas to designate 8,400 miles as eligible for aid, but the state's allotment would never stretch so far. After conferring with neighboring states to select interstate connections, the commissioners and engineering staff arrived at a tentative system of 6,575 miles.[90]

Besides overseeing the 114 separate federal aid projects under construction in 1922, the highway department had published its second compilation of Kansas road and bridge laws, put out a new manual of standards and specifications and conducted a lengthy road school for county personnel. Staff had distributed over a million dollars worth of federal war surplus equipment to the counties -- everything from caterpillars to picks and shovels -- and its investigation of county administrations turned up several examples of corruption that were prosecuted by the state attorney general.[91]

The state's engineers had already discovered that bridge construction posed other legal problems. A Kansas Supreme Court decision in 1916 placed some curbs on bid rigging among bridge companies, but colusion and influence-peddling recurred at the local level through the 1920s. So long as the highway commission lacked the authority to let bids and award contracts for bridge construction, its staff had little means to ensure competitive bidding except by supplying local officials with specifications and standard forms for advertising bids. Even the design of bridge standards involved some early legal tangles. State Engineer W. S. Gearhart was one of several Kansas highway officials who found himself in court in 1917 defending himself against charges of patent infringement by Daniel Luten. Luten, an enterprising, self-styled inventor, claimed to hold hundreds of patents on bridge designs -- including at least six on the manner in which reinforcing rods were layed in concrete spans. It was nearly impossible to erect an economical concrete bridge without seeming to infringe one of Luten's patents.[92]

Luten threatened township and county boards with similar suits if they did not pay him a royalty on their concrete bridge contracts. Frightened contractors and worried local officials began refusing to build such projects unless the state indemnified them against a suit -- a course the legislature took in 1917. Meanwhile an angry Gearhart prepared a case for a lengthy court battle with Luten. The resulting decision by the U.S. District Court of Kansas in 1918, together with similar decisions in other federal courts, put Luten out of

89 Ibid., p. 49.
90 Third Biennial Report, p. 17.
91 Ibid., pp. 59-62, 71-76.
92 Topeka Capital, June 8, 1916 in Bridge Clippings, v. 1, 1906-1941, KSHS; Governor Capper's Correspondence, Box 7, Luten Bridges Folder, KSHS.

business. In part because of Gearhart's arguments, the courts ruled that basic building techniques, and design features as old as the Romans, could not be patented.[93]

Luten made his initial profits because of the growing popularity of reinforced concrete structures. Lumber proved too costly on the treeless plains. When the state's original wooden bridges began to give out in the late 19th century, communities began substituting steel stringers for timber to support the bridge floor. Flimsey as these metal members were, the structures were nicknamed "tin bridges." They were cheap, but they tended to fail in modest floods. Thus, the highway department concentrated on supplying standards and specifications for concrete structures to replace the dangerous old spans. Concrete bridges were reliable, reasonably priced and, with the state engineers' instructions, were easily designed by county or township personnel. Local communities liked them because they were inexpensive to maintain and pleasing to the eye. Since concrete would not rust, it need not be given repeated coats of paint, and the bridge could be ornamented with decorative copings and guard-rails.[94]

While the highway department had no trouble promoting use of good concrete structures, Kansas law left local officials enough leeway in other design matters to cause frustration throughout the 1920s. Penny-pinching county commissioners often refused to build spans wider than the legal minimum of 16 feet -- too narrow for cars to pass. Erecting a bridge wherever the stream crossing was easiest cut costs, but it frequently meant that drivers must negotiate a sharp turn from the roadway onto the bridge deck. With its legal authority so restricted, the highway department could do little about these problems but urge local boards to consider safety before thrift.[95]

Even the best designed road or bridge could still crumble in a short time if it were made from faulty materials. The legislature refused to give the new highway department its own laboratory to test materials in 1917. Instead, the legislature made the testing lab at the Kansas State Agricultural College's Department of Applied Mechanics "available" for the highway department's use. Because no appropriations were made for additional staff or equipment at the lab, the college had to dip into its own budget to keep pace with the increased volume of work and to add equipment for testing some road materials. It was left to the counties to take their materials to Manhattan for testing before beginning a construction project and to pay for tests out of their road funds. Not all counties were conscientious about paying these bills. By the mid 1920s, a growing volume of test work was getting done simply because the college was willing to cooperate in spite of deficits. Considering these frustrations, the lab managed to meet BPR's standards for testing methods admirably with simple but efficient contraptions to measure hardness, toughness or compaction.[96]

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93 Governor Capper's Correspondence, Box 7, Luten Bridges Folder, KSHS.
94 Topeka Journal, November 16, 1915 in Bridge Clippings, v. 1, 1906-1941, KSHS.
95 F. W. Epps, "Bridge Building in Kansas," Kansas Highways 1 (July, 1918), pp. 7-9.
96 Third Biennial Report, p. 114; Fifth Biennial Report, pp. 74-76.

Using suitable materials was essential in any case, but inflated costs and the taint of scandal over brick and cement made it imperative to find durable materials that need not be imported from elsewhere. The highway department suspected that there were ample sources within Kansas of good native materials. The problem lay in finding them. The 1917 legislature authorized the state geologist to locate them in a survey, but Kansas proved to big an area for the paltry appropriation the state geologist received from succeeding legislatures. It fell to county engineers to report local material deposits whenever they happened on them, but the resulting data was spotty at best.[97] Throughout the rest of the decade, the highway department pleaded for a comprehensive survey as it pressed its campaign to build "all Kansas roads" out of native materials.

The department also achieved another, long delayed objective in this period. Originally, the commission was to approve a system of county roads, but the individual counties had proved stubborn -- each mapping its own network of county roads and expecting adjacent counties to adjust their routes to make connections at the county line. After the 1921 legislature stiffened the regulation, all of the counties managed to submit maps in 1922 for a system of reasonably connected county roads.[98]

The year 1923 opened with a new man in the Kansas governor's chair with his own approach to road building. Election of Jonathan M. Davis to the governorship represented a considerable shift in Kansas politics. Unlike the two governors before him, Davis was a Democrat and a self-styled man of the people. Having campaigned against the centralizing of authority in Topeka and the professionalizing of public administration, which his predecessors had begun, he entered the statehouse pledged to returning authority to the county level. In particular, Davis intended to listen to rural voters' opinions about highway matters.[99]

A new look for the highway commission called for a purge of old members and professional staff. Because the incoming governor was entitled to make only one appointment to the commission, Davis asked Fred Perkins, Tiernan's replacement and the one hold-over, to resign. Perkins refused, and Davis had to settle for just one new commission member, L. F. Davidson of Glasco. Davis found it easier to sweep out the old engineering staff. By March, 1923, State Engineer Watson, State Bridge Engineer Epps and Assistant State Engineer Buck had all resigned. In their places the commission named L. R. Tillotson, formerly an engineer for a Kansas bridge firm, state engineer. John McIntyre came on as assistant state engineer and R. F. Gallup took the bridge engineer's position. Putting the old guard out, Davis hoped, would ease public animosity toward the commission and the highway department.[100]

So far as Davis and his hand-picked highway squad were concerned, past commissioners had buried enthusiasm for good roads under an excess of concrete. Tillotson later explained to the governor that, when the commission had begun work, it had been "generally understood and agreed" that federal aid could be secured only for slab roads. This turned out to be a mistake, said Tillotson,

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97 Fifth Biennial Report, p. 73.
98 First Biennial Report, p. 36; Third Biennial Report, p. 71.
99 Rowland, "Managerial Progressivism", pp. 18-21.
100 Governor Davis's Correspondence, Box 4, Highway Matters, KSHS; Minutes, v. 1, February 8, 1923 and March 7, 1923.

but weaknesses in the benefit district system caused the situation to get out of hand, leaving the state with too many hard surface projects, each taking too long to complete at too much cost. Irate taxpayers had turned on the commission and its highway program as the most visible source of their frustration.[101] Even the Kansas Automobile Owners Association, a bastion of road boosters, agreed with Davis in 1923 that "one of the greatest obstacles we have to over-come (sic) is that whenever a State System of Highways is mentioned the immediate conclusion is it means brick or concrete."[102]

To restore public goodwill, Davis announced a new trinity for highway construction. He was pledged to "Dirt-Bridges-Culverts." The new commission elected to discourage hard surface projects. Davis proposed instead to lay the groundwork for a modern state highway system by building the finest earth roads. These dirt highways would make the foundation for later paving when funds allowed. Meanwhile the commission could spread federal dollars over more projects, see them completed faster at less cost to any one community, and win more friends.[103]

Putting this policy in action more than doubled the number of counties participating in federal aid in the biennium, 1922 to 1924. The commission made good on the governor's "more dirt" policy. Past commissions had approved contracts for a total of 777.5 miles in federal aid construction up to November, 1922 -- 60 percent of those miles in concrete and brick and just 16 percent in earth roads. In fiscal years 1923 and 1924 alone, the Davis commission let federal contracts for 889 miles. Earth and sand-clay roads accounted for 59 percent of that mileage while concrete and brick fell to 21 percent. Because dirt roads led to speedy construction, the commission saw 470 miles in federal aid work completed in 1923 and 1924 compared to just 483 miles finished in the previous five years.[104]

The Davis administration won more allies among rural taxpayers by targeting the benefit district for annihilation. If the benefit district could not be eliminated, Davis believed, paving would remain a luxury Kansans could ill afford. At the end of Davis' term, Tillotson judged that his administration had put the highway program on better footing with the public because the commission "stood out against the use of the Benefit District and only allowed them where it was quite evident that the county was unable to proceed financially by any other means" to complete a connected system."[105]

Unfortunately, the benefit district would have to stay until replaced by other sources of highway construction money. Davis urged the legislature in 1923 to eliminate the benefit district and the county road levy by substituting a tax on motor fuels. "In other words," Davis proposed, "we take the tax from

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101 Letter of September 5, 1924, Tillotson to Davis, Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.

102 Letter of April 13, 1923, Kansas Automobile Owners Association to Davis, Davis Papers, Box 4, Highway Matters, KSHS.

103 Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.

104 Fourth Biennial Report of the Kansas State Highway Commission, To June 30, 1924 (Topeka: Kansas State Printing Plant, 1925), pp. 7, 33, and 53; Third Biennial Report, pp. 34-40.

105 Letter of September 5, 1924, Tillotson to Davis, Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.

the home that does not earn, from the farm that is not selling, and from the bank that is not paying dividends and place that tax on the fellow that is using the roads." He estimated that the new source of revenues would cut property taxes by $1.5 million and allow the state to reimburse benefit districts for previous outlays.[106]

The governor's plan made good sense for a state as economically hard-pressed as was Kansas by 1923. Kansas agriculture had seen flush times during the First World War. Farmers had tried to cash in on the boom by buying additional land or machinery to boost production. But war's end put European farms back in operation and sent crop prices plunging. The drop in prices left farmers with crushing debts, set off an epidemic of bank failures and drove rural merchants to close their doors. Kansas and other farm states achieved a ten year headstart on the Great Depression.

Those rural and small town Kansans who managed to stay in business faced a squeeze. The Butler County Grange estimated that inflation had driven up prices for the goods they must buy by 50 percent to 150 percent and that taxes had doubled.[107] In the long run, a gasoline tax would spread the burden of road taxes more equitably and cut out the benefit district assessment on land. But legislators took the short view in 1923 by rejecting the motor fuels tax proposal. It was a bad year to vote "yea" on any measure with the word "tax" in it.

Notably, Governor Davis had nearly reversed his stance on centralizing highway authority. In lieu of a fairer tax, he now argued that the law must be changed to strengthen the highway commission hand. A strong commission could eliminate unneeded road projects and ensure that they were built in the most economical fashion reflecting existing traffic flow and financial conditions.[108] But Davis refused advice that he call a special legislative session in 1924 to enact a gas tax.

Whether he was right to be pessimistic about chances for a gas tax in 1924, Davis left a tangle of unsolved highway problems for his successor. Governor Ben S. Paulen, a Republican, looked ready to set road matters straight. As an ex-banker, Paulen wanted business-like efficiency in a streamlined, centralized state government. He stood as firmly for an improved highway system as previous Republican governors but, like Davis, Paulen thought the benefit district had to go. If Paulen came to the statehouse equipped to untangle the state's long-standing problems, he was not prepared for the crisis -- the worst in the state's highway history -- that assaulted him his first few months in office. A case of monumental bungling by a well-meaning legislature had closed the spigot on federal aid for Kansas.

The first warning of trouble came in February, 1925, when State Engineer Tillotson informed Governor Paulen about the highway department's financial straits. The 1923 legislative session had cut another slice from the commission's appropriation. At the same time, the department had processed nearly as many federal aid projects between 1923 and 1925 as in all previous years. The

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106 Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.
107 Correspondence of November and December, 1923, between Butler County Grange and Davis, Governor Davis's Correspondence, Box 4, Highway Matters, KSHS.
108 Ibid.

highway department was surviving the awful work load only through the loyalty of its employees. Further, the commission now owed the national government $13,000 for war surplus equipment.[109]

The Kansas House was then considering a $25,000 deficiency appropriation to make up for the expanded work load and to pay off the debt to the federal government. If the deficiency appropriation failed, Tillotson warned, the departments of road and bridge planning and the division engineers would have to be eliminated. After March 1, there would be no field work, no new federal project statements, no vouchers for work in progress, no inspection of federal works, and, without travel expenses, no meetings of the highway commission. Federal authorities would probably pull funds for existing projects and leave the counties to pay the bills.[110]

The Kansas Legislature passed the deficiency appropriation. It also approved measures to expand the commission to three members, to encourage a connected system of improvements and to promote highway safety. Most important, the legislators decided that the time had come for a gasoline tax. Unfortunately, the gas tax was a cumbersome measure which parcelled the revenue by a complex formula among four funds. Included was a stipulation that a portion of the gas tax would be returned to the counties less any appropriation made for the commission up to $75,000. Proponents thought they were giving the commission a $75,000 appropriation automatically. Anti-commission legislators slyly inserted appropriation bills for a much smaller amount. According to the Topeka Journal, legislators, "influenced largely by the county commissioners of the state," saw a chance to cripple the State Highway Commission and managed to slip the lesser amount past the commission's backers.[111] Legislators left Topeka content with their handiwork, only later to discover they had left the highway commission short. The commission was left with its deficiency appropriation and a total of $50,000 to get through each of the next two years.

Soon the Kansas Highway Commission was nearly broke. Agriculture Secretary W. M. Jardine, himself a Kansan, fired a series of letters to new State Engineer W. V. Buck in May, 1925, making clear that federal patience had worn thin. Appropriations had never been adequate. After the 1923 legislature had cut the commission's budget, the highway department had taken to charging the counties a percentage of their federal aid to support its engineering expenses -- a practice BPR had squelched when it was discovered by the Kansas attorney general and the press. Now the Kansas legislature had capped years of funding cuts by disembowling the commission's budget.[112]

While four of Kansas' neighboring states provided an average of around $400,000 in state funds annually for their highway departments, Kansas, which managed just $50,000, would receive the second largest of the five states' allotments of federal funds in fiscal year 1925. Because, Kansas ranked second in the nation in total road mileage, it ranked 11th of the 48 states in its

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109 Letter of February 21, 1925, Tillotson to Kansas Highway Commission and Boards of County Commissions, Records of the Governor's Office, Correspondence Files, Box 7, Folder 2, Department of Archives, KSHS.

110 Ibid.

111 Topeka Journal, July 11, 1925, in Good Roads Clippings, Vol. 2, 1925-1942, KSHS.

112 Fifth Biennial Report, pp. 5-8.

federal allotment in 1925 but only 40th in number of miles paved.[113] Jardine suspected the federal government had made a bad bargain. The highway department, Jardine concluded, would not have the staff necessary to supervise and inspect federal projects. He had no choice but to stop federal approval of all new work in Kansas as of May 9, 1925.

State Engineer Buck learned in late May that, so far as Jardine was concerned, the immediate problem was the size of the highway department's engineering and support staff. Four states adjoining Kansas averaged highway departments of 305 employees compared to fourteen in the highway department, the Secretary noted. The state had to confront its state aid gap at some point, but it had to enlarge its department at once. To help, Jardine promised to send top BPR officials to Topeka to advise on a reorganization.[114]

The following week Buck, Paulen and the highway commissioners met the BPR's representatives. Together they worked out a plan to divide the state into six divisions, each headed by a division engineer and assistant engineer, and to divide the work of the Topeka office among four departments of design, construction, maintenance and equipment. Each of the first three would have its own engineering, clerical and support personnel and the help of a general office of clerical workers. In all, the department would employ twelve engineers and fifteen support and clerical staff in Topeka with an initial year's budget of $98,200 in salaries and $39,100 in expenses. On June 9, 1925, the highway commission sent out a public statement supporting the reorganization plan as the best way to restore the state's federal aid and protect taxpayers' interests.[115]

Putting the plan in action would take more money than the commission had coming, however, and a special session of the legislature could not be convened to approve the full $75,000 appropriation until 1926. Meanwhile, Kansas would lose over $2 million in federal aid. But Governor Paulen had a desk full of options to raise the $88,000 needed. Kansas had relied for a century on citizen initiative in getting the roads built, and many citizens were ready to pitch in again. Wyandotte County pledged to contribute the entire amount until told that that was illegal. The state's Chambers of Commerce promised to advance the full sum.[116] Private citizens across the state swamped the governor with offers of cash from their own pockets, including a Stockton man who scrawled a message on smudgy tablet paper assuring Paulen, "I have four or five thousand dollars I can loan to the State of Kansas. Can the State use it?"

Paulen did not want to "pass the hat," especially since many Kansans thought the highway program was tarred already by association with town promoters such as Chambers of Commerce. Instead, Paulen turned to his fellow bankers. He polled the legislators and found that a majority favored making an increased appropriation to support the reorganization plan in a future session. With that

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113 Ibid., p. 11.
114 Ibid., pp. 8-9, and 12.
115 Ibid., pp. 12-16.
116 Letter of May 27, 1925, Kansas Association of Chambers of Commerce to all member organizations, Governor Paulen's Correspondence, Box 7, Folder 2, KSHS.

as "collateral," Paulen invited Kansas banks to pledge the needed funds. "It is just a plain case of putting up $88,000 to get $2,047,000," he maintained, " and I'd do that any day, either for the state or for my own business."[117]

On July 1, the highway commission bet that Paulen's ploy would work and voted to proceed with the reorganization. It proved a good wager. Bankers figured that advancing the money now would be cheaper for the state than paying the costs of a special session. By July 21, 1925, with nothing but a vague promise of repayment from whatever appropriation the next session might make, scores of Kansas banks volunteered a total of $1 million. A week later, Secretary Jardine informed Buck that the reorganization of his department had progressed satisfactorily and that the Department of Agriculture would resume consideration of new projects. The spigot opened on September 9, when the commission let its first federal contract in nine months.[118]

If not for the appropriation snarl in 1925, the output of road bills would have deserved applause. The highway commission was enlarged to three members representing the east, central and western thirds of the state and commissioners were granted salaries. The governor would no longer sit as a voting member. The commission was authorized to work with the counties in designating a state aid system to include the federal aid mileage. Where short, unimproved gaps remained in the state network, and no benefit district had formed to petition for improvements, county commissioners were authorized to designate a district for the work. If fewer than 51 percent of affected landowners failed to protest within thirty days, the county could proceed. The legislature failed to eliminate the benefit district outright, but it did allow counties a portion of the money already invested in benefit district road construction if the resulting road had been well-maintained.[119]

The highway revenue measures of 1925 posed a bookkeeper's nightmare. The portions of the two cent fuels tax and vehicle registration and license fees that were remitted to the state treasury were promptly returned to the county according to various formulas that took into account its assessed valuation, its number of registered vehicles, and the amount of fuels tax collected within its borders. Each of these allotments must be directed by the county into one of several funds. Its "state-aid road fund" would cover up to 25 percent of costs for improving state highways. The larger "county and state road fund" gave county commissioners considerable leeway in spending. They could invest the money in improving county and township roads, constructing state highways, or reimbursing benefit districts, but by far the largest amount must be spent to maintain the state highways. Farmers added on further complication. Because the fuels tax was meant to tax highway users, counties were required to refund to farmers any tax paid on fuel used in agriculture.[120]

On paper this was a system which any school boy would have fixed by leaving all the money with the counties or transferring it all to the state. In practice the system was a purposeful and clever compromise. A portion of the

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117 Good Roads Clippings, v. 2, pp. 1-3.
118 Ibid., p. 7; Fifth Biennial Report, pp. 16-18.
119 Kansas Highway Commission, Kansas Road and Bridge Laws. (Topeka: Kansas State Printing Plant, 1925); Fifth Biennial Report, p. 19.
120 Kansas Road and Bridge Laws (1925), pp. 12-15; Fifth Biennial Report, pp. 19-22.

money passed into state hands just long enough to be reapportioned more equitably. The richer, more populous counties recouped most of their contributions while a lesser sum was doled out to sparsely populated counties. By mandating how each fund could be spent, the law put boundaries on the county commissioners' budget decisions. Yet the highway commission itself did not directly control one dollar outside its own appropriation. This ingenious maneuver pushed Kansans closer to a state-administered highway system.

The highway administration that would operate under these statutes was only partly assembled when the federal edict froze the state's aid. Because the law to expand the commission to three members would not go into effect until July 1, 1925, Paulen had made only one appointment, John W. Gardner. On April 1, the two-man commission met to elect a state engineer, a process that required almost a dozen ballots before the commissioners agreed on former assistant state engineer W. V. Buck.[121] Buck had held his job just a month when the federal cutoff crisis occurred, and the highway department's reorganization had been approved by a lame duck commission. Two new men joined the commission when it met under the revamped road laws on July 1, 1925. R. W. Dole of Almena represented the First District, C. A. Wilkins of Independence sat for the Second District while John Gardner of Marion remained as the Third District's commissioner. The commission elected Gardner for chairman and buckled down to its job.[122]

One of the most important tasks was the designation of a new state highway system. The highway department had begun drawing maps in June for a tentative network in each county. Through the summer the maps were sent to the boards of counties for study before the county boards and the highway commission worked out a final plan -- a tricky business as it turned out. Not only must the total state system incorporate the federal network but it must be limited to 8,690 miles of roadway carefully apportioned among 105 counties. The state mileage in each county could be no less than the sum of the county's north-south and east-west dimensions and must connect its county seat with its principal market centers. Finding connections which satisfied county boards, the highway commission and the Bureau of Public Roads dictated lengthy and delicate negotiations because every shift in routes drew loud complaints from bypassed communities. The various parties forged agreement on the first county maps in October, 1925, but not until September, 1926 were the last ones approved.[123]

There were plenty of roads to choose from to put a state system together. In 1926, the highway department finished its first actual count since 1922 of just how many miles of roadway existed in Kansas. The total came to an eye-popping 130,294 miles, including 8,536 miles of state highway, 9,523 miles of county roads and 112,235 miles of township roads.[124]

Under the new departmental organization, the engineering staff began to find its footing. Despite being short-handed for its project load, the new design department devised a satisfactory system for overseeing project plans,

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121 Minutes, v. 2, April 1, 1925.
122 Ibid.
123 Fifth Biennial Report, p. 29.
124 Ibid., p. 31.

running field checks and advising the county engineer's and consulting engineer's design work. It still managed to bring standards and specifications up to date.[125]

Meanwhile the construction department kept tabs on a building boom. Between July, 1925 and July, 1926, roads under construction increased by 65 percent and bridges by 95 percent. The new state aid accounted for much of the increase since the county and state road fund generated $3 1/4 million for highway construction in fiscal year 1926. Even with the temporary federal freeze, more federal contracts were let in 1926 than in the record year 1925. The boom also stemmed from a downturn in construction costs. Because there were more experienced road building contractors in the state operating under rigorous, uniform engineering supervision, bid figures began creeping downwards at last.[126]

The maintenance department also began to make headway. Before July, 1925, the counties were required to levy a property tax for maintaining mileage built under federal aid or the benefit district. These segments were generally kept in good repair, but the unimproved segments of the state and federal networks usually depended for upkeep on slipshod dragging by farmers who were paid out of the county drag fund. Frustrated drivers alternately zipped over paved sections and crawled over neglected stretchs of road.

For the first time in 1925, Kansas law put maintenance of the state system on an equal footing with construction. To improve the counties' maintenance efficiency, the department urged them to end the old system of hiring scores of part-time drag men to maintain short sections. The counties would spend less on full time maintenance patrols, the department argued, with better results in systematic repairs, grading and snow removal. Only nine counties used patrols in July, 1925. A year later all but sixteen counties lacked them. With a chain of command set up between Topeka and the patrols in the field, the counties did save on wages and equipment.[127]

No matter how well highways were built or maintained, the effort was fruitless so long as Kansans drove them recklessly. In 1917, the accumulated traffic laws of the state set some modest safety requirements. The speed limit outside city limits was 40 miles per hour, and all vehicles were required to have two white headlamps, one red tail light, brakes and some sort of horn, bell or signal. It was unlawful to drive under the age of fourteen, but, because there was no licensing procedure, Kansans were free to take the wheel whether they were infirm, half-blind, or just ignorant of the rules of the road. Under no circumstances, however, could they drive "under the influence of intoxicating liquor or any exhilerating or stupefying drug." It was left to the county sheriffs to enforce these few strictures, but counties with populations over 65,000 could hire deputies out of their county road or general revenue funds to help patrol the highways.[128]

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125 Ibid, p. 36.
126 Ibid., pp. 54 and 66.
127 Ibid., pp. 80-92. However, the number of counties using the maintenance patrol decreased in later years.
128 Kansas Road and Bridge Law (1925), pp. 29-31.

Not everyone took the sheriff or the law seriously. The highway department, which had the gruesome task of collecting accident reports from the counties, recognized how murderous the situation was. In 1920 and 1921, for example, there were 80 injuries and 32 deaths from road mishaps, most of them attributed to carelessness, reckless speed or "booze."[129] The highway department pleaded continuously for a uniform, enforceable traffic code to curb the mayhem. Practices varied so from place to place that a hand signal meaning left turn in one community meant a right turn in others. Right of way at intersections followed local rules. Some streets and roads were considered to have right of way over others, so that strangers who did not know the local protocal were in mortal danger. Most of all, the highway department demanded action against the speed demons, for "speed is a mania to some drivers, and even the most careful person is in constant danger from the reckless ones."[130]

In 1925 the legislature tried to put teeth in the drunk driving law by making it a felony to injure someone while driving under the influence. That same year, the attorney general announced that he would make a special target of joyriders by seeking stiff jail terms. As a reporter put it, the state was out "to curb the wild desire of the speed boys to get over the Kansas highways in a little less time than any other driver."[131] Without a uniform traffic code and adequate policing, however, an alarming number of drivers continued to make the highways a playground.

If motorists would drive carelessly, there were steps the highway department could take to save them from themselves. One of the most costly and time consuming was the elimination of railroad grade crossings, a task first given the department in 1917. Less traveled roads merited warning signs at the crossings, a seemingly obvious precaution; yet, these crossings were marked by such a variety of signs, often crude and makeshift, that motorists easily failed to notice them. State law only required marking with a board of some sort of saying, "Look Out for the Cars." The highway department recommended in 1919 that the state adopt the standard warning used in other states, the now familiar white metal disk bordered in black and bearing a black crossbar with the letter "R" in each upper quarter.[132]

Not until 1925 did a legislature take signage seriously. That year, the new highway statutes provided for a comprehensive, standardized marking of the state highway system by the highway department. The step was long overdue. Highway marking had been such a hit and miss affair that motorists on unfamiliar routes were often taken unawares by road hazards. Yet Kansas was far from the last state in 1925 to adopt the marking system recommended by AASHO.[133] Soon the Kansas landscape was dotted by black and yellow markers denoting various hazards according to their shape. Signs giving the distance and direction to towns cropped up beside the road. Within three years, the department posted the state system with some 30,000 caution signs and 16,000 U.S. highway numbers.[134] Another 22,000 state highway emblems were erected after State Engineer Buck

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129 Third Biennial Report, p. 113.
130 Second Biennial Report, p. 21.
131 Good Roads Clippings, v. 2, p. 39, KSHS.
132 First Biennial Report, pp. 27-28.
133 Kansas Highway Commission, Manual of Markers and Signs. (Topeka: Kansas State Printing Plant, 1926).
134 Good Roads Clippings, v. 2, p. 75, KSHS.

engaged in a furious squabble with state dignitaries over whether the emblem should display a sheaf of wheat or a sunflower. Buck's sunflower faction won.[135]

The highway department's productivity after 1925 resulted in some ways from a truce with the county commissioners and county engineers. By early 1925, both sets of county officials had come to accept state and federal aid and a good roads program, but they wanted to run their own projects. At the end of that year, however, the Kansas Association of County Commissioners and the State County Engineers Association called a cease-fire. They must take the state's engineers along with state money, and they were beginning to see that the professionals' instructions achieved good results in the field. Both organizations made public statements supporting the highway commission's activities.[136]

With one public relations problem out of the way, the highway commission faced another, involving the public image of its state engineer. Gearhart and Watson had been accused in the past of stirring ill-will toward the highway commission because they had "the nack (sic) of getting at loggerheads with practically all of the county commissioners of the State of Kansas."[137] Tillotson had scored higher marks for diplomacy, probably because he shared Governor Davis' sympathy for the rural people who most often logged such complaints. Buck, on the other hand, was charged in his first term with being "rude and insulting," "antagonistic and unreasonable," "a Bull doser and bluffer." One protester complained "If we must have a dictator over our road system, I would prefer one with reason and civility."[138]

What his detractors perceived as Buck's rudeness was usually just straight talk. He had professional standards, and he had no intention of handing over the authority vested in his office. He was candid, sometimes brusque, but a "Bull doser" only when he felt his department to be threatened. Because complaints usually came from men who thought state highway authority itself was dictatorial, Paulen and the highway commission easily rode out the criticisms. Buck became the first state engineer to be given a second term in 1927. Thereafter, the number of complaints declined.

A third public relations problem proved hard to squash, though its very existence showed that Kansans' enthusiasm for highways and the highway commission was on the rise. Before 1925 the hottest question had been what type of road to build. By 1925, however, a much larger share of the public wanted the up-to-date highways which state and federal money would buy. Knives were now drawn over where the modernized routes should go. That Kansans took these disputes to the highway commission for settlement showed how the commission's credit with the public had risen.

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135 Governor Paulen's Correspondence, Box 7, Folder 2, KSHS.

136 Good Roads Clippings, v. 2, p. 23; Rowland, "Managerial Progressivism," pp. 94-95.

137 Letter, Secretary of Chamber of Commerce of McPherson, Kansas, to Paulen, Governor Paulen's Correspondence, Box 7, Folder 2, KSHS.

138 Governor Paulen's Correspondence, Box 7, Folder 4, KSHS.

Governor Paulen summed up the debates to a reporter in 1925 as quarrels over "whether or not the new line should pass by my filling station or your garage."[139] In fact, economic survival for struggling country villages and prosperity for the larger commercial centers depended on highway access. A typical plea from a merchant from the tiny town of Bison asked the governor to "Please do all in your power to get Highway No. 4 to connect the city of Bison, I would appreciate a little out of the gas tax I am paying. And if the road misses the city it will injure it to large extent."[140]

Because the stakes were high, the competition for highways could turn brutal, with the spoils going most often to the biggest town. For years, Reno County was a hotbed of dispute between town and country over hard surfacing. By the mid-1920s, after rural interests decided that they to wanted good roads, the fight shifted to a question of routes. Rodney Elward, Reno County's perennial gladfly, charged in 1927 that Hutchinson held the county commission in such firm grasp that just two out of eleven farm trade centers in his county were touched by good roads. The two best highways crossing the county passed through just one other town besides Hutchinson, according to Elward.[141]

When towns of nearly equal size squared off, they filled local editorial pages with poisonous attacks and joined the country hamlets in beseeching the highway commission to put them on the road map. In general, the commission took a hands-off approach. It remained a county matter where improvements were to be made, and changes in state routes would not win BPR's approval, commissioners argued. Though it tried to stay neutral, the commission and the engineering staff sometimes seemed to favor one community over another. Straight routes made sense for of high speed autos and big transport trucks, while routes which zigzagged to connect every village would be enormously expensive to pave. Instead, Buck urged the counties to build spurs from by-passed towns to the paved trunk lines. Representatives of some by-passed cities like Sabetha accused Buck of feeding Kansans "dope" about air lines (as straight through-routes were known) but most rival towns saved their insults for each other for their own county commissioners.[142] Many farmers and country merchants, on the other hand, blamed businessmen in the big towns for building "speedways for people who have money and time to see the sights" instead of paving the farmer's way to market.[143]

The federal government stirred up the worst fracas over routes. The Department of Agriculture in 1925 set up the Joint Board of Interstate Highways to designate a comprehensive interstate system. There would be no additional federal expenditure for this system, but it would be assembled from the 48 existing federal aid mileage and the routes marked by uniform signs.[144] After six regional meetings, the Joint Board chose simply to mark them with U.S. highway numbers painted in black on a white shield -- even numbers for east-west

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139 Good Roads Clippings, v. 2, p. 4, KSHS.
140 Letter of September 4, 1926, Charles Kottal to Paulen, Governor Paulen's Correspondence, Box 7, Folder 4, KSHS.
141 Rodney A. Elward, "The Farmer's Viewpoint on Road Question," The Kansas Stockman 11 (October 15, 1927), p. 3.
142 Governor Paulen's Correspondence, Box 7, Folder 4, KSHS.
143 Letter of December 21, 1925 to Paulen, Governor Paulen's Correspondence, Box 8, Folder 1, KSHS.
144 Good Roads Clippings, v. 2, p. 29, KSHS; Fifth Biennial Report, p. 33.

routes, odd numbers for north-south. Southern delegates protested at first that their people would resent having Yankee highway signs dotting their roadways to remind them they had lost the war. Yet a Southerner found the solution. The state's name would be put at the top of the shield with the U.S. number below.[145] That done, the board settled on a system of coordinating U.S. highways, seventeen of them crossing Kansas.

The Kansas towns and trails associations favored with U.S. route numbers were jubilant. Those who were passed over growled in outrage. The Midland Trail through Kansas had been cheated; the National Old Trails Road had been slighted in favor of the New Santa Fe Trail; one town after another clamored for a U.S. route. Soon Governor Paulen collected a sheaf of telegrams and letters demanding changes. From the start the governor and the highway commission tried to keep out of the line of fire. "My personal idea," Buck advised the governor's secretary, "is that we will be better off if we stay away from the National Committee and accept graciously any route designations through Kansas by the National Committee."[146] Thereafter, the commission tried to avoid interfering with the federal route designations.

One case turned into such a bitter scrap, however, that the commission was pulled into the argument. The dispute rose over the line of U.S. Highway 40 to Colorado -- obviously a juicy prize for the lucky towns it would connect since U.S. 40 would be a key tourist route to the Rockies. Feelings also ran high over U.S. 40 because it involved the Victory Highway. Victory was a latecomer among the voluntary associations of marked trails. It was begun as a memorial to America's World War veterans in the early 1920s. By 1925 the necessary work on the Kansas portion of this transcontinental line was nearly done, with the first hundred miles west of Kansas City paved or gravelled, its central portion partly paved and its western end well-graded.[147]

Victory Highway looked like the natural choice to be a U.S. highway, but central Kansans were outraged when the Joint Board extended U.S. Highway 40 along the Victory Highway only as far as Manhattan. At that point, the route angled northwest to strike the Midland Trail and continue west to the Colorado line at Kanarado. Since this brought U.S. 40 through Commissioner Davidson's hometown of Glasco, the by-passed cities suspected a sell-out. Said one irate resident, "Of all the stealing that was ever perturbed on the American people, that deal wherein Ben Paulen and the State Highway Commissioners stole the Victory High-Way from us going North from Manhattan is the biggest.... Now if Ben Paulen thinks he is going to get by with that kind of stuff here in Saline County, he is badly mistaken. From our stand point it looks to me like first degree murder."[148]

Agriculture Secretary Jardine heated the controversy to a boil in early December, 1925, when he sent the bypassed towns copies of a telegram from the Kansas Highway Commission which purportedly asked that U.S. 40 be rerouted north from Manhattan. According to Jardine, the entire Victory line originally had been designated Highway 40. Commissioner Gardner stoutly denied to reporters

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145 Markham, Autobiography, pp. 153-154.
146 Letter of July 9, 1925, Buck to Clyde Miller, Governor Paulen's Correspondence, Box 7, Folder 2, KSHS.
147 Good Roads Clippings, v. 2, p. 23, KSHS.
148 Governor Paulen's Correspondence, Box 8, Folder 1, KSHS.

that the Kansas commission had had anything to do with federal markings, but protests from Junction City, Salina, and Abilene grew so angry that Paulen, Gardner and Buck met with the "Victory people" on December 18, 1925.[149] A compromise later was reached whereby the northern route was made U.S. 40 North and the Victory Highway was designated U.S. 40 South from Manhattan to the Colorado line in Wallace County. At that point the rivalry turned into a competition for highway aid and tourist traffic -- each route advertising itself the shorter, more scenic way to the West.

Fortunately, the fracas over federal highway designations did not seriously erode the highway commission's growing acceptance by the public. Thus, when legislators met in 1927, they agreed to give the commission more muscle. Changes in the formula for state funding put a "county free fund" under commission discretion for use in closing gaps in the state highway system, doubled the commission's maximum appropriation and gave the commission some control over the county and state road fund. By denying expenditure from the fund on projects it considered poorly planned or unnecessary to the public welfare, the commission could prod the counties to put their aid money where it would do the most good -- particularly where county boards refused to connect roads at county lines or to improve gaps on key routes.[150] Legislators stoutly refused to lift the legal prohibition on state highway bonds, but a new statute made it easier for counties to issue their own bonds for road construction. Taking the funding changes as a whole, a Topeka columnist thought that Kansas now had the means "to speed up road improvement almost as rapidly as if the state had an immense bond issue at the disposal of the highway commission."[151]

Changes in the organization of the highway commission were made to handle the volume of projects stimulated by these aid provisions. The state was divided into six divisions, each represented by a commissioner. The law provided for a highway director, "who shall be a practical business man," to carry out the commission's orders, appoint the state engineer, hire and fire highway department personnel, and set their duties. To guarantee that the commission was "safe and sane and pure," the commission -- not the governor -- would select the director "solely for fitness, irrespective of political beliefs or affiliations," and commissioners must take an oath that they were not connected with any contractors or suppliers and would not use their position to benefit themselves.[152] A Kansas City Times reporter noted the new commission plan approvingly. "During the last ten years, Kansas has been spending money on its highways with the recklessness of a drunken sailor on shore leave, and without, apparently, getting much more out of it than the said sailor." The reporter expected a revised commission to curb some of that recklessness.[153]

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149 Letter of December 9, 1925, Secretary Jardine to officials of Junction City, Salina, Abilene, et al.; Statement of December 11, 1925, Gardner to Topeka newspapers, Governor Paulen's Correspondence, Box 8, Folder 1, KSHS.

150 Kansas Highway Commission, Kansas Road and Bridge Laws. (Topeka: Kansas State Printing Plant, 1927), pp. 12-15.

151 Good Roads Clippings, v. 2, pp. 42-44, KSHS.

152 Kansas Road and Bridge Laws (1927), pp. 10-11.

153 Kansas City Times, May 4, 1927, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

In May, 1927, six commissioners met under the new plan and elected John Gardner their director. The general policy they agreed to follow reflected a compromise between the Davis "dirt first" philosophy and the mounting enthusiasm for surfacing the state system. Highway department staff would still be prohibited from recommending one type of construction in advertisements for bids, but the commissioners would refuse to approve any project for hard surfacing if the grading and preliminary work had not been completed within the last year. At first, members stuck to another, earlier decision to approve aid one year at a time, but they soon found that counties were planning projects too ambitious to complete on one year's grant. Without promises of continued funding, county boards could not win taxpayer's approval of bond issues. Consequently, commissioners agreed to bend their own rule and give assurances (but not promises) of continuous aid to big projects.[154]

The commission's business swelled so much that monthly meetings stretched over two to five days as a rule. Dispensing aid fairly was a sufficient headache that commissioners decided to outline a tentative program for the 1928 federal allotment that would earmark some of the funds for completing two or three roads across the state from east to west and another amount for satisfying the needs of counties outside the east-west corridor. Even then, one session in late December, 1927, kept commissioners at their work from nine a.m. to midnight as they tried to reduce applications for federal aid from the $9 million asked to the $3.6 million available for 1928.[155]

The bleary eyed commissioners who stumbled out of those meetings that Christmas time, saw their labors pay off. As one county after another closed the muddy gaps on major routes, Kansas' reputation with tourists improved. Where most of its neighbors had invested federal dollars heavily in dirt roads, Kansas led them in hard surfacing. Nationally, the state stood tenth in amount of federal aid received in 1928 and had moved up to the 21st rank in improving its total mileage.[156]

Despite that progress, an order cutting off federal aid to Kansas was practically in the mail. Congress had renewed highway funding in 1926 with the Curtis amendment attached and a stern warning that Kansas had squeaked by for the third and last time.[157] The 1927 Kansas legislation had not taken the warning seriously enough to lift the constitutional ban on internal improvements, but Congress kept its word in early 1928 by striking the Curtis proviso from the highway act. Secretary Jardine promptly explained to Governor Paulen that Kansas had tinkered with its system long enough. State aid funds still were not under highway commission control; the commission lacked the authority to determine what roads would be improved and how; it did not enter into

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154 Minutes, v. 2, May 2, 1927 and July 9, 1927.
155 Minutes, v. 2, December 19, 1927.
156 Good Roads Clippings, v. 2, p. 49, KSHS; Sixth Biennial Report of the Kansas Highway Commission, To June 30, 1928. (Topeka: Kansas State Printing Plant, 1928), p. 21.
157 Letter of December 27, 1926, U.S. Representative J. N. Tincher to Paulen, Governor Paulen's Correspondence, Box 7, Folder 4, KSHS.

contracts nor did it fully direct construction and maintenance. Without a constitutional amendment allowing improvements at state cost and under state control, Jardine proposed to pull funds out of Kansas in June, 1929.[158]

Urgent though the situation was, Paulen chose not to call a special session until he had polled the legislators. A special session alone had become a hot issue, with county engineers and farm organizations charging that urban interests would use the federal threat to hike the gas tax, then use the proceeds to build speedways. Others, Paulen included, wanted no part of a tax hike without a constitutional amendment putting the revenues in state hands. By July Paulen had enough evidence that a majority of legislators saw matters his way.[159]

The special session met to "surge, swelter and sweat" in late July, 1928. Out of it came two propositions for amending the state constitution, which would be put to voters in the general election in October, 1928. The first kept the ban on state participation in internal improvements "except that it might adopt, construct, reconstruct and maintain a state system of highways." According to one reporter, legislators remained "hog tight against" state bond issues or state property tax to finance this state-controlled system because property taxes would pinch farmers hardest, but the second proposition would allow the state to levy the gasoline and vehicle taxes for highway purposes. It was expected that voter approval of the two items would mean a one cent hike in the gas tax to finance state control in 1929.[160]

The amendments' supporters staged a whirlwind campaign over the next two months. The new Kansas Highway Bureau organized to win voters with a "highway primer." Paulen repeated everywhere that federal aid represented taxes Kansans had already paid; some other state would get those taxes if Kansans chose not to reclaim them by altering the constitution. During the first week in October, Kansans could scarcely turn on their radios or take their seats in a movie theatre without hearing a talk about good roads.[161]

Saturation advertising, backers hoped, would overcome suspicions still lodged in the minds of some voters and politicians. Skeptical taxpayers scoffed at the governor's promise that the amendment would preserve federal aid without raising taxes, pointing out that state takeover of the highways would require a one cent hike in the gas tax. The western counties worried that the highway commission would strip them of state aid in order to build tourists air lines in the east. The Grange and Farmers Union stood solidly opposed to both propositions. Enough controversy surrounded the amendment that neither political party risked putting it in their platforms for the October election. A Topeka journalist complained about political spinelessness on the road question: "Candidates who are backed against the wall and asked straight questions get buck ague trying to think of answers that will please everyone."[162]

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158 Letter of June 29, 1928, Secretary Jardine to Paulen, Governor Paulen's Correspondence, Box 7, Folder 6, KSHS.
159 Governor Paulen's Correspondence, Box 11, Folder 1, KSHS.
160 Good Roads Clippings, v. 2, p. 69, KSHS.
161 Governor Paulen's Correspondence, Box 7, Folder 6, KSHS.
162 Topeka Journal, October 11, 1928.

Not only must the amendment's promoters carry the election, but they believed they had to rack up a huge "yes" vote to use as a club in the 1929 legislature. That session would design the laws to implement the constitutional change. An adviser predicted to Paulen that, when members figured the costs of a state-constructed and maintained system, the "county boards are going to 'holler' so loud that some of these folks in the legislature are going to get scared."[163]

Proponents achieved the stunning victory they wanted. Voters approved the state control issue by more than four to one and gave the gas tax proposal a three to one margin.[164] At last Kansans had come forth in mass numbers to be converted to the highway faith and be baptized in the waters of state aid. In fact, fear of damnation by Washington had done as much as anything to win converts. The voters had taken the final step only when the loss of federal funds looked certain. Kansans wanted an adequate system of state highways. That much was clear in the October tallies. Beyond those two convictions, however, Kansans were nearly as confused as ever. Highway "missionaries" still had work to do among the "heathens."

In large part, the confusion stemmed from the electoral campaign. Electioneers had promised something for everyone in their zeal to win votes. Clyde Reed, the Republicans' successful candidate for governor in 1928 campaigned on a pledge to complete the state system in two years, a task requiring an estimated $15 million in state and federal funds. Yet Reed pledged at the same time to repay "pioneer builders" in the benefit districts. Other backers tried to overcome rural doubts by promising to distribute the one cent revenue increase on a 60-40 plan, turning 40 percent over to the counties. Vague hints encouraged towns and cities to think that they would get a share to spend on connecting links --the city streets on which state highways were routed.[165] By October, campaigners had pledged to spend the same penny four times over.

When the legislature met in 1929 to write the bills for implementation, confusion turned into open conflict. The roads committees of both houses agreed in joint conference on a bill to give the State Highway Commission control of the state system and the exclusive use of eminent domain (previously exercised by the counties) in acquiring rights-of-way. Because 2,095 miles of new construction would be required to link all the counties with a state system of all-weather roads, the committee recommended spending the entire one cent tax increase to get that job done. The good roads faction had hoped to replace the township boards with a mandatory county unit system for administering highways, but the proposed bill left the county unit optional as a sop to local interests.[166] In mid February, this joint conference bill sailed through the Senate with just one "no" vote. Then it ran aground in the House.

Angry House members charged that the Senate was a rubber stamp for the highway commission, that the governor was double-dealing and (with some justification) that the roads committees were deliberately stacked with pro-commission members. With still more justice, representatives of sparsely-populated counties claimed that their people had voted for the amendments on the promise that the

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163 Governor Paulen's Correspondence, Box 7, Folder 6, KSHS.
164 Rowland, "Managerial Progressivism," p. 103.
165 Good Roads Clippings, v. 2, p. 76, KSHS.
166 Ibid., pp. 78-80.

formula for disbursing aid would not change and local roads would not be slighted. Now they stood betrayed. Pressured by county commissioners who wanted control of the entire gas tax, dissident legislators protested that poorer counties, already lagging in construction on their state roads, would be forced to spend aid dollars on speedways at the expense of the county and township roads they needed more. Only a fifty-fifty split of the tax increase would satisfy them; the Kansas House was at loggerheads over how to split a penny.[167]

In the end, Governor Reed kept his forces in line and the conference bill devoting the one cent additional gas tax to the state system passed the House by a 71 to 50 vote. Had the pre-election promises not been inflated, the wrangling in the legislature might have been avoided, for the bill's formula for disbursing aid actually did give something to everyone. The fund for county and township roads went up to $3.6 million a year, to be paid out of the gas and vehicle taxes and distributed 40 percent equally and 60 percent according to assessed valuation. The county commissioners must put at least half this fund into the township roads and bridges, but they had discretion in all other matters of its expenditure. Moreover, while the law gave the State Highway Commission sole charge of the state highway system, it turned the remaining county and township roads over to local officials. That left 93 percent of Kansas total road mileage in local hands.

Another $2.8 million a year was set aside from the state highway fund and apportioned to the counties by the same 60-40 formula, but it was not to be paid to them. Instead, the highway commission would apply it toward construction and maintenance of the state system in each county, the repayment of the benefit districts, and support of county bond issues. A set aside of $500,000 was dedicated to maintenance of the state system, and the commission was authorized to allot $250 per mile for maintaining connecting links within cities. After all these deductions were made, the highway commission could spend whatever balance was left in the highway fund on the state highways according to its own judgment. The 1928 constitutional amendment having removed all ceilings, state aid was no longer limited to a percentage of costs on any one project. In short, the new fund increased the state's contribution for building local roads, but it was aimed chiefly at getting an all-weather state system built without delay.[168]

Once the House had agreed to this masterful compromise, another road measure, called the Mack bill, easily moved through the farmer-dominated House. The Mack bill provided a clever way around the ban on state highway bonds by allowing the counties to declare an entire county a benefit district. The county could issue benefit district bonds, but the state would pay the principal out of the highway fund, and the county would pay just the interest. This was expected to speed completion of the state system.

Unfortunately, the Mack bill was one of a sheaf of measures the exhausted Senators voted on at the end of the session. Impatient to finish and go home, no one noticed that a few die-hards had attached amendments prohibiting county bond issues under the bill. Thus, the Senate passed a law telling the counties to go ahead with the work but not to raise the money to pay for it. As a Kansas

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167 Ibid., p. 82.

168 G. Clay Baker, "The New Kansas Highway Act," Jayhawk: The Magazine of Kansas 2 (April, 1929), pp. 102-103.

City Star headline put it, "Kansas Law Chokes Itself."[169] By May, 1929 the "Mack muddle" was before the Kansas Supreme Court to be sorted out, but a $1 1/2 million shortfall in needed funds was expected in the coming year as a consequence. Former commission director John Gardner warned that the deficit would have to be recouped by restoring the old benefit district system. In their zeal to defend rural interests against Topeka, Senate hardliners had "killed the goose that laid the golden egg" for those same farm constituents.[170]

In the end, machinations over the Mack bill proved a last assault for a lost cause. It scarcely dimmed the larger triumph. Kansans finally had a state highway system in fact as well as name and a State Highway Commission with the authority and funds to construct that system where, when, and how its best judgment indicated. The ceremony in which Governor Reed signed the 1929 road bill into law was broadcast by Topeka radio station WIBW and recorded by motion picture cameras, for it was an historic event and likely to draw the attention of radio listeners and movie-goers across the state.

Highway questions had become visceral issues for Kansans -- issues that determined whether a city grew, a village merchant kept his customers or a farmer paid his tax bill. Roads counted in intimate, vital ways and so the disputes had been bitter. Kansas was a farm state struggling to find its place in a decade when agriculture ceased to be the nation's paramount industry and hard times plagued the farmer. Thus Citizens who wanted to put Kansas on the speedway to modernity clashed with farmers who wanted to get a crop to market. The state stood uncomfortably with one foot in the old century, one in the new.

Kansans had fought longer and harder than any state for the principle of citizen control of highways. During its halting, reluctant progress toward a state system, Kansas produced men who, in one way or another, worked a disproportionate influence on the nation's highway legislation, but ultimately Washington's influence proved dominant. Desire for federal aid gave the federal government the power nearly to dictate the form of the state's constitution and its laws. What the state gained in efficiency, professionalism and engineering wisdom cost a measure of local autonomy.

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169 Good Roads Clippings, v. 2, p. 90, KSHS.
170 Ibid., pp. 92-93.

CHAPTER 3

"A New Deal for Roads: The Kansas State Highway Commission in Depression and War, 1929-1944"

Quite a few voters meant to keep a sharp eye on the highway department after it took over the state highway system in 1929. They were the ones who had said all along that state control meant trouble. Politicians would play dirty over highways, free-spending bureaucrats would overspend their budgets, and an army of job-seekers would go to work on the roads. In fact, a number of these predictions came true -- though for unexpected reasons. The stock market crashed just a few months after the state takeover. For the rest of the decade, the highway department would fight money problems. By the mid-1930s, an army of the jobless was at work on the roads because thousands otherwise faced hunger and humiliation. Later, another sort of army appeared on the highways of Kansas. The Kansas Highway Patrol was just one way the department hoped to stem terrible highway fatalities and make the roads as safe as they were smooth.

Highway building in Kansas reached maturity in the 1930s. A department that began the decade looking for a dust-free alternative to gravel ended it with the state's first four-lane, divided roadways in place. That maturity came about in spite of the Great Depression, but hard times contributed to the "growing up" of the highway department.

The highway department's first job on April 1, 1929 was to place control of the state system on an organized footing. That caused headaches. Since the highway commission was now responsible for distributing millions of dollars through various funds, an Auditors Department was established within the highway department. Refunds of benefit district assessments were endlessly troublesome. The auditors had to locate everyone who had paid a benefit district assessment before 1929, although many of them had moved away or died in the meantime. Often the auditors had to spend a tidy sum to track down an individual whose refund came to a fraction of a cent. At the same time, the counties were required to transfer their state highway funds and records to Topeka. Many county treasurers had been so haphazard in their bookkeeping that the Auditors Department had to discard the county books and launch its own audit -- one that examined 16,000 records covering expenditures of $80 million.[1]

Control of the state system also produced legal tangles. The highway law of 1929 empowered an assistant state attorney general to serve as the highway commission's legal advisor and head its new legal department. The normal run of its business involved suits and damage claims against the commission, condemnation proceedings, and the like. But the legal department also had to sort out confusion over the state take-over. The highway legislation of 1929 was vague enough to permit several counties to balk over surrendering money and authority to the state. It took a year of legal head-scratching and two decisions from the Kansas Supreme Court to settle matters in the commission's favor.[2] Another brand new section in the highway department had to take trouble as its natural

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1 Seventh Biennial Report of the Kansas State Highway Commission, to June 30, 1930 (Topeka: Kansas State Printing Plant, 1930), pp. 193-195.

2 Ibid., p. 33; Minutes of the Kansas State Highway Commission, v. 4, August 25, 1930 and May 11, 1931.

lot. Now that the highway department must acquire rights of way for the state system, a staff of nine "right of way agents" was assembled to handle the ticklish negotiations with property owners.

The Design and Construction Departments moved easily from their old role as advisors into direct supervision, largely because there were already experienced men at the county level ready to go to work for the state. The Design Department simply organized in nine squads, each with a squad chief (designer), a draftsman and cross-section help. Squad chiefs went to the field to head up local survey parties and bring back notes from which their design crews planned given projects. Construction found its organization ready made. The state had been split for administrative purposes into six engineering divisions in 1927. The Topeka office adopted this divisional structure, with a division engineer and construction engineer to supervise and inspect work in each. The day-to-day job of watching over the projects fell to some 75 resident engineers who had been at the job for years in most cases and often had experienced parties of instrumentmen, rodmen, and chain men at hand.[3]

The Maintenance Department had the same good fortune. Headquarters simply added a maintenance engineer to each division and split the division into districts under a district supervisor. The district supervisor was to hire, train, and, if need be, fire the sectionmen who gave their assigned length of highway personal attention. While this meant organizing a considerable body of manpower down to the last mile of roadway, headquarters put a competent force together quickly by bringing on the counties' maintenance men to work for the state.[4]

In a few weeks time, Governor Clyde Reed could look with satisfaction at a highway department geared up and ready to make good his campaign promise to complete the state system by 1930. True, there were annoying problems facing the governor. Where Kansans had once pestered their county commissioners with demands for road work, state control now fastened their attention on Topeka. Soon every Kansan who wanted improvements on the state highway near his home or business was dumping requests on the governor's desk. At first Reed stood on principle. To each petitioner he answered cooly that decisions belonged to the highway commissioners and were quite outside his influence.[5] In early 1930, however, Reed found himself locked in a tough primary fight with "Chief" Frank Houcke for the Republican party's gubernatorial nomination. If Reed wanted back in the State House, he would have to dangle attractive lures in front of Republican voters, and highways looked to be among the most alluring items.

Accordingly, Reed began pressing for road improvement projects in contested areas -- and letting the local voters know about it. One supporter from Moundridge assured Reed: "The newspaper men along the line of [U.S.] 81 are being primed at this time on this road improvement work which we are asking for, and it is being done with an idea that the action of the administration towards pushing our request to an immediate conclusion will in a measure determine some

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3 Seventh Biennial Report, p. 35 and 63.

4 Ibid., p. 145.

5 Records of the Governor's Office, Correspondence Files, Governor Clyde M. Reed, Box 13, folder 1, Department of Archives, Kansas State Historical Society [KSHS].

of the support they are going to give or not give in the situation."[6] Reed's secretary admitted to the friend in Moundridge that the project on U.S. 81 would take one third of the state's construction and maintenance budget for a year. But Reed needed the journalists' backing. He would push the project. Another supporter assured Reed that a well-timed sanding job "will not only make you many votes from those who are undecided but should win you many who are now with the opposition."[7]

Unfortunately, the highway program hurt Governor Reed as much as it helped. The previous November, reports had begun leaking out that the highway department was holding up payments to contractors for finished work, while, in the same month, it was announced that gas tax collections were higher than expected.[8] This was jarring news for taxpayers who had watched their highway taxes raised and an unprecedented amount of state and federal funds put in the highway commission's hands only to see the commission go broke in less than a year. Having started the 1929 season with a balance of $8 million, the commission had a $3.5 million overdraft and a host of angry creditors by November. It looked as though the 1930 construction program might have to be scrapped to pay it off.[9]

The highway department's payroll had swelled and its maintenance expenses were jolting upward. Longtime skeptics of state control were quick to charge that their forecasts had been painfully accurate; state control, they gloated, had meant extravagance, waste, and bloated costs for work the counties had done much more cheaply. By summer, 1930, supporters were warning a nervous governor that the financial mess was costing him votes, especially in the western counties where suspicion of state highway authority always had run deep.[10]

Since the highway department was as embarrassed as Reed about this black eye, its staff gladly supplied the governor and the public an explanation before the August primary. For the most part, the highway program's first year had been plagued by a combination of uncontrolled enthusiasm and bad luck. The commission could pay contractors only out of its monthly gas tax receipts on a cash-as-it-goes basis, but, as was the usual practice, the commission had let contracts amounting to its entire year's construction budget for start-up in the 1929 construction season. However, Kansas had experienced an unusually dry summer and fall and contractors were able to finish their work sooner than expected and submit their bills.[11] The commission had gotten behind on its payments in September through November but had caught up by convincing two Topeka banks to advance the contractors their money. To prevent future embarrassment, the commission voted in March, 1931, to schedule contract lettings to match anticipated revenues. That way the cash would be on hand when estimates came in.[12] On top of a dry summer, Kansas suffered one of its worst winters on

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6 Letter of June 26, 1930, Carl Krehbiel to Reed, Governor Reed Correspondence, Box 12, folder 5.

7 See correspondence for July, 1930 for numerous similar messages to Reed, Governor Reed Correspondence, Box 12, folder 5.

8 Governor Reed Correspondence, Box 13, folder 2.

9 Topeka Journal, November 5, 1929, in State Highway Commission Clippings, 1927-1944, Kansas State Historical Society.

10 Letter of July 28, 1930, Governor Reed Correspondence, Box 12, folder 5.

11 Letter of November 18, 1929, Governor Reed Correspondence, Box 13, folder 2.

12 Minutes, v. 4, September 30, 1930 and March 9, 1931.

record in 1929 and 1930, and the state had been forced to spend a packet of its maintenance funds to clear snow-clogged roads. Rural mail carriers reported to the Topeka press that it was money well spent, for the state roads had been opened sooner under the new system than in any winter past.[13]

Maintenance costs for the highway department without question had skyrocketed. The fault principally lay with the state's reliance on gravel roads, which cost nearly three quarters of a million dollars a year to keep up. But there were other problems. The Maintenance Department had to junk much of the counties' old equipment and start from scratch. Between the time the constitutional amendment had been approved and the state had taken effective control, some counties had let their state highways go to ruin. To charges of extravagant hiring, Reed answered that most of the highway department's new employees had been doing the same work for the counties and had merely been transferred from one public payroll to another. Even so, the state was doing with 1,379 highway employees what the counties had done with 1,672 men.[14]

None of this was enough to save Reed at the polls. He carried a number of political liabilities besides this highway program. The young, conservative athlete and war veteran Frank Haucke defeated the progressive Reed. Neodesha banker Harry H. Woodring won the Democratic primary and took an experienced Kansas politician, Guy T. Helvering, as his campaign manager. Haucke and Woodring then turned to fight for the governorship in which highways figured prominently.[15]

The battle was all the more colorful for the entrance of Dr. John R. Brinkley, one of those political oddities Kansas turns up from time to time. Brinkley was a physician of sorts who had found his way to Milford, Kansas, in 1918 and there opened a hospital. Brinkley then concocted the idea of surgically implanting goat glands in men whose physical stamina and virility were slipping. In 1922, he opened radio station KFKB (Kansas First -- Kansas Best), largely to promote his rejuvenation scheme. The number of his patients grew with his fame. By the late 1920s, his income was guessed at anywhere between $50,000 a year and $50,000 a month.[16] By 1930, though, Brinkley was under fire. The Kansas City Star had set out to put Brinkley and his radio station out of business while the Kansas Medical Society had gotten his medical license taken away from him. A run for the governor's chair seemed just the thing to forestall Brinkley's enemies.

As part of a write-in campaign to "Clean Out, Clean Up, and Keep Kansas Clean," Brinkley vowed to pave 7,000 miles of Kansas roadway. To do the job, he would raise $7 million a year with a two cent increase in the gas tax and use the amount to secure $140 million in state bonds. Not only were his figures

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13 Topeka Capital, January 21, 1930, in State Highway Commission Clippings, 1927-1944.

14 Topeka Capital, June 21, 1930, in State Highway Commission Clippings, 1927-1944.

15 Francis W. Schruben, Kansas in Turmoil, 1930-1936, (Columbia: University of Missouri Press, 1969), pp. 23-27.

16 Ibid., pp. 28-29; Carroll D. Clark and Noel P. Gist, "Dr. John R. Brinkley: A Case Study in Collective Behavior," Kansas Journal of Sociology 2 (Spring, 1966), pp. 52-58.

fantastic, but Brinkley ignored the constitutional ban on state highway bonds. Haucke and Woodring countered by promising, among other things, their own good roads programs based on more conservative, though unspecified, funding.

With Republican ranks split after the primary, the election might have been close in any case. Brinkley's independent run made it as tight a race as possible. Over 183,000 Kansans voted for Brinkley as a champion of the little guy. It took a month to count returns and announce the official results, making Woodring the winner by 251 votes, but mass meetings continued to protest bitterly that Brinkley had been cheated. Haucke and Woodring later admitted that enough write-in ballots had been thrown out on technicalities to have given Brinkley the election in 1930.[17]

Woodring's victory ended a long drought for Kansas Democrats. Except for Jonathan Davis' single term in 1923 and 1924, the Democrats had not had a man in the governor's seat for the last sixteen years, and they were hungry -- for jobs, influence, and some means of solidifying their newly won hold on power. They had taken the State House by an electoral fluke and remained a minority party in 1930. Staying on top would require the creation of a political machine.

Patronage oiled political machinery, and in 1931 there was no reward the average Kansan appreciated like a job for himself or his kin. Since the highway department, of all state agencies, provided the greatest potential number of jobs for distribution, Governor Woodring wasted no time in making it a principal cog in his political plans. A 1931 amendment to the highway laws gave the appointment of highway director to the governor, but the statutes covering the rotation of new appointments to the highway commission allowed Woodring to name new representatives only for the even numbered districts. He selected Charles Helstrom for the Second District, Carl Rice for the Fourth and Forrest Luther for the Sixth. At the new commission's first meeting in April, R. W. Dole was demoted from Director of Highways to become Assistant Director in Charge of Right of Way, a post newly created to keep him on board but out of the top spot. To replace him as Highway Director the commission unanimously confirmed Woodring's choice of a man whose highway experience was slight but whose political credentials were flawless. Guy T. Helvering, Woodring's campaign manager and the State Chairman of the Democratic Party, got the post.[18] Woodring promptly delegated to Helvering the task of making political appointments to the highway department.[19]

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17 Schruben, Kansas in Turmoil, pp. 28-46.

18 Minutes, v. 4, April 1, 1931. There were only two Woodring appointees at that meeting, as Helstrom did not take his seat until June. Despite the three-three party split on the commission, journalists reported that the commission acted with surprising unanimity through 1931.

19 Records of the Governor's Office, Correspondence Files, Governor Harry H. Woodring, Box 6, folder 10, Department of Archives, Kansas State Historical Society. Woodring's biographer, Keith D. McFarland, also noted that highway department patronage was central to Woodring and Helvering's joint plan to build a strong Democratic party in Kansas. See Keith D. McFarland, Harry H. Woodring: A Political Biography of FDR's Controversial Secretary of War. (Lawrence: University of Kansas Press, 1975), pp. 46-47, 58-59.

Politics and cronyism influenced commission appointments and hiring for the top engineering post in the past, but the Republicans had been in the State House so long that political purges in the highway department had seldom been necessary. Nor had there been highway patronage to dispense. Not until state control in 1929 did the highway department acquire a great number of lesser jobs to fill. At that point the department opted for continuity and proven ability by hiring most of the men who had been at the same work under the old system. Under Helvering, however, incumbents were swept aside to make way for the party faithful. Solid Democratic credentials became the prime requisite for employment as extra-laborer, sectionman, resident engineer, highway supervisor, oil inspector and right of way agent.[20]

Those who had been laid off complained that Woodring's commission appointees had his permission to go over the heads of the Division Engineers in their districts and to hire Democrats for any position.[21] In fact, Woodring often directed one of the thousands of job applicants he heard from to apply directly to his district commissioner. Having three Reed holdovers on the highway commission stayed Woodring's hand somewhat in their districts, but, after April, 1932, the governor had a commission entirely of his own naming. Still, there were always more supporters than jobs. Woodring claimed to have gotten 5,700 requests for highway work in just his first eight months in office.[22] A letter illustrated his problem in May, 1932, when one commissioner wrote to the governor about a party man who wanted work. The man had been given a highway laborer's job the year before but had quit within a few weeks. Still, the commissioner noted, "I would like to take care of him but I am at a loss to know whom I should fire to make way for him."[23]

Woodring did draw the line at politicizing the highway department's upper echelon. By May, 1931, he had already heard complaints because Luther Tillotson, State Engineer in the Davis term, had not been named in W. V. Buck's place. Woodring agreed that "to the victors belong the spoils," but, if the existing construction program for 1931 were not underway by deadline, the state would lose $4 million in federal aid, and his administration would be blamed. The deadline would more likely be met under Buck.[24] In November, 1931, the highway commission ensured that the governor would continue to keep hands off the top engineering ranks. A resolution gave Helvering authority to hire and fire all highway department personnel but department heads and division engineers.[25] Thus, for reasons of professional ability and experience the incumbent state engineer and top departmental personnel remained through Woodring's term, whatever their political coloration.

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20 See correspondence on appointments, Governor Woodring Correspondence, Box 6, folder 10.

21 Letter of November 3, 1931, Governor Woodring Correspondence, Box 6, folder 10.

22 Letter of August 3, 1931, Governor Woodring Correspondence, Box 6, folder 10.

23 Letter of May 12, 1932, Carl V. Rice to Woodring, Governor Woodring Correspondence, Box 8, folder 1.

24 See correspondence on appointments, Governor Woodring Correspondence, Box 6, folder 10.

25 Minutes, v. 5, November 17, 1931.

In other areas, ability counted much less. At the end of Woodring's term, the Maintenance Department, in particular, objected to the effect purges had on its ability to get its job done. In the future the department asked that district maintenance supervisors, at least, be hired for their experience and skills and given some assurance that they would not be booted out with the next shift in the political winds.[26] Just how little those concerns had mattered was shown in 1932 when Helvering had forwarded to the governor a semi-literate letter from a Democratic county committeeman. The writer wanted to be State Fire Marshall but, since he was 78 years old and quite infirm, Helvering did not think he was suited to the post. Instead, Helvering suggested making him an inspector of highways.[27]

Despite the attempted politicizing of its work, the highway department had put its wits to solving problems, the most troublesome (and embarrassing) being high maintenance costs. Both Reed and Woodring had pledged to the voters that they would complete an all-weather state highway system before leaving office. But an amendment to the 1929 road bills limited new concrete construction to 100 miles a year. That meant an insurance policy for rural interests who dreaded seeing their highway taxes spent on cross-state slabs for the tourists. It also meant that the state must rely on gravel to weatherproof its state mileage.

No sooner was a road graveled, however, than its neighbors began complaining of the dust. In fact, gravel posed a safety hazard as well as a housekeeping nightmare. Drivers along these routes kicked up clouds of dust that blinded them to other vehicles, while some motorists drove through freshly laid windrows of gravel recklessly enough to lose control. More to the point, the earthen base of Kansas soil sucked up gravel like a quicksand bog. Having been built for traffic of no more than 500 vehicles per day, these routes soon carried 1,000 vehicles per day once they were linked to the intrastate system. Each vehicle pounded more pebbles into the soil.[28]

By 1930 it took $750,000 each year just to replace materials on gravel roads and a total maintenance budget of $3.5 million to keep the state highways in operation.[29] Because these amounts had to be subtracted from the construction budget, and hence from the amount of federal aid Kansas could match, every dollar spent on maintenance cost two dollars in new construction.

In 1929 and 1930, the highway department began its search for an alternative to gravel that would be as cheap yet safer and more durable. Experiments were tried with various kinds of "blotter" treatments, and, in 1930, the department built four experimental roads using the most promising of these, the bituminous mat. Simply put, laborers spread asphalt oil over an earthen subgrade and allowed it to penetrate. On top, they spread a mixture of aggregate and asphalt to a width of 26 feet. Traffic did the rest by compressing it

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26 Eighth Biennial Report of the Kansas State Highway Commission, to June 30, 1932 (Topeka: Kansas State Printing Plant, 1932), p. 186.

27 Memo, Helvering to Woodring, Governor Woodring Correspondence, Box 8, folder 1.

28 Seventh Biennial Report, pp. 149-151; Eighth Biennial Report, pp. 115-116.

29 Minutes, v. 4, March 11, 1930.

almost immediately to a nearly impenetrable surface that stayed put. It was cheap; it was dust-free. And the engineers reckoned it would carry 1,500 vehicles a day before needing to be replaced by a slab.[30]

Results on the bituminous mat looked so good in June, 1931, that the highway commission decided to go for broke. The commission launched a rush program of bituminous mat resurfacing to cost $300,000 -- a sum the commission did not have on hand. Contracts were to be let immediately but payments deferred until March, 1932, and the whole amount charged against next year's program. Six months later the commission reached an agreement with the Bureau of Public Roads covering the proportion of aggregate to be used in the first treatment and in the second treatment given in the following construction season.[31]

After the fact, the agreement made bituminous mat eligible for federal aid. By that time, Kansas had used the treatment on 700 miles of roadway. In five more years, the highway department had surfaced over 2,100 miles with this one surface of its own invention.[32] What the Kansas engineers accomplished with a mixing bowl full of gravel and goo soon caught the attention of highway departments across the country. For their part, dust-choked, taxpaying motorists gratefully noted that "the old mud roads have been starched and ironed flat and hard in Kansas."[33]

Other problems were not so easily solved by engineering genius. In fact, a legislative investigation thought that too many decisions in the first four years of state control had been made by engineers. The investigators objected, in particular, to the way routes had been relocated strictly on the engineers' advice.[34] For the sake of straight, fast (albeit safer) highways, small towns continued to lose vital highway connections. Their citizens complained even louder than the investigative committee but without much effect.

The larger Kansas cities carped too, just as they had in the 1920s. Wichitans complained that the east-west routes grabbed all the construction money so that Kansas City, Missouri, siphoned off the traffic and the benefits of Kansas highway dollars.[35] Cities along the U.S. numbered routes scrapped with each other for funds or ganged up on the U.S. 40 South supporters. That one route had fared handsomely from Reed's electioneering pledges. A Woodring supporter warned the governor in 1931 that the GOP commissioners would load the U.S. 40 South slab project on the Democratic bandwagon and, "by 1932 it will smell so strong that our band cannot play sweet music to the voters for holding

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30 Eighth Biennial Report, p. 156.

31 Minutes, v. 4, June 22, 1931; Minutes, v. 5, December 6, 1931.

32 J. R. Benson, "A Kansas Experience With the Use of Bituminous Materials," Kansas Highway Engineering Conference Proceedings, March 14-15, 1940, pp. 55-56.

33 Topeka Journal, July 18, 1931, in Good Roads Clippings, 1930-1939, Kansas State Historical Society.

34 A Report of the State Highway Commission Investigating and Auditing Committee (Topeka: Kansas State Printing Plant, 1935), pp. 13-16.

35 Wichita Eagle, December 30, 1930, in Good Roads Clippings, 1930-1939, Kansas State Historical Society.

their noses to shut out the unpopular odor of this unpopular program."[36] Since the commission had just 100 miles of new concrete to dole out in a year, competition was fierce. It hardly slacked at all when the law was changed in 1933 to limit each commissioner to 100 miles of slab per year in his district.

While some decisions may have rested too squarely on the engineers, journalists, some legislators, and capitol observers thought that the highway commissioners acted too independently. Each member considered himself a representative of his district's interests whose job was to get as many projects for his bailiwick as possible. To save feuding, the commission generally divided available funds among the six districts somewhat evenly and left it to each member to select projects in his district for the coming year's program.[37] When every commissioner was baron of his own fiefdom, the resulting jumble of duplication, disjointed planning and confused budgeting hampered efficiency throughout the 1930s.[38] That was something the state could ill afford when economic depression tightened its grip on Kansas.

In the first year following the Wall Street crash, Kansans hoped to ride out the nation's economic troubles in relative safety. The state suffered fewer of the early business failures seen in the industrial regions; most of its banks stayed solvent; and its fields yielded record-breaking wheat crops. As the year 1931 ended, however, grim signs of distress were appearing. It was estimated that 40,000 Kansans would be unemployed that winter -- almost twice the usual number. Over a quarter of those out-of-work came from the state's three largest cities. Out on the land, farmers discovered in 1932 that bumper crops did them no good when the world market was glutted. Crop prices plunged. When corn fell to 15 cents a bushel in 1932, many rural families found it cheaper to burn corn than coal to heat their homes. Young Kansans in their teens and twenties began leaving the state in large numbers, and by 1933, the number of tenant farmers in the state would increase almost by half when thousands lost their land to foreclosure.[39]

At first, state government reacted as any householder would whose income dropped. It cut its budget. In April, 1932, the highway commission ordered Highway Director Helvering to make a ten per cent reduction across the board in highway department salaries. At the same time, the department eliminated scores of employees at headquarters and in the field. One of the first positions to go was R. W. Dole's consolation prize, the office of Assistant Highway Director.[40] To be sure that Kansas highway revenues went into the pockets of needful Kansans, the commission had resolved the previous November that all highway contractors must give preference in hiring to local labor and Kansas residents and must use hand labor in place of machines where feasible.

It was already clear, however, that these simple measures would only nibble at the mounting tragedy. Looking for fresh ideas, Governor Woodring called a conference of the state's business and labor leaders in August, 1931, to mull

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36 Letter of May 16, 1931, L. F. Davidson to Woodring, Governor Woodring Correspondence, Box 7, folder 3.

37 See for example, Minutes, v. 4, June 22, 1931.

38 Topeka Capital, November 14, 1931, in State Highway Commission Clippings, 1927-1944, Kansas State Historical Society.

39 Schruben, Kansas in Turmoil, pp. 47-75.

40 Minutes, v. 5, April 11, 1933.

over the unemployment problem. A hint of fear crept into their discussions for, as the state's Commissioner of Labor warned, "Last winter the unemployed were just going into it and they made requests for assistance. The temper now seems to be that they are demanding; they do not seem to ask anything any more." And there was little left to ask for or demand. The counties handled their own poor relief. Already the counties' poor funds were $182,000 in the red, with winter layoffs and cold weather still to come. Conferees worried that, unless they acted, the have-nots would act for themselves, perhaps with violence.[41]

Labor representatives presented the few concrete proposals at the conference. They wanted the state to take responsibility for a relief burden the counties could not (or would not) carry alone. Raising the gas tax from three cents to five cents would put men to work on public construction. Reluctantly, the union men agreed that the increase would have to be spent by the highway commission on road work since the state's constitution banned expenditure of the gasoline tax for any other purpose. With taxpayers leagues sprouting in several counties, Woodring saw the political danger of raising any sort of tax or expanding state government's responsibilities. He therefore steered the conference away from state initiatives toward a resolution urging increased federal appropriations for highways.[42]

Passing the buck to Washington was one way a Democratic governor could embarrass a Republican president. In 1930, Congress had made an emergency appropriation of additional highway monies, of which Kansas received $2.2 million to help in the unemployment crisis. But President Herbert Hoover dreaded making the states or the American people any more dependent on federal handouts. By July, 1932, however, the crisis was deeper than Hoover's fiscal scruples. That month Congress approved the Emergency Relief and Construction Act [ERC], which provided federal aid for use by the states. For several reasons a hefty portion of the money was to be targeted at highway construction. It was the one form of federal assistance to the states which had a quarter century of precedent and constitutional legitimacy, and each state had highway agencies in place, ready to spend the funds. Just as important, great numbers of idle men quickly could be set to work on the roads.

The Kansas portion of ERC funds came to $3.3 million over and above its usual allotment of federal highway aid. That money could be used to match regular highway aid. Without it, many states stood to lose federal dollars for lack of matching funds. The ERC money came to each state as something of a loan which the state must pay back in ten yearly installments, to be deducted from the state's regular highway aid allotments beginning in fiscal year 1938.[43] But 1938 was a long way off. Surely good times would return. The pressing task in 1932 was to get the ERC dollars spent since the act required a state to let contracts for its entire amount and begin the work on the Federal Aid System by July 1, 1933.

The Kansas Highway Commission wasted no time. In July, 1932, the current year's program was declared closed and that year's money spent. New contracts let during the remainder of 1932 would be charged to next year's program or the

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41 "Conference on Unemployment," Governor's Office, August 31, 1931 (typed manuscript of proceedings in Kansas State Historical Society), p. 5.

42 Ibid.

43 Minutes, v. 5, July 25, 1932.

ERC funds, and, to make sure the work got underway at once, the highway director was authorized in October to issue work orders to the lowest bidder on a project, without waiting for a commission vote. Commissioners would give the contracts official approval at their next meeting.[44] By bending the rules in a good cause, Kansas managed to have all its ERC contracts in operation by the extended deadline of December, 1933.

Unemployment relief affected the highway department in another way when Governor Woodring organized the Kansas Emergency Relief Committee [KERC] in July, 1932. It was KERC's job to funnel money to the counties under the Reconstruction Finance Corporation [RFC], another attempt by the Hoover administration to bail out the economy. In lieu of direct aid to the needy, the counties were to put relief recipients to work on public projects for wages. Since a good many of those projects would involve work on the roads, the highway commission agreed to supply equipment, materials and supervision for projects using relief labor on the state highway system. Unfortunately, the commission had run out of funds to make good on its promise by the time these projects were ready to roll, and very little was done in 1932.[45]

The Kansans who worried over the dismal state of the economy had a gaudy spectacle to divert them when the election campaign heated up in 1932. Governor Woodring won renomination to head the state Democratic ticket and turned to fight the GOP candidate Alf Landon's charges that, among other things, he had politicized the highway program. Both candidates had to combat J. R. Brinkley, the goat gland wizard, who made another run for the governorship. Brinkley was never at a loss for issues -- real or manufactured -- with which to bedevil his opponents, but one of his cleverest choices was the matter of highways.

To embarrass Woodring, Brinkley's campaign mouthpiece Publicity quipped that the governor had told every Democratic job-seeker to go "straight to Hell (vering)." According to Publicity, Helvering had won state Democratic support for Franklin Roosevelt with a steam roller that "plastered the convention with a concrete coating"[46] (in reference to lucrative highway contracts). When Brinkley turned to lock horns with Landon, he demanded the reduction of the motor vehicle license fee. Unfortunately, Landon let himself be drawn into a "political auction over the price of automobile tags and finally offered the low bid of sixty-cent license plates."[47] There was no sign that Kansans were bothered by license fees, but Woodring chimed in a "me too," and all three candidates headed for the election promising, on the one hand, a better highways program and on the other a disastrous cut in the revenues to fund it. The Legislature did cut auto registration fees in half in 1933.

Alf Landon won the governorship by some 5,600 votes. But the fiesty little doctor from Milford had terrified both parties once more. That Brinkley had come within 34,000 votes of winning signaled resentment, confusion and fear

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44 Minutes, v. 5, July 16, 1932; Minutes, v. 5, October 10, 1932.

45 Public Welfare Service in Kansas: A Ten Year Report, 1924-1933, KERC Bulletin No. 127, December 1, 1934; W. V. Buck, "Kansas Highways," Kansas Engineering Society Yearbook, 1934, p. 30; Minutes, v. 5, July 26, 1932.

46 Schruben, Kansas in Turmoil, pp. 88-89.

47 Ibid., p. 96.

among Kansans who were beginning to feel the full anguish of economic depression. It now fell to the businesslike and mildly progressive Alf Landon to help them find security in uncertain times.

One of Landon's first acts as governor was to sign a bill authorizing the legislature to investigate the highway department. At the beginning of his term, Woodring had scotched a similar bill for investigation of the highway commission's financial problems under Reed. Then the issue that had interested critics most was the higher cost of state over county maintenance, and Woodring had guessed that the investigation would turn into a "political football." It would be himself instead of Reed who would be battling charges of extravagance.[48] Instead, the highway commission itself had hired outside auditors who had turned up only minor, repairable problems in 1931.[49] With Woodring gone, Landon pushed the 1933 legislature to order an audit of the highway department for the years 1931 and 1932 and to carry out an investigation of the highway commission and highway department for the years since 1927. Neither the audit nor the investigating committee of legislators turned up serious deficiencies in the way past highway commissions or the highway department had handled their responsibilities. Some means were found for updating highway department organization and cutting costs, and one lone department employee was sacked for paying benefit district refunds over to a confidence trickster.[50]

Early in its investigations, however, the committee got a lead from a naive contractor that uncovered misdeeds outside the highway department proper. In April, 1933, the contractor told a highway department purchasing agent that, with the Woodring administration gone, he could lower his bids. Now he would no longer be adding the amount of his political contributions to the amount of his contract, as he claimed to have been doing under Guy Helvering's regime.[51] The investigation next indicated that Guy's brother, Bob Helvering, had been soliciting donations to the Democratic party from several highway contractors, with the understanding that the contributions would insure contracts with the highway commission. One contractor, who refused to donate, testified to the investigators that he had been frozen out of highway business. He had been forced to close out his operations in Kansas and move to Arkansas to survive.[52]

None of the testimony implicated the highway department or the commissioners. In fact, the legislative committee scrupulously avoided making their investigation a political witch hunt -- perhaps because the Roosevelt administration now controlled relief funds flowing out of Washington. Harry Woodring had moved from his loss of the Kansas governorship in 1932 to become part of

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48 Governor Woodring Correspondence, Box 7, folder 2. The Topeka Journal reported on March 13, 1931, that Woodring vetoed the investigation to prevent delays in roadwork while the Kansas City Star of March 15, 1931, claimed Woodring's veto was a reward to the Reed cronies who had supported Woodring over Haucke in the 1930 election. In State Highway Commission Clippings, 1927-1944, Kansas State Historical Society.

49 Minutes, v. 4, April 1, 1931 and June 13, 1931; Topeka Capital, November 14, 1931 in State Highway Commission Clippings, 1927-1944, Kansas State Historical Society.

50 A Report of ... the Investigating and Auditing Committee, pp. 5-20.

51 Ibid., pp. 195-196.

52 Ibid., pp. 195-367.

that administration as Franklin Roosevelt's Assistant Secretary of War.[53] Whatever the case, Kansans had more to worry about between 1933 and 1935, when the investigative report was finally published, than political chicanery under a long-gone administration.

Certainly the highway commission had more on its mind in 1933 than an approaching audit, for its coffers were almost empty. On April 1, 1933, Governor Landon and his appointee as Highway Director, Harry Darby, met in private session with new and old members of the commission to review the sickly state of the funds. Nearly all the state's ERC monies for highways had been committed before January and a good share of its 1933 construction funds. Then the legislature sliced by half the vehicle licensing fee. Because the little that remained in the 1933 budget would have to go into maintenance, there would be no more state money for new construction that year, and, without matching funds, no federal aid for Kansas.[54]

Faring this grim assessment and the governor's policy recommendations, the commission moved into regular session, confirmed Darby's appointment, and gave him his first orders. He was to draw in the highway department's belt. Within a month Darby had cinched it tight. Since there would be little new construction in the offing, what was left of the Design Department was put on half time, and seven right of way agents were eliminated. Maintenance lost personnel even though it would be the busiest department, and everyone left at headquarters saw their work day upped from seven to eight hours and their salaries cut another 5 percent.

As it turned out, the belt tightening was a waste of energy. Even as the highway department prepared for a slack year, Congress was meeting in its historic One Hundred Days, an emergency session following Roosevelt's inauguration during which Congress voted out depression-fighting measures faster than members could read them all. At the end of May, Darby came back from Washington with the news that Kansas was likely to get $10 million of relief money to spend at once on highway projects. He put the Design Department back on full time, and the commissioners drew up lists of projects for completing the state system in each of their districts with the anticipated federal aid.[55]

By autumn the commission was awash in the alphabet soup of relief programs the New Deal launched. In August, 1933, Kansas was allotted a direct grant of over $10 million under the National Industrial Recovery Act [NIRA] to spend on highway projects employing men from the county relief rolls. Since all the contracts had to be awarded before the year was out, the commission began meeting every Monday to get them approved at top speed, but it still took an act of the legislature's special session to keep the commission on schedule. A temporary measure allowed the commission to hold four mass lettings of contracts

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53 The position was Woodring's reward for his early backing of Roosevelt's drive for the Democratic nomination. He had hoped to be Secretary of Agriculture. With the death of Secretary of War George Dean, Woodring became Acting Secretary of War in 1936 and served as Secretary of War from 1937 to 1940. See McFarland, Harry H. Woodring, pp. 76-79, 103-116.

54 Minutes, v. 5, January 23, 1933; Minutes, v. 6, April 1, 1933, April 10, 1933.

55 Minutes, v. 6, May 29, 1933, June 5, 1933.

covering the entire state. In the one month of December, the commission awarded $6.5 million in NIRA contracts and made its deadline ahead of the other 47 states.[56]

Another portion of NIRA money went to drought relief in 18 southwestern Kansas counties. The first of four rainless summers that would turn lower Kansas into a Dust Bowl had stricken the West in 1932. Obviously road work could not restore the rains, but it would put impoverished farmers to work who, as landowners, were ineligible for some types of relief. To get them on the job quickly, the contract bidding procedure was dispensed with, and the highway department provided direct supervision for selected projects starting in November. NIRA footed the entire bill through 1934.[57]

With upwards of 100,000 Kansans unemployed and one fourth of the labor force out of work nationwide in 1933, the coming winter was expected to be grim. That November, Thomas McDonald, BPR's Chief in Washington, telegraphed state highway agencies that Congress planned another enormous work relief program to get idled workers through the winter. Since road work would absorb large numbers of unskilled labor, state highway agencies should be ready to put more projects in the works. "This is a big order," McDonald admitted, "But on the other hand the State Highway Departments are the outstanding agencies of government controlling closely knit and disciplined organizations sufficiently dispersed to insure reasonable success of this emergency effort." He suggested relieving the overworked construction staff by using maintenance personnel as field supervisors.[58]

How big an order it was the Kansas Highway Commission soon found. Administered under the new Civil Works Administration [CWA], this pool of relief money came to the state with 65 percent of the funds earmarked for wage payments by local relief agencies. The highway commission would have to pay for supervision, supplies and materials out of the remaining 35 percent. Worse, the highway department would be responsible for CWA projects on county and township, as well as state, roads. The highway commission met through the night discussing how to handle this new challenge while State Highway Engineer Buck wired McDonald that Kansas would cooperate fully. Still, Buck worried, 35 percent was "plenty low for continued constructive effort."[59]

In fact, the Kansas Highway Commission did not have the money on hand to meet this obligation. Lack of funds by the commission severely limited the effectiveness of the short-lived CWA effort in Kansas. But the special session of the Kansas legislature that met through October and November 1933, had come up with a possible solution. Besides permitting the counties to refill their empty relief coffers by issuing bonds, the session approved using the county and township road fund's portion of the fuel tax to create a $3.6 million sinking fund, from which to repay a federal loan. On this basis the Kansas Highway Commission could borrow $17 million from the federal government to qualify for federal work relief projects.[60]

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56 Minutes, v. 6, November 2, 1933; Buck "Kansas Highways," Year Book, p. 30.
57 Buck, "Kansas Highways," p. 31.
58 Minutes, v. 6, November 13, 1933.
59 Ibid.
60 "Relief Unemployment and Civil Works Legislation Passed by Special Session of the Kansas Legislature," October and November, 1933, in Kansas State

This solution was far from ideal. It stood on shaky constitutional ground, and BPR worried deeply about how Kansas would pay back the loan and match regular federal highway aid allotments at the same time. Thus the Kansas Highway Commission lowered its sights and secured just $5 million from CWA's successor the federal Public Works Administration [PWA], in September, 1934. Thirty percent of this amount came as an outright grant, but the remaining 70 percent, or $3.8 million, was a loan which the commission must pay back at 4 percent interest over 15 years. In November, 1934, the Kansas Highway Commission began issuing revenue anticipation warrants in the amount of the loan and selling the warrants to PWA. This put the entire $3.8 million in commission hands for immediate expenditure on construction while PWA could redeem no more than $1 million in warrants in any year. The scheme made a step around the Kansas constitution by pretending that revenue anticipation was "not to be construed as indebtedness on the part of the state."[61] In fact, the future was mortgaged to meet the present crisis.

As rolling dust storms blotted out the sun in southwest Kansas in spring, 1935, nature played another cruel trick. Torrential rains falling at the Republican River's source sent an eight foot wall of water blasting at ten miles per hour down the Republican Valley on the night of May 31, 1935. An estimated 105 people died in the flood, most of them Nebraskans, and the devastation along the valley in both states was horrendous.[62] The cataclysm helped convince Congress that recovery from such disasters as floods and hurricanes was a federal as well as state responsibility. The Hayden-Cartwright Act passed in 1935 set aside a permanent fund for reconstruction of highways and bridges destroyed by natural disaster. Out of it, Kansas received $455,000 to cover half the cost of rebuilding bridges the Republican's rampage had destroyed.[63]

That summer saw other changes in the federal war on want. Despite the sternest efforts under the early New Deal to stamp out depression, one fifth of the nation's labor force remained unemployed. Over 16 percent of the entire Kansas population was on relief. Something more ambitious was needed and in May, 1935, Congress approved the Works Progress Administration, the most extensive and successful recovery program in the nation's history. In July, the Kansas Highway Commission agreed to accept a WPA grant to improve grade crossings and another for highway construction. Before the decade ended Kansas had collected over $13.5 million from WPA funds. Unlike earlier relief grants, however, WPA funds could not be used to match regular highway aid. Kansas had been conserving its own state highway revenues to pay off past-due accounts and accumulate an unexpended balance while letting federal relief grants carry the entire burden for new construction. Now the state must begin dipping into its own revenues to obtain its regular highway aid. Still, the WPA money allowed the state to continue building for a few more years at the pace it had set in the early New Deal.[64]

Historical Society; Minutes, v. 6, November 28, 1933.

61 Minutes, v. 6, July 9, 1934, August 10, 1934, November 19, 1934.

62 76th Congress, 3rd Session, House Document No. 842 (1940), pp. 14-16.

63 Wichita Eagle, July 25, 1937, in State Highway Commission Clippings, 1927-1944, Kansas State Historical Society.

64 M. W. Watson, "Future of Kansas Highways," Progress in Kansas 5 (July-August, 1939), pp. 274-275.

What impact depression and New Deal spending had on Kansas highways is clear first, in dollar figures. Between 1929 and 1939, the state garnered over $34 million in unmatched federal relief funds for use on highways, along with $28 million in regular federal appropriations for highways. These dollars worked magic on Kansas roads. The state had surfaced just 2,700 miles of its state system by April, 1929, nearly twice that much, 5,200 miles, were surfaced in the next seven years. By July, 1936, almost 8,000 miles of state highway could be driven in any weather. Forty percent of those miles were in bituminous mat, concrete or some other surface besides gravel or oiled earth. Scores of bridges had been built or reconstructed, and the department liked its first venture into roadside beautification projects using relief workers well enough to want to continue the effort.[65] The highway department was one of the first in the country to put landscape architects on its permanent payroll.

Converting so much money into roadway miles and bridges pushed the highway department to its limits and beyond. For three months in autumn, 1933, the design department worked round-the-clock in three shifts to get projects underway. Once construction began, headquarters engineers had to be sent to the field with instruments in hand to stake out and supervise those projects the overworked construction personnel could not handle. Having cut its staff to the bone, the department soon could not find enough experienced men to fill its jobs and had to train a new force of graduates fresh from the University of Kansas and Kansas State College.[66]

Luckily, headquarters had room to expand. By 1930, the State House building was so cramped by state agencies that the highway department was told to find another home. The department moved to the Masonic Temple building and set up shop that year. By 1937, the department was ready to look for more space. Even in the midst of staff cuts in June, 1933, the highway commission had agreed to put the staff of the Kansas State College Testing Lab on its own payroll. Having "gotten well" with federal grants, it thought, the commission also began restoring earlier salary cuts.[67]

Fortunately for Kansas, the job of marshalling all this activity fell into very able hands. The experienced and forthright W. V. Buck served as state highway engineer until August, 1934, when he joined BPR to supervise federal aid operations in Ohio. H. D. Barnes, long-time chief of the construction depart-

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65 Tenth Biennial Report of the Kansas State Highway Commission, to June 30, 1936 (Topeka: Kansas State Printing Plant, 1937), pp. 51-54.

66 Records of the Governor's Office, Correspondence Files, Governor Alfred M. Landon, Box 5, folder 5, Department of Archives, Kansas State Historical Society; Buck, "Kansas Highways," Year Book, p. 32; Tenth Biennial Report, pp. 77-78.

67 Minutes, v. 4, February 15-17, 1930; Minutes, v. 6, June 19, 1933; Minutes, v. 8, February 10, 1937.

ment, took over as state engineer.[68] The other department heads who saw the state through its spate of New Deal construction had been at their jobs a good number of years.

In Harry Darby, Kansas had a Director of Highways with remarkable managerial skills. Not only did Darby oversee an unprecedented volume of work for the commission during his four year tenure but he managed, in the midst of those labors, to save hundreds of thousands of dollars for the state by streamlining the highway department's organization. Darby and Governor Landon sought to subtract politics from the department's activities. Early in his first term, Landon had told Darby to assure department supervisors that they would have sole charge of hiring and firing the personnel under them -- without going through the Republican county committees.[69] In practice, this policy meant that professional staff would remain fairly free of partisan pressure. "In all my 40 years with the highway commission," Johnson remembered, "I was never, to my recollection, asked outright by any highway official how I voted, what my political affiliation was. It was assumed by a lot of them to be certain ways. Sometimes they were right and sometimes they were wrong." What political influence remained largely affected the lower level employee. "They kind of laid off the engineers," said Johnson, "and the politicians pretty well worked with the maintenance forces. And they [maintenance forces] changed a lot of times with the administration -- just practically completely."[70]

Personal honesty counted, for highway department staffers dealt with amounts of money that would have tempted the average person in good times or bad, yet they did not fall to temptation. Important as money was to hard-strapped Kansans of the 1930s, the New Deal had far-reaching effects on the state's highways outside the account books. For one, the depression gave the state and federal governments another chance to meet a promise to farmers that had been long deferred -- the promise of farm-to-market roads. Most of the highways built in Kansas under NIRA's drought relief program, for example, were farm-to-market routes, a fact the farmers who labored on those roads appreciated.[71] Twenty-five percent of the larger NIRA grant of $10 million and the WPA funds had to be spent on feeder roads outside the federal highway system. Meanwhile, the counties put quantities of their separate federal relief funds into improving county and township roads. These remained piecemeal efforts to meet the jobs crisis until June, 1936, when Congress approved the Hayden-Cartwright amendment requiring each state to designate a Federal Aid Secondary System of feeder and farm-market roads. These were to equal ten percent of the state's total mileage. The measure authorized $25 million for the secondary system in fiscal year 1938 and 1939. Later Congress renewed the secondary

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68 Minutes, v. 6, July 25, 1934. Buck became a chief of design section for BPR in 1945. In 1949, he was made associate division engineer and later division engineer for Division 5-N. He oversaw the consolidation of Divisions 5-N and 5-S in 1953 (Division 5-S including the State of Kansas) and remained regional engineer there until his retirement from BPR in 1959. Buck died in 1984. See, Kansas Construction 11 (March, 1959), p. 72.

69 Memo of June 3, 1933, Landon to Darby, Governor Landon Correspondence, Box 5, folder 6, Kansas State Historical Society.

70 Interview with Walter Johnson, State Highway Engineer (retired), January 8, 1986.

71 Minutes, v. 7, August 20, 1935; Buck, "Kansas Highways," Year Book, pp. 29-30.

system aid at $15 million through 1941, which amount participating counties spent largely on bridges and light surfacing. Clearly rural Kansans gained most by good roadbeds, but the state benefited too. The participating 18 counties in Kansas planned and executed their own projects with the advice of the highway department; yet those contacts began to ease the friction between state and county road men.[72]

Highway projects put wages in empty pockets. Wherever the work could be done by man or team, the machines were shut down and labor hired. No man receiving relief wages for highway labor could work more than 30 hours (later 40 hours) a week so that as many men as possible could be given jobs. Even skilled labor was hired from the counties' Reemployment Service lists. Under NIRA alone, 8,800 men were given employment in the peak season under highway commission contracts. Kansas was second only to Texas in the number of unemployed it put to work on roads in 1934. The short-lived CWA enabled 2,300 more to go to work on the state highways; the WPA funds to the highway commission gave work to an average of 2,605 men per day.[73] It was estimated that every $650 spent for highway construction in Kansas gave four to six months employment to a laborer; every one man put to work on the job site created employment for two men in allied industries such as materials or shipping.[74]

Because employment now shared priority with road-building on the highway commission's agenda, commissioners found themselves intimately (often aggravatingly) involved with workers' lives. There came a deeply human side to their responsibilities. Wage rates took endless tinkering, for instance. Federal relief wages for road work began at 30 cents an hour for the unskilled, 40 cents for semi-skilled and 60 cents for skilled workmen. Each contract, however, had to accord with the prevailing wage rate in the local area of the project and with the guidelines of the local wage rate committee for federal relief. Naturally, workmen, contractors, and committees did not always agree just what that prevailing wage was. With the advent of WPA, the highway commission had to set separate wage scales for everyone from ditch digger to skilled mason on a county-by-county basis and reset them whenever economic conditions changed. Meanwhile, the highway department monitored contractors to see that relief workers were not docked unfairly for board and lodging charges or penalized by other cost-cutting tricks.[75]

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72 John F. Harbes, "Progress on the F.A.S. System," and O. D. Henry, "Progress of the Federal Aid Secondary Projects," Kansas Highway Engineering Conference Proceedings, March 14-15, 1940, pp. 108-118. Note: The Hayden-Cartwright Act of 1934 enabled BPR to aid to expend funds on roads outside the Federal Aid System and provided for establishment of a Federal Aid Secondary System. However, that aid was extended on an emergency basis until the 1936 amendment made it a part of regular appropriations. See also, Jean Labatut and Wheaton J. Lane, ed. Highways In Our National Life. (Princeton: Princeton University Press, 1950), p. 211.

73 Ninth Biennial Report of the Kansas State Highway Commission, to June 30, 1934 (Topeka: Kansas State Printing Plant, 1935), p. 133; Buck, "Kansas Highways," Year Book, p. 31; Tenth Biennial Report, p. 18.

74 Letter of September 28, 1933, George Mack to Willard Mayberry, Secretary to the Governor, Governor Landon Correspondence, Box 5, folder 5, Kansas State Historical Society.

75 See Minutes, v. 7 and v. 8, inclusive.

To many better-off Kansans, this looked like molly-coddling men who ought to have been grateful for work at any price. That relief workers should have a union of their own struck many Kansans as outrageous. But relief projects worried a number of union leaders and labor organizers, who feared that the thousands of men needing jobs so desperately would accept low wages and poor working conditions on government projects -- and thus the labor benefits union members had struggled for so long would be wiped out in a few years. With no one to represent their interests, the unemployed were open to exploitation.[76]

In June, 1935, Kansas unemployed workers got their union. Several organizations of the jobless joined at Emporia to form the Kansas Allied Workers (called KAW). A year later a convention of similar associations in various states banded together to establish the Workers Alliance of America, of which KAW became one of the most active and obstreperous affiliates. Within two years KAW had an impressive membership mostly of men and women who worked on WPA projects. Through lobbying, protests and strikes of relief workers, KAW won increased hiring quotas for WPA, elimination of discrimination and favoritism in the distribution of relief, and better working conditions on several WPA projects. In December, 1936, KAW supported "drouth farmers" who staged ten days of mass demonstrations known as the "Shawnee County Farmers Rebellion."[77]

Three months later, the eyes of the nation focused on Kansas where KAW was ram-rodding sit-ins at relief offices in several counties, including a ten day sit-in accompanied by mass demonstrations of the poor and sympathetic business and professional people at Topeka. If the Topeka demonstrations succeeded, similar "sieges" by reliefers were expected in other states. In fact, the Topeka protesters won most of their demands for fairness and decent treatment. Having triumphed at home, KAW next helped the Workers Alliance of America organize a march on Washington that forced the Roosevelt administration to halt cut backs of 300,000 WPA jobs.[78]

So far KAW's activities had been so much newspaper ink for the Kansas Highway Commission, but the commission had to wade into the conflict in May, 1937, when 20 relief workers walked off a state paving job on U.S. 69 near Columbus, Kansas. Instead of the 35 cents an hour they were getting, strikers insisted that 50 cents was the prevailing wage in Cherokee County and the rate they should receive. At first Koss Construction Company, the contractor on the job, tried to pass the buck. "Boys," a Koss representative told strikers, "there is nothing we can do about it. Your state highway department set the minimum wage of 35 cents per hour." The buck was not going to stop there, for the highway commission announced that the wage rate was really in Washington's hands.[79]

Within five days of the strike-call, however, it was clear that someone had to take responsibility before the situation turned violent. The previous month Cherokee and neighboring Crawford County had been in a state of riot when

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76 "Resolutions of Kansas Allied Workers," in Governor Landon Correspondence, Box 12, folder 5, Kansas State Historical Society.

77 Ernest F. McNutt, "Kansas Unemployed Organizations, Their Programs and Activities," December, 1939 (typed manuscript in Kansas State Historical Society), p. 4, 75-78.

78 Ibid., p. 77.

79 Ibid., p. 147.

members of unions controlled by the mine companies had used pick handles, axes and guns to keep organizers from the Congress of Industrial Organizations [CIO] out of the local mines. Landon had had to send in the National Guard to restore order during similar outbreaks in 1935 and 1936, but laboring men had been left unprotected in 1937, and their tempers were high. Truckloads began arriving to join the growing number of picketers KAW had placed on the roads leading to the job site on U.S. 69. If Koss Construction tried to restart work on the project, as it planned, bloodshed was likely.[80]

After a week of tension and a complete work halt on the project, the highway commission acted. The commissioners could not change the wage rate in the Koss contract, they claimed, but strikers were rehired, and the commission agreed to set 50 cents as the minimum wage for common labor on all future contracts throughout the state. Meanwhile the commission had learned a harrowing first lesson in its social responsibilities. As the biggest paymaster in the state, it reached decisions in a Topeka board room that affected deeply the quality of life for all working people of Kansas.

Other decisions concerning highways under the New Deal had similar far-reaching effects. Unlike President Roosevelt, Alf Landon believed that Kansas could "save our way out" of depression.[81] For the governor and a majority of state legislators this meant keeping state government's expenses to a minimum. But somebody had to pay the check for stemming hunger and ruin. Under Landon, Kansas let the counties and the federal government foot almost the entire bill while the governor won a nationwide reputation for thrifty, pay-as-you-go state government. In the case of highways, for example, special legislation of 1933 put the burden of meeting state costs for federal relief projects upon bond issues by counties and the diversion of county and township road funds for relief work. Thereafter, Kansas simply accepted federal largesse without increasing its highway revenue, despite repeated attempts in the legislature. By 1935, Kansas had the lowest average vehicle taxes for highway use in the nation.[82] When Landon made his unsuccessful run for the White House in 1936, he had to battle charges that he had let the New Deal rebuild his state. "Sure he balanced the budget in Kansas," WPA Director Harry Hopkins reportedly said. "And how did he do it? By taking the money out of the hides of the needy, that's how. His administration has never put up a thin dime for relief."[83] How much these charges contributed to the Roosevelt landslide of 1936 is questionable, but Kansans discovered that fighting depression on the cheap was costly in the long run.

As the depression lingered through the 1930s it came to be an unwelcome and familiar houseguest. Like people everywhere, members of the highway department had more on their minds than economic woes. One subject became a near-mania for the highway department and other concerned Kansans in 1935. That year Kansas highway fatalities reached a shocking 598. "Modern civilization," Harry Darby

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80 Ibid., p. 78, 147-148.

81 Letter of December 14, 1932, Landon to Roy Bailey, Governor Landon Correspondence, Box 7, folder 1, Kansas State Historical Society.

82 Edward Burge, "A New Source of Road Funds," Progress in Kansas 2 (December, 1935), pp. 25-27.

83 Quoted in "Relief Without Politics ... The Record of Kansas Under the Administration of Governor Landon," Republican National Committee, 1936 (pamphlet in Kansas State Historical Society.)

warned, "is stained with the blood of those who have been killed in traffic accidents." Something must be done to prevent losing more citizens to "this red death."[84] A considerable number of organizations launched safety campaigns. The American Legion, for instance, sent a "White Caravan" of shiny, all-white automobiles into Kansas towns, bringing lectures about safety to grown-ups and school children. But the highway department, guardian of the roadways, took traffic injuries most to heart. Not only was the human loss tragic, but state law held the highway commission liable for injuries on the state highways which resulted from defects in a roadway or bridge. Each year since 1929, the commission had been plagued by scores of costly law suits over accidents, some of which resulted from driver negligence and not its own.[85] The commission must act from prudence as well as compassion.

In early 1936, the highway commission created a Division of Safety within the highway department to promote caution on the highways.[86] Within a few months the division resumed publishing a highway commission magazine, called Highway Highlights. Each monthly issue was devoted almost entirely to articles on safety. So long as any darned fool could drive a car and drive it recklessly, public education was less than a complete solution. The highway department had tried for a decade to secure traffic regulation laws, and in 1931, the legislature obliged by requiring all drivers to be licensed. No one was to receive a license who was under age 13, a drunkard or drug addict, or so unsound of mind or body to be unable to control a vehicle.[87] Unfortunately, the law left it to overworked, untrained local officials to discover (more often to guess) whether a license applicant fit those standards. Voluntary spot-checks of vision by the highway department showed that there were enough half-blind drivers still on the road to cause mayhem. Kansas lagged behind the 21 other states with licensing examinations and the 37 states that inspected vehicles for safety.[88]

Even a healthy driver in a well-equipped vehicle could prove a menace to life and limb. Speeding, recklessness, disobeying the "rules of the road" cost the heaviest penalties in blood because Kansas has no real rules to observe. Motorists were free to drive at whatever speed they thought "reasonable and proper," to pass another car at will, to yield right-of-way when it suited them, to turn or stop without signalling, and generally to drive by whatever standards they had concocted for themselves. There was no law to guide them. By 1936, four national conferences on safety had devised a uniform traffic code which, in those states that adopted it, helped reduce fatalities. The highway department pitched in with other concerned organizations to lobby for a similar code in Kansas. In 1937, the state legislature came through with a state traffic code encompassing 137 separate regulations. There were still gaps. Speed limits on the open road were set only for trucks, buses and the like, while auto drivers

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84 Quoted in Progress in Kansas, 2 (April, 1936), p. 17.

85 Eighth Biennial Report, pp. 115-117; Highway Highlights, 1 (February 1937), p. 1.

86 Minutes, v. 7, February 18, 1936.

87 Gladys Ransom, A Compendium of All Kansas Laws Related to Roads, Highways, Streets and Bridges (Topeka: State Highway Commission of Kansas, 1948), pp. 166-167.

88 "Report of Legislative Council Committee on Highway Safety, Safety Regulation for Motor Vehicles," Legislative Council Publication No. 45, November, 1936.

remained free to set their own reasonable pace outside cities.[89] No uniform set of arm signals was specified so that, "methods of interpretation are left to the ingenuity of other drivers."[90] Yet the code laid down an invaluable guide for safety. Another provision in 1937 tightened licensing requirements. To be licensed, a driver had to be at least 16 years old and able to pass a test over the traffic law and must renew that license every year (later amended to every two years).

Of course statute books would not stop the slaughter. Kansas acquired a State Highway Patrol in 1933, but the patrol's original job was to enforce collection of ports of entry and motor carrier fees. Arresting reckless motorists still fell almost entirely to county sheriffs and deputies. Times were hard, though, and several of the craftier sort of citizen began practicing his own kind of relief program. Bank robberies spread like a minor epidemic through Kansas, Oklahoma and Arkansas. After Kansas bankers lost tens of thousands of dollars in over 60 bank robberies in 1933, the State Highway Patrol was turned into a crime busting force.[91]

Within a year, the patrol built a reputation for catching crooks. Letters poured into Governor Landon's office from bankers in three states thanking him for the patrol's help and praising especially the work of Wint Smith, the highway commission's attorney and Superintendent of the Highway Patrol, and two patrol officers. The Kansas law men used what one grateful banker called "a system" to crack cases that stymied local officers and even the U.S. Secret Service. A special prosecutor thought that a grisly torture-murder in Stafford County, Kansas, would have gone unpunished had Smith, Edwards and Anderson not solved the crime and gathered the evidence for conviction.[92]

While the Kansas Highway Patrol was collaring thugs (bank robberies in Kansas dropped to six in 1935), the slaughter on state highways was mounting. Disgruntled citizens thought their tax money could be better spent safeguarding the roads than providing a security force for bankers. In 1935 the Highway Patrol was reorganized and expanded from 30 to 45 uniformed officers, whose job it was to inspect vehicles and -- most vital -- to enforce the new traffic code. Their specially marked patrol cars soon became a familar (though sometimes unwelcome) sight across the state's highway system.[93]

Safety advocates hoped the new patrol would be nonpartisan, but the legislature settled instead for "fairness," The law required that half the officers be members of the party getting the second highest vote count in the gubernatorial elections. The governor's first appointment as Superintendent of the Highway Patrol went to Jack Jenkins, a fingerprint expert and former member of the Kansas City, Kansas Police Department who had helped solve the Union

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89 Ransom, Compendium, pp. 172-173; Highway Highlights, 1 (April, 1937), p. 1.
90 Highway Highlights, 2 (June, 1938), p. 4.
91 Letter of March 11, 1934, Fred Bowman, Secretary, Kansas Bankers Association to Landon, Governor Landon Correspondence, Box 10, folder 4, Kansas State Historical Society.
92 See correspondence in Governor Landon Correspondence, Box 5, folder 9, Kansas State Historical Society.
93 Ransom, Compendium, p. 173.

Station Massacre in Kansas City, Missouri in 1934. Jenkins promptly assigned his new force to a training program covering detection, fire arms and first aid.[94]

Although the Kansas Highway Commission was glad to see the patrol revamped under the Motor Vehicle Department's jurisdiction, the highway commission had to foot most of the bill. The highway department provided space for the patrol's district headquarters in its own district facilities. The patrol's funding came out of highway revenues that formerly went toward construction. "Safety pays," as the saying went, but it had to be paid for as well. That would be increasingly more difficult for the highway commission.

Besides promoting safety measures, the highway department had its own work to do in saving lives. Every year, faster cars and bigger trucks rolled off the assembly lines and onto the state's major arteries in ever greater numbers. Keeping pace with modern vehicle meant building roads to accommodate thousands of them a day. The highway department, which had experimented constantly with safety features in the early 1930s, made safety its principal goal in the latter half of the decade.

Some solutions were obvious. Designing and rebuilding roadways with ten foot traffic lanes, reduced grades and curves, wide, unobstructed shoulders, center and lane limit markers and banked curves cut the accident rate. So did the elimination of narrow bridges, high crowns, dips and the guardrails on culverts. Other solutions were more troublesome to carry out. Since the early thirties the department had struggled to keep billboards, lunch counters, gas stations and repair shops off the highway right-of-way, but the "roadside slums" sprouted like weeds and were just as hard to uproot. Customers turning on and off main roads imperilled though traffic even where businesses had been forced to provide adequate access roads. Planning experts began to insist that the highway commission be given the legal mechanisms to limit access to state highways and control land use beside the roadway through zoning, but the legislature showed little interest in giving the commission that kind of power.[95]

What the commission did possess was an ingenious staff. In these years, the department tried and adopted white paint for marking center lines, guard posts studded with reflectors to line curves and corrugated concrete midlines that threw a straying vehicle's tires back onto the right lane. After tests at the materials lab showed that colored concrete relieved eye strain and driver fatigue, Wyandotte County announced a construction program for 1938 featuring daffodil yellow and coronation blue slabs. The highway commission was expected to adopt the colored slab for the entire state soon. "It is virtually certain," trumpeted the Kansas City Star, "that no more strips will be laid in white."[96] As it turned out, colored slab was too expensive to adopt, and the color additive tended to dissolve concrete. More successful were design innovations that sorted out the snarls of traffic around major cities. In 1938, Lawrence residents turned out to marvel at the opening of an amazing new underpass. Not

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94 Highway Highlights 2 (July, 1937), p. 1.

95 D J. Teviotdale, "Junking the Junkyards," Progress in Kansas, 2 (May, 1936), pp. 3-5.

96 Kansas City Star, April 9, 1937, in Good Roads Clippings, 1930-1939, Kansas State Historical Society.

only was it built to carry motor and pedestrian traffic on U.S. 40 safely under the Union Pacific tracks and into the city, but its roadbed was below the level of the nearby Kansas River. Pumps were installed to remove rain and flood water, and the five foot thick slab was certified to withstand in a flood.[97]

As early as 1931, traffic counts showed Wichita to be the hub of cross-state travel in Kansas. By 1937 some 10,000 vehicles were reported to travel U.S. 81 between Newton and Wichita each day. Traffic entering Wichita on U.S. 81 had to cross a busy network of railroad tracks at an intersection so dangerous it was called Dead Man's Corner by the locals. At first the highway commission and the railroads agreed on an overpass with a 20 foot slab over Dead Man's Corner but Wichitans objected to that fairly modest proposal. The state's busiest, most perilous roadway deserved better, they thought.[98] An obscure auto and gasoline dealer had suggested a possible solution to the Wichita problem in a letter to Governor Reed in 1930. He thought that construction of "twin roads," or separated, one-way lanes, would cause folks to drive more, hence to spend more and so ease the depression.[99] The idea was beyond the state's means in 1930, but states on the east and west coasts were using divided highways successfully by the mid 1930s to handle heavy traffic safely. With the generous work relief funds Kansas now had the wherewithal to try it, and in 1936, contractors were hard at work building a superhighway -- a 40-foot overpass at Wichita and two 20-foot slabs separated by a four foot median all the way to Newton.

At the same time, the highway department had another superhighway under construction on U.S. 40, the grandaddy of paved roads in Kansas. Kansas City, Kansas rivalled Wichita's claim as the state's traffic hub, but whatever the case, the seventeen-year-old stretch of U.S. 40 from Kansas City's city limits to Victory Junction on K-7 took a heavy toll in fatalities. The highway commission chose to turn that older portion over to Wyandotte County and replace it with a four lane divided highway devoid of curves and grades. This shorter stretch carried off the honors as the state's first completed superhighway when it was finished in 1937, making Kansas the first state in its federal highway district to build dual slabs.[100] A year later Kansas had 50 out of the 600 miles of four-lane divided highway in the U.S. as a whole.[101]

The highway department's bridge engineers had to consider not only safety and modern traffic needs but thrift when they worked out plans and specifications with contractors or private engineering firms. Ironically, this triple challenge caused the department to be enormously innovative. The Wichita

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97 Kansas City Times, May 3, 1938, in Ibid.

98 Wichita Eagle, April 25, 1931, in Ibid.; "Will Celebrate Opening 4-Lane Highway," The Wichita Magazine 14 (December 2, 1937), p. 1.

99 Letter of October 25, 1930, Cowles Tolman to Reed, Governor Reed Correspondence, Box 12, folder 5, Kansas State Historical Society.

100 Kansas City Star, November 10, 1937 and Kansas City Times, August 26, 1939, in Good Roads Clippings, 1930-1939, Kansas State Historical Society; Highway Highlights 1 (June, 1936), p. 2.

101 "Gasoline Tax Losses Cut Road Appropriations to New Low," Kansas Business 6 (February, 1938), p. 4.

overpass on U.S. 81, for example, was almost one-of-a-kind when it was built. Not only did it carry a 44-foot roadway, but it accommodated a sharp angle of intersection of road with rail line.[102]

Engineers tried out continuous steel beam and girder designs for bridges in the latter 1930s and found that they got the job done at a considerable savings. Longer deck truss spans "running continuously from end to end without breaks in the trusses and deck over the piers" and longer groups of continuous spans gave them a stiffer structure and used less material than the older simple trusses had.[103] Because these designs needed little in the way of overhead structure, they had a low-slung look "more harmonious with Kansas's rolling prairies." In 1938 workers erected a bridge on U.S. 77 at Junction City, one being built with the new federal flood repair fund. With its five center spans joined in a single continuous truss totaling 960 feet in length, the Junction City bridge featured the longest continuous bridge truss in the United States.[104]

A similar bridge over the Kansas River in Topeka fell just short of this record. Its five span continuous deck-plate girder came to 940 feet end-to-end, but its center girder span broke world records at 217 feet. Its total length, including approaches, of 4,400 feet made it the longest bridge the department had built as of 1938. This particular bridge solved all sorts of problems. It was beautiful enough to overcome local citizens' preferences for concrete; it was inexpensive enough at $1.5 million total cost to meet tight budgets. When it was completed it closed the last gap on U.S. 75 between Winnipeg, Canada and Galveston, Texas.[105]

Pioneering this type of bridge design required the department's bridge engineers to solve even tougher problems. They made breakthroughs in calculating stresses on rigid structures and designing rollers between girder and pier to replace expansion joints. Although these "one piece" structures were comparatively lighter weight than older designs, they were now built to carry more lanes of traffic, so that the piers supporting the broader Topeka Avenue bridge had to be sunk with pneumatic caissons more than 60 feet below water level to reach bedrock. Meanwhile the engineers experimented with new alloys like silicon steel and chromium steel for bridge members. The department's pioneering in the use of arc welding to join those members (on the Fairfax and Intercity viaducts in Kansas City, for example) made it the chief contributor to the writing of national specifications for arc welded highway structures. Again, this technique proved useful because it resulted in a more attractive bridge at less cost.[106] Necessity proved a demanding mother to the Kansas engineers' inventiveness and the entire country learned from their experience.

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102 Eleventh Biennial Report of the Kansas State Highway Commission, to June 30, 1938 (Topeka: Kansas State Printing Plant, 1939), p. 24.

103 Tenth Biennial Report, p. 63.

104 Topeka Capital, June 19, 1938, in Bridge Clippings, Kansas State Historical Society.

105 Topeka Capital, February 13, 1937, Topeka Capital, March 24, 1938, Topeka State Journal, September 1, 1938, in Bridge Clippings, Kansas State Historical Society.

106 Topeka Capital, October 29, 1933, in Bridge Clippings, Kansas State Historical Society; Tenth Biennial Report, p. 64; Eleventh Biennial Report, p. 22, 61; Highway Highlights 1 (November, 1936), p. 1.

What ingenuity did not accomplish, sheer dedication to the job often must, for the highway department demanded considerable committment from its employees and their families. Walt Johnson recalled of his years as a young resident engineer in the thirties: "I worked wherever the job was and moved. That's what you did. The division office might call you up and say, "You're about through with that job aren't you? Well, the contractor is going to start in Ness City week after next. You better get up there and see if you can rent a house." . . . That's about how much notice you had." Housing posed a problem for men in the divisions because, "You did the best you could in those small towns. You had to take what you could find that was vacant when you needed it." Johnson recalled moving his family into one little house that had no running water. "You had a pump in the front yard and a toilet in the back yard. You pumped the water in the front yard and carried it through the living room to the kitchen and used it for whatever purposes. Then you threw it out in the back yard," where the kids threw rocks "to keep you awake."[107]

Such dedication to construction and improved design features had at least one noticeable impact, since the state's traffic deaths declined steadily from 598 in 1935 to 418 in 1939. Kansas would be a long time getting any more superhighways or record-setting bridges. Much as they might save lives and traffic headaches, the federal relief funding that had made them feasible began to slacken in 1937. Democrat Walter Huxman took office as governor that year and saw his choice confirmed as Director of Highways in Darby's place. The new director, Evan Griffith had considerable management experience as the state's head of the National Re-Employment Service and later as state administrator of WPA -- experience, some thought, that marked Griffith as a big spending New Dealer. A. B. Nuss, the new State Highway Engineer replacing Barnes, was another WPA veteran, having been state engineer for the WPA in Kansas. Instead, Griffith and Huxman planned a "breathing spell" for new road construction. By emphasizing improvement of farm-market roads and elimination of the sharp curves that made the state system treacherous for speedy modern cars, they hoped to consolidate gains made during the flush days of early New Deal spending.[108]

Before the Huxman-Griffith administration ended in 1939, realization of this goal appeared impossible. Famine followed feast for Kansas highway construction in the latter 1930s, as old bills came due and funds for new construction dwindled to almost nothing. There were sufficient reasons for this latest financial crisis to fill hundreds of columns in Kansas periodicals. For one, the only new source of state revenue created for highways in the 1930s was ports of entry and motor carrier fees, which largely penalized out-of-state carriers to produce just a pittance for highways.[109] Meanwhile the state cut other tax receipts. In a symbolic act, the 1933 legislature had eliminated the antiquated poll tax.[110] More to the point, that same legislature had given way

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107 Interview with Walter Johnson.

108 Highway Highlights 1 (February, 1937), p. 2; Highway Highlights 2 (May, 1937), p. 4.

109 "Ports of Entry Receipts," Kansas Business 5 (December, 1937), p. 6. Note: Kansas was the first state to institute ports of entry for the collection of ton mile taxes and safety inspection of trucks. As a by-product, the ports of entry in Kansas provided the "nation's first complete detailed analysis of interstate motor truck traffic." See "What Interstate Trucks Carry," Business Week (March 16, 1935), p. 30.

110 Ransom, Compendium, p. 87.

to Governor Landon's demands and halved auto license fees, taking $3.5 million a year out of highway funds. "It was a nice little vote-getting gesture to cut the car license cost in Kansas," a business magazine lamented, "but the gesture dumped onto later administrations a problem that has left many brows permanently wrinkled and turned a lot of hair gray."[111]

The gas tax was kept at three cents but evasion reduced those revenues more each year. The legislature of 1931 had opened the gate to tax cheats. Since 1929, farmers had been required to travel to their county seats to get their gas tax refunds. For greater convenience of the farmer, the 1931 session provided that purchasers of fuel not used for highway travel would get an exemption from the tax at point-of-sale. Initially, few farmers abused the privilege, but an army of crafty bootleggers found ways to secure illegal exemptions for fuel they used, or resold for use, on the roads. The legislative sessions of 1933 and 1935 tried to crack down on forgery of exemption slips. Attempts to eliminate the entire exemption system, however, met stiff resistance from farmers who refused to be penalized for the cheating of others. It was estimated in 1936 that the state lost $2,000 in highway revenues to the tax evaders everyday.[112] Two years later Kansas ranked 15th in the nation in the number of its trucks and autos and a shameful 47th in revenue receipts per vehicle. Even farm leaders were willing, by then, to reform the exemption law simply because they resented implications that dishonest farmers were responsible for revenue leaks.[113]

Though Kansans taxed themselves lightly for highways, the state had an expensive -- in some cases needlessly expensive -- highway system. In 1937, only two entirely dust-free highways, U.S. 40 and U.S. 24, crossed the state, and most of their mileage consisted of oiled surface or bituminous mat. Already bituminous mat surfaces were wearing out and having to be replaced throughout the state system. Some 40 percent of the system remained in gravel. Consequently, high maintenance costs threatened to absorb money for new construction.[114] "Just to boost the game of getting rid of highway revenues," said one newspaper, "the highway commission added 632 miles to the state highway system over and above the 8,690 miles eligible for federal aid. Kansas had to foot the entire bill for those new miles."[115]

The highway commission tended to spread its resources too thin, partly because each member first served his district's interests. If two districts' interests collided, log rolling among commissioners satisfied both so that the

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111 "Tax Income Per Car Is Puzzling Kansas," Kansas Business 8 (February, 1940), p. 4.

112 "Gas Tax Evaders To Be Curbed," Kansas Business 4 (January, 1936), p. 6; "Gasoline Taxation and Exemptions To Be Under Fire in Kansas Legislature," Kansas Business 4 (December, 1936), pp. 3-4.

113 Watson, "Future of Kansas Highways," p. 272; "Gasoline Tax Losses Cut Road Appropriations to New Low," Kansas Business 6 (February, 1938), p. 6; Karl Kennedy, "The Case Against the Kansas Gas Tax Exemption," Kansas Business 8 (December, 1940), pp. 8-9.

114 Records of the Governor's Office, Correspondence Files, Governor Walter Huxman, Box 1, folder 19, Department of Archives, Kansas State Historical Society.

115 Cliff Stratton, "Realism Must Enter Kansas Highway Situation Picture," Topeka Capital, December 20, 1938.

entire system was more political patchwork than planned program.[116] Since the commissioners would not take a state-wide view of planning, the highway department's professionals were yanked this way and that by local pressures, unable to bring order to the chaos. Veteran Engineer of Design O. J. Eidman described the situation from the department's perspective in 1936:

> The state highway engineer finds himself, before the task of getting the entire state system out of the mud is completed, harassed on all sides; by those who are still in the mud wanting to get out on one side while at the same time those out of the mud want out of the dust, and those out of the dust point to the increased traffic speed and its attending dangers as a reason for demanding a new or modernized high type highway. Unconnected population centers should no longer be expected to wait for surfaced roads, but on the other hand, accident concentrations cannot be ignored.[117]

Politics crippled efficiency in another way. No sooner had a commissioner learned his business than his term ended and a new man replaced him. Electoral shifts also meant that the state had five different highway directors and four state engineers between 1930 and 1940. "The Kansas Highway Department is big business -- it is a $14,000,000 a year business," a critic warned. "Do you know of any private business or industry of that magnitude, whose top executives are fired every two years, and new men put in their places totally untrained for their jobs? Such a business would soon find itself in bankruptcy."[118] Bankruptcy was no idle threat in 1939. For all its tax leniency and inefficient planning, Kansas took in over $14 million a year in state highway revenues -- enough to build even an ill-devised system. Instead, state statutes parcelled out this revenue among a clutch of fixed funds. Thus $5.5 million went into benefit district refunds, support of the highway patrol, repayment of the federal loan, administrative costs and the county and township road fund (the latter taking $3.6 million). Another $5.4 million went into maintenance. That left only $2.5 to $3.5 million with which to match federal aid.[119]

Coming up with matching funds had been no problem while the state received direct grants from New Deal programs. Kansas had stepped up its construction program while amassing a small balance in the highway fund. Once regular highway appropriations resumed in 1935, that balance dwindled rapidly. Kansas fell about $1.1 million short of matching the federal appropriation available to it each year. To keep the money flowing, Kansas was allowed to claim its full appropriation and deduct the unmatched portion from its next year's allotment. The state fell farther behind. By 1938, Kansas was entitled to some $3.8 million in federal aid it could not match, thus providing little more than $3 million for new construction in 1939, and the almost certain danger of losing a

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116 "Where Do Kansas Roads Lead," Kansas Business 2 (February, 1936), p. 14.
117 O. J. Eidman, "Highway Traffic," Kansas Engineering Society Year Book, 1936, p. 65.
118 "Kansas and Her Highway Problem," Kansas Business 7 (April, 1939), p. 4.
119 Pamphlet by the Citizens Road Association of Kansas in Governor Huxman Correspondence, Box 1, folder 19, Kansas State Historical Society.

half million dollars in federal aid each year thereafter until the state's debt was caught up.[120] Under those circumstances, new construction would limp to a halt.

As the decade ended, concerned Kansans were pleading with their fellow citizens to adopt the obvious solutions. A study of gas tax exemptions in 1939 showed that farmers now outstripped bootleggers in getting unjustifiable exemptions. In one western rural county, 80 percent of the gas sold went tax-free. A return to the refund system, restoring the registration fee to the old pre-Landon figure, raising the gas tax one cent or finding some satisfactory combination of those measures would raise the state and federal funds available for new construction each year to nearly $13 million. Allowing the highway commission to keep some of the revenue it must fork over to other governmental units would help.[121] So would revamping the highway commission itself, critics claimed. Former State Engineer Watson, among others, urged that commissioners be appointed at-large to serve four to six years. No other of the 48 states limited its highway commissioners to two year terms. Longer tenure would shield both the commission and the highway department staff from political upheaval. Watson noted that it was sheer good fortune that the department's engineering staff had been spared frequent shake-ups, but each change in winning party in November threw the maintenance and clerical personnel into disorder. Said Watson, "it would seem the height of folly should a new president be elected to a railroad and he would immediately discharge all of the clerical staff and the maintenance-of-way employees and replace them with men with no experience in their particular line of work."[122] Watson thought that a merit system for maintenance would cut that department's heavy costs considerably.

One development did hold promise. In 1932, the highway commissioners had authorized a complete study, including traffic counts, to enable them to plan a "modern, efficient and coordinating state highway system."[123] The study made little headway until the Hayden-Cartwright Road Act in 1935 allowed each state to spend 1 1/2 percent of its federal aid allocation for a comprehensive survey.[124] Kansas gave WPA workers the tedious chore of making traffic counts, which enabled the engineers to pinpoint road usage across the state. With this information (and a respectable sum of dollars) in hand, the department could plan construction according to need and traffic flow within a given area. It would "begin disentangling a lot of public affairs from political webs," if a stubborn citizenry could only pry itself loose from localism.[125] Battling depression had already cost Kansas citizens some part of that local independence. It had meant accepting a visible government presence in their lives. The Dirty Thirties had been a harrowing decade which jolted the state and its highway department into modern times. Kansans faced the 1940s with a clear choice: they could build highways fit for the future or they could let Kansas slip back into its former place as the most backward road-building state in the union.

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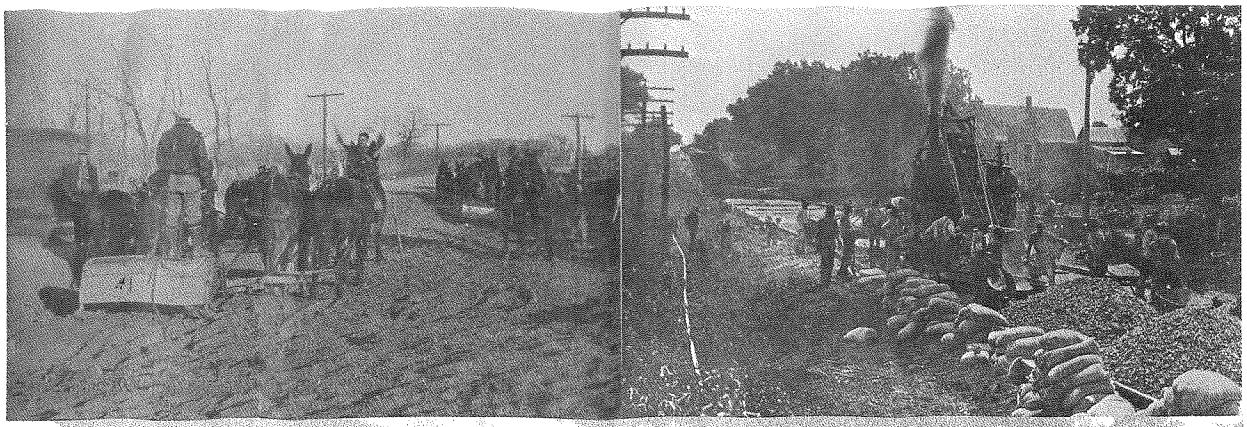
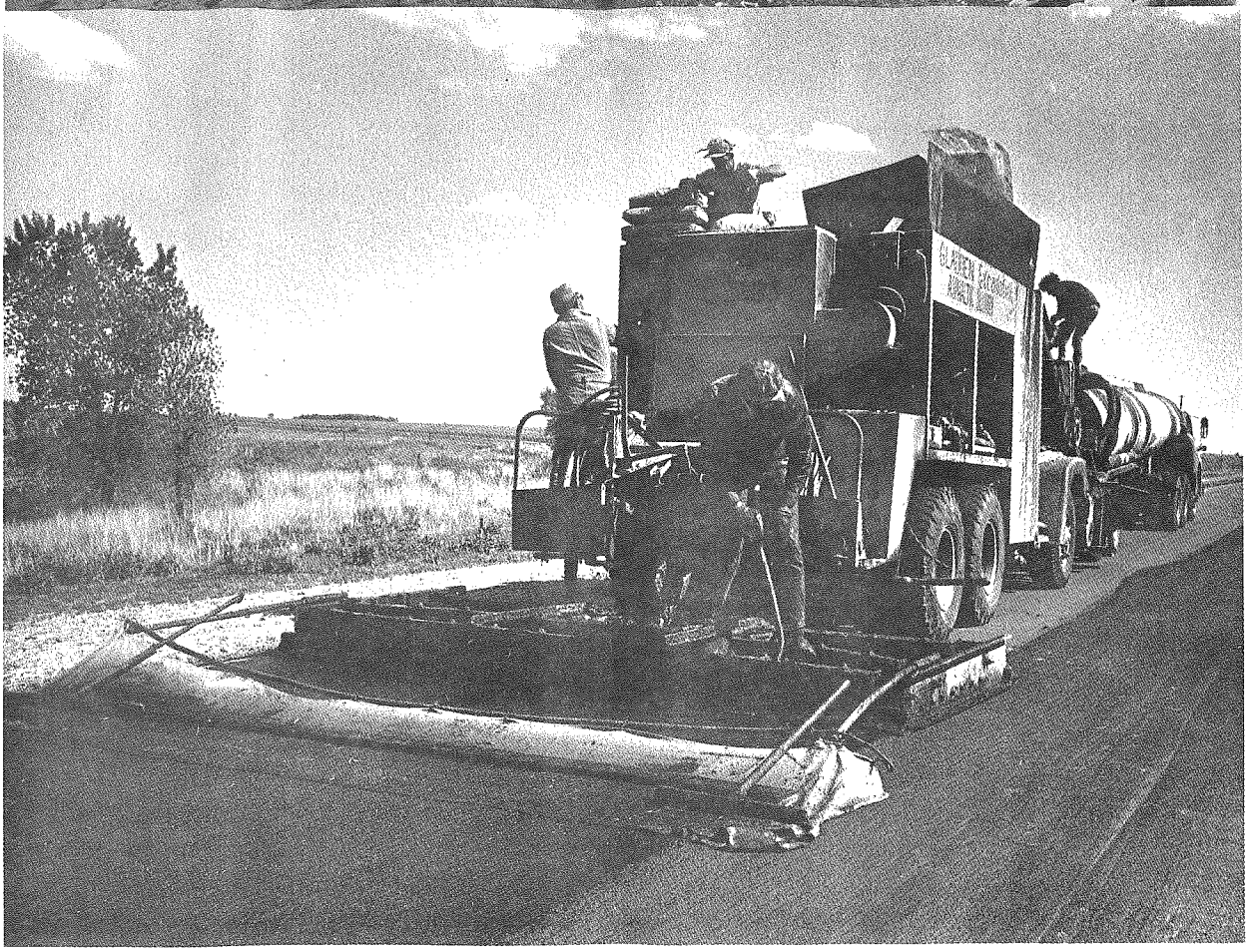
120 Watson, "Future of Kansas Highways," pp. 272-275; Research Department of the Kansas Legislative Council, "Organization of State Highway Systems," Legislative Council Publication No. 86, February, 1939.
121 Watson, "Future of Kansas Highway," pp. 280-283.
122 Ibid., p. 283.
123 Minutes, v. 5, January 18, 1932.
124 Minutes, v. 7, September 25, 1935.
125 "Tax Income Per Car ....," p. 4.





Top left corner: To put wages in more pockets, the State Highway Commission replaced heavy road equipment with man and mule power during the depression.

Credit: KDOT

Top right corner: Highway construction provided relief for unemployed Kansans in 1930s. Here workmen man a paving mixer.

Credit: KDOT

Above: Before the introduction of Drake's Device, it took a crewman and shovel to help crown asphalt paving.

Credit: KDOT

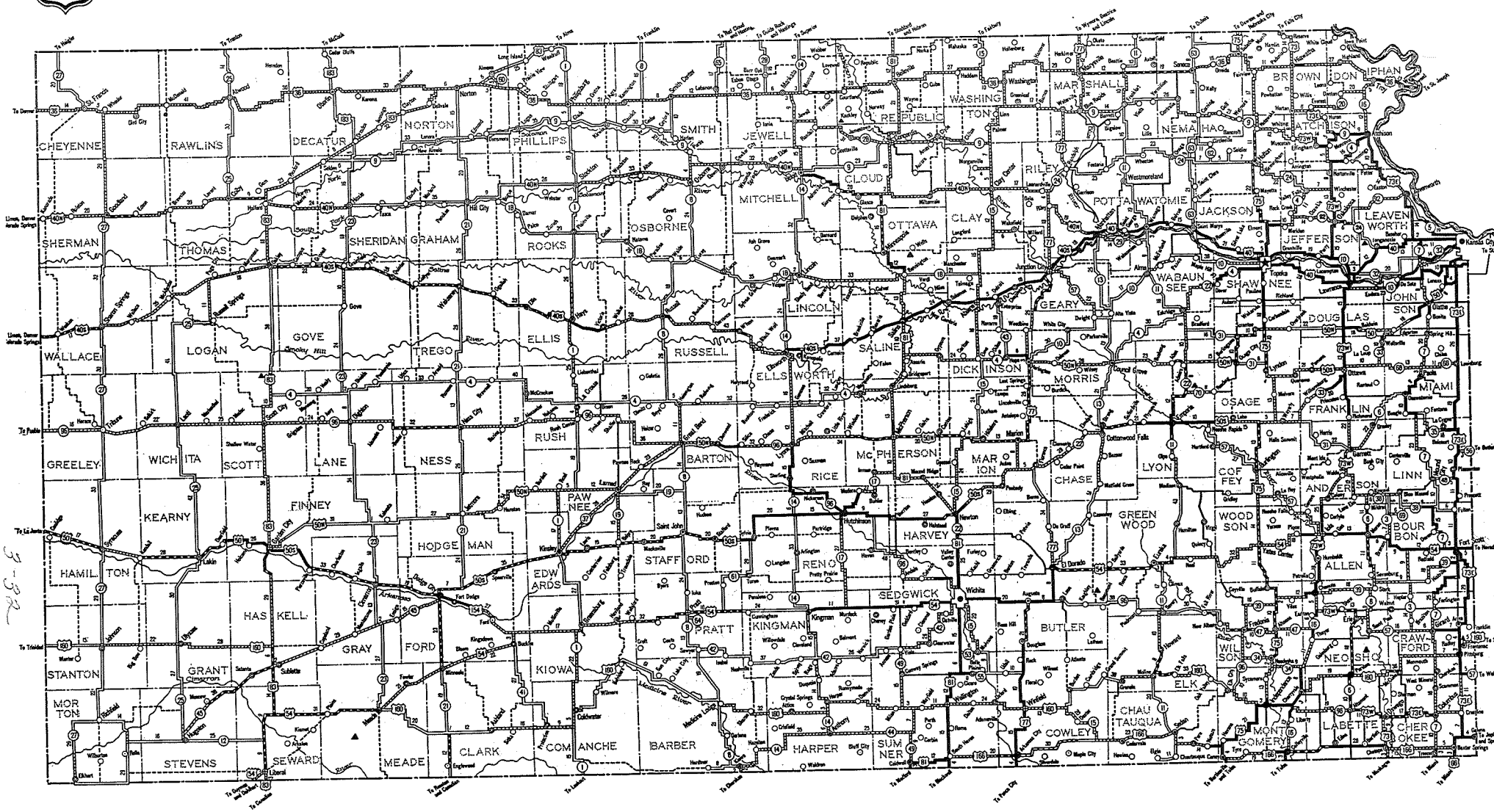
Above: Begun as an unemployment relief project, the Kansas highway landscaping program was one of the first in the United States.

Credit: KDOT

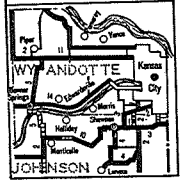
Below: By the end of the 1930s, new Kansas highways exemplified an increasing concern for safety and beauty as well as durability.

Credit: KDOT

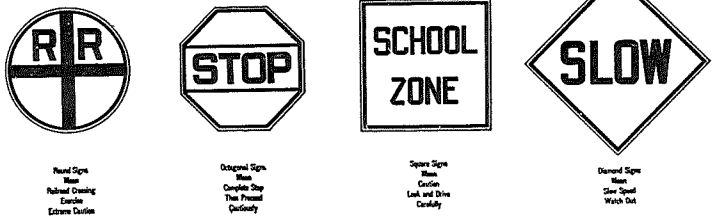
KANSAS STATE HIGHWAY SYSTEM



KANSAS CITY and VICINITY



UNIFORM STATE HIGHWAYS MARKINGS



Round Signs Mean Railroad Crossing Exercise Extreme Caution

Octagonal Signs Mean Complete Stop Then Proceed Cautiously

Square Signs Mean Caution Look and Drive Carefully

Diamond Signs Mean Slow Speed Watch Out

POPULATION OF CITIES AND TOWNS

- ○ Under 500
- ◎ 500 to 1,500
- ⊛ 1,500 to 5,000
- ⊕ 5,000 to 10,000
- ◉ Over 10,000

STATE HIGHWAYS

- EARTH
- GRAVEL
- BITUMINOUS MAT SURFACE
- HARD SURFACE

COUNTY ROAD CONNECTIONS

- EARTH
- SURFACED

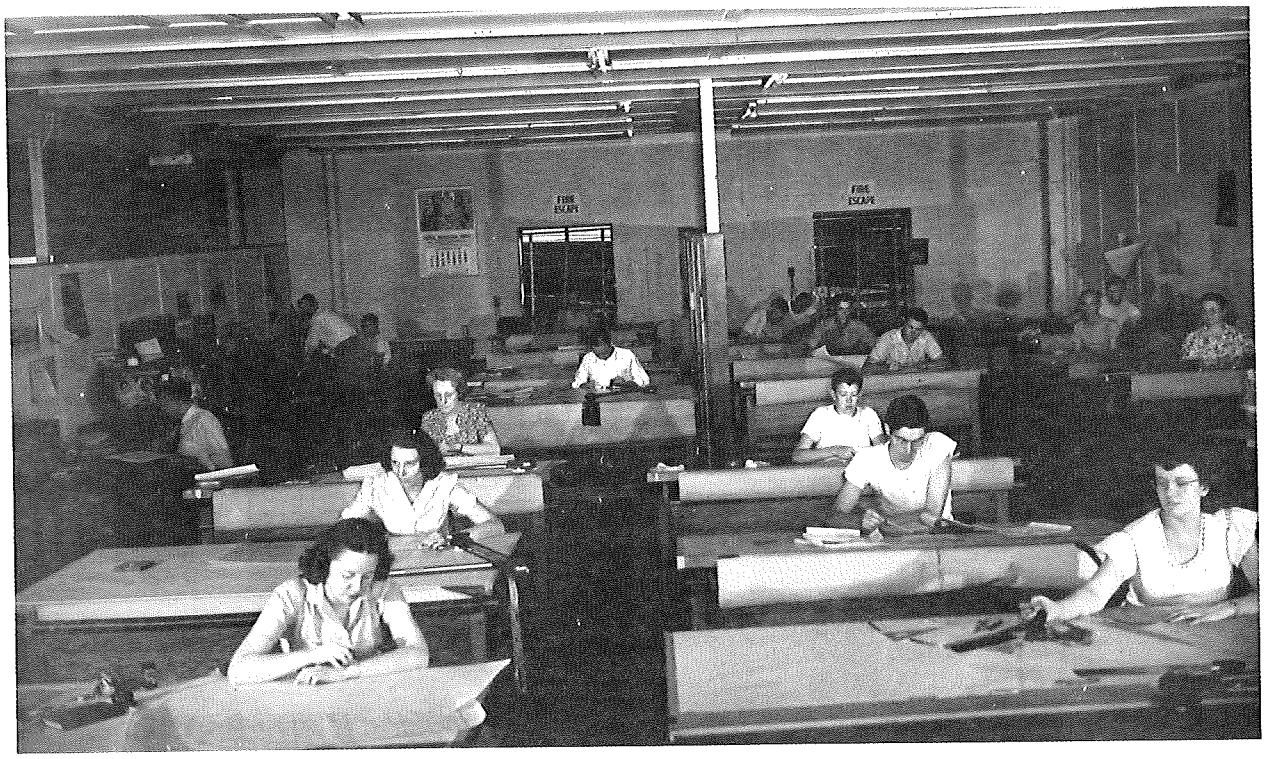
- ROUTE NUMBERS
- MILEAGE (Between County Seats or Between County Seats and Junction Points Between Junction Points)
- ▲ STATE LAKE

SCALE IN MILES

0 10 20 30 40 50

A map of the state highway system in the 1930s displayed the uniform highway numbering and signage system adopted in 1925.

Credit: KDOT

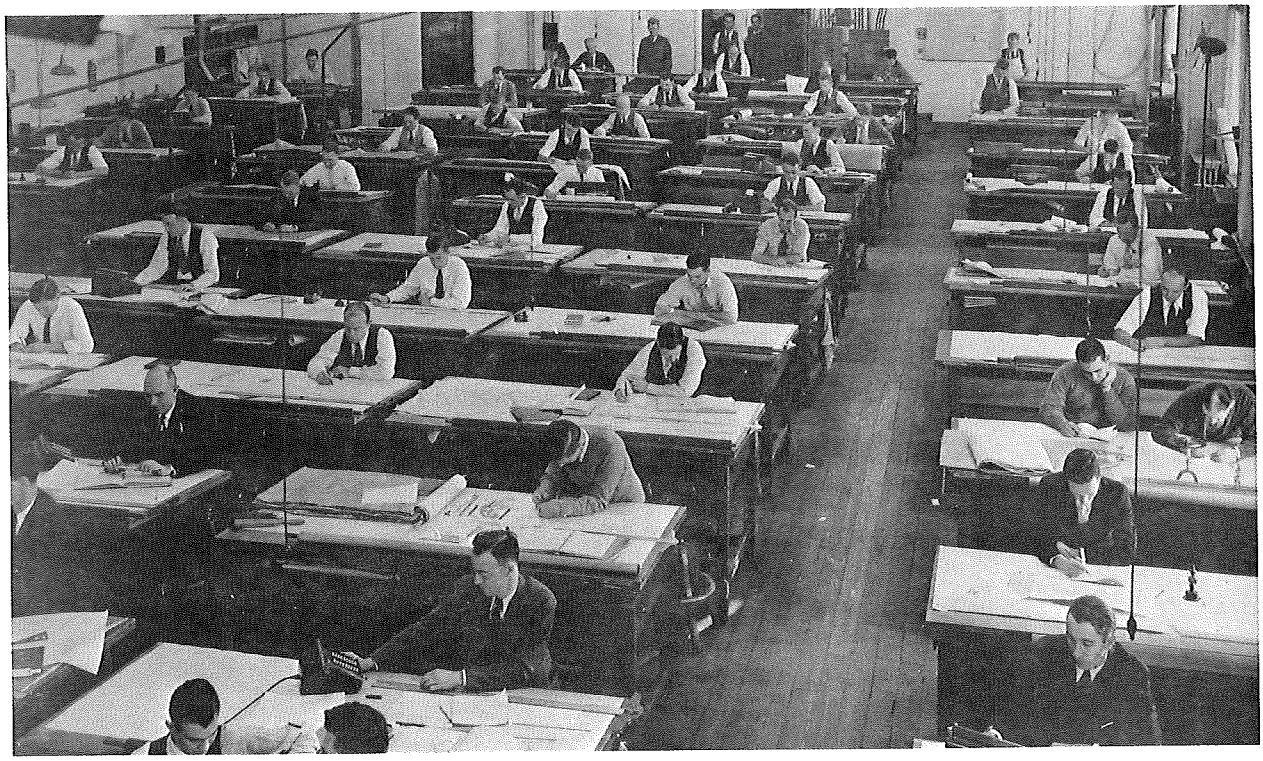


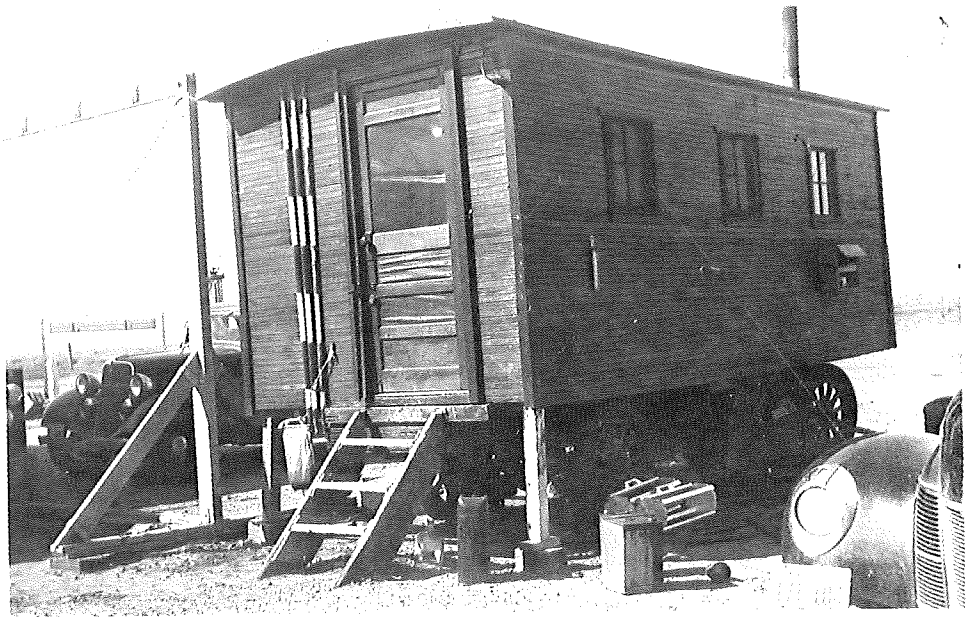
Above: With many of its personnel in uniform during the Second World War, the highway commission employed women as draftsmen for the first time.

Credit: KDOT

Below: Unventilated, poorly lit and overcrowded, the highway department's offices in the Masonic Temple were declared a fire hazard in 1946.

Credit: KDOT





Above: A typical construction field office near Hugoton was used by Dr. Arland Hicks in 1946 and 1947.

Credit: Dr. Arland Hicks

Below: An excavation project to clear debris for the construction of U.S. 75 in Topeka was undertaken in 1947.

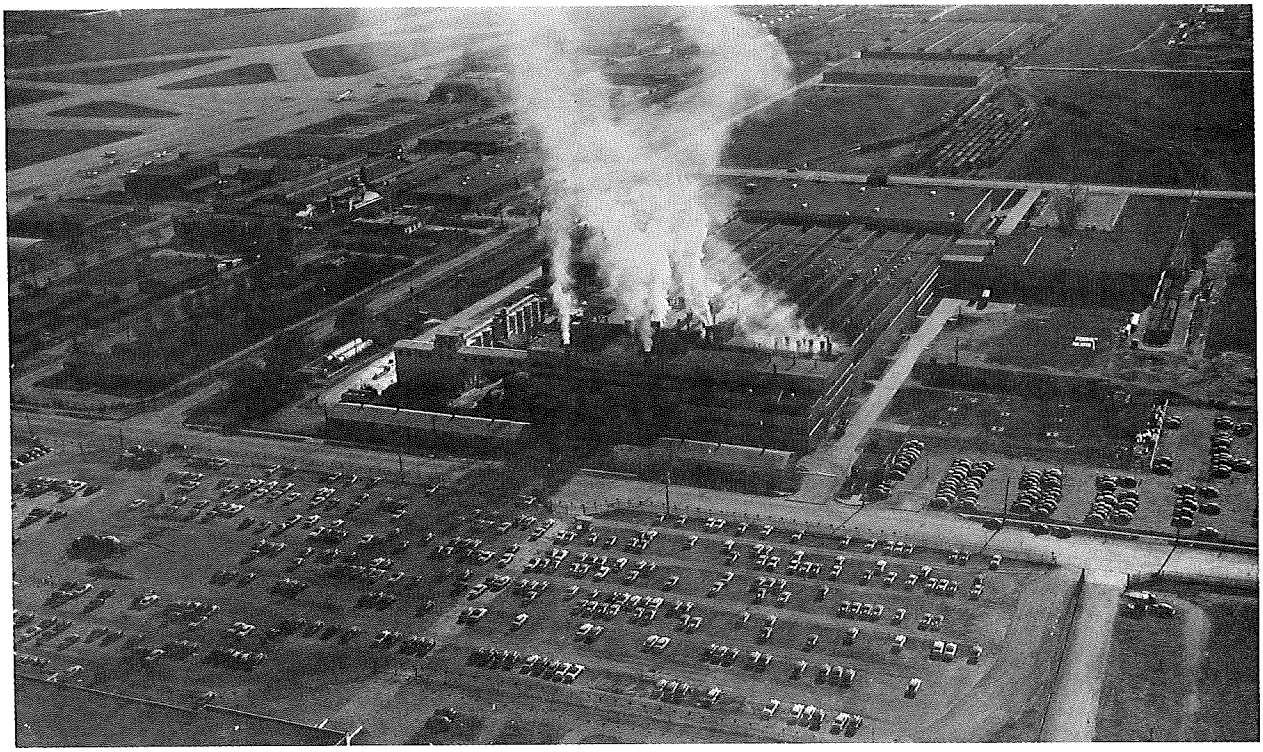
Credit: KDOT

Signs like this one reminded Kansans of the benefits of the 20 year construction program begun in 1949.

Credit: KDOT

State Highway Engineer Walt Johnson (left) and Highway Director John D. Montgomery stand beside a signpost illustrating the history of U.S. 40 in Kansas. Begun as Victory Highway in 1917, this heavily-traveled corridor became the route of Interstate 70.

Credit: KDOT

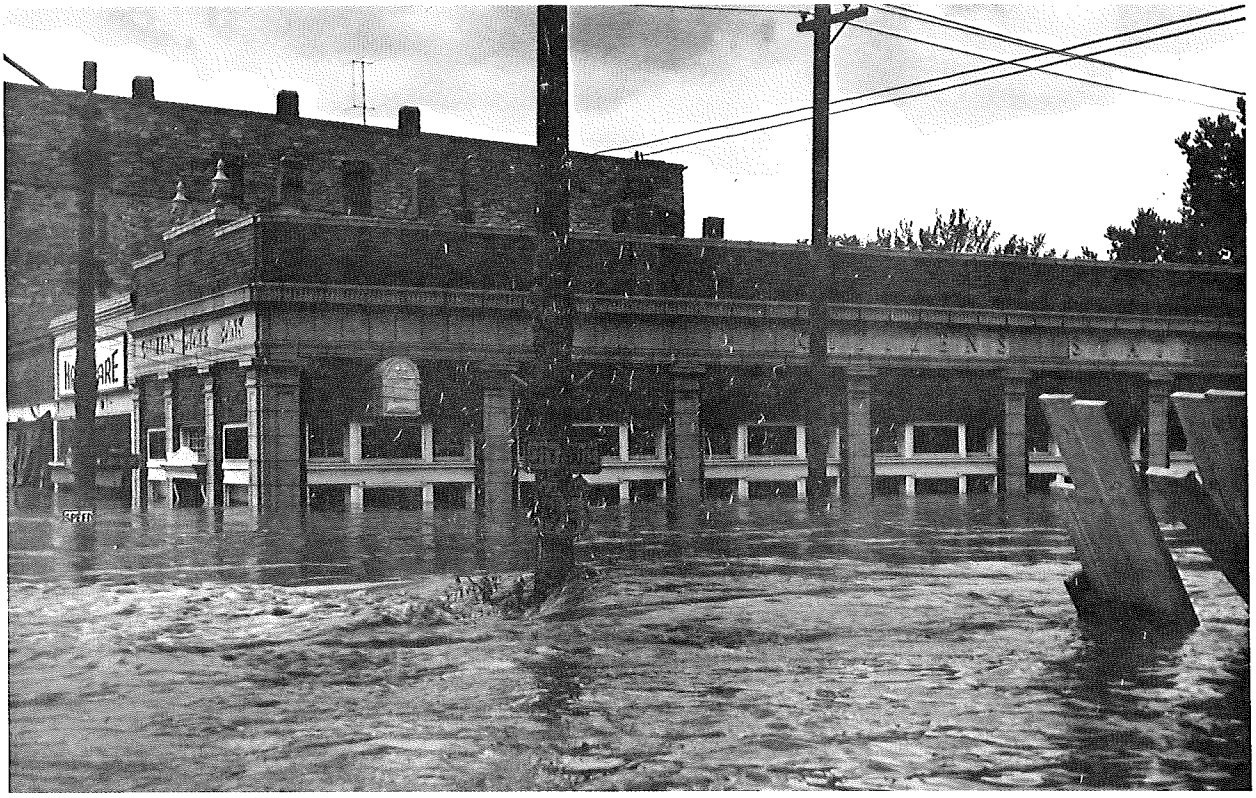


Above: Post-war industrial developments like the Owens Corning Fiberglas plant in Fairfax Industrial District in Kansas City, Kansas, required access to modernized streets and highways.

Credit: KDOT

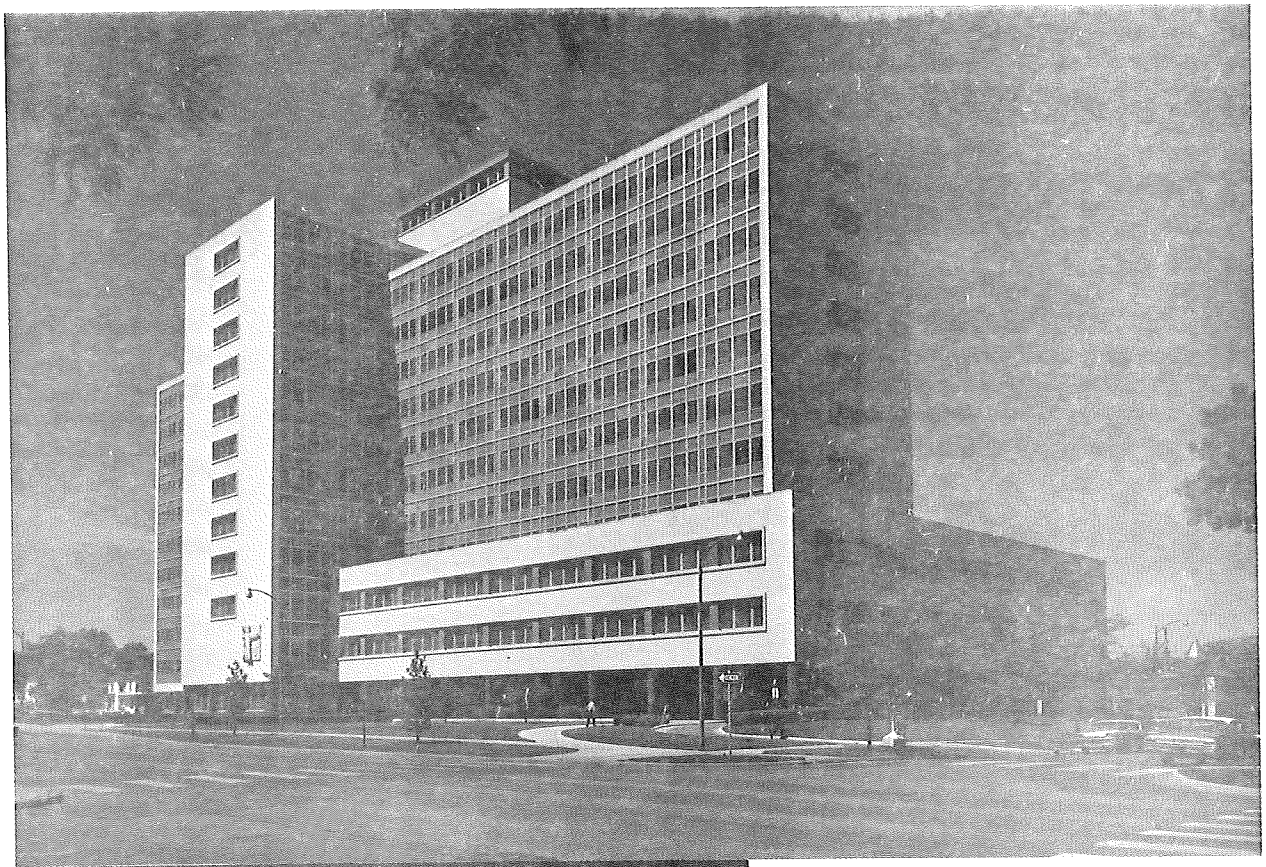
Below: Employees gather data to determine the feasibility of additional Kansas turnpike routes.

Credit: KDOT



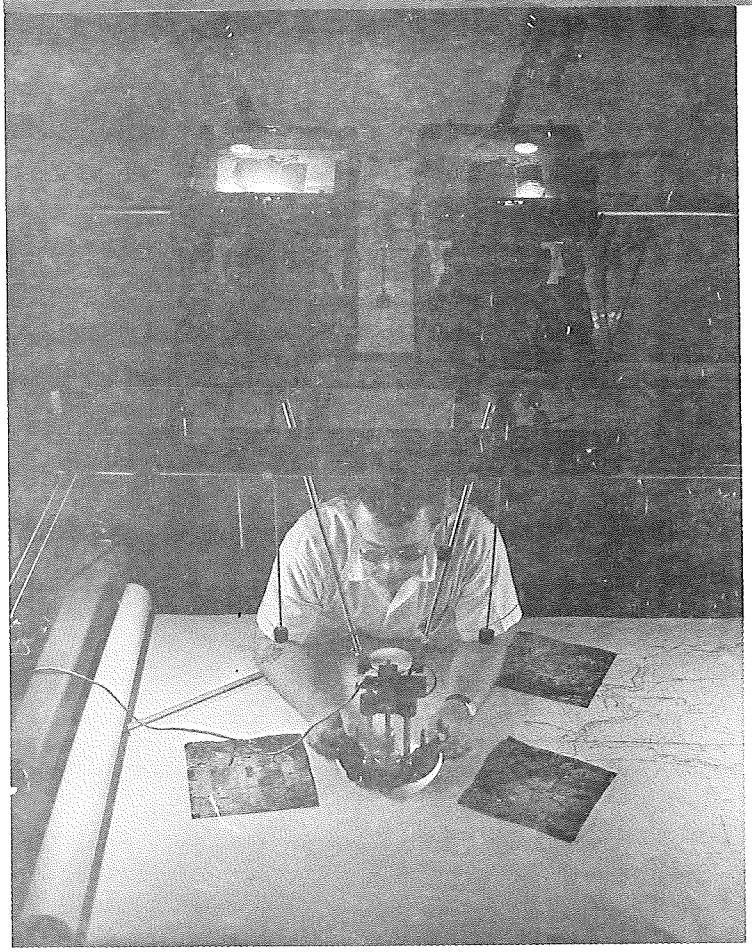
The 1951 flood of the Kansas River devastated highways and bridges throughout the river's basin. (Above) Here flood waters begin to recede at North Kansas Avenue in North Topeka. (Below) Brickyard bridge on U.S. 40 northwest of Topeka where several spans were lost.

Credit: KDOT



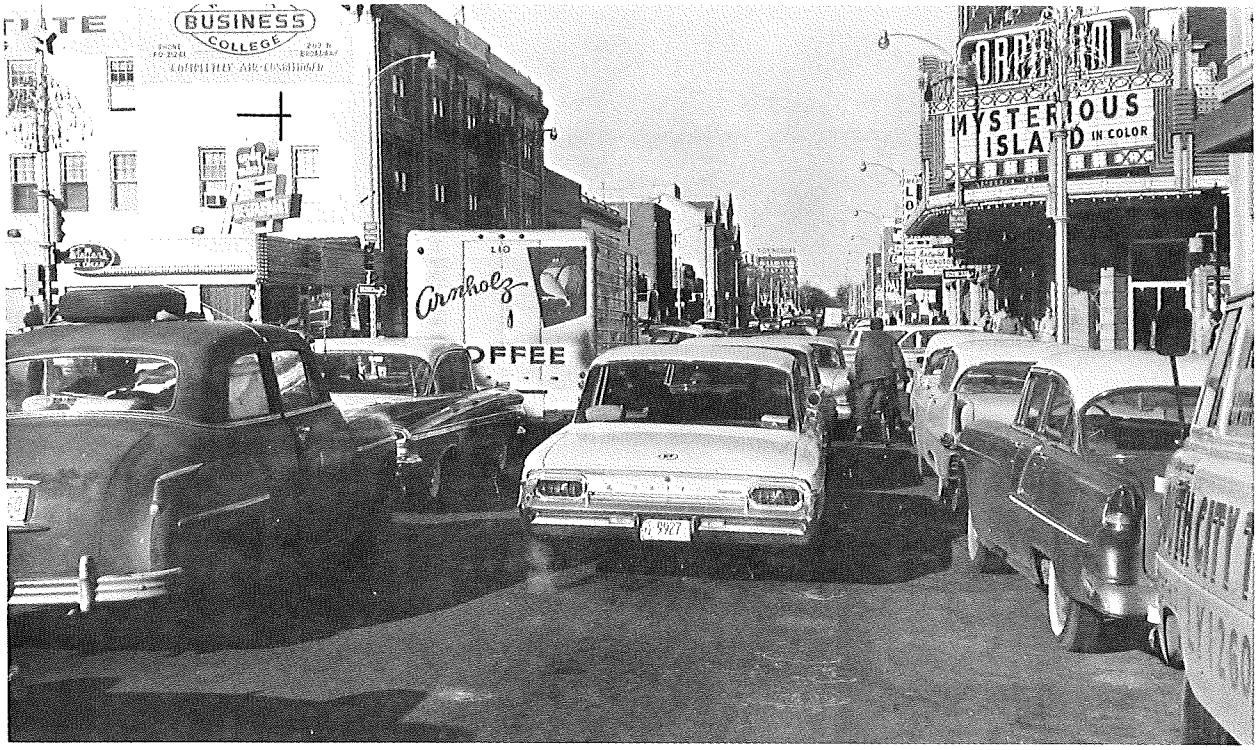
Above: The State Highway Commission moved to new quarters in the State Office Building in 1957.

Credit: KDOT



Left: Wearing his "3-D" glasses, an engineer technician uses photogrammetry's Kelsh plotter.

Credit: KDOT



Above: With interstate bypasses not yet complete in Wichita, North Broadway was congested by traffic on U.S. 81 in the 1960s.

Credit: KDOT

Below: Ribbon development created safety hazards on U.S. 54 in Sedgwick County in 1956.

Credit: KDOT

CHAPTER 4

Divided Highways to Prosperity: The Kansas State Highway Commission in the War and Post-War Years, 1939-1963

The Second World War introduced all sorts of new phrases to the American vocabulary. Folks who faced a personal crisis began to speak of their approaching "D-Day." Those who handled emergencies with enthusiasm and grit were said to be "can-do" or "gung-ho" kinds of people, like the American soldiers who had coined those phrases. And when things went wrong, Americans borrowed another term from the G.I. and called it a SNAFU (for Situation Normal, All Fouled Up). By the end of the war and post-war era, members of the Kansas highway department had made such words a permanent part of their lexicon. In those 25 years they met zero-hour and handled the impossible situation scores of times, often with so few resources of manpower and money that the "gung-ho" spirit made the difference between success and failure. When the state's highway builders turned from winning the war to preserving the peace by constructing an interstate system of highways, their efforts made the D-Day preparations look paltry. For all the state's thriftiness where highways were concerned, and its inheritance of highway problems, Kansas made unique contributions to that unprecedented effort with amazingly few SNAFUs. This was the highway department's "can-do" era.

As members gathered for the 1939 session of the Kansas legislature, Kansas highway officials and highway advocates confronted an emergency. Unless the legislature made a drastic overhaul of highway funding and department organization, the state would have no money for new construction in 1940 and dismal prospects for its program in coming years. The 1939 session came and went without legislative action, but what had seemed a crisis in 1939 ended in anticlimax the following year.

A large part of the credit for stemming disaster went to D. J. Fair, new Governor Payne Ratner's choice for Director of Highways in 1939. Although Fair was reluctant to take the post, Ratner was eager to have someone of Fair's management acumen in the director's chair and eventually persuaded him. Within a year, Fair had justified the governor's decision. By cutting 800 employees from the payroll, slicing maintenance expenditures by a third and otherwise pinching pennies in operations costs, Fair's department found enough money to match the federal aid allotment and provide $9 million toward new construction for 1940.[1] Typical Kansas thrift in highway management accomplished what had seemed impossible a year earlier without overhaul of the state's funding scheme.

The Kansas Highway Commission also had to improvise a new employment policy. The commission drew up its own job classification and salary schedule to prevent patronage abuses and job insecurity. Not until April 1, 1943, would state employees come under the provisions of a state civil service. The new Kansas State Civil Service Board was designated thereafter to approve any new

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1 Topeka Capital, January 25, 1940, in Good Roads Clippings, v. 2, 1925-1942, Kansas State Historical Society [KSHS].

positions created by reorganizations of the highway department while the state's Civil Service Department was established to ensure that promotions and hiring were based on merit instead of political loyalty.[2]

Meanwhile, the Hatch Act, which became federal law in July, 1940, banned partisan political activity on the part of employees of any state agency receiving federal funds. The Kansas Attorney General ruled in 1940 that the ban applied to highway commissioners only when they were on commission business and did not include employees of the Highway Patrol, Motor Vehicle, Right of Way or Maintenance Departments. A second provision banned the old practice of forcing campaign contributions from employees.[3] With the Hatch Act and state civil service law to back them, one journalist observed, the highway department's professionals began "putting the stopper on effervescent politics."[4]

The highway department next encountered an emergency of international proportions. The highway department went to war. As early as 1940, the department was helping with preliminary plans for a strategic highway network.[5] With the Allies' military situation deteriorating in Europe and tensions with Japan mounting in the Pacific in 1941, the United States prepared to produce the goods that would keep the Allies in the fight. That August, federal authorities issued a list of materials critical to the nation's defense and began ranking highway projects by defense priority. With a large number of projects under way or under contract, the highway department saw its busy construction season interrupted as critical materials were denied contractors.[6] From that point, the department faced a dilemma. It must maintain its highways for the job of transporting vital military, industrial and farm cargoes at the same time that its resources dwindled.

Kansas was feeling the pressure of mounting traffic. Routes between Wichita and its airport and aircraft factories were jammed with cars and trucks. As early as February, 1941, military traffic was so thick around Fort Riley that U.S. 40 was clogged at Junction City and heavily congested between Topeka and Fort Riley. Not only was the state's chief east-west route becoming almost impassable for vital cargoes, but townsfolk along U.S. 40 were terrified that tourists would avoid the highway, especially when high-handed brass at Fort Riley sometimes closed U.S. 40 altogether to clear traffic at the fort. When the Army demanded and won a by-pass routing traffic on U.S. 40 around Fort Riley, townsfolk were still less pleased, for westbound tourists tended to follow the by-pass to U.S. 24 instead of returning to U.S. 40 at Junction City.[7]

Salvation appeared likely in summer, 1941, when Congress approved a bill to provide extra funds to the states for important military routes. With two Army posts within its borders, Kansas expected to receive enough emergency funds to

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2 Minutes of the Kansas State Highway Commission, v. 12, April 19, 1943.
3 Minutes, v. 10, August 28, 1940 and October 1, 1940.
4 Kansas City Star, March 29, 1942, in Good Roads Clippings, v. 2, 1925-1942, KSHS.
5 Twelfth Biennial Report of the State Highway of Kansas, To June 30, 1940 (Topeka: Kansas State Printing Plant, 1940), p. 14.
6 Thirteenth Biennial Report of the State Highway Commission of Kansas, To June 30, 1942 (Topeka: Kansas State Printing Plant, 1942), p. 17.
7 Topeka Journal, n.d., Topeka Capital, February 8, 1941, Topeka Capital, May 24, 1942, in Good Roads Clippings, v. 2, 1925-1942, KSHS.

build a four lane route between Wichita and its defense plants, to make U.S. 50 a four lane road between the Missouri state line and its intersection with U.S. 69 in Johnson County and to try an experiment along U.S. 40. That experiment, known to its Kansas enthusiasts as the "hot shot," would reroute U.S. 40 along a nearly straight line from Topeka to Junction City, by-passing the fort and most towns along the way. Not only would the "hot shot" serve the nation's defense but Kansas would acquire an up-to-date, high speed roadway for its busiest cross-state connection at largely federal expense.[8]

Predictably, the U.S. 40 towns from Junction City west were gleeful at the prospect while the eight villages to be by-passed held protest meetings. "Topeka businessmen, the politicians, the cement trust and the contractors are trying to shove [this project] down our throats," declared the protest's leader. "We're going to fight this thing till we whip it."[9] According to the Kansas City Star in 1941, protesters directed their anger toward the wrong targets. Federal aid, particularly in a military emergency, gave Washington a major voice in Kansas highway decisions for which the Kansas State Highway Commission received the blame, according to the Star. The U.S. 40 beeline and the widening of U.S. 50 in Johnson County were just two products of BPR's desire to straighten and widen major routes, regardless of the effect on by-passed towns. "Locked in the files of the federal bureau of roads and the highway commission's planning division are other proposals that would cause many a Kansas town to organize an expedition to sack the statehouse," warned the Star. Among those cited were a rerouting of U.S. 24 to bypass Lawrence, a U.S. 59 by-pass of Iola, Humboldt and Chanute, and a straight shot on U.S. 40 to the Colorado line by-passing Abilene, Salina, Ellsworth, Hays and Russell. The exigencies of war might provide BPR an excuse to execute its plans, the newspaper warned.[10] President Roosevelt vetoed the first emergency highway bill as a Congressional pork barrel in August, 1941, but he failed to quell the agitation over the U.S. 40 "hot shot." Its Kansas supporters simply pressed their representatives in Washington to introduce a new bill that would win the president's signature. This Congress managed to do in November, 1941.[11]

The Defense Highway Act of 1941 recognized both that a sound highway system was indispensable to national security and that paying for such a system would pose an unfair burden for the states. Consequently the act provided extra federal funds for costs of right of way and construction of two types of essential roadway. One provision supplied 100 percent federal funding for access routes to military installations, defense plants and the locations of vital raw materials -- sites already thronged with more traffic than local roads and local resources could manage. The second category had momentous implications for the future. The War Department was authorized to designate a

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8 Topeka Journal, n.d., Kansas City Times, June 26, 1941, in Good Roads Clippings, v. 2, 1925-1942, KSHS; Kansas City Times, July 9, 1941, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

9 Kansas City Times, July 17, 1941,in Good Roads Clippings, v. 2, 1925-1942, KSHS.

10 Kansas City Star, November 30, 1941, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

11 Topeka Journal, November 21, 1941, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS and Lawrence Journal-World, August 8, 1941, in Good Roads Clippings, v. 2, 1925-1942, KSHS.

"strategic network of highways," in effect an interstate system of those roadways most vital to the nation's defense. Federal funds would cover partial costs of right of way acquisition and 75 percent of construction costs.[12]

By mid-December, 1941, the War Department had chosen a 1,400 mile network of strategic routes in Kansas, including all of U.S. 81 across the state; U.S. 50 and 50S from Colorado to Kansas City; all of U.S. 66 across the state's extreme southeastern corner; U.S. 75 from Topeka to the Nebraska line; and U.S. 177 from South Haven to the Oklahoma border. Two more strategic routes were pieced together from several highways. One followed U.S. 69 south from Kansas City to Crestline, in the state's vital mining region, then followed K-26 to U.S. 66. The second took the line of U.S. 24 from the Colorado border east to its intersection with U.S. 83 and thence south on U.S. 83 to Oakley, where the route turned east on U.S. 40 and U.S. 24 to Kansas City. The Kansas Highway Department's traffic surveys showed that these routes already carried the heaviest traffic. Despite the Kansas City Star's warnings, no alterations in route were proposed for these highways, but their designation by the War Department as strategic ensured that they would take first place in future highway planning.[13]

So far all this had been so much preparation for potential danger. Once Japan attacked Pearl Harbor on December 7, 1941, and the nation officially entered the war, the emergency -- and the attendant headaches for highway officials -- was unmistakably real. A federal directive promptly banned construction of any federally funded highway projects but those necessary to defense or the health and safety of the American people. Getting the Army or Navy to certify a project as vital became more difficult as the government reserved resources for the war effort; and in April, 1942, a conservation order went into effect requiring the War Production Board to approve state-funded projects as well.[14]

Within a few months after Pearl Harbor, the highway department had adopted an "all-out-for-war" policy, shelving nearly all its road building plans for the duration and putting its construction energies into strategic routes, access roads, and the few projects underway before the coming of war. Construction crews worked furiously putting in access roads where defense installations sprang up, sometimes overnight it seemed, in once quiet towns. Traffic had increased by as much as 600 percent at some hours around Eudora's powder factory, Pittsburg's ammonium nitrate plant, Parsons' ordnance plant and tiny Pauline's bomber base. Likewise, sheer congestion of vehicles threatened a sort of sabotage of the war effort until multi-lane access routes were built to the aircraft plants in Wichita and Kansas City's Fairfax District.[15]

Sometimes local citizenry found the changes war brought difficult to accept. After eight years of stiff resistance by its business interests, Olathe resigned itself in 1942 to seeing U.S. 50 rebuilt as a four lane highway between

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12 Kansas City Times, December 25, 1941, in Good Roads Clippings, v. 2, 1925-1942, KSHS.

13 Thirteenth Biennial Report, p. 21.

14 Ibid., pp. 17-20.

15 Thirteenth Biennial Report, pp. 31-33; Topeka Journal, December 22, 1941, Kansas City Times, March 31, 1942, in Good Roads Clippings, v. 2, 1925-1942, KSHS.

Gardner and Kansas City. Local fears that the speedway would divert Olathe's trade gave way to patriotism, or in this case the necessity of accommodating the traffic between Kansas City and Olathe's new naval air station. On the other hand, hopes for a "beeline" between Topeka and Junction City faded soon after Pearl Harbor. Despite its high priority as a defense project and BPR's approval of it, Governor Ratner announced that he would approve it only if the military ordered the project. He would be happy to spend $3 million of Kansas money to advance the war effort, the governor declared, but he refused to build a "luxury highway" to benefit a few west Kansas towns. Residents and travelers across central Kansas had to content themselves with a long, troublesome detour around Fort Riley and the prospect of a straightened route along K 10 from Alma to Topeka.[16]

Getting any sort of roadwork done, whatever its priority, became nightmarish ordeal. One by one the directives came down from Washington freezing cement, steel, lumber, asphaltic products -- the essential ingredients of road building. The War Production Board would unloose its grip on those materials only for city, county or state projects whose delay would impede the war effort. But the struggle to get applications approved wrapped yards of red tape around the highway department, which processed the applications of all governmental units in the state and dealt with the myriad of federal agencies and armed services whose stamp of approval was necessary. Once given the go-ahead, contractors waited for weeks for the snarled rail system to deliver coveted materials.[17]

If the materials shortage created headaches for the highway department, lack of human resources caused migraines. Contractors were hard put to keep laborers on a highway project when defense plants offered fatter wages. Nor was it easy for contractors to resist the profits and patriotic satisfaction to be had in building the war plants, air strips, or barracks needed for mobilization. Beginning in 1940 the highway department agreed to release several contractors and their equipment from state highway projects to work on war-related construction. Some $2 million in state projects sat incomplete and crumbling in 1944.[18]

The highway department's own offices emptied quickly as its employees enlisted or answered the draft. Over a hundred more of the department's engineers who were not in uniform had to be loaned out to work on war-related construction. The department could muster little more than skeleton crews from division office to headquarters. Seventeen women did take the place of draftsmen who had gone into the service, but the highway department resolved not to fill most vacant positions. Because its employees had been given leaves of absence to enter the military, jobs were left open for returning vets. In any case, replacements were not to be found in the general manpower shortage. Remaining staffers simply doubled their work load. Fortunately the highway

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16 Kansas City Star, March 17, 1942, Kansas City Times, March 12, 1942, in Good Roads Clippings, v. 2, 1925-1942, KSHS.

17 Thirteenth Biennial Report, pp. 18-20; Kansas City Times, August 29, 1941, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

18 Topeka Journal, March 30, 1943, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS; Thirteenth Biennial Report, p. 18; Fourteenth Biennial Report of the State Highway Commission of Kansas, To June 30, 1944 (Topeka: Kansas State Printing Plant, 1944), p. 7.

department was able to make a smooth transition of leadership when State Highway Engineer R. B. Wells died and Ross C. Keeling was promoted from Construction Engineer to State Highway Engineer in December, 1941.[19]

Despite having few construction projects to tend, this overworked remnant had more than enough to do. The Planning Department, for example, turned out several thousand maps in just a few months for military and federal authorities. Because the War Department issued work orders without prior warning, the tiny Construction Department (reduced from 437 full and part time employees in 1940 to 49 men in 1944) worked like dervishes, springing into action on a project as soon as the military brass sounded an alarm. The Design Department taxed its collective brains to devise highway structures which, like the barrel arch bridge, used a minimum of concrete or steel. What sustained these exhausted men and women was their sense of how important their labors were to national security.[20] Even the Right of Way Department pledged itself to "full cooperation in the war program with fair but not foolish compensation" and called its property settlements "Democracy at Work."[21]

Among all these sorely tried crews, the Maintenance Department suffered most. Finding so much as a barrel of asphalt to patch a pothole was frustrating. Even then, maintenance engineers had neither crewmen enough to make repairs nor the gasoline to get crewmen to the job. With replacements for worn out equipment unavailable, maintenance staff took to patching, mending and jerry-rigging machinery just to keep the relics in service for the duration. Meanwhile the traffic around defense installations pounded roadways to bits and extra-heavy truck cargoes and military caravans ground up major highways.[22] The rest of the state's system simply crumbled with neglect, while the frustrated maintenance engineers "started going around in circles and talking to themselves," a reporter commented.[23]

By an ironic quirk, the war did benefit the highway department's finances. Gasoline rationing caused the state's gas tax revenues to plunge, yet what highway revenues the state collected accumulated in the vaults. There were just too few projects and salaries. By war's end, the highway department was in the black with a small but useful balance of $10.8 million.[24] This and much more would be needed in the years to come, for, in mobilizing to help defeat the Axis, Kansas had well nigh exhausted its stock of streets and highways.

Because Congress recognized as early as 1941 that the states' highways were likely to deteriorate from neglect and heavy use during a protracted war effort, the Federal Aid Highway Act of that year ordered the states to have reconstruction plans ready to go as soon as peace returned. Even more important in

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19 Thirteenth Biennial Report, pp. 20, 41; Fourteenth Biennial Report, p. 11; Topeka Capital, November 27, 1941, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

20 Thirteenth Biennial Report, pp. 32, 41, 47; Fourteenth Biennial Report, p. 28.

21 Thirteenth Biennial Report, p. 79.

22 Fourteenth Biennial Report, p. 32.

23 Topeka Journal, August [?], 1942, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS.

24 Automotive Safety Council, Highway Needs of Kansas, A Report to the Kansas Highways Fact-Finding and Research Committee, 1948, p. 34.

Congressional calculations, a rebuilding program would provide jobs. The New Deal had failed to end depression by 1939, and Kansas highway officials agreed with the Washington experts that wartime prosperity would be temporary. Road construction jobs would help shorten the inevitable unemployment lines once veterans returned to the job market and the defense industries closed down.[25]

Potential joblessness still figured in highway planners' thinking in 1944, but wartime mobilization was making it clear that something besides "make-work" projects and simple replacement of worn roadways was in order for Kansas and the nation. Whether peace brought poverty or plenty, Kansas planners expected to see heavier transports and faster cars take to highways which, in their existing state, were too narrow, twisted, and deteriorated to handle them. Traffic clogs in cities made city driving perilous and threatened to close off vital shipping should the country need to mobilize for some future war. Decay of state and county rural routes would make it harder for farmers to preserve wartime gains in farm income.

Similar thinking in Congress produced landmark highway legislation, after a sharp debate over priorities, in 1944.[26] The Federal Aid Highway Act of that year tried to satisfy several highway users' demands through an integrated system of funding. For farmers, who had been promised much and given little by way of farm-market routes, the act put the Federal Aid Secondary [F.A.S.] System on more solid footing by setting aside funds for secondary and feeder roads and by ordering state highway departments to cooperate with counties in selecting and building secondary roads.[27] Satisfying though this victory was for rural interests, however, the farm lobby lost several key battles to urbanites.

The formula for apportioning federal funds to the states was revised to give greater weight to population and so more money to populous states whose highway systems were already better developed than those in the farm belt.[28] More important, the act set aside a considerable fund for cities to use in improving streets (connecting links) and constructing urban by-passes. Of the several lessons drawn from the wartime experience, one had made particular impact on highway planners and AASHO members: that cities were both the most costly bottlenecks in the free flow of traffic and the potential locus for most post-war development. The rural phase of highway construction was over, according to G. Donald Kennedy of AASHO. Highway policy must shift focus to the integration of city streets and highways, for, as a BPR official stated, "the city is the reason, origin and destination of all heavy traffic." Thomas MacDonald thought that urban-centered regional highway networks should take precedence even over transcontinental systems.[29]

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25 Thirteenth Biennial Report, p. 21;Fourteenth Biennial Report, pp. 7-8.

26 Mark H. Rose, Interstate Express Highway Politics, 1941-1956 (Lawrence: The Regents Press of Kansas, 1979), pp. 15-28.

27 Fifteenth Biennial Report of the State Highway Commission of Kansas, To June, 1946 (Topeka: Kansas State Printing Plant, 1946), pp. 20-21.

28 Topeka Capital, September 10, 1944, in Good Roads Clippings, v. 3, KSHS. The Kansas State Highway Commission objected to the funding formula giving greater weight to population but resolved to support the legislation on AASHO's recommendation, concluding that this bill was better than no bill at all. See Minutes, v. 12, April 19, 1943.

29 "Policies on Highway Construction," Kansas Government Journal 29 (January, 1943), p. 48. See also Rose, Interstate, pp. 1-26.

If city streets were to be the connective tissue in such a network, municipal governments must have help in constructing them. By providing that help, the 1944 act gave federal highway planning a pronounced urban emphasis. For the first time, a pool of federal aid was set aside for improvement of specific city streets as connecting links and for building by-passes around congested urban centers. Some 30 percent of the funds authorized were dedicated to cities over 10,000 population, in addition to the share of regular appropriations for the federal aid system that each state would normally spend on connecting links. Moreover, prior regulations had allowed state highway departments to pay only for construction of urban highway routes of the same type and width as the highway itself; additional traffic lanes, higher type surfacing and other improvements necessary to handle a combination of urban and through traffic came at the city's sole expense. With the 1944 act, however, federal money could be used for construction "curb-to-curb."[30]

For those concerned with national defense and rapid, long-distance transport, the 1944 act established a National System of Interstate Highways. Something of the sort had been under consideration since the 1930s when American highway experts had seen Hitler's engineers at work on the Autobahn system. In 1939, however, Thomas MacDonald had advised Congress that what was good for Germany was not necessarily good for America. Instead of putting a new system of expressways under wholly federal construction, MacDonald recommended upgrading a 40,000 mile network of existing arterials under the federal-state partnership that had served the country so well since 1916.[31] The act of 1944, by incorporating MacDonald's scheme, left to the states the responsibility to select routes to be included in the interstate system, with BPR and War Department approval. In order "to serve the national defense" the system must link major metropolitan and industrial centers and connect with key international highways.[32]

The act provided no additional funds for constructing an interstate system; the states must build their portions of it from their regular allotments of federal highway money. Proposals to increase the federal share of interstate construction from 50 percent to 75 percent foundered on the nation's huge war debt, rural anger that the whole kitty was not to be spent on farm roads, and some engineers' fear that a bigger federal contribution would mean a larger federal role in planning. The act did provide federal money for acquiring right of way (something the government had never done except under the Defense Highway Act of 1941) and earmarked 1.5 percent of a state's allotment for planning costs.[33]

The Federal Aid Highway Act of 1944 authorized $500 million for expenditure on the four highway systems over three years. Kansas expected to receive $11 million a year if the state could muster its equal match. In October, 1945, a

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30 Highway Needs of Kansas, p. 17; "Federal Highway Aid," Kansas Government Journal 30 (June, 1944), p. 22; "Report on the County Secondary Road Program," Kansas Government Journal 34 (January, 1948), pp. 51-53.

31 Department of Agriculture, Bureau of Public Roads, Toll Roads and Free Roads, House Document No. 272, 76th Congress, 1st Session, 1939.

32 Rose, Interstate, p. 26; Highway Needs of Kansas, p. 21.

33 Rose, Interstate, pp. 15-44; Topeka Capital, September 10, 1941, in Good Roads Clippings, v. 3. KSHS; Fifteenth Biennial Report p. 14.

joint resolution of House and Senate saluted the Allies' military victory by making the 1944 act operative and, with the wartime ban on non-essential road projects already lifted by new President Harry Truman, the states went into action.[34] The Kansas State Highway Commission had in June, 1945 selected the routes it hoped to incorporate in the interstate system. The commissioners admitted that they had no knowledge of the U.S. defensive requirements, but Kansas deserved more than the single east-west and north-south routes provided for each state in the federal act. They recommended seven highways instead. The entire lengths of U.S. 40 and U.S. 24 were included; otherwise these were the same routes that had been designated in the wartime strategic network.[35]

Over the next year the proposal was scrutinized by a Congressional committee, the Army, the Navy and BPR. Military considerations had to come first, of course, but Kansans hoped to garner more than two interstate highways, for the possibility remained that Congress might increase the federal share of construction costs. Disappointment and consternation erupted when BPR discussed its selections with the commission in May, 1946. The state would be given a single east-west interstate route that would follow U.S. 40 from Kansas City to Oakley, then bear north on U.S. 83 to U.S. 24 and thence westward to the Colorado border -- the same route designated for the strategic network four years earlier. The state's north-south interstate would pass diagonally along U.S. 50 from Kansas City to Newton, where it would turn south on U.S. 81 through Wichita to South Haven. From South Haven it would follow U.S. 177 to Oklahoma. Because the interstate connection designated between St. Louis and Tulsa crossed the southeast corner of Kansas, technically the state did receive a third interstate route -- the short length of U.S. 66 and 166 from the Missouri to the Oklahoma lines via Baxter Springs. This, too, had been a wartime strategic highway. When BPR gave final approval to a 37,700 mile interstate system in 1947, 731 miles of it lay in Kansas.[36]

Because the funding formula made no distinction between interstate routes and the rest of the federal aid system, the benefits of having an interstate designation existed initially on paper. The highway department simply returned to business as usual when the new highway act became operative in 1945 and within nine months had contractors at work on over $17 million worth of projects on the state system. Having stopped all construction since 1942, that was a heady pace but nowhere near the level required. A rough estimate showed that Kansas needed $267 million to bring its state highways, secondary roads, and urban routes to standard. That meant finding additional state revenues both for construction and for the much costlier job of planning sophisticated structures and efficient networks that modern traffic demanded.[37]

The highway department's post-war rebuilding program was stymied in other ways. In fact, the department was beginning to suffer the penalties of national prosperity. When American industry turned from producing war material to making goods for the consumer market, peace brought boom instead of bust. Employment and wages stayed high; construction by the private and public sectors mushroomed. As a result, labor costs for road-building pushed upward and the prices for

34 Fifteenth Biennial Report, pp. 12, 22.
35 Minutes, v. 13, June 5, 1945.
36 Minutes, v. 13, May 22, 1946; Highway Needs of Kansas, p. 21; Rose, Interstate, p. 31.
37 Fourteenth Biennial Report, p. 5.

construction materials -- inflated earlier by wartime scarcity --just kept climbing in the post-war years. By 1948, for example, a bridge cost twice as much to build as it had in 1940, and certain materials such as steel remained in desperately short supply.[38]

Booming construction and industrial development required the services of engineers, who now found themselves in a seller's market. Scores of department personnel who had intended to return to their jobs after their military service found 25 percent to 50 percent higher salaries working for other states' highway departments or private firms. Other department staffers went to work planning highways or building reclamation or flood control projects for federal agencies. Year after year, the highway department pleaded for higher salaries and a retirement plan so that it might at least compete for fresh graduates of the engineering schools, but without success. By training its own raw recruits, in some cases under the G.I. Bill, the department managed to fill its essential requirements for technical personnel, but it remained chronically understaffed for two decades.[39]

Those dedicated men and women who remained in highway department employ labored under difficult conditions. The Masonic Temple where the department made its headquarters had never been intended as office space. The building's second hand elevator and fiberboard partitions were the very ones the Santa Fe Railroad had left behind when it had vacated the premises in 1930. As the highway department expanded, it had added more fiberboard cubicles and laid wooden flooring to create upper stories. The resulting work spaces were cramped, airless, and dimly lit. In summer, sweat dripped from sweltering employees onto drawings or tracings. A fire would bring highway construction to a standstill by destroying records and plan files, but, despite the Topeka Fire Chief's indignant protest in 1946 that the Masonic Temple "violated every safety principle of the Topeka building code," the Department was refused a new headquarters building.[40]

There was much in which the highway department could take satisfaction in the immediate post-war years. Although the provisions of the Federal Aid Highway Act of 1944 covered only a 12,000 mile secondary road system for the state, the Kansas legislature in 1945 established a 20,000 mile system of secondary roads (raised to 25,000 miles in 1947) and levied an additional one cent gasoline tax for use on the state's secondary and primary systems. In May, the highway department created a Secondary Roads Department, one of the first in the nation, and in October put former District Engineer Walter Johnson, at its head.[41] For six weeks in mid 1945 the staff of the new organization hit the road to evangelize among the various counties, explaining the legal, technical and financial ramifications of the new legislation in 22 meetings. By the end of the year, all 105 counties had designated their portions of the system, and BPR had approved 14,000 miles of it within another six months.[42]

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38 Fifteenth Biennial Report, p. 13; Sixteenth Biennial Report of the State Highway Commission of Kansas, To June, 1948 (Topeka: Kansas State Printing Plant, 1948), pp. 13, 19.

39 Fifteenth Biennial Report, pp. 14, 44.

40 Ibid., pp. 6-11.

41 Fifteenth Biennial Report, pp. 12 and 14; Topeka Capital, May 12, 1945, in State Highway Commission Clippings, v. 2, 1944-1955, KSHS.

42 Fifteenth Biennial Report, pp. 20-22.

The Secondary Roads Department acted as liaison between BPR and the counties. Its staff assisted the counties through the preliminary steps of a project by supervising the preparation of plans, providing field and office checks of plans and preparing agreements for right of way acquisition. Once a county had let a contract, the highway department monitored and inspected the work as it would for a state highway project. Though some counties were less prompt than others to take advantage of the funds now available, Kansas had nearly 700 projects approved and 439 under contract in 1948.[43]

The thousands of miles of new, chiefly light-type surfacing and scores of new bridges this beaver-like effort produced had obvious benefits for farm folk. But the secondary roads program affected highway matters in Kansas in other ways. For one, the program knocked down some of the old fences between Topeka and the county seats. Walter Johnson reported in 1948 that the program had generated enough local goodwill that his staff was kept busy speaking before meetings of county engineers and local officials, Chambers of Commerce, farm organizations, and booster clubs across the state. An average of seven visitors per day called at his headquarters to talk about farm roads.[44] In the past, county commissioners, township boards and county engineers had seen the State highway department as a rival for state funds and its engineers as meddlesome, high-handed technocrats. Now the close and increasingly friendly cooperation of the two in planning and building secondary roads closed the gulf -- largely because of the Secondary Roads Department's "diplomacy," a university study concluded.[45]

One outcome of this rapprochement, Johnson anticipated, would be the upgrading of counties' planning, engineering and administrative expertise. Many counties, however, had very limited engineering capabilities at their disposal. In 1945, over half of them began using consulting firms to prepare project plans.[46] Their patronage gave an added boost to a fledgling consulting industry in the region and provided the state highway department's first opportunity to work extensively with some of the same consulting firms it would later call on when its own shortage of engineers grew desperate.

As had been the case so often in the past, the highway department made significant advances in the technical aspects of highway development out of sheer necessity. By 1944, the Design Department was already making extensive use of aerial photos to locate roads and study drainage and geological problems -- saving countless manhours in preliminary field surveys by its understaffed crews. The department already stood far in advance of the rest of the country in using geological surveys. It had been one of the first states to hire a highway geologist in the 1930s. By 1948, when just a handful of state highway departments employed two or three geologists, the Kansas department kept 15 geologists at work under their chief, Seward "Tiny" Horner. Their findings proved invaluable at nearly every step from design to maintenance. Knowing what geological formations lay beneath the locations for bridge piers or roadbeds

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43 Fifteenth Biennial Report, pp. 20-22; Sixteenth Biennial Report, p. 23.

44 Sixteenth Biennial Report, p. 22.

45 Clarence J. Hein, State-Local Relations in Kansas: The State Highway Commission, Special Report #60, Government Research Center (Lawrence: University of Kansas, 1954), pp. 5, 27-34.

46 Fifteenth Biennial Report, p. 22.

eliminated potential problems at the design stage, for example, while information about groundwater allowed designers to avoid troublesome seepage. Geologists' data alerted the Construction Department in advance to the type of excavation problems that lay ahead for any given project and helped the Maintenance Department reduce damage from seepage.[47]

The reputation of the department's materials lab at Kansas State College and its soils lab in Topeka was so high that the labs tested materials for military installations in several states during the war.[48] Pioneering work with soils surveys to improve designs of base course and bituminous surface paid off in tremendous economies. After six years of development, the soils lab's success with its triaxial compression test led to publication of a report in 1948, in cooperation with the Highway Research Board, on the design of flexible pavements. The manual explained how to determine whether soil of higher grade must be added to a base and how to predict the performance of a soil base when wet, the likeliest cause of failure of a base. Because the Kansas engineers' methods applied to a variety of soils and climatic conditions, BPR and 20 other states adopted the test and engineers from other countries began studying it.[49]

The Construction Department's dogged battle with inflated costs, expensive labor and scarce materials would have been all the harder were it not for improved efficiency by contractors. The frantic pace of wartime construction had taught the region's contractors more efficient techniques and spurred the development of labor-saving equipment. New construction firms had emerged to take advantage of the wartime and post-war building boom so that competition as well as cost-effectiveness helped keep bids within reason.[50]

Those staffers in charge of allocating resources and planning highway development grew equally sophisticated. Acting as "guinea pig" for BPR, the highway department had been the first in the nation in 1940 to compute the total dollar investment in its highway system (an eye-popping $145 million) and to set up a ledger to monitor depreciation of that investment.[51] By building on that data and its increasingly sophisticated measures of traffic flow, inventories of roads and bridges and calculations of the life expectancy for a given road, the highway department could produce a fairly comprehensive picture of the state of the roads in Kansas. Unfortunately, having that picture at hand did little good unless it could be impressed on the minds of Kansas legislators and voters, for, despite a healthy level of construction since 1945, Kansas had a long way to travel to replace its worn-out highways.

An opportunity to mobilize public opinion came in 1947 when the state legislature created a Kansas Highways Fact-Finding and Research Committee. Governor Frank Carlson appointed 18 citizens to sit on the committee along with

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47 Fourteenth Biennial Report, p. 12; Seventeenth Biennial Report of the State Highway Commission of Kansas, To June, 1950 (Topeka: Kansas State Printing Plant, 1950), p. 17; Interview with John McNeal, Director of Planning and Development (retired), January 8, 1986.

48 Fourteenth Biennial Report, p. 19.

49 Sixteenth Biennial Report, p. 38; Topeka Capital, March 28, 1948, in State Highway Commission Clippings, v. 2, 1944-1955, KSHS.

50 Seventeenth Biennial Report, p. 17.

51 Topeka Capital, December 29, 1940, in State Highway Commission Clippings, v. 1, 1927-1944, KSHS; Twelfth Biennial Report, p. 96.

two members each from the Kansas House and Senate. They were directed to dig out the facts necessary for developing a "useful" network of highways which, Carlson urged, should also be comprehensive enough to incorporate secondary and township roads as well as state routes. In the legislature's parlance, a "useful" network would be one based on efficient advance planning, with emphasis on lengthening the life of highways and bridges and improving safety and traffic management.[52] That was a tall order, but, in fact, the committee delegated the detailed labor. The Legislative Council prepared a fiscal study while the Automotive Safety Council worked shoulder-to-shoulder with the highway department's planners to compile a highway needs assessment from data the department had been collecting since 1936. The result was a slick, eye-catching publication in 1948 that made masses of old and new data digestible and the highway problem unmistakable for Kansans.

In time honored fashion, Highway Needs of Kansas cited the troubles of the average farmer, who still trucked his produce to market on unsurfaced roads, as a rationale for highway improvements. But rural Kansas had changed in the last 15 years, and highway planning would have to accommodate those changes to be effective. Farmers had celebrated good harvests and the post-war boom in farm prices by buying more vehicles. The average producer now used the highways 97 times a year to market his crops. At the same time, increased use of trucks instead of rails to haul wheat and livestock made the Kansas farm economy all the more dependent on good rural highways.[53]

Spatial rearrangement of rural Kansas meant that the pattern of that rural traffic had been reoriented. With the increase in size of the average farm from 275 acres in 1935 to 345 acres ten years later, fewer farmsteads needed to be reached by roads. Consolidation of schools and churches in the countryside tended to concentrate rural traffic on fewer routes.[54] Thus two thirds of rural traffic traveled the state system while nearly 10,000 miles of Kansas roadway carried fewer than 25 vehicles per day. Even farmers would be badly served if the state continued to spread its resources over so many useless miles.[55]

Vital though the farmer was to the state, several needs studies found urban traffic problems more pressing. On the one hand, there were simply more city-dwellers to be served, for, as one of the few plains states to recoup most its depression era population loss, Kansas had seen most of this return migration go to urban areas. As early as 1944, over 90 percent of the state's population lived within two miles of a tiny portion (14 percent) of the state's total highway mileage. Urban residents, who made up nearly three-fourths of the travelers on the state system and almost half those using the county roads, paid the lion's share of motor vehicle registration fees and fuel taxes; yet, less than half the amount paid into state highway coffers by residents of large

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52 Highway Needs of Kansas, pp. 8-9; Governor Frank Carlson, "Highway Study Program Gets Under Way," Kansas Government Journal 33 (July, 1947), p. 24.

53 Highway Needs of Kansas, pp. 7, 39-49.

54 Ibid., pp. 39-49.

55 John Harbes, "Some Kansas Highway Transportation Facts," Kansas Government Journal 30 (August, 1944), pp. 11-12; Wichita Morning Eagle, November 11, 1947, in Good Roads Clippings, v. 3, KSHS.

cities came back to their home towns for use on connecting links.[56] Simple justice and plain sense demanded a closer match of expenditure with concentrations of traffic and population.

The connecting links themselves bedeviled townsfolk as cities which had fought to bring highways into their central business districts now hoped to be rid of them. Worried merchants watched local drivers thread their way among the trucks and tourist traffic clogging downtown streets and reckoned that a good many went home in disgust -- without stopping to make a purchase. In cities like Wichita, where 15,000 drivers competed each day for 700 curbside parking spaces, the cruise for a parking stall became a frustrating commonplace. Outside the central business districts, hospital patients were wakened by grinding gears, school children darted through heavy traffic, and homeowners cursed the noise and smells wherever highway routes traversed residential areas. Meanwhile, city fathers found the connecting links deteriorating faster than they could be maintained under the load. For their part, tourists and drivers of commercial vehicles dreaded the passage through each town, especially on Saturdays. "Making good time" had become a mania for America's speed-conscious drivers, who found that city speed limits, parking shoppers, and backing trucks slowed their progress to a crawl.[57]

Some cities experimented with one-way streets, off-street parking lots and parallel parking to free lanes to through traffic, but by-passes held greater promise. Ottawa, Kansas, first adopted one back in 1936 after a gasoline transport truck collided with a lamp post, caught fire and burning fuel flowing along gutters set an Ottawa neighborhood ablaze. Soon other towns proposed to bar transport of flammables (over the strenuous protests and lawsuits of petroleum and trucking interests), and in 1939 the Kansas State Highway Commission established procedures allowing cities to post city, business and truck routes.[58] Even truckers warmed to the idea of by-passes once wartime congestion impeded them, while leaders of the state's larger cities yearned to shunt destructive, hazardous commercial vehicles and through traffic to the fringes and reserve downtown streets for those who had business there. An urban by-pass did not come cheap, however. Unless the state could direct more of its resources to construction, the entire population stood to suffer the consequences of stagnation of major commercial centers and their abandonment by interstate motorists and transporters.

One additional urban phenomenon attracted the attention of the needs assessment of 1948. Between 1930 and 1940, Topeka's suburban population grew five times faster than its urban population, while growth of Wichita's suburbs outpaced the city proper by sixteen to one in the same period. The post-war trek to the suburbs multiplied the suburbanization rate for both those cities and began transforming Johnson County's villages into bedroom communities. Not only must highway planners provide commuter arteries to tie ex-urban fringes to their urban cores, the 1948 study reported, but heavy industry had begun a

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56 Harbes, Kansas Government Journal; "Committee on City Streets and Highways," Kansas Government Journal 34 (August, 1948), pp. 37-38; Highway Needs of Kansas, p. 53.

57 Highway Needs of Kansas, pp. 65-68; D. J. Fair, "City Cooperation on Highway Routes Thru Cities," Kansas Government Journal 27 (October, 1941), pp. 16-19.

58 Highway Highlights 1 (August, 1936), p. 4; Minutes, v. 10, June 21, 1939.

suburban flight of its own by locating plants in places like Newton or Kansas City's Fairfax District. Each reorganization of urban space must be knit together by a newly designed highway network.[59]

Finding the dollars to build roadways to suburbia was one problem the state legislature might help solve, but there were other difficulties with suburban development that needed the legislature's attention. Right of way agents discovered one when they began acquiring right of way for the widening of U.S. 50 through Johnson County. Instead of a handful of farmers, agents dealt with owners of hundreds of tiny parcels, many of which sported the bungalow and bluegrass lawn the suburbanite held dear. Consequently, the parcels had a higher monetary value than what was reflected "on the books" in assessed valuation. Householders had to be dispossessed of their homes in the midst of a housing shortage. The situation stirred a legal wasp's nest and propelled an "avalanche of mail, telegrams, and personal inquiry that has absorbed almost the exclusive time of two members of the department," a report lamented in 1946.[60] Two years later, highway department attorneys, who still faced 50 appeals cases from this one project, noted ruefully that, "behind the beautiful new Highway 50, through Johnson County, lies a considerable amount of legal work."[61] To prevent anymore such entanglements, the Kansas State Highway Commission wanted a "more workable condemnation law" for acquiring right of way in urban and suburban areas.[62]

Even more, the commission wanted a controlled access law, for improved highways created a kind of suburbanization. By the term "ribbon development" the experts prettified what was, in fact, an unsightly mess of diners, motels, gas stations, curio shops and drive-in theaters that appeared beside a highway before the pavement dried. Signs reduced scenery to "a glimpse of green between billboards." These strip developments were also dangerous. Customers slowed traffic or risked collision at each entrance and exit; signs, particularly the neon variety, obstructed drivers' vision. Yet, after a near decade of asking, the commission still lacked legal authority to control access to major roadways and to regulate ribbon development. Bringing Kansas highways up to standard, the 1948 needs assessment discovered, would take legal muscle as well as engineering wits.[63]

Much of this was heady stuff, promising a bold new future once Kansans readjusted their highway priorities. After all, the number of vehicles registered in Kansas multiplied by nineteen between 1936 and 1947 and the number was expected to reach 829,000 in 1970. Such a population-on-wheels would surely insist on the most up-to-date of highway facilities. Unfortunately, the facts on highway finance and the condition of the state system made dismal reading. In order to meet current construction standards, all but the most recently constructed miles in the state system would have to be rebuilt. Because that was clearly impossible, the fact-finding committee lowered its sights and established criteria for a "tolerable" road. Even then an inventory found that 80 percent of the state mileage and 1,250 bridges and grade separations needed

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59 Highway Needs of Kansas, pp. 47, 50.
60 Fifteenth Biennial Report, pp. 27-28.
61 Sixteenth Biennial Report, p. 57.
62 Eighteenth Biennial Report of the State Highway Commission of Kansas, To June 30, 1952 (Topeka: Kansas State Printing Plant, 1952), p. 6.
63 Highway Needs of Kansas, pp. 103-104.

improvements to qualify as tolerable. Total cost for correcting deficiencies and providing 102 miles of four lane highway came to nearly a half billion dollars, in the committee's estimation, and would take much longer than the ten years originally projected. The rise in Kansas highway fatalities to fifth rank in the nation in 1948 illustrated how costly delay would be.[64]

Stretching reconstruction over 20 years would reduce the average yearly cost to the still-daunting sum of $89 million from state, county and local resources. The Legislative Council found that 40 percent of total highway costs had been financed from property taxes since 1930 and concluded that property owners carried a sufficient burden. Because Kansas now collected less in license fees and fuels tax per vehicle than any other state, the council calculated that highway users could afford to put up the additional revenues for reconstruction, as they would be required to do for any public utility. Tapping gasoline purchasers alone, however, meant pushing the gas tax to seven or eight cents, and, because one half the state legislatures in the country had defeated fuels tax increases in 1947 and 1948, it seemed wildly improbable that the Kansas legislature would approve a two fold hike. Consequently, the Legislative Council outlined a four pronged proposal. By raising vehicle registration fees (still at their 1933 "Brinkley" level), increasing the ton mile charge for motor carriers, and eliminating tax exemption frauds with a return to the refund system for farmers, the state could finance a twenty year construction program with a reasonable and acceptable increase in its gas tax.[65]

Having gotten these proposals and supporting data before the public in 1948, the Fact-Finding Committee prepared to play its principal role when the legislature assembled in early 1949. Long-time political pundit A. L. Schultz suggested that "John Q. Taxpayer should bring a cushion and a sack of sandwiches and plan to hold a ringside seat during every round of the highway financing fight that will be before the Legislature next winter." With his long experience of Kansas highway matters, Schultz expected the farmer-dominated legislature to keep the highway commission "handcuffed" and to balk as it always had at providing enough funds for a "square deal without round corners" for the cities.[66] Thus warned, the Fact-Finding Committee mounted a "media event" in December, 1948. Whether or not publicity made the difference, the '49 legislature put its weight behind highway modernization: nearly all the Fact-Finding Committee's recommendations won approval. The legislature officially adopted a 20 year construction program to make existing highways "tolerable" while new ones were built.[67]

With the special one cent gas tax increase approved in 1945 about to expire, the legislature reset the tax at five cents and restored the refund system to increase actual collections. Rural interests managed to preserve the controversial $3.6 million county and township road fund, but members did recognize the cities' plight. The state's contribution toward maintenance on connecting links rose to $1,000 per mile. One penny of the gas tax was set

64 Ibid., p. 54, 106-112.
65 Research Department, Kansas Legislative Council, "Highway Finance Estimates Based on the Report of the Engineering Survey," November 12, 1948.
66 Topeka Journal, April 1, 1948, in Good Roads Clippings, v. 3, KSHS.
67 "Report of the Kansas Highways Fact-Finding and Research Committee," Kansas Government Journal 35 (January, 1949), p. 17; Kansas City Star, April 21, 1949, in Good Roads Clippings, v. 3, KSHS.

aside for two years to be distributed to the cities and counties, $1 million a year going to the cities on the basis of population and $3.5 million to the counties for use on secondary roads. Vehicle license fees and ton mile charges for motor carriers were raised to levels consonant with those in other states, so that together these financing measures provided some $7 million in additional highway funds. Because the new revenues would not be available until 1950, the legislature further authorized a "loan" from the state's general fund to permit the commission to begin contracting immediately.[68]

Legislators did ignore certain recommendations. They neglected, for example, to provide new offices for the highway department or to enact a controlled access law and failed to make the commission a three man panel serving at large for six year terms. But they proved sensitive to their state's miserable record on highway safety. Several studies ranked Kansas near the bottom in matters of traffic regulation and licensing of drivers. The Saturday Evening Post accused Kansas of issuing drivers "a license to kill." New legislation ordered tougher licensing examinations to be given by state troopers and established a point system for traffic violations. Convictions for wreckless or drunk driving now cost an automatic suspension (bringing double the usual number of suspensions in the first three months the law was in effect).[69] All in all, the '49 session cast a strong vote for the highway planner's vision of modernity.

What the '49 legislature had written into law, the highway department quickly converted to concrete and asphalt. Every year its staff set new records for dollar volume of construction. Maintenance engineers began to catch up with wartime deterioration. When devastating floods knocked out highways and bridges in 1951, the department managed to restore them, despite a critical shortage of materials during the Korean War. Staffing problems still plagued the department (its pleas for a retirement plan went unheeded), but the highway department made considerable headway by hiring new engineering graduates and putting them through on-the-job training and orientation courses and by rotating staff between headquarters and the field or from department to department.[70] Worries that the highway department would have no experienced leadership corps for the future began to ebb.

The department's Materials School had much to do with restoring that confidence. Bituminous engineer Merritt Royer and young concrete engineer Dick Peyton first opened the school in the mid 1940s to train ex-servicemen who were then joining the department. Young engineers and engineer aides began meeting in Topeka for the three months instruction given each year in whatever low-rent building Royer and Peyton could find. Because the state's supply of good native road materials was so paltry, students spent a good deal of their time learning how to test materials or how to make use of what materials were available, such

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68 Seventeenth Biennial Report, p. 11; Kansas City Star, October 1, 1949, Kansas City Times, December 29, 1949, Topeka Capital, October 11, 1949, in Good Roads Clippings, v. 3, KSHS.

69 Topeka Capital, May 21, 1949, Topeka Journal, September 29, 1949, in State Highway Commission Clippings, v. 2, KSHS. Kansas would not have a controlled access law until 1959.

70 Nineteenth Biennial Report of the State Highway Commission of Kansas, To June 30, 1954 (Topeka: Kansas State Printing Plant, 1954); see also Seventeenth and Eighteenth Biennial Reports.

as the otherwise useless chat which Kansas miners dug up along with coal and ore. Not all students were college graduates, however, and instructors sometimes found they must teach basic math along with testing methods and construction theory. The school was one of the few mechanisms the department had for disseminating new technical information or ensuring uniformity of method across the state. And under Peyton's guidance, the Materials School proved an effective response to the technician shortage, for the school turned out the kind of skilled professional the department could not easily recruit in the open market. In later years, most of the department's supervisory staff would be alumni of the Materials School.[71]

While handling unprecedented contract volumes, Kansas highway experts continued to make their contributions to highway science. They participated in AASHO's Master Test Road Project, a test of unequalled precision, to find a balance between the costs of transporting goods by motor vehicle and the costs of providing the highway facilities to do it. They were among the first in the country to use a saw blade studded with diamonds to cut smooth-edged expansion joints in concrete or to measure the strength and durability of concrete paving with sound waves.[72] One other state-of-the-art device originated from the experiments of William Gibson of the highway department's materials lab. Back in 1932, Gibson had crawled on hands and knees shaking tiny glass beads from a salt shaker onto a freshly painted center line. His reflective center markers worked so well that the highway department sported a machine in 1951 to spread 70 gallons of glass beads to the mile of center line.[73]

Whether they came out to gawk at giant earth movers or counted the detour signs that sprouted like sunflowers, Kansans seemed fascinated by their building boom. Local newspapers saluted each replacement by "black top" of a gravel road, and thousands of rural Kansans took pleasure in driving the 8,777 miles of secondary road built between 1946 and 1954. Townsfolk, too, witnessed considerable change, for much of the work on the state system aimed at "taking out road kinks." That meant by-passing dozens of towns.

Many towns were inclined to celebrate the news. Junction City learned in 1950 that its coveted "hot shot" was one step closer to consummation. To prevent future bottlenecks at Fort Riley should the country go to war again, a straight new section of K 18 would be built from Junction City to an intersection with K 13, 14 miles to the east. If that new route were one day extended to meet the freshly straightened K 10 at Alma, Junction City would have its beeline to Topeka.[74] Abilene welcomed a by-pass route for U.S. 40 that would remove traffic from its business center, and Beloit's residents were relieved to see U.S. 24 rerouted along the outskirts of their town. When citizens of Lawrence first learned in 1944 about a proposal to reroute U.S. 59 and U.S. 40 outside their business district, they were concerned about the safety of

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71 Interview with Dick Peyton, Assistant Director of Highways (retired), January 8, 1986; Interview with Dick Beige, Director of Administration (retired), January 10, 1986; Interview with Ted Roberts, Bureau of Design, January 7, 1986; Highway Highlights 34 (January, 1973), pp. 4-5.

72 Eighteenth Biennial Report, p. 26; Kansas City Star, September 7, 1949, Topeka Capital, September 25, 1949, in Good Roads Clippings, v. 3, KSHS.

73 Topeka Capital, March 31, 1951, in Good Roads Clippings, v. 3, KSHS.

74 Topeka Journal, July 12, 1950, in Good Roads Clippings, v. 3, KSHS.

children who attended a school along U.S. 40's new route. Once the highway commission added an underground crossing for the youngsters, the Lawrence Chamber of Commerce approved the project.[75]

Wamego greeted its by-pass by U.S. 24-40 differently. Citizens' experience illustrated some of the hard facts governing these situations. Local alarm over the potential loss of business led to two town meetings in 1950 and an expedition by 100 Wamego citizens to meet with Governor Carlson and representatives of the highway commission. Carlson told them frankly that he and the commission sympathized but there was nothing either could do. Because the old route was too narrow and decrepit to handle current traffic, BPR refused to put federal money into its improvement, and the state could not afford to do so alone. Efficient movement of through-traffic mattered more to the distant planners at BPR, who held the balance of power in these decisions, than Wamego's business fortunes.[76] Understandably, Wamegoans took the news with ill-grace, one declaring that "if you move the highway you might as well fold up Wamego."[77]

Once the by-pass of Wamego opened in 1952, however, "all the scars had healed and nobody had any gripes to air." In 1960, a study by University of Kansas economists would find that Lawrence, Wamego, Abilene and Beloit suffered no appreciable economic or social problems from their by-pass; three of those towns, including Wamego, actually gained in retail sales after by-passes were completed.[78]

Midst the din of construction and the festivity of ribbon-cuttings, however, highway engineers met disappointment when they toted up their progress in 1952. They had broken records yearly in dollar volume of contracts awarded, it was true. But inflation, according to one gloomy report, meant that actual construction barely exceeded the 1940 level. At that rate, existing funds would not be enough to complete the 20 year program for construction on the state system, and the fifth cent of the gas tax allocated to cities and counties was set to expire in 1953.[79] Meanwhile, traffic volume in Kansas already exceeded the level once projected for 1970, making the 20 year program somewhat obsolescent before it was four years underway. Legislators who had dealt generously with highways in '49 were to be excused irritation at seeing the highway department renew its plea for funds.

There might be a way of easing the predicament without dipping into taxpayers' pockets, for toll roads were coming back in vogue after a century of disuse. Pennsylvania sparked the trend when it completed 160 miles of the Pennsylvania Turnpike in 1940. New York, New Jersey and a few New England states followed with tollways to handle commuters and summer tourists. To the west, an extension of the successful Pennsylvania Turnpike through Ohio was planned and Coloradoans could zip along a 17 mile toll road between Denver and Boulder. Toll-paying superhighways looked to be the badge of modernity in 1952 when Governor Johnson Murray of Oklahoma proposed his own grand design for a

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75 Hulse Wagner, "The Economic Effects of By-pass Highways on Selected Kansas Communities," Center for Research in Business (University of Kansas, 1960), pp. 18-19, 27, 35.
76 Ibid., pp. 6-8.
77 Quoted in Wagner, "Economic Effects of By-pass Highways," p. 8.
78 Ibid., pp. 8, 42-44.
79 Eighteenth Biennial Report, p. 7.

turnpike stretching from Galveston to Saint Louis. The super-tollway would intersect a toll road under construction between Oklahoma City and Tulsa, and, if Kansans were wide awake to the whole idea, would run through Kansas City via eastern Kansas.[80]

Murray's proposal had a number of attractions for Kansans. Turnpikes, after all, depended on local initiative and private enterprise -- part of the bedrock on which Kansas highways and governmental relations were built. Private investors would assume the debt for building the super road, with a minimum of federal interference, and users would pay it off through tolls. Kansans had made "pay as you go" an unofficial state motto for a century. While highway departments in other states resented losing some of their authority over highways to these independent corporations, the highway department warmed to the turnpike idea.[81] Not only would the state acquire a superhighway at private expense, thus freeing part of the highway fund for other urgent uses, but the tollway would draw off part of the traffic that battered the state highways to bits.[82]

Other Kansans saw turnpikes as ammunition in the economic combat among the states. Several tollway schemes were afloat that would link Chicago with the Pacific coast and St. Louis with Phoenix and Los Angeles -- each likely to "leave Kansas right in the middle, without a turnpike and standing to lose at least part of its tourist 'take'."[83] Stagnated industrial development might also penalize the state that lagged in the competition. Believing that "one turnpike attracts another," Kansas boosters urged the state to move fast in building one to be "in the driver's seat to draw the expanding network of express highways to its borders."[84]

Not every Kansan embraced the turnpike idea with ardor. There was disturbing evidence that some of the eastern toll roads were failing to pay their way. Taxpayers and legislators alike worried that a turnpike authority might go bankrupt and leave the state saddled with its debt to bondholders or that a turnpike might wear out long before 30 year bonds were retired.[85] Some of the state's motorists simply suspected expressways of any sort. One Topeka reporter warned of modern tollways that, "The driver dares not glance at the wooded hills and green valleys, for minimum speed is 50 miles per hour. From 70 to 95 m.p.h. is common. At such high speed one slip of the steering apparatus usually makes the car and passengers a part of the scenery."[86]

Nonetheless, the Kansas Chamber of Commerce held turnpike clinics throughout the state in 1952 and claimed audiences were overwhelmingly enthusiastic.[87] At the same time, the Legislative Council made a study of the feasibility of a turnpike authority so that toll road proposals would be "in a neat

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80 Clarence Hein, "Turnpikes Head West," Your Government 8 (March 15, 1953), pp. 1-4.
81 Rose, Interstate, p. 33.
82 Topeka Journal, May 22, 1953, in Kansas Turnpike Authority Clippings, KSHS; Nineteenth Biennial Report, p. 8.
83 Edward Weilepp, "Kansas Turnpike Authority Needed to Assure State Place in Toll Road Picture," Kansas Construction 5 (July, 1952), p. 7.
84 Ibid., p. 7.
85 Hein, "Turnpikes Head West," Your Government.
86 Topeka Capital, May 14, 1950, in Good Roads Clippings, v. 3, KSHS.
87 Hein, "Turnpikes Head West," Your Government.

package on the steps of the statehouse when the legislature comes to Topeka in January."[88] The package was tied so neatly that the 1953 session created a Kansas Turnpike Authority [KTA] consisting of State Highway Director Gale Moss, the chairmen of the House and Senate committees on highways and four members appointed by the governor. If the KTA's investigation showed that a turnpike as feasible, the KTA was authorized to finance it by selling revenue bonds to investors, to select the route and exercise eminent domain in acquiring right of way, to choose locations for access routes and service facilities and to regulate the operators of those facilities. Toll collections would be used to repay investors, maintain the turnpike and pay the salaries of the state troopers who policed it. Once construction costs were paid and the bonds retired, the turnpike would be turned over to the state to use as a free road; but under no circumstances, the legislation assured, could principal or interest on the debt be made the responsibility of taxpayers or added to state indebtedness.[89]

With a tiny budget of $25,000, KTA chairman Gale Moss set up offices in an old barbershop in the state capitol building that spring and proceeded to work "on the cuff," as he put it. Expenses for preliminary studies would be paid by the eventual winners of construction contracts, while the costs to the highway department for its help on the studies was to be paid from KTA bonds, if and when they were issued.[90] Given the likelihood of a north-south turnpike through Oklahoma and the locations of heaviest traffic on the highway department's traffic flow maps, the turnpike authority had its preliminary route in mind: a highway striking west and south from Kansas City, through Topeka and Wichita, to the Oklahoma border. A second route might extend from Topeka to Salina, eventually running all the way to the Colorado line.[91] The first question, of course, was whether either route would attract enough toll-paying motorists to cover their costs since, without clear assurances on that point, KTA would lay an egg in the bond market.

To settle the matter, KTA contracted with the New York consulting firm of Coverdale and Colpitts, but highway department planners worked closely with the consultants to dredge up the raw data for the study. Over 173,000 motorists were interviewed by highway department staff and asked to fill out questionnaires to see how many would pay for the privilege of driving a speedway.[92] Projections were made of how many more motorists would choose a turnpike over a more direct route to their destination for the sake of speed and safety. The consultants determined that the route west of Topeka would not be financially feasible. The Kansas City to Oklahoma turnpike, however, would generate over $9 million in total revenues its first full year of operation (projected to be 1957) and net $12 million from 9.3 million vehicles in 1960.[93]

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88 Topeka Journal, May 1, 1952, in Good Roads Clippings, v. 3, KSHS.

89 Governor Edward F. Arn, "Toll Roads in Kansas," Kansas Government Journal 39 (September, 1953), p. 492; Clarence Hein, "The Kansas Turnpike Authority," Your Government 10 (March 15, 1955), pp. 1-3; Topeka Journal, May 20, 1953, in Kansas Turnpike Authority Clippings, KSHS.

90 Topeka Journal, June 8, 1953, in Kansas Turnpike Authority Clippings, KSHS.

91 Ibid.

92 Nineteenth Biennial Report, p. 15.

93 Coverdale and Colpitts, "Report on Estimated Traffic and Revenues of the Kansas Turnpike Authority," in Second Annual Report of the Kansas Turnpike Authority, 1954.

Consulting engineers of the Kansas City firm Howard, Needles, Tammen & Bergendorf made a more exacting plan for a preliminary route and an estimate of its costs. They relied heavily on the highway department's expertise, particularly by using the department's photogrammetry section to lay out location, alignments and grades and its geological and soils survey talents to select surface types and plan design specifications. So precise was this information that the consulting engineers expected to see only minor modifications in their preliminary plans when time came for bid lettings.

Planners considered a number of courses for the turnpike between Kansas City and Oklahoma, one of which would have by-passed Topeka by following the general line of U.S. 50 to Emporia. Instead, a route roughly paralleling U.S. 40 and running north of the Kansas River was chosen because it linked the capital city and gave the most convenient access to the business centers of the two Kansas Citys. Planners also rejected suggested routes between Topeka and Wichita which would have followed various combinations of existing U.S. highways, preferring to strike as direct a southwesterly course between the two as topography and design considerations allowed. Overall, the consultants' proposed route corresponded to KTA members' desire for an "airline" that would cut the distance between Kansas City and Wichita by at least 60 miles.[94] Considerable care was given to selecting the turnpike's end points. The final leg running south from Wichita paralleled U.S. 81 to the Wellington Interchange where, the KTA devoutly hoped, it would one day join the Oklahoma Turnpike. Should Oklahoma delay building its own toll road, however, planners had to include an interchange at South Haven giving access to other U.S. highways. Otherwise the Kansas Turnpike would be the nation's costliest dead end road.

In selecting a point on Muncie Boulevard in Kansas City, Kansas as the eastern terminus, turnpike planners reinforced a long-standing plan among federal, state and local highway officials for redesigning traffic flow in metropolitan Kansas City. With a turnpike about to become a reality, BPR, the Kansas Highway Commission and the government of Kansas City, Kansas agreed to extend Muncie Boulevard and have it designated part of the federal interstate system, thus making it an expressway between the turnpike gate and the Intercity Viaduct that crossed the Kansas River and joined the business hearts of both Kansas Citys. Other plans were discussed for turning major intersecting streets into trafficways. These developments, together with turnpike construction, would move metropolitan Kansas City a considerable step toward a system to funnel heaviest traffic speedily along the circumference of its busiest commercial centers.[95] Thus, the turnpike -- a profit-making venture -- influenced public planning and served public ends.

With the approval of the Kansas Highway Commission, the consulting engineers proposed a turnpike built for speed and safety. Dual lanes, each of twelve foot width, would be separated by a 20 foot sunken median to reduce headlight glare. Wide shoulders would accommodate emergency stops, while a 300 foot right of way would keep the roadside free of billboards and businesses. So controlled was access to be that a continuous fence along the outer edge of

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94 Howard, Needles, Tammen and Bergendorf, "Kansas Turnpike, Kansas City to the Oklahoma Border: Engineering Report," in Second Annual Report of the Kansas Turnpike Authority, 1954, pp. 1-20.

95 Ibid, p. 12.

right of way would keep livestock (and toll chiselers) from entering. Nor would drivers have to worry about colliding at intersections because every grade crossing would be separated. With minimum sight distance pegged at 725 feet, and no curves to be tighter than 3 degrees nor grades steeper than 3 percent, motorists could satisfy the yen to "make good time" yet be reasonably sure of surviving to their destinations.[96] Kansas had never seen the like.

Taken together, the reports of the two consulting firms brought good news in early 1954: the 240 mile turnpike would cost $160 million to build -- about a third what turnpikes were costing in other states -- and would recoup enough in tolls to repay investors in 19 years. "It's Yes On the Turnpike," the Topeka Capital trumpeted in March.[97] Happily, the Kansas Supreme Court added its "yes" the following July by ruling that the KTA could legally issue revenue bonds and construct and operate a turnpike. Because the Kansas case was the first directly bearing on this issue to be heard in any court, observers thought the ruling would have a nationwide impact in stimulating turnpike construction.[98] As it turned out, the "smart money" proved partial to the Kansas project. The banking and investment syndicate which underwrote the bond sale gave KTA an excellent discount, in recognition of the state's fine credit record, and Wall Street investors quickly snapped up all $160 million in bonds in September, 1954. Modest construction costs and the promise of a quick return made the Kansas issue one of the most attractive of its kind.[99]

With the bond sale proceeds in its pocket, the KTA moved quickly to let contracts. Josef Sorkin of Howard, Needles, Tammen & Bergendorf was picked to head up a consortium of fourteen engineering firms organized to design and supervise construction. On December 31, 1954, less than eighteen months since KTA's creation by the legislature, Governor Edward Arn climbed aboard a steam shovel and broke ground on the first section of the turnpike -- the approach to the future Kansas River bridge near Lawrence. Three months later the first grade construction began where the terrain would be the toughest, in the Flint Hills near Cassoday. The target schedule for completion in 27 months looked to be a cinch.[100]

Of course, there were a few obstacles -- some almost as hard to level as the Flint Hills. Because the turnpike took a direct line, its right of way sliced through farms and ranches, left an angry rancher's pasture on one side of the road and his stock tanks on the other, gouged enough out of a field to make the rows "too short to mess with," or put an elevated grade a few yards from a farmhouse door. One Douglas County farmer protested that, "as far as we're concerned, it's the same as if they'd routed the Kaw River up through these

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96 Ibid., pp. 28-31.

97 The original cost estimate was $140 million. The turnpike authority elected to issue bonds for $160 million in order to provide a thicker surface and more interchanges. Topeka Journal, March 15, 1954, Topeka Capital, September 9, 1954, in Kansas Turnpike Authority Clippings, KSHS.

98 Kansas City Star, July 24, 1954, in Kansas Turnpike Authority Clippings, KSHS.

99 Topeka Journal, September 22, 1954, in Kansas Turnpike Authority Clippings, KSHS.

100 Topeka Capital, September 24, 1954, Lawrence Journal-World, December 31, 1954, Wichita Evening Eagle, March 2, 1955, in Kansas Turnpike Authority Clippings, KSHS.

hills."[101] Reaching severance agreements, providing underpasses or arranging resale for owners whose land was split by the turnpike cost time and money. Fortunately, the turnpike's right-of-way agents received training from the seasoned pros at the highway department.[102]

Patient negotiation eventually carved out a right of way, but removing another snag in turnpike plans depended on the Wall Street money men -- a tougher bunch to maneuver. Having spawned the turnpike scheme in the first place, Oklahoma fell far behind its neighbor. Oklahoma omitted to do a traffic study, as Kansas had, to substantiate profitability, and its general credit record was not so strong. Financial houses were reluctant to underwrite a sale of Oklahoma's turnpike bonds, and then investors refused to buy them in a market glutted, by now, with other states' issues. When Oklahoma appeared to have financing in late 1955 for a toll road from its capital to the Kansas line, political entanglements blocked construction. Without its Oklahoma link, the Kansas Turnpike stood to lose quite a number of toll customers.[103]

Undaunted, the KTA authorized feasibility studies in October, 1954, for four more toll road projects: a northeastern spur reaching Leavenworth and St. Joseph, Missouri; a spur from Wichita to Hays via Hutchinson and Great Bend; a new intercity viaduct at Kansas City; and a toll bridge making 18th Street a major new expressway for Kansas City, Kansas. The latter proposal had such clearcut benefits that it took just eighteen more months before Governor Fred Hall approved an agreement among the highway commission, Kansas City, and the KTA to complete it at KTA's expense -- a bargain for the state, according to Hall.[104] When the 18th Street Expressway opened in 1959 the Kansas City Times proclaimed: "It breaks down the ancient Chinese wall that has blocked easy movement between Wyandotte and Johnson County for decades. For Kansas City, Kansas, it is another bridge over the Kaw. In short it is a classic example of the spectacular improvement in urban transportation that becomes possible when imagination and modern engineering techniques are applied to a problem."[105]

Throughout the turnpike's initial construction, the highway department stayed in close touch with the activity. Some said too close. The highway department, for example, seemed to be suffering a "brain drain." Gale Moss resigned as director of highways in October, 1954, to become general manager of the Kansas Turnpike Authority. Three more highway department staffers made the same move the following month and, in December, 1954, State Highway Engineer Ross Keeling announced his resignation to join Howard, Needles, Tammen & Bergendorf.[106] This occurred in spite of a resolution by the Kansas Highway

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101 Lawrence Journal World, May 18, 1955, in Kansas Turnpike Authority Clippings, KSHS.

102 Topeka Capital, May 1, 1955, in Kansas Turnpike Authority Clippings, KSHS.

103 Wichita Evening Eagle, November 20, 1954, Kansas City Times, December 9, 1954, Topeka Capital, October 13, 1955, in Kansas Turnpike Authority Clippings, KSHS.

104 Topeka Capital, October 20, 1954, Kansas City Times, July 19, 1956, in Kansas Turnpike Authority Clippings, KSHS.

105 Quoted in "18th Street Expressway," Kansas Government Journal 45 (February, 1959), p. 93.

106 Topeka Capital, October 20, 1954, Topeka Capital, November 24, 1954, in Kansas Turnpike Authority Clippings, KSHS; Topeka Capital, May 26, 1955, in State Highway Commission Clippings, v. 2, KSHS.

Commission urging KTA not to recruit its employees or contract with any consultant firm which had hired a highway department employee within the last year.[107] But the state could not match the 300 percent salary increase Moss achieved by joining KTA. Little active recruitment was necessary when turnpike construction provided top salaries and exciting professional challenges.

Governor Hall thought the highway department itself paid too much attention to turnpike business. In 1954, the highway commission agreed to pay Howard, Needles, Tammen & Bergendoff and Coverdale & Colpitts for their preliminary planning reports and to train right of way agents for KTA, with the understanding that the commission would be repaid from the bond issue.[108] Over succeeding months the highway department put some of its men to work on geological surveys and feasibility studies for KTA and, Hall was alarmed to find, some state employees and state owned equipment were at work on turnpike construction. Hall sent a "strongly-worded letter" to Walter Rugan who, as Moss' replacement as highway director, also had a seat on the Turnpike Authority. The governor's letter warned Rugan that the state might never recoup its money (nearly a quarter million dollars) if KTA suffered financial reverses, and it asked Rugan how state activities had been harmed by the diversion of men and money. "I believe the soundest approach is to let the Turnpike Authority build the turnpikes and the highway commission build the highways of Kansas," the governor asserted.[109]

At Hall's request, the commission halted all work for KTA by its employees on January 29, 1955. Meanwhile, Hall and Rugan set about determining how much more the state was obligated to do for KTA under some written agreements Hall found disturbingly "open-ended" and "indefinite." At the same time, the governor questioned KTA's wisdom in spending its resources on feasibility studies for spurs before the turnpike itself was finished, let alone a proven money-maker.[110] On the other hand, Josef Sorkin pointed out, the highway department's expertise in geological and soils testing cost a fraction what private firms would charge.[111] The governor relented two weeks later and agreed to allow the highway department to finish its soils and geology surveys and its work on feasibility studies, though Hall still believed the toll road projects should be done one at a time. But he wanted no more contracts between KTA and the highway commission "unless they are spelled out in detail" and would not impair state efforts. Both the governor and KTA hoped the legislature would decide whether the highway commission could continue providing staff and advancing credit to KTA. When the legislature dallied, Hall renewed his ban on state participation in the feasibility study for the Wichita-Hays spur, a project whose practical value he doubted.[112]

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107 Minutes, v. 21, April 28, 1954.
108 Ibid.
109 Topeka Capital, January 28, 1955, in Kansas Turnpike Authority Clippings, KSHS.
110 Topeka Capital, January 29, 1955, in Kansas Turnpike Authority Clippings, KSHS.
111 Topeka Journal, January 29, 1955, in Kansas Turnpike Authority Clippings, KSHS.
112 Topeka Capital, February 17, 1955, Topeka Journal, March 11, 1955, in Kansas Turnpike Authority Clippings, KSHS.

Despite these hitches, the Kansas Turnpike was finished ahead of schedule -- the only portion of a toll road once envisioned between the Texas Gulf and St. Louis to be built. On October 21, 1956, the turnpike was opened to motorists for a toll-free day of travel and official opening ceremonies took place at three key interchanges on October 25. Wichita held a sedate ceremony, and Governor Hall officiated at Topeka's formal ribbon cutting, but Kansas City, Kansas opted for glitz and glamour. Gene Autry, astride his horse Champion, burst through a huge paper map of the turnpike to open the eastern terminus.[113] Even more curious a salute to the tollway came from British Poet Laureate John Masefield, who penned this ode to the Kansas Turnpike:

> May this Road's Angels Blessedly fulfill
> The inmost Hope of travelers of good will.
> May those who seek Love, find; those Knowledge, learn.
> To all, gay going-forth and glad return.[114]

Travelers did report their pleasure in going forth on the turnpike. It was fast and efficient, and, after some harrowing accidents among speedway neophytes in its first year, it was safe. Unfortunately the "Road's Angels" failed to watch over those who were mesmerized by a smooth surface and their own velocity. Because Oklahoma still had not built its toll road in 1956, the Kansas pike simply (and suddenly) ended at the border, on the edge of Oklahoma farmer Amos Switzer's oat field. Despite dozens of warning signs, motorists hurtled off the turnpike at top speed to land among the oats. When the otherwise sensible governor and first lady of Wyoming made the unfortunate flight, the oat field became famous in the national press. Being a compassionate man, Switzer filled in a ditch and plowed his field to make a softer landing, but he soon grew tired of assisting the stunned and injured. At his pleading, KTA put up a huge wooden barricade at pavement's end. Within 24 hours, three more drivers smashed the barrier to bits. Amos Switzer continued ministering to the fallen while the KTA sealed off the roadway at South Haven and gave Oklahoma financial assistance to build a temporary link with that interchange.[115]

If professionals in the highway department felt a pang of envy now and then as they watched the turnpike built, they were to be excused. They must face the more prosaic problems of inflation, staff shortages, modest salaries, cramped offices and the familiar gap between highway needs and highway dollars. True, they continued setting new records for contract volume and managed to put Kansas in second place in the nation in the number of miles constructed with federal aid in 1953 and 1954. But Kansans owned more than a million cars in 1953. When traffic volume multiplied by a fourth between 1950 and 1954, the number of inadequate miles in the state system, particularly in the four most populous counties, mounted in spite of the biggest construction program in Kansas history. Even a jump in federal aid and an increase in the federal share of

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113 Topeka Capital, October 21, 1956, Topeka Journal, October 25, 1956, in Kansas Turnpike Authority Clippings, KSHS.

114 Kansas City Times, October 10, 1957, in Kansas Turnpike Authority Clippings, KSHS.

115 Topeka Capital, October 20, 1957, in Kansas Turnpike Authority Clippings, KSHS.

costs for the interstate system to 60 percent in 1954 created problems because Kansas had to cut back expenditures for resurfacing and rehabilitating older roads to match this new bounty.[116]

Kansas highway officials might take consolation in the fact that other states suffered the same problems. From car-crazed California to rural Mississippi, skyrocketing traffic volumes pinned highway engineers against a barrier of inflation, shortages and the high cost meeting new design standards, especially in their congested cities. If anything, Kansas was better off for having dedicated its gasoline taxes by law to highways because a good many other state highway departments watched their states' gas taxes frittered away, or so they thought, on schools and welfare programs. Everywhere, roadways turned to relics as farmers, city mayors, truckers and engineers competed in Congressional hallways for attention to their particular highway problems.[117]

Initially, President Dwight Eisenhower saw a boost in federal highway spending simply as a solution to unemployment and recession that followed the end of the Korean War. As the highway crisis worsened, along with the squabbles over priorities among highway interest groups, Eisenhower asked his administration to find a way out of the impasse in 1954. His advisers were no better able to agree on a solution. Some wanted to push interstate construction ahead by creating a new federal agency to locate routes and supervise the building, with the state highway engineers handling administrative errands. Some wanted to finance an interstate system with tolls, others with bond issues or federal gasoline tax revenues. Finally, in February, 1955, the president put his weight behind the proposals of General Lucius D. Clay, head of his highway advisory committee, for a Federal Highway Corporation to manage bond sales providing $2.5 billion a year -- enough, Clay expected, to pay 90 percent of interstate system costs and to pay the debts of independent toll road authorities and bring their highways into the interstate network. A commissioner of public roads would supervise construction under the Clay plan.[118]

The general's bill came under withering fire on Capitol Hill. Influential House and Senate members disliked putting highway route selection and construction into the clutches of a federal road czar and demanded to know why they should spend $11 billion in interest to bondholders when the sum could be better spent on building roads through the old state/federal cost-sharing system. State engineers, road users, army generals and opponents of the toll ways reinforced the Congressional defenders against the Clay bill; yet no one in Congress could find a compromise that satisfied everyone. According to interstate highways' historian Mark Rose, "hopes of reforming the federal aid highway program" were pronounced dead in August, 1955.[119]

Public demand for a way out of traffic jams was alive, however, and threatening to kick if Congress failed to act. After combat was renewed over a new bill in late 1955, Congress extricated itself with legislation designed to offend as few interest groups as possible. The Federal Aid Highway Act Eisenhower signed on June 29, 1956, provided a 90 percent federal share of costs for

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116 Kansas City Times, June 25, 1954, Topeka Capital, October 12, 1954, in State Highway Commission Clippings, v. 2, KSHS; Nineteenth Biennial Report, p. 7.
117 Rose, Interstate, pp. 31-32.
118 Ibid., pp. 69-77.
119 Ibid., p. 82.

constructing a 41,000 mile interstate network. The network's ostensible purpose would be to serve national defense, but it would reflect also the growing importance of cities in the overall traffic picture by linking every city over 50,000 population. Because it would cost more to build urban throughways, some 60 percent of interstate funds would be available to urban areas. Congress salved rural resentments by including a generous increase in authorizations for the secondary system.[120]

The funding mechanism jettisoned the bond issue scheme in favor of preservation of the federal taxes on fuel, tires and vehicles, which were increased modestly to pacify truckers. The proceeds were to be collected in a Highway Trust Fund where they would be protected against diversion to non-highway uses and apportioned to the states according to the old land-population-mileage formula through 1959. Thereafter, in order to get the interstate system completed at the same date, funds would be allocated to each state in proportion to its remaining costs to complete its segment for the years 1960 to 1969.[121]

The final act neatly forestalled one conflict that had obstructed earlier bills by postponing a decision about toll roads. Clearly, building a federal superhighway next door to an existing tollway would be a foolish waste and would drive the toll road into bankruptcy, but opinions differed sharply over which tollways should be adopted as federal interstates and how states should be compensated for them. The 1956 act adroitly put off a final disposition by Congress until 1958, by which time BPR would have measured each tollway against construction standards for the interstate system.[122]

Those standards departed significantly from Thomas MacDonald's proposals in 1939 by calling for a true superhighway design, with four lanes or more of divided highway over 34,000 miles of the total, 7,000 miles of two lane highway on light traffic routes, controlled access, and grade separations in all but the most sparsely populated areas. Service roads would be built to reach roadside businesses and frontage roads, cloverleafs, underpasses and overpasses would funnel drivers safely on, off or away from the highway. To eliminate what had been an agonizing problem of delays in construction while right of way tangles were sorted, the act empowered the states to acquire right of way for all federal highway projects up to five years in advance of their construction. Further, states could begin construction of an interstate project before being allocated funds for it with the understanding that they would be reimbursed from future federal authorizations.[123]

Although there had once been talk of a federal interstate authority, the act augmented the decision-making power of state highway departments to some extent. In fact, the 1956 act largely preserved the forty year old federal-state partnership. State engineers had to obtain BPR's approval for design and construction standards and final selection of a state's proposed route designa-

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120 Rose, Interstate, pp. 85-94; Bernard F. Hillenbrand, "The Federal Road Program," Kansas Government Journal 42 (September, 1956), pp. 485-486, 498-499.

121 William H. Cape, "The 'New Look' in Interstate Highways," Your Government 4 (December 15, 1957), p. 3.

122 Rose, Interstate, p. 90.

123 Cape, "The 'New Look,'" Your Government, pp. 1-4; "Road Building Program," Kansas Government Journal, p. 449.

tion and access sites lay with the Secretary of Commerce, the cabinet officer now in charge of BPR.[124] These constituted the primary and long-standing federal checks on state authority over the interstate highways. Astonishingly, a nation committed to building the largest public works program in world history -- and in just thirteen years -- intended to do so by coordinating desires of a federal government, 48 states and more than 200 cities. The Interstate Highway Act also required the states to hold public hearings whenever an interstate was planned to bypass or pierce so much as a village, implying that authority had been extended down to the grass roots. It was a measure of how fervently the American people still hoped to keep government close to home.

The Interstate Highway Act had been off the president's desk a scant three weeks when the public learned of BPR's interstate route designations in Kansas. The east-west route followed the familiar course first selected as a strategic highway during the war, taking the line of U.S. 40 from Kansas City to Oakley, jogging north to U.S. 24, then west to cross the state line at a point just east of Burlington, Colorado. The northerly route from the Oklahoma border took the course of U.S. 81 through Wichita to Newton, thence by U.S. 50S to Kansas City. Little was changed since the original designations in 1945 except that the interstate highway from Tulsa to St. Louis would bypass Kansas' southeast corner.[125]

The designations left in doubt the fate of the Kansas Turnpike, which, without an Oklahoma link, fell distressingly short of collecting enough tolls to service its debt in its first year. Kansas ended the year 1956 by completing a horse trade with BPR. At BPR's request, Interstate 70 would incorporate the Kansas Turnpike from Kansas City to Topeka and Interstate 35 would take in the turnpike from Oklahoma as far as Emporia. Then, at the state's insistence, I-35 would resume its original course on U.S. 50 to Kansas City. In exchange, BPR agreed to add the section of U.S. 81 between Wichita and Salina to the interstate system at the 90/10 funding ratio, but it remained for Congress to decide later whether to reimburse Kansas for the turnpike mileage thus absorbed or to pay off the bondholders and make it a free road.[126] Having been foresighted enough to build a superhighway, Kansans hoped not to be penalized for having built it without federal dollars.

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124 Twentieth Biennial Report of the State Highway Commission of Kansas, To June 30, 1956 (Topeka: Kansas State Printing Plant, 1956), p. 9. NOTE: The Bureau of Public Roads was transferred from the Department of Agriculture to the Public Works Administration in 1939. From 1939 until 1949, when it was transferred once more to the Department of Commerce, its official name was Public Roads Administration. However, since its title reverted to Bureau of Public Roads in 1949, that title is used throughout this chapter for the sake of clarity. See Winston Wade Riddick, The Politics of National Highway Policy, 1953-1956, unpublished Ph.D. dissertation, Columbia University, 1973. (Reprinted by University Microfilms, 1973), p. 139.

125 Kansas City Times, July 20, 1956, in Good Roads Clippings, v. 3, KSHS; BPR officially dropped U.S. 66 in Kansas on May 21, 1957. See "Kansas Interstate System, Status, Progress and Condition, Appendix," (Kansas Department of Transportation, 1984), p. I-4.

126 Topeka Journal, January 2, 1957, in Good Roads Clippings, v. 3, KSHS; Cape, "The 'New Look,'" Your Government, p. 2. NOTE: The "I" numbering system for interstate routes was officially adopted by AASHO August 14, 1957.

With more than $100 million to spend and nearly one-fourth of the state's 800 interstate miles slated for construction the first three years, the highway department moved quickly -- so quickly, in fact, that Kansas opened the first section of new highway to be completed under the Interstate Highway Act on November 14, 1956, less than four months after the act's passage. The state had been committed to constructing this eight mile section between Topeka's western city limits and the Wabaunsee County line under the 60/40 formula for interstate funding in the 1954 legislation. Thus, the contractor was ready to go when Congress raised the ante to 90/10 in 1956.[127] Central Kansans thought it altogether fitting that the birthplace of the nation's interstate system lay on the "hot shot" route they had hankered for since 1940.

Kansas set another record on April 22, 1958, when the first interstate connection across a state line was opened to traffic. Having failed ultimately to secure financing of its tollway, Oklahoma completed its link with the Kansas turnpike under the interstate act. Appropriately, the honored guest at the opening ceremonies was Amos Switzer, that Good Samaritan of the oat field where the nation's interstate system made its first state-to-state connection.[128]

The turnpike had given Kansas a headstart. But many miles of interstate remained to be built from scratch. The preliminary process took new State Highway Engineer Walt Johnson out of his office and into the field. He and BPR's regional director W. Van Buck walked much of the proposed route for the interstate. Buck had seen the highway department through many of its difficult early years as state highway engineer and knew the state and its roadways intimately. He and Johnson had no trouble agreeing to the initial locations for the interstate's alignment. The delicate matter of selecting surface types fell to Dick Peyton, who must weigh problems of rail transport and the availability of construction materials near the sites of construction against the economic welfare of the state. Both the asphalt and the Portland cement industries were important to the Kansas economy. Moreover, concrete aggregate was in poor supply in the state's western half. In choosing to construct I-70 with a concrete surface east of Salina and an asphalt surface west of that city, the highway department found a compromise that served practical needs and economic considerations. The ordering of construction projects was designed to build good public relations for the interstates. The Department elected to put emphasis on building first in rural areas to give rural motorists a taste for superhighway driving.[129]

Once actual planning and construction began, the men and women of the highway department certainly had no reason to envy the turnpike's builders. They had full scope for flexing their professional talents in constructing the

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127 Kansas City Times, November 10, 1956, in Good Roads Clippings, v. 3, KSHS. When opened, this section was a two lane highway. In the 1960s the section was converted to four lane by adding a new eastbound roadway and keeping the original paving for westbound traffic. See Richard Tapscott, "Eight Miles of Highway Made History in Kansas," Kansas City Times, November 14, 1981, mounted clipping, KSHS.

128 Wichita Morning Eagle, April 23, 1958, in Kansas Turnpike Authority Clippings, KSHS.

129 Interviews with Walter Johnson, State Highway Engineer (retired), January 8, 1986; Interview with Dick Peyton; Interview with Dale Dugan, Inspector General, January 8, 1986.

interstate. Engineers recalled their longing to be transferred to a district where the interstate was in progress; those lucky enough to be assigned an interstate project took it up with enthusiasm and a sense of purpose, for they were "in on the action." "It was the same kind of goal we had in World War II," Glenn Anschutz recalled.[130] At times their sense of mission was all that kept them going. Contractors laid as much as a mile of paving a day by working two crews in ten hour shifts and running their mixing equipment round-the-clock. The resident engineers who supervised these projects must be on the job site six days a week, 20 hours a day. Materials inspectors, geologists, design technicians, nearly everyone connected with interstate construction put in similar hours which, because they were denied overtime payments as civil servants, made them the most underpaid labor in the state.[131] "We worked with bulldozers on our tail," John McNeal remembered. "I guess we just didn't have good sense."[132]

The pace they set enabled the highway department to finish the first major section of interstate on I-35 south of Ottawa in mid-December, 1958. Like the shorter section west of Topeka that inaugurated the interstate system, this too was built initially as a two lane highway.[133] Yet the effort that kept the state's interstate program on schedule could not be maintained by slackening energies on non-interstate projects. The federal act that kicked off the interstate highways program in 1956 provided increased sums for improving the primary, secondary and urban routes. After 1956, amid the breakneck activity to build interstates, the highway department also managed to set new records for construction on the secondary roads and to push ahead its program for widening and straightening the state highways, resurfacing broken, worn pavements with coatings of asphalt and replacing narrow bridges.[134] Increased federal aid to the cities, and growing concern about their peculiar traffic problems, meant redoubled effort in urban areas. The most ambitious of these, a $4 million dollar project to update the intercity viaduct between the two Kansas Citys, combined engineering genius and typical Kansas thrift. The project retained the old viaduct for eastbound traffic and added a new structure for west bound lanes.[135] In all, the first seven years under the new federal legislation saw the highway department whittle down considerably what had been called "the monstrous problem of building highways in Kansas" prior to the federal act's passage.[136]

As in the past, the need to build much and spend little spawned important technical and administrative innovations, for higher levels of construction strained the department's resources. One area in which significant advances came was the department's photogrammetry section. Typically, Kansas had been

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130 Interview with Glenn Anschutz, Division of Engineering and Design, January 7, 1986.

131 Carol Keown, "State Highway Commission Employees Recall Interstate Challenge," KDOT News 3 (June, 1981), pp. 3-5.

132 Interview with John McNeal.

133 Kansas City Times, December 19, 1958, in Kansas Turnpike Authority Clippings, KSHS.

134 "Road Construction in Kansas," Kansas Government Journal 42 (January, 1956), p. 11; Twentieth Biennial Report, p. 5; Twenty First Biennial Report of the State Highway Commission of Kansas, To June 30, 1958 (Topeka: Kansas State Printing Plant, 1958), p. 7.

135 Kansas City Star, October 9, 1958, in Good Roads Clippings, v. 3, KSHS.

136 Twentieth Biennial Report, p. 5.

among the first states to make use of this highly technical process; now, under the burden of increased construction, the department expanded its photogrammetry capabilities. Between 1957-1959 the section began using a camera mounted on a Cessna Skylane to take its own aerial photographs, in lieu of the ones the Soil Conservation Service had supplied. On the ground, technicians who overlapped portions of the photos could see a three dimensional view of a project site by putting on the same two-color eyeglasses that audiences wore to see 3-D movies. Installing an enormous IBM 650 computer added to the impression among curious newspaper reporters that photogrammetry was science fiction made real. Instead, the technical exactitude of photogrammetry, allied with the computer's capacity to make sense of thousands of items of information, had quite practical outcomes. It produced more precise designs at a savings of hundreds of manhours spent in field surveys and checks. That was crucial for a department whose staff shortage pinched even tighter after 1956.[137]

Efficient as computerized photogrammetry might be, its very newness caused problems. No other state agency was making such extensive use of the computer when the photogrammetry section acquired its IBM 650 in 1958. "That thing had to have tons and tons of air conditioning," Dick Biege remembered. "That was a major step forward just getting enough air conditioning to keep from melting it down." Once the delicate machine was on line, engineers had to be convinced that its output was more accurate than the data a field crew could produce with a level and tape. Biege credited the photogrammetry section's "good bedside manner" with winning engineer's gradual acceptance. By 1962, when the computer's early proponent, Glenn Anschutz, replaced Ken Dinklage as department head, the alliance of aerial photos and electronic data processing was effective enough to require a new name for the section. Highway Highlights magazine advertised a contest among department employees that year to rename the section. A $5 prize went to the entrant who suggested "Photronics."[138]

With its engineers stretched to their limits, the highway department had to call up reinforcements from outside its ranks by making its first extensive use of consultant engineering firms after 1956. While consultant contracts did keep programs on schedule, they left more fundamental problems unsolved. One magazine commentator estimated in 1957 that the $1.5 million the department had paid in consultant fees in the past season cost the taxpayers more than a competitive salary schedule would.[139] Comparatively low salaries and the continued lack of a retirement plan (something 44 other states offered) made it difficult for the department to attract young professionals or to retain seasoned veterans when engineers were everywhere at a premium.

Since demand outstripped supply, the highway department and the civil engineering departments of the University of Kansas and Kansas State College launched a cooperative venture in 1956 to boost engineering enrollments. The program, later called Rotational Training, put qualified graduates of high schools and junior colleges through alternating periods of academic instruction

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137 Twenty First Biennial Report, p. 5; "Airplane and Camera Help Build Highways," Kansas Government Journal 45 (June, 1959), p. 361.

138 Interview with Dick Biege; Highway Highlights 23 (September, 1962); Highway Highlights 24 (November, 1962).

139 Jack Werts, "Kansas Completes Biggest Highway Year," Kansas Government Journal 43 (July, 1957), pp. 391-392. Kansas would not institute a retirement plan for state employees until 1961.

in the classroom and on-the-job training as highway department employees. Their salaries from the highway department made school affordable for young people who otherwise lacked the means, and the program turned out a cadre of engineering graduates already seasoned by practical experience.[140] At the same time, the department continued advancing its own personnel through the ranks from unskilled beginner to skilled veteran by means of "o.j.t.," job rotation, and its short-term "Materials School" in the slack season. Still, fear lingered that, in the heated competition for engineering talent, its pool of trained men and corps of future leaders would be gutted by competitors.[141]

Shortage, shortages of materials and rising prices continued to haunt the department, though less painfully than during the Korean War. Builders were busy everywhere with the nationwide highway explosion, with flood control projects in the Missouri River basin, and in construction of schools to make room for the baby boom generation, suburban developments to house them, plants and offices where their parents worked. Births, business, and building boomed together, exerting strong demand on basic construction materials. To reduce the highway department's need for costly items, its engineers and technicians tested new ideas. Between 1956 and 1958, for example, the department pioneered the construction of hollow slab concrete bridges. Embedding hollow tubes up to eighteen inches in diameter in the slab cut the volume of necessary concrete drastically.[142]

Another breakthrough in construction methods grew out of a resident engineer's frustration with bumpy asphalt roads. Every highway department tolerated bumps and waves in its blacktop because an asphalt paving machine simply laid a uniform thickness of road mix over the existing contours of the roadbed. While he watched pavers at work on U.S. 56 in summer, 1956, Resident Engineer Frank Drake decided that wavy, poorly crowned blacktop could be eliminated with a little ingenuity. Drake experimented until he had devised a pendulum suspended in oil that could be attached to the paver. The pendulum enabled operators to pour a properly sloped and crowned surface regardless of the angle at which the paver moved. The waves and bumps would remain unless Drake could find some mechanism to "tell" the paver when to deposit a thicker layer of road mix at low spots and a thinner one over the humps in the roadbed. He tinkered until he had assembled a device from wood blocks, lumber, plastic tubing and nylon string that would alert equipment operators to the peaks and depressions ahead of the paver and enable them to adjust mechanisms to compensate. Within a few years, "Drake's Device" was required in specifications for all machine-placed asphalt surfaces in Kansas and was rapidly finding its way into the standard specifications in other states. The first asphalt highways built in Kansas with Drake's Device supposedly were so smooth that drivers were apt to skid on the glassy surfaces. According to department legend, some bumps had to be recreated as a safety measure.[143]

Luckily, innovations like these were cheap for labor costs now took a larger bite from highway funds. A major cause was the Davis-Bacon Act, which reflected the formula first worked out during the depression for pegging wages on federal projects to the prevailing local rate. After fierce debate, Congress

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140 Twentieth Biennial Report, pp. 9-10.
141 Ibid., p. 10.
142 Ibid., p. 16.
143 Highway Highlights 23 (June, 1962), p. 4.

agreed to include Davis-Bacon provisions in the 1956 highway act, thus mandating that all laborers and mechanics on interstate highway projects be paid at or above the prevailing local rate and requiring state highway departments to confer with the U.S. Department of Labor in setting wage rates. The effect was to put a floor under wages and, indeed, to raise construction labors' wages generally in Kansas.[144] Offsetting this budgetary penalty were social dividends, for Davis-Bacon gave the highway department a hand in assuring that blue-collar Kansas received its share of post-war prosperity.

With its responsibilities ballooning, the highway department needed an organizational overhaul. In 1956, it divided activities into two categories and added a second assistant state engineer. One assistant now headed a group composed of the planning, design, materials and research and secondary roads departments while the other oversaw construction, maintenance, right of way and office operations. A move to the new State Office Building in July, 1957, gave this revamped headquarters operation the space needed for so long.[145]

Until 1958, however, the department withstood demands to open an "urban highways department" similar to that for secondary roads. It was in cities that the department faced its toughest challenges. There costs for right of way were highest, planning for traffic flow and design of structures most demanding. According to a political scientist who studied the matter, the department's top brass were reluctant to delegate to a separate division what were really the "make or break" problems for the state system as a whole.[146] Coordinating among all the governmental units involved in urban highway projects took enormous energy, especially when opinions collided over whether priority should go to efficient traffic management, solving the parking crunch or redeveloping urban economies. The governor created a Highway Coordinating Committee, with members from state, county and city governments, to act as an advisory planning board in 1956, but bottlenecks persisted. In 1957, the League of Kansas Municipalities urged a separate urban division and the Bureau of Public Roads concurred in strenuous terms. Otherwise, the goal of simultaneous completion of the interstate system appeared doomed by urban snarls; urban, non-federal routes might develop with a peculiar logic of their own so out of kilter with federal planning as to move traffic in haphazard or contrary fashion.[147] At Governor Hall's recommendation, the Kansas Highway Commission instituted an Urban Highways Department in early 1958 to consult with city governments, advise their engineers and check city highway plans.[148]

Ironically, a nationwide recession permitted the highway commission to give further relief to Kansas cities later in 1958. To relieve the economic downturn, Congress increased federal highway aid to the states and gave them unusual

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144 Rose, Interstate, pp. 90-91; Twentieth Biennial Report, p. 8; Twenty First Biennial Report, p. 8.

145 Twentieth Biennial Report, p. 9; Twenty First Biennial Report, p. 5.

146 Hein, State-Local Relations, p. 53.

147 "Problems Cited on Highway Plan," Kansas Government Journal 43 (February, 1957), p. 124; "State Department of Urban Highways Recommended," Kansas Government Journal 43 (July, 1957), p. 403; "Cities Seek Creation of a Division of Urban Highways," Kansas Government Journal 43 (August, 1957), pp. 448, 477.

148 "Urban Highway Department," Kansas Government Journal 44 (February, 1958), p. 98.

leeway in choosing how to spend the increment. The Kansas Highway Commission elected to invest a portion of this bounty in urban areas by taking over the cities' share of right of way acquisition costs for interstate routes and cutting to 25 percent the cities' share in right of way expenses for connecting links. The state further agreed to pay full maintenance costs on urban interstate routes. In all, anti-recession funds underwrote a record-breaking $80 million highway program in 1959 that included secondary road construction at "bargain basement prices" as well as urban and primary route improvement.[149] Unfortunately, this largesse nearly bankrupted the Highway Trust Fund. With the fund about to run dry in 1959, the Commerce Department had to freeze a portion of each state's federal aid allocation until late 1962.[150]

The highway commission was not the chromeplated, streamlined model critics had passed for beginning in 1938. Its six members, holding two instead of six year appointments, still strove assiduously to serve the interests of six separate districts. After 1940, however, commissioners began accepting the wisdom of taking a state-wide perspective. They matched dollar allocations with increasing fidelity to the engineers' sufficiency ratings of roads and bridges and approved projects according to their priority in the long range program.[151] A succession of Republican governors in the forties and fifties chose to give the commission continuity by reappointing incumbents. Because they retained their connections to local communities, the commissioners had time and motive to meet Kansans face to face, explain the state's programs, and hear what the public thought about them.[152] Thus the functioning of the commission evolved informally after 1940 to meet certain of the earlier demands for efficiency. At the same time it curbed a tendency -- just as worrisome to Kansans in 1939 -- to transfer public decision-making from popular representatives to bureaucrats.

If "effervescent politics" has encompassed the department before 1940, events in the late 1950s showed that not all the bubbles had gone flat. In 1956, 78 Republicans in the state legislature organized a Flying Truth Patrol that charged, among other things, that two highway department staff members were violating the Hatch Act by campaigning for Governor Hall's renomination in the GOP primary. The staffers in question quickly resigned from Hall's campaign committee, but newly elected Democratic Governor George Docking decided in 1957 to prevent further abuses. Docking ordered Lynn Broderick, his appointee as Director of Highways, to resign from the Democratic National Committee. Broderick likewise ordered all highway department employees to resign any county or precinct party offices. Broderick shortly died, but his replacement, Maurice Martin, continued the policy.[153]

In 1962, Kansas Democrats charged John Anderson, Docking's Republican successor, with playing political favorites among consulting firms. Not only was the Anderson highway commission giving out many contracts to consultants, the Democrats protested, but the bulk of them went to firms with largely

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149 "Anti-Recession Act," Kansas Government Journal 44 (May, 1958), p. 299; "New Highway Bill," Kansas Government Journal 44 (June, 1958), p. 345.
150 Central States Construction 15 (September, 1962), p. 34.
151 Hein, State-Local Relations, p. 52.
152 Ibid., p. 12.
153 Topeka Journal, July 23, 1956; Kansas City Times, January 7, 1957; Topeka Journal, February 21, 1957; Topeka Capital, January 31, 1958; in State Highway Commission Clippings v. 3, 1956-1963, KSHS.

Republican staffs. These accusations still floated when it was revealed that Anderson's appointee as highway commissioner in the First Division had bought a Johnson County farm shortly before it was announced that the farm lay on the new route of U.S. 69. The commissioner argued that he had no prior knowledge when he made the purchase, but to forestall further doubts, he donated the proceeds from his right of way settlement to a church.[154]

Highway officials everywhere were sensitive to any hint of wrongdoing. After corruption in letting interstate contracts was discovered in Indiana in 1957, the U.S. House of Representatives organized the Blatnick Committee to investigate any possible misuse of federal interstate funds.[155] The highway department promptly instituted each recommendation for preventing abuse that issued from committee investigations elsewhere. As a result, Central States Construction magazine noted in 1962, not one department employee had ever been accused of the sort of wrongdoing the Blatnick Committee was probing. After the incident of the Johnson County farm, however, reports surfaced that investigators were asking questions among Kansas contractors. None of them went as far as questioning department employees, and at the end of the year, the Kansas highway department was declared to have a "clean bill of health."[156]

Not all disturbances over the interstates had purely political motives. In 1960 the tollway still cleared in revenues only about 85 percent of what it needed -- all the more distressing a figure when it became clear that the roadbed between Topeka and Emporia had deteriorated badly. The Turnpike Authority was forbidden by its charter to take money out of capital funds for maintenance until the operation showed a profit.[157] The turnpike figured, too, in protracted negotiations over additional interstate routes in Kansas. When Congress raised the total interstate mileage in the 1956 act to 41,000, it left the additional 1,000 miles undistributed. The Kansas Highway Commission put in its bid for some of those miles that year, asking that U.S. 69 be designated an interstate from Kansas City south to a juncture with the Tulsa to St. Louis interstate route. By 1959, however, the turnpike was proving a financial disappointment. In July, 1959, the highway commission withdrew its request concerning U.S. 69 and asked instead that the portion of turnpike between Topeka and Emporia be taken into the interstate system and the portion of U.S. 50 between Emporia and Ottawa be taken out of it. Because that would put the entire turnpike within the interstate network, KTA was understandably enthusiastic. Kansas needed something in return, however, for the state would be giving up an unbuilt road (at 90/10 funding) for a finished one. Townsfolk in southeast Kansas needed soothing, too, over their loss of a border interstate. The commission consequently expanded its request to include an interstate from Ottawa to the Oklahoma line and thence (with Oklahoma's cooperation) to Tulsa. BPR took the requests under consideration.[158]

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154 Topeka Journal, July 12, 1962; Topeka Journal, September 13, 1962 in State Highway Commission Clippings v. 3, 1956-1963, KSHS.

155 Riddick, Politics, p. 86.

156 Central States Construction 15 (July, 1962), p. 103; Central States Construction 15 (December, 1962), p. 46.

157 Wichita Morning Eagle, March 4, 1961, Topeka Capital-Journal, May 6, 1962, in Kansas Turnpike Authority Clippings, KSHS.

158 Kansas City Times, December 15, 1959, in Kansas Turnpike Authority Clippings, KSHS; "Kansas Interstate System, Status, Progress and Condition," 1984, pp. I-4-5.

By 1960, many Kansans thought these proposals too intriguing to sit in BPR's files and the Kansas highway situation too complex to go unstudied. The 1948 needs assessment was woefully out of date. According to the Kansas Highway Coordinating Committee the state's highway financing system was just as antiquated.[159] With 325 miles of interstate open in 1960, Kansans were developing a taste for the finest of roadways. Accordingly, a consulting firm was engaged to recommend to the legislature in 1963 how the state might update its highways and pay for a system that would satisfy the new breed of Kansas motorist.

Kansans were, in fact, a new breed, as an event some two decades before, in 1941, demonstrated. That year the first cloverleaf in the state opened. The Kansas Highway Commission would much rather have had the money it cost to spend on ordinary roadbeds, but BPR wanted a cloverleaf built somewhere in the West so that drivers would become familiar with their innovation. BPR decided on the intersection of U.S. 75 and U.S. 24 north of Topeka was an ideal spot. A week before the cloverleaf opened to traffic on September 18, 1941, the highway commission printed instructions in the Topeka papers and a diagram telling drivers how to make their way through the cloverleaf. Two state troopers were to be posted at each leaf to hand out more diagrams and give directions. All these careful preparations went for nothing. On opening day, hundreds of drivers who turned out to give the new fangled thing a try failed miserably to negotiate it. Motorists drove up and down each leaf in both directions, collided with each other or just stopped in befuddlement. Hard headed Kansas drivers bellowed at hapless troopers that they were headed for Topeka -- they could see Topeka lying to their left -- they were gol'darned if they'd turn right to go left. It took several days of patient supervision by troopers before motorists could use the cloverleaf without utter mayhem.[160]

Thirteen years later a Kansas editorialist thought his state was ready to build highways suited for atomic powered cars.[161] No nuclear autos had appeared yet on Kansas roads in 1962, but a populace that once found cloverleafs too confusing now took expressways, throughways, tollways, frontage roads and the accoutrements of modern highways in stride. Heightened sophistication about highway matters matched a mounting professional sophistication in the highway department which, together, had produced the first two milestones in interstate construction and a mammoth state highway program. And these accomplishments had been done with the nation's lowest highway tax. Kansans had come to expect the best -- at modest cost.

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159 "Highway Committee Recommends Study," Kansas Government Journal 46 (October, 1960), p. 525.

160 Kansas City Star, September 13, 1941, Topeka Capital, September 18, 1941, in Good Roads Clippings, v. 2, KSHS.

161 "Adequate Highways and Parking", Kansas Government Journal 40 (January, 1954), pp. 7-8.

CHAPTER 5

Cementing Partnerships: The Kansas State Highway Commission in an Era of New Responsibilities, 1963-1975

Vacationing parents of the early 1960s, exhausted by the long drive across Kansas and their nerves frayed by a backseat full of restless children, put an old game to a new use. Challenging the kids to count out-of-state license plates, they found, ensured quiet for miles. Indeed, by 1963, unprecedented numbers of tourists and commercial vehicles traveled the state's highways, and larger numbers of Kansans put their own wheels to the road. With almost half its interstate mileage complete that year and more superhighways in the offing, the state was entwined as never before in a national traffic network.

Over the next twelve years Kansans would discover that modern highway construction linked them to a national community in other ways. Once the country proposed in the mid sixties to build a Great Society founded on racial and economic justice, road construction came to be seen as a social as well as technological investment -- a critical tool for combating discrimination and poverty and for preserving the people's history, nature's balance and community cohesion. Road builders shouldered responsibilities that were undreamed of by highway engineers of any earlier generation. When war, inflation and a petroleum crisis pinched the country's pocketbook, Kansans found that highway budgets hinged on events that were national, even global, in scope.

"Crisis" came to be a stock word in the headlines of the sixties and seventies. A lingering one, the "crisis of the cities," proved especially troublesome in Kansas. On the one hand, a pattern which had been developing since the Kansas Highway Commission's birth had given Kansas a split personality. By 1963, it had emerged as an urbanized farm state in which the bulk of its income depended on agriculture and the majority of its citizens lived in urban areas. Devising a road building policy to suit both halves of the state's nature could be a schizophrenic experience at times. When federal authorities responded to the crisis of the nation's big cities with a novel approach to transportation, the result for Kansas was a temporary heightening of tension between its dual personalities and the introduction of a wholly new structure for uniting the two aspects. In the end, solving this and several crises of the sixties and seventies joined Kansas highway builders in new partnerships with other agencies and other policymakers -- partnerships that were sometimes uneasy, often productive, and always challenging.

If Kansans still thought of themselves as a farm people, the Jorgensen Report tried to refashion this image. This needs assessment, authorized by the legislature in 1961 and ready for legislators' study in 1963, found that Kansas farms continued to grow larger in size and fewer in number. Meanwhile, the tendency to take a city address increased sharply between 1950 and 1960. More than 60 percent of the state's population now clustered in urban places and two-thirds of the state's area contained less than one-third of its population. Urbanized and increasingly industrialized since the end of the depression,

Kansas still maintained an enormous road network geared to rural traffic. The time had long since come, the report's authors argued, for Kansas to recognize its dual urban-rural character and to plan highways accordingly.[1]

For a start, the report recommended paring down the state's roadway mileage. Over decades, new routes had been added to the primary and secondary systems as needed. Few of the lightly traveled routes had been removed so that the state's mileage of streets and roads had grown to 133,000. The network absorbed a disproportionate amount of highway funds for routes carrying under ten percent of total traffic and left urban arterials poorly financed. By funding 578 miles of connecting links at a level equal to state highways and lopping 325 miles of seldom used road from the state system, Kansas might begin to restore balance.[2]

Another proposal to update the system had been stirring excitement for several years. The report urged that Kansas build some 1,200 miles of controlled access freeways along heavily travelled corridors outside the interstate system. Freeways would serve "traffic desire" of the motoring public and might also give the state an edge in federal highway politics. When the interstate system reached its target date for completion in 1972, Congress would be left with a big Highway Trust Fund to spend on other purposes. Should Congress decide at that point to expand interstate mileage or to invest in state freeways, having freeway plans in the works would put Kansas in a position to claim a sizeable portion of those funds.[3]

The report recommended anchoring eleven freeway projects in key urban areas, one of the most critical projects linking Wichita with the populous southeast corner of the state and two others tying Kansas City to I-44, along U.S. 69 to Joplin or along the U.S. 59-U.S. 169 corridor via Ottawa. Not all the eleven projects would need four lane construction at once, but the report urged that the highway commission acquire enough right of way to convert them to dual roadways in the future.[4]

Long range planning would be essential to the state's "new look" in highways and would require retooling of the administrative apparatus. Even though "long term planning" had become a byword in the state, the Jorgensen firm concluded that the Kansas Highway Commission still produced six separate divisional programs instead of a unified state program. Jorgensen staffers thus repeated a recommendation critics had been making since the late thirties -- appointment of highway commissioners at large for longer terms. Jorgensen consultants would also have the commission elect one of its own members to serve as chair in place of the highway director and would empower the commission, not the governor, to hire and fire the highway director. A still more innovative

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1 Roy Jorgensen and Associates, Kansas Highway Needs: An Engineering Appraisal. (Topeka: Kansas State Printing Plant, 1962), pp. 10-12, 31.

2 Ibid., pp. 13, 19.

3 Ibid., pp. 13, 47, 68-69.

4 The other corridors recommended for freeway construction were: All of U.S. 81 north of Salina; all of U.S. 75 north of Topeka; K-5 and U.S. 73, Kansas City to Atchison; U.S. 36, Saint Joseph, Missouri to Belleville; K-96, Great Bend to Wichita; U.S. 50, Hutchinson to Emporia; K-61, Hutchinson to McPherson; and a northeast quadrant to complete the circumferential route at Wichita. Ibid., pp. 48-49.

proposal would strip the county commissions of all but policy making authority over county road systems and give day-to-day administration to the county engineers.[5]

Obviously a system of freeways and streamlined urban arterials would not come cheap. The cost to Kansans of an updated system mounted still higher because 4,000 miles of state rural highway and half the mileage recommended for "urban state highway" status were found to be deficient. Kansans would have to find over $92 million a year to build and maintain the complete package in fifteen years.[6] A separate fiscal study found that Kansas highway revenues would fall 15 percent short of the needed amount.

Results of the AASHO Road Test, demonstrating what highway user groups ought to be paying for roads, spotlighted culprits for the Kansas shortfall. Kansas automobiles ought to be contributing $77 to $86 per vehicle in state highway revenues. They paid just $63. Various systems of measurement showed that semi-trailer trucks contributed no more than 35 percent of the justified amount for the use of Kansas highways. Among the fiscal recommendations were a one-cent hike in the motor fuels tax and a jump in car and truck registration fees. To answer the cities' pressing needs, the report suggested that the legislature revise the revenue distribution formula in cities' favor and empower municipalities to charge separate vehicle registration fees.[7]

Mixed reviews greeted the combined report. A consortium of public officials and state highway administrators protested that the report was too conservative. While agreeing with the report's essential findings, the consortium urged that the gas tax be increased by 1 1/2¢ (with a heftier portion going to the state and cities) and that the pace of urban street and highway improvements be stepped up. Even a few rural spokesmen agreed that the report asked cities to pay too much of the costs for relieving congestion on city streets.[8]

Predictably, the freeway proposals stirred jealousy among various locales. Residents along U.S. 75 protested that the report outlined two freeways paralleling the state's eastern border. They held that construction of U.S. 75 as a superhighway all the way from the Nebraska to the Oklahoma lines would give a more equitable spacing between superhighways.[9] Representatives of southeastern Kansas towns were incensed. The highway commission had withdrawn its request that BPR designate an interstate route between Ottawa and Tulsa in January, 1963, and complaints from the Ottawa area continued during the 1963 legislative session. State highway administrators replied that their action was reasonable. To date, Oklahoma refused to build the necessary Oklahoma leg of an Ottawa-to-Tulsa route, and BPR was reluctant to invest interstate funds. Having rejected the Ottawa-Tulsa interstate proposal for an earlier one extending I-35

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5 Ibid., pp. 14, 16, 100.
6 Ibid., p. 13.
7 Wilbur Smith & Associates, Fiscal Aspects of Kansas Highway Programs, 1962.
8 "Kansas Officials Present Program for Better Roads," Kansas Government Journal 49 (November, 1963), p. 479; Wichita Eagle-Beacon January 29, 1963 in State Highway Commission Clippings, v. 3, 1956-1963, Kansas State Historical Society [KSHS].
9 Topeka Capital January 17, 1963 in State Highway Commission Clippings, v. 3, 1956-1963, KSHS.

from Emporia to Ottawa, the highway commission could eliminate a 47 mile gap in I-35 between those towns and assure the essential federal aid for a bypass at Emporia. Proponents simply would have to rely on the legislature to fund their route as one of the proposed freeways.[10]

Advocates of a superhighway along the U.S. 69 corridor chose to hedge their bets. Although U.S. 69 was proposed as a freeway, they secured legislative authorization for a preliminary estimate of the route's feasibility as a turnpike. Legislators decided against a costly full-blown feasibility study because of the risks involved. Should Missouri elect to make nearby U.S. 71 a freeway from Kansas City to I-44, a parallel Eastern Kansas Turnpike along U.S. 69 would attract few paying customers.[11]

In the words of Ed Weilepp, Manager of the Kansas Contractors Association, the remainder of the road program "got clobbered" in the legislature.[12] After an anti-tax lobby showed its teeth, a caucus of House Republicans apparently killed the gas tax increase before the measure reached the House floor. Squabbles among various locales over freeway routes and some legislators' displeasure with use of traffic flow and "desire lines" to locate freeways further hampered the program. In fact, legislators frankly confessed confusion about the intricacies of highway planning and finance. While several anti-taxers demanded that the highway department's staff and administrative costs be pared before it received additional tax funds, the legislature ordered an administrative study of the department -- not out of suspicion of the highway department, members admitted, but because they felt too uncertain about highway affairs to invest in a massive program. "And it has long been known," Weilepp noted, "that what the legislature does not understand, the legislature votes against." Thus members adjourned without implementing one measure recommended in the Jorgensen Report.[13]

Advocates kept plugging for a revamped highway program the following year against strong opposition. Petroleum producers in the state declared that the gasoline tax was "a good horse but it has been ridden to death," and service stations began sporting big signs saying "Gas Taxes Collected Here -- We Also Sell Gasoline and Oil." When an interim budget session of the legislature refused to consider a gas tax hike in 1964, worried public officials and editors of city newspapers blamed rural dominance in both houses.[14]

Anxious to accelerate its construction program with whatever funds it could scrounge, the Kansas Highway Commission designated in September, 1964 a Kansas Freeway System roughly corresponding to the routes outlined in the Jorgensen Report.[15] The commission would begin building the system as rapidly as funds became available, but it was apparent that this piecemeal approach would handicap the commission politically as well as fiscally. The normally unified Fourth Division, for example, was torn by dispute when the commission decided to

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10 Minutes of the Kansas State Highway Commission, v. 33, February 13, 1963.
11 Topeka Journal March 12, 1963 in Kansas Legislature Clippings, v. 34, 1963, KSHS.
12 Central States Construction 16 (May, 1963), pp. 17, 69.
13 Central States Construction 16 (April, 1963), p. 36.
14 Central States Construction 16 (November, 1963), p. 16; Central States Construction 16 (December, 1963), p. 15.
15 Minutes, v. 36, September 9, 1964.

begin building a U.S. 69 freeway piece-by-piece from Kansas City. Charging that the improvements would leave no additional funds in the division for their own pet project (a freeway south of Ottawa), representatives from the western half of the Fourth cried foul. Without additional funds to earmark for the freeway system, commissioners found themselves in one public meeting after another explaining to frustrated townsfolk why their long-awaited superhighway must be further delayed.[16]

So far, administrative studies had been no help about supplying additional funds. A collection of Kansas businessmen, who were chosen to scrutinize the highway department because it was thought the legislators would trust their homegrown common sense, agreed after a year's study that the commission could not keep up capital improvements with the money available to it. But the businessmen's tantalizing recommendation -- issuance of highway revenue bonds -- frightened debt-wary Kansans. A simultaneous management study by a consulting firm found that the highway department could be made more efficient by adding more professional staff and upping their salaries.[17] Critics of the department could easily ignore both studies.

Consequently, legislators were no better informed about highway matters when they met in 1965. Proposals for a gas tax increase died once more amid reports by the Kansas Oil Men's Association that the highway commission possessed a huge surplus of funds and employed too many engineers (1,500 resident engineers, according to one legislator). An angry Highway Commissioner, J. Rex Duwe, took to the stump after the session closed to brand those reports "unmitigated fiscal hogwash." The rumored surplus funds were actually the cash balance the commission kept on hand to pay contractors when their work on a project was done -- sometimes months before federal funds for the project arrived in Topeka. Far from being overstaffed, the department had tripled its work load between 1950 and 1964 but added just 15 more engineers to its ranks. The Bureau of Public Roads, Duwe warned, was threatening to cut federal funds to Kansas because of understaffing, and Washington was growing impatient with a state that stood among the top third in receipt of federal highway funds and near the bottom in expenditure of state revenues for highways.[18] Unfortunately, Duwe's civics lesson came too late to save the road program in 1965. Neither the highway commission nor the highway department was doing a good job educating the public.

By late 1967, however, support for a speed-up in Kansas highway construction was growing. The pace of pay-as-you-go freeway construction had proved maddeningly slow for many communities, and the rate of inflation promised to multiply the costs of any project that was postponed for the future. Building with borrowed money now, before construction prices went through the ceiling, began to make good financial sense. At the same time, existing roads deterior-

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16 Wichita Eagle August 2, 1963, in Good Roads Clippings, v. 4, 1957-1979, KSHS.

17 Minutes v. 34, June 12, 1963; Minutes v. 37, January 28, 1965; Topeka Capital October 15, 1964, State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

18 Central States Construction 18 (May, 1965), p. 16; Highway Highlights 24 (August, 1963), p. 2.

ated as fast as new ones were built. For every twenty miles of new surface the highway department laid in a year, nineteen other miles of road became obsolete. Nearly half the state system stood below tolerable standards.[19]

Governor Robert Docking instructed his Special Highway Assistant Gale Moss to work to formulate an accelerated highway program. What Moss devised was a stripped-down plan. Instead of the 1,200 mile freeway system proposed in the Jorgensen Report, the state would build over five years just 400 miles of freeway and 200 more miles of two-lane road. Because a recent study had shown the Eastern Kansas Turnpike, and parts of two freeways linking Wichita with Hays and Baxter Springs, to be feasible as tollways, the Docking plan included them, adding 200 miles of turnpike construction to the proposed package.[20] Docking hoped to pay for the program by issuing highway revenue bonds and repaying bondholders from highway user fees and turnpike tolls. Reckoning that growth in population and vehicle registrations would increase these revenues sufficiently to pay off the bonds (and judging a gas tax hike likely to poison voters' support for the plan), Docking rejected an increase in users fees.[21]

Ironically, the tax issue produced a dogfight between a Democratic governor and Republican legislative majority that scuttled the program. When the legislature approved a GOP bill for a bond issue and a two cent increase in the gas tax in its 1968 session, the governor vetoed it as an unnecessary burden on taxpayers.[22] Both parties then dug in for the '68 election campaign in which the highway program figured as a hot issue. Highway interest groups, anxious to see one plan or the other approved, hoped the voters would not return another partisan split between the state house and the legislature, in which case, "a highway bill of any substance would be hard to come by."[23] The electorate did precisely that, re-electing Docking to the governor's chair and a Republican majority to the legislature. Both sides squared off in the '69 session for what one observer called "the most dramatic legislative battle of the decade." The House failed by one vote to override the governor's veto of a bill providing for bond issues and a tax hike. Then in late April, both houses managed to override a similar veto of a measure for the two cent tax increase alone. An angry Docking charged that the GOP had succeeded in taxing the public unnecessarily for the benefit of special interests.[24]

The new legislation caused difficulties for the highway commission. Of the two cent gas tax increase, one cent was pledged to the cities and counties and the other to a state freeway fund. In addition, 50 percent of all state-wide funds for highway construction were now to be earmarked for freeways, cutting in half the money previously spent on the other 8,000 miles of state highway. Another proviso of the bill designated nine freeway corridors and mandated that they be built according to a complex set of priority ratings - which the

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19 Topeka Journal December 20, 1967 in Good Roads Clippings, v. 4, 1957-1979, KSHS; Central States Construction 21 (April, 1968).

20 Minutes, v. 42, November 29, 1967; Topeka Journal December 20, 1967 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

21 Topeka Journal December 20, 1967 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

22 Central States Construction 21 (April, 1968), p. 20.

23 Central States Construction 21 (October, 1968), pp. 42, 46.

24 Central States Construction 22 (April, 1969), p. 11; Central States Construction 22 (June, 1969), p. 9.

commission judged to be contradictory and an instrusion into its authority over programming. Having approved a five year plan for highway construction, the commission now put the entire construction program on hold while it determined whether there was enough money left to spend on roads outside the freeway system, and it filed suit to have the priority restraints invalidated. When inflation led Docking to cut back state construction budgets at the end of 1969, bid-letting in Kansas creaked to a near halt. The highway department edged uncertainly into a new decade.[25]

Despite the familiar problem of funding lags between 1963 and 1970, the highway department staff found plenty to do. So complex had the department's operations become, in fact, that a sequence of reorganizations had to be made to adapt to its burgeoning responsibilities. A management study which followed the legislature's order in 1963 found that the department suffered from lack of continuity and a cumbersome chain of command. Eight separate department heads representing a total of 4,000 employees reported to the state highway engineer and he to the highway director. Inevitably, communication clogged in the offices of these two overburdened commanders. Each change in the governor's appointee to the highway directorship brought in a new man with a different style of management. The study suggested relieving the communications blockage by limiting the number reporting to the state highway engineer to three assistant state engineers and putting one administrator in charge of fiscal and personnel management, purchasing and public relations. The latter, a career officer, would provide continuity.[26]

The highway commission preferred to weigh the recommendations carefully. Besides employing three assistant state engineers, the opening of a new Department of Organization and Management in 1966 met another of the study's suggestions. As it turned out, the department enjoyed continuity without significant reorganization. Long-time State Highway Engineer Walt Johnson stayed at his post and Governor William Avery asked Addison Meschke, Governor John Anderson's appointee, to remain as highway director.[27]

In 1966, the administration of federal highways underwent restructuring with the creation of a U.S. Department of Transportation. The Bureau of Public Roads was transferred from the Commerce Department to the Department of Transportation and was newly named the Federal Highway Administration [FHWA] in 1967. By 1967, Governor Docking concluded that the highway department must consider a more thorough-going reorganization of its own in order to handle a mushrooming work load and to reassure the public. The highway commission arranged for another management study -- and received the same conclusions. In February, 1968, the commission authorized John D. Montgomery (Docking's appointee as highway director in 1967) to carry out a major overhaul.[28]

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25 Highway Highlights 30 (May, 1969), p. 2; Central States Construction 22 (June, 1969), p. 7; Central States Construction 22 (September, 1969), pp. 26, 34.

26 Topeka Capital October 15, 1964 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

27 Topeka Journal September 28, 1966 and January 10, 1965 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

28 Minutes, v. 41, April 21, 1967 and May 10, 1967; Minutes, v. 40, January 27, 1967; Minutes, v. 41, February 29, 1968. The U.S. Department of Transportation, a Cabinet level office, was established in order to bring more

The most visible change was the creation of an assistant to the highway director, a post to be filled by a career officer who would help oversee the entire operations of the department and have charge of the six departments of Personnel, Planning and Development, Safety, Motor Vehicle, Accounting and Data Processing. John B. Gehr, a personnel expert with the highway department for the past ten years, took over the new slot. One assistant state engineer for operations now supervised the Maintenance, Construction and Materials Departments and the six divisional offices while an assistant state engineer of design also oversaw the new department of Location and Design Concepts, which incorporated photogrammetry and geology and soils survey. This reduced to two the number of assistant state engineers reporting to the state highway engineer. The new assistant director's post freed the state highway engineer of administrative duties and enabled him to concentrate on engineering matters. The state engineer's office now had a new occupant as well for Walt Johnson retired in April, 1968, taking with him the benefits of the experience of 40 years spent with the highway department and twelve years as its state highway engineer.[29]

Luckily, the department had in Johnson's replacement a man who had played a similar part in shaping the department's development. Having started with the department as a rodman in 1933, R. L. (Dick) Peyton had fathered its training programs and had overseen, at various times, photronics, planning and research and materials. He knew the department's workings as well as anyone could.[30] Another change in November, 1968, put Peyton in the assistant director's chair and brought John D. McNeal, with 27 years experience in geology and research, to the state highway engineer's post.[31]

Shuffling the organizational chart would not solve an endemic problem. An engineer shortage still strangled the highway department. Rotational Training continued to be the department's life-line to young engineering talent, but the program only partly overcame the department's disability. Where one-half the graduates of Kansas engineering schools had left the state in 1950, three-quarters of them found jobs elsewhere in 1963. Because the graduate engineer who went to work for the state would earn about $150 a month less than his classmates, still fewer chose the highway department.[32] In July, 1965, an exasperated highway commission called its shortage of technical staff a "dangerous situation" of "critical urgency" and announced that its members would not be held responsible if Kansas lost its federal highway aid because of understaffing. The warning was dire enough to move the state's Finance Council to raise engineer's salaries.[33]

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coordination to transportation policy and to place BPR more directly under Executive Branch direction. See Winston Wade Riddick, The Politics of National Highway Policy, 1953-1966. Ph.D. dissertation, Columbia University, 1973 (Reprinted by: University Microfilms, 1973), pp. 149-150.

29 Highway Highlights 29 (July, 1968), pp. 4-5.

30 Interview with Dick Peyton, Assistant Director of Highways (retired), January 8, 1986; Topeka Journal January 10, 1968 and Topeka Capital January 12, 1968 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

31 Highway Highlights 29 (November, 1968), p. 2.

32 Central States Construction 17 (January, 1965), p. 60.

33 Minutes, v. 38, July 7, 1968; Wichita Eagle September 8, 1965 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

Meanwhile, the modern highway engineer's craft grew ever more sophisticated; soon the bachelor of science degree would be an inadequate preparation for the work the department's engineers had to do. In August, 1967, the highway commission authorized the highway director and state highway engineer to select two promising department employees each year and provide them a stipend for one year's graduate study in engineering. Recipients must agree, in return, to work for the Kansas highway department for twice the period for which they had received a stipend. At the lower level, the Highway Technology Training Program for engineering aides and other in-house training programs honed employees' skills and opened opportunities to advance careers.[34]

Still, keeping pace with pressures on manpower taxed management's ingenuity. The military draft and the call of Kansas National Guard units for duty in Vietnam cost the department scores of experienced men.[35] With manpower stretched thin, the department welcomed any technological innovation that substituted machines for men. The Research and Materials lab, for example, began using nuclear testing devices to measure the density and moisture content of highway surfaces and the depth of the surfacing material. In two or three minutes the instrument measured on the job site what had taken hours to test from samples in the lab.[36] In 1965 Research and Materials improved its efficiency still more with its move into a new lab building. Work that had been scattered in several buildings about Topeka was now brought together in a facility a newspaper reporter pronounced "kitchen clean."[37]

By augmenting its IBM 1620 with an IBM 1440 in 1966, the department added magnetic tape and disk file storage to its computer capacity and cut by a third the average running time needed to process data for accounting and photronics. For all its state-of-the-art capacity, however, the tempermental 1440 was comprised of six bulky machines requiring a room of their own and a cool, clean environment. Accounting and photronics moved to a shared wing to be near the machines they used so heavily -- testament to the computer's facility for breaking down organizational traditions. And in 1969 the highway department consolidated operations of its new IBM 360s in a "highway data center."[38] No longer simply the tool of a few data-rich offices, the computer was now integral to the highway department's entire operation.

Other innovations increased motorists' chances for survival. The department erected several types of breakaway signs that snapped off easily when struck by a car and experimented with collapsible barriers around signposts that absorbed the impact of collision. New substances cropped up everywhere, from adhesive plastic centerlines that seldom needed repainting to epoxies for bonding new concrete to old.[39] And the department made breakthroughs in use of old standby

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34 Minutes, v. 41, August 23, 1967; Highway Highlights 28 (September 10, 1967), p. 2.

35 Highway Highlights 29 (May-June, 1968), p. 3.

36 Highway Highlights 25 (November, 1963), p. 4.

37 Topeka Capital March 5, 1965 in State Highway Commission Clippings, v. 4, 1963-1979, KSHS. The new lab was located at 2300 Van Buren in Topeka.

38 Highway Highlights 27 (January-February, 1966), pp. 6-7; Highway Highlights 31 (January, 1970), p. 7.

39 Kansas City Star February 8, 1967 in Good Roads Clippings, v. 4, 1957-1979, KSHS; Highway Highlights 27 (August, 1966), p. 5; Highway Highlights 27 (September, 1966), p. 10; Highway Highlights 30 (May, 1969), p. 15.

materials. In 1964, Kansas welcomed visiting experts to see the world's largest asphalt project, the surfacing of I-70 through Saline, Lincoln and Ellsworth Counties, where asphalt was laid an unusual 18 inches thick along 40 miles of dual road.[40] Six asphalt plants turned out 1,650 tons of asphalt and aggregate an hour at a pace that was, one reporter noted, "gobbling up Kansas petroleum in gulps measured in millions of gallons."[41]

After other states had used slipform paving successfully, Kansas saw its first experimental application of the method on I-35W near McPherson in 1968. For the test project, Koss Construction, slipforming veterans, put down a layer of tarpaper and topped it with transverse and centerline steel. Once concrete was dumped on this base, a paver equipped with vibrators spread and compacted the concrete so firmly that it would stand without forms -- a vital savings in preliminary labor. Steel mesh was laid atop the first 6 1/2 inch layer of concrete and a second layer of 2 1/2 inches of concrete was spread in the same way. More autograder and smoothing machines followed to finish the surface, then burlap was placed over the raw roadway and kept damp for four days to cure the concrete. Tests by highway department personnel followed to determine if slipforming produced a roadway of proper specifications, but at the outset there appeared to be only one troubling problem. Laborers were so scarce in Kansas that the available men could not lay tarpaper and steel fast enough to keep ahead of the pavers.[42]

The tempo of construction was only a little less frenetic elsewhere on the interstate system. In the flurry of dedication ceremonies between 1963 and 1970, local officials were hard-pressed to outdo each other. An old-fashioned sickle sliced through a ribbon of Kansas wheat to open I-70's urban route through Topeka in 1965. Shaving the trip through downtown from 20 minutes to eight, the route was expected to boost the business district by relieving traffic congestion. "This is going to be the front yard of Topeka," predicted an optimistic Mayor Charles Wright, Jr.[43] Governor Avery and several beauty queens shared the spotlight with a 101 year-old pioneer woman at the opening of I-70 from Oakley to Colby in 1965, and the following November, 1966, saw the dedication at Russell of the last section of I-70 between Colby, Kansas and St. Louis, Missouri. Interstate 70 now boasted the longest complete and continuous roadway in the nation's interstate system -- half of it lying within Kansas borders.[44]

When Kansas opened its final section of I-70 at Goodland in August, 1970, dedication planners pulled out the stops. A caravan of celebrants formed in Topeka to travel the route in style, stopping for festivities at towns along the way and adding members to the caravan. At the ceremony in Goodland, visiting dignitaries included John B. Kemp, then Regional Administrator of the Federal Highway Administration, who praised the federal-state partnership in interstate construction as an unprecedented example of effective government. But the unwitting stars of the ceremony were a vacationing family from Wisconsin, who were

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40 Central States Construction 17 (July, 1964), p. 28.

41 Wichita Eagle July 27, 1964 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

42 Central States Construction 21 (November, 1968), pp. 14-15. Interstate 35W was renamed I-135 in 1976.

43 Topeka Capital June 16, 1965 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

44 Topeka Capital December 17, 1965 and Wichita Eagle November 17, 1966 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

unaware that the last leg of their trip through Kansas was a few hours short of its actual opening. A puzzled father slowly approached the crowd standing in the middle of his route and carefully negotiated his car through the throng. With curious youngster's faces pasted to the rear windows, the family disappeared toward Colorado unaware that they were the first to use I-70 border to border in Kansas.[45]

The most costly and technically challenging project on Kansas interstate was slated for construction on I-35W in Wichita beginning in 1966. The Canal Route, named for the drainage canal it would straddle, took years of study simply to locate a route that would combine reasonable right of way costs with the least harm to neighborhood stability, drainage patterns, economic development, and myriad other factors. When complete, the Canal Route would funnel traffic through the city's core at 60 to 70 miles an hour and would link it with three other highway and freeway routes, as well as I-35W and I-235 bypass. Meanwhile, engineers and contractors would face daunting construction tasks: a canal that required improvement and enlargement where it formed the median for part of the route; a 1,400 foot bridge curving over the Santa Fe Railroad; a huge directional interchange; bridges crossing other bridges with a dipping and rising grade like the tracks of a roller coaster.[46]

Despite difficulties about getting additional funds, the highway department made a good start on the Kansas freeway system. In 1963 the highway commission pegged for an early start the most heavily traveled freeway routes identified in the Jorgensen Report: the U.S. 69 corridor, a combination of U.S. 59 and U.S. 169 corridors linking Kansas City and Coffeyville via Lawrence and Ottawa, the length of U.S. 81 between the Nebraska border and its juncture with I-70 and I-35W outside Salina, and U.S. 54 linking Wichita to Pratt. Work began at once on U.S. 69 in Johnson County.[47]

Settlement of two disputes over routing decisions cleared the way for additional freeway construction in 1965. Proposals to reroute U.S. 54 had been drawing fire since the 1950s from the towns that would be bypassed. When designation of a U.S. 54 freeway confirmed those rerouting plans, angry townsfolk protested that they "might as well bulldoze the business places on the [old] highway."[48] The legislature narrowly defeated a bill in 1965 that originated in the U.S. 54 controversy and would have given municipalities a veto over highway bypasses. With the beeline route seemingly assured for U.S. 54, contractors began work the following year on a ten mile stretch of the freeway between the Kingman County line and a four lane road west of Wichita.[49]

Another controversy involved Topekans' desire for a border-to-border superhighway along U.S. 75. Work started in 1963 on a four mile length of four lane road north of Topeka, where heavy traffic and hilly terrain imperiled drivers on

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45 Central States Construction 23 (August, 1970), p. 15.

46 Wichita Eagle July 23, 1966 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

47 Jorgensen, Kansas Highway Needs, pp. 47-49; Topeka Capital September 19, 1963 in Good Roads Clippings, v. 4, 1957-1979, KSHS; Minutes, v. 34, August 14, 1963.

48 Wichita Beacon March 5, 1964 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

49 Wichita Eagle-Beacon October 17, 1965 in Good Roads Clippings, v. 4, 1957-1979, KSHS; Highway Highlights 27 (August, 1966), p. 6.

U.S. 75. Topekans demanded more, however, and in 1966, with stout endorsement from public hearings, the highway department began construction near Forbes Field of a freeway that was slated ultimately to link Topeka with I-35 to its south and the Nebraska border to the north.[50] The same summer, work was started on two more freeways which the highway commission had included in 1964 in its expanded program for freeway construction. One project would convert K-32 to a four lane route between Bonner Springs and Kansas City. The other, a four lane highway between I-70 and Leavenworth, was expected one day to stretch from Olathe to Atchison.[51]

A look at the map showed why these five projects received a go-ahead before the commission had the wherewithal for a full-blown program of accelerated highway construction. All five were anchored in heavily urbanized areas; all but one lay in the populous eastern third of the state. Only in 1967 was work begun for two freeways based in small cities outside the eastern tier (U.S. 81 north of Salina and K-61 around the southern edge of McPherson). In that same year, the state spent $79 million in highway construction (the third highest amount in 50 years) and devoted half of the funds to building four lane roads in congested population centers, for the commission and the highway department believed they must push their existing resources to the limit if highway capacity were not to fall behind the pace of social and economic change in Kansas.[52]

A similar impulse energized Washington and the American people in the mid 1960s. Outworn social and political institutions designed for an earlier day and barely retooled during the New Deal were strained by the consequences of the rapid changes the nation had experienced since the Second World War. In cities in which mushrooming suburbs circled decaying cores, on a landscape where industry and technological innovation upset environmental balance, in a marketplace where products that threatened consumers' health and safety were sold, new problems begged for fresh solutions. Lingering flaws in the social fabric -- racism, poverty, ill-health -- meant that a prosperous nation fell short of its ideals. Worried Americans reacted with a typically optimistic and practical conviction that what was broken could be fixed by Yankee ingenuity. The Great Society launched in Lyndon Johnson's presidency and consolidated under Richard Nixon's administration put this conviction into practice.

Casting about for a means to retool America, policy planners rediscovered highway construction. So massive a civil works program, they recognized, had effects beyond the movement of vehicles. Highways supplanted old neighborhoods and structures, determined the sites of economic development and altered the quality of air, water or habitat. Careful planning might ensure that they did so in positive ways. And the public had a mammoth investment of its tax dollars in the highways -- enough to charge highway builders with a wider responsibility

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50 Topeka Journal August 28, 1963, Topeka Capital February 26, 1965, Topeka Journal March 8, 1965, Topeka Journal September 23, 1964 in Good Roads Clippings, v. 4, 1957-1979, KSHS: Highway Highlights 27 (August, 1966), p. 6.

51 Highway Highlights 27 (August, 1966), p. 6; Topeka Journal September 23, 1964 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

52 Topeka Journal June 28, 1967, Kansas City Star January 10, 1968 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

for the public welfare. Tying that investment to social purposes made highway construction a sort of trowel to reshape American society. Highway professionals would be the social, as well as civil, engineers who plied the trowel.

One of the earliest and most visible of the highway department's experiences with social engineering followed the Highway Beautification Act of 1965. Popular legend of the time attributed the act to Lady Bird Johnson's horror over the country's ill-kept outdoors. Comics liked to mimic her soft Texas drawl, as the First Lady urged every American to plant a "tree, a bush or a shrub." In fact, state highway departments had been planting trees and shrubs for decades. Relief workers set plantings along the margins of roadways across Kansas in the depression and the highway department layed out its first roadside rest area at the Baldwin Junction of U.S. 56 and U.S. 59 in 1934. Having one of the first landscape architecture sections to review plans and set roadside plantings in the 1930s put Kansas in the advance of highway beautification. At the same time, the commission sought legislation to keep the roadsides clear of eyesores.[53]

The Federal Aid Highway Act of 1958 took a step in that direction by offering a bonus equal to 1/2 percent of a state's federal aid allocation to any state having laws on the books to control billboards, but the Highway Beautification Act replaced the carrot with a stick. States now stood to lose 10 percent of their yearly allocation for failing to eliminate junkyards within 1,000 feet of right of way and another 10 percent for failing to remove outdoor advertising within 660 feet of right of way. Their deadline for enacting the appropriate legislation was January 1, 1968.[54] The highway department received over a half million dollars in federal money in 1966 to begin enhancing seven roadside parks and to put in shrubs and fences that would screen junkyards or muffle traffic noise. By autumn, department staff had inventoried 55,000 offending signs, tallied junkyards and let bids for screening four junkyards.[55] But the department lacked muscle so long as the legislature failed to enact coercive laws.

With a hefty slice about to be cut from the state's federal aid, the 1967 session finally passed a measure forcing removal or screening of junkyards within 1,000 feet of state, county or city routes and establishing a State Salvage Board to license junkyards. A billboard law died again after legislators failed to come up with a compromise between the Outdoor Advertising Association's willingness to sacrifice rural billboards and FHWA's insistence on stricter limits for billboards in urban areas.[56] The "billboard fiasco," as one journalist called it, stretched into 1971. The legislature ignored U.S. Transportation Secretary John Volpe's open threats to cut $3.4 million out of Kansas highway funds. By the time the legislature met again in 1972, Washington

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53 Interview with Dick Peyton; Highway Highlights 23 (September, 1962).

54 Wichita Eagle January 21, 1967 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

55 Minutes, v. 38, August 11, 1965; Topeka Journal August 18, 1965 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS; Highway Highlights 27 (September, 1966), p. 2.

56 Topeka Journal July 17, 1967 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS; Minutes, v. 40, December 14, 1966.

had put that money in escrow. This time the legislature managed to get a Highway Advertising Control Act through both houses, and the highway department began removing signs the next year.[57]

Efforts to beautify the highways contributed to safety. For decades, the highway department had poured considerable energy into ensuring safe design and use of the state's roads. The federal Highway Safety Act of 1965 expanded those responsibilities by directing the department to cooperate down to the local level in eliminating hazards. Within a few months the department's staff had helped Kansas counties inventory danger spots on primary and secondary routes, and in the following year the department added a Highway Safety Coordinator's office to devise programs for eliminating hazards.[58] The National Safety Act of 1966 made that office a conduit for grants to local communities for a variety of activities. One of the most important cooperative programs was dubbed TOPICS for Traffic Operations Program to Increase Capacity and Safety. The federally funded effort to improve sites where the accident rate was high got its first Kansas project underway when a busy Wichita intersection was widened and given left turn bays in 1971.[59]

The highway department's employee safety program had its own long and successful history, but in 1970 the acronym "OSHA" began to be whispered among contractors on highway projects. With passage of the Occupational Safety and Health Act in 1970, Congress set minimum standards for worker safety, directed the Department of Labor to inspect job sites and to fine employers who failed to remove hazards, and it empowered workers to file complaints about dangerous conditions -- a procedure that could shut a construction project down entirely. Contractors worried that unions would use the complaint procedure to harrass them, and they fretted over the costs of compliance, the extra burden of record-keeping and the possibility of fines.[60] However, after the Kansas Highway Commission voted in 1972 to apply OSHA standards to all its projects, however, the Kansas construction industry reported that it could get along with OSHA.[61]

Environmental preservation posed broader issues of health and safety. Protections which environmentalists had fought for over several years won Congressional approval in the Kennedy-Johnson years and were toughened under Richard Nixon. Meanwhile, researchers discovered more about the intricate, often subtle ways in which human actions damaged the ecological balance. Planning or building a road had been a much simpler affair before it was understood that accumulated car exhausts poisoned air and plant life, that close-cropped, weed-free right of way destroyed wildlife habitats or that six lanes of heavy traffic produced enough noise over time to harm one's hearing. Devising highway systems that mitigated these and other hazards raised highway design to a new level of complexity.

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57 Central States Construction 24 (June, 1971), p. 6; Central States Construction v. 24 (February, 1972), p. 8.

58 Highway Highlights 27 (September, 1966), p. 3; Minutes, v. 42, October 13, 1967.

59 Highway Highlights 33 (January-February, 1972), pp. 2-3.

60 Central States Construction 24 (August, 1971), p. 26.

61 Minutes, v. 48, July 19, 1972. For attitudes toward OSHA, see yearly surveys of the heavy construction industry in Central States Construction.

Not everyone took kindly to these complications. In 1970, the Central States Construction magazine warned contractors that "air pollution militants" in Kansas would shortly impose air quality control standards on every machine they operated, from diesel scrapers to dust-belching batch plants, even though the equipment was used most often in open areas, away from urban populations.[62] Under the blue skies of Kansas, it was hard to believe that a puff of pollutants rising above a rural job site could do anyone harm. But the accumulated puffs from hundred of construction sites mixed with urban pollutants to create a potential hazard unbounded by geography. Convinced it must act before blue Kansas skies turned murky, the legislature passed the Ambient Air Quality Standards and Air Pollution Control Regulations to take effect in 1971.

Contractors were bothered most by controls on emissions from asphalt and cement batch plants and bans on open burning. Contractors who cleared brush and debris from job sites would have to find some way other than burning at the site to dispose of the stuff. The Kansas Contractors Association asked that the highway commission rather than the State Department of Health enforce the new regulations, believing that the commission would be more sympathetic to contractors' problems. Instead, the highway department's construction and maintenance personnel worked with the Department of Health to institute water or air pollution controls the industry and the environmentalists could accept.[63]

Designing highways to minimize pollution was not so easy. The federal Air Quality Control Act required the highway department to predict what pollution level would result from a prospective roadway. Staff must consider the number and types of vehicles likely to use the road, the effect of terrain and weather patterns in spreading pollutants and the "background pollution" already present at the project site. Unfortunately, there was little the department could do to prevent the levels it predicted. The highway commission tried expedients, such as helping to air-condition buildings near a new highway so that occupants would not have to open windows. No actual design measures existed to cut pollution except to relocate a route away from existing emission sources, posing a difficult choice between concentrating pollution where the air was already bad or spreading it to cleaner areas.[64] More effective curbs lay outside the highway designer's province. Federal requirements that vehicle manufacturers install emission controls on their products did far more to curb highway pollution at its real source.

The highway department took increasing interest in preserving the manmade as well as natural environment in these same years. Photogrammetry staff discovered in the mid sixties that their aerial photos sometimes picked up signs of archeological deposits near prospective highway routes, and department staff volunteered the information to the Kansas State Historical Society so that its archeologists could mine the site and remove artifacts before road construction destroyed them. So far, federal highway authorities only encouraged that kind of informal cooperation, and the emphasis lay on preserving artifacts rather than sites themselves.[65]

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62 Central States Construction 23 (April, 1970), p. 13.
63 Central States Construction 23 (December, 1970), pp. 9, 24; Highway Highlights 33 (January-February, 1973), p. 2.
64 Highway Highlights 35 (March, 1974); Highway Highlights 35 (February, 1974), pp. 6-7.
65 Highway Highlights 27 (September, 1966), pp. 6-7.

By the mid-1970s, cooperation with preservationists was mandatory, and the highway department had a full-blown Highway Archeological Salvage Program that guaranteed archeologists an opportunity to survey a route in the early phases of location. If a survey turned up signs of a deposit, the department gave archeologists time to excavate before construction or, in instances in which the site itself had outstanding significance, a road might be realigned to protect the site. Once highway construction teams arrived, contractors were required to report any signs of deposits their crewmen might uncover. Such was the case when contractors set to work realigning U.S. 75 near Lyndon in 1974. An alert operator of an earth mover noticed unusual changes in the color of the soil as he dug and notified the resident engineer, who notified the Kansas State Historical Society in turn. Construction halted while archeologists made a dig. Their discoveries -- 1,500 year-old artifacts of a Woodland Indian occupation -- would have been lost forever had the salvage program not made scores of individuals knowledgeable and sensitive to preservation.[66]

Conserving the remains of long dead Kansans might take energy and committment. Promoting the welfare of living residents took that and more. Again, the highway commission claimed past experience with social welfare. Its relief projects in the thirties and its monitoring of Davis Bacon extended social benefits to Kansans beyond what highway construction alone provided. In the early 1930s, black organizations in Kansas had tried to win equitable benefits from highway and other relief projects, but the highway commission at the time lacked the means, even had it had the inclination, to challenge racial patterns nearly a century old. With the Civil Rights Act of 1964, President Johnson's executive order for affirmative action, and the implementation guidelines of the 1968 Federal Aid Highway Act, the highway commission acquired both means and the mandate to promote economic opportunity for minorities and the impoverished. The commission's responsibility was two-fold. To increase minority employment at the highway department itself, the department placed Zachary Perez in charge of its first Equal Employment Opportunity [EEO] office for internal personnel in 1969. Perez monitored minority relations in-house and developed recruitment and training programs to bring more minority members on staff. A more difficult task was expansion of opportunities among department contractors. Keyton E. Barker, Jr. joined the department as EEO Compliance Officer in 1969 to interpret the federal Equal Employment Opportunity Commission's guidelines and to monitor contractors' adherence to the guidelines.[67]

Contractors expressed all sorts of anxieties over the 1968 highway regulations. Most reported that they would gladly hire trained men of any color but that labor contracts bound them to hire trainees from union apprenticeship programs. Contractors claimed (and federal investigations confirmed) that unions effectively barred minorities from construction work. Other builders asserted that they had made good-faith efforts to recruit minorities, only to have black and Hispanic trainees quit within a few months. Some trainees were discouraged by unfriendly or openly hostile treatment from white co-workers while others reported that they could earn more at common labor than on a

66 Highway Highlights 35 (May, 1974), pp. 8-9.
67 Highway Highlights 30 (October-November, 1969), p. 2.

trainee's low pay. Men with families to support could ill afford the "two year drought" for trainees before their earnings passed those of common laborers. Contractors also claimed that no minorities applied to fill vacancies.[68]

Capitalizing on what appeared to be a constructive attitude, Barker and Perez set out to show employers how to get more results from their recruiting efforts. They compiled lists of minority newspapers, church and social organizations, and local leaders -- the real pipelines between employers and minority hires. While Perez set internal hiring goals and reviewed department offices each six months to see that every possible means was taken to recruit minorities, Barker gave contractors tips for finding minority hires, smoothing race relations on the job and enlisting union support for minority training.[69] After two years, results were disappointing. The highway department held workshops in late 1969 to warn Kansas contractors that the Nixon administration meant business about enforcing civil rights regulations. Early the next year the U.S. Department of Labor announced that the so-called Philadelphia Plan for affirmative action would be extended to federal construction in cities where compliance lagged -- Kansas City among them. An outraged editor of Central States Construction protested that the contractor would be mashed between unions and minority militants. Racial violence would likely follow, he predicted.[70]

The U.S. Department of Transportation espoused a less combative strategy based on what the government called "hometown solutions." Under the Turner Plan announced by U.S. DOT in late 1970, 10,000 new workers would be placed in highway construction a year. By paying trainees 60 percent to 70 percent of the standard wage in their trade and giving employers a stipend to cover training costs, U.S. DOT expected to remove key obstacles to compliance. In any case, something more than a good-faith try would be required since contractors would now be subject to compliance reviews by the "feds."[71]

The highway department's EEO officer sat down with the Kansas Contractors Association to devise a program under the Turner Plan for raising the state's first year quota of 80 men to journeymen's status. The association had its own training program in the works, which the Federal Highway Administration [FHWA] approved. The highway department selected the contractors best able to implement the program productively and in fall, 1971, FHWA congratulated Kansas for leading 50 states in meeting the Turner Plan's objectives.[72] Central States Construction continued to complain about paperwork for contractors, potential violence between unionists and militants and the expenditure of highway funds on liberals' pipe dreams. The magazine apparently manufactured these concerns in its editorial offices for its survey of heavy industry showed year after year that the average contractor reported no particular problems in meeting EEO requirements.

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68 Central States Construction 21 (October, 1968), pp. 24, 44.
69 Highway Highlights 35 (July, 1974), p. 9.
70 Central States Construction 22 (January, 1970), p. 12; Central States Construction 22 (March, 1970), p. 15.
71 Central States Construction 23 (September, 1970), p. 11. The Turner Plan was named for Federal Highway Administrator Francis E. Turner.
72 Central States Construction 23 (December, 1970), p. 28; Highway Highlights 32 (September-October, 1971), p. 5.

Women's movement for equality in the same period scarcely seemed to register at the highway department. If the in-house magazine, Highway Highlights, reflected attitudes shared by the staff as a whole, there seemed to be confusion about the women's movement. Women personnel (almost entirely clerical) and wives of staff appeared on Highlights' pages in traditionally female roles -- preparing and serving food for department parties, making holiday ornaments, "accepting" PHT degrees for "putting hubby through" college. When a Highlights photographer needed to punch up a photo of a new bridge, a trail marker or a new interchange, he usually posed a local beauty queen or an attractive young woman staff member somewhere in the foreground. However these women viewed themselves, stereotypes still colored their image within the department's publication. A Highlights article assessing the impact of the woman's movement on the highway department equated the movement with wearing pants suits, refusing men's offers to open doors or pay the dinner check and generally acting "more like a man." Accompanying interviews with six secretaries, however, suggested that women staff had a clear idea of what the woman's movement was about. The six reported that they found their jobs satisfying and that they had received fair and just treatment from male supervisors. But a woman should be free to compete for whatever job she felt qualified, they agreed, and should receive equal pay for equal work.[73]

Thus far, the highway department could boast of little headway in widening women's participation. The first woman engineer joined its staff in 1959 when Sandra Kiesler finished Rotational Training. Twelve years later, the only female among the department's 400 engineers was Carole May, like Kiesler a product of Rotational Training.[74] Until more women found their way into engineering schools, there would be few among the department's professional ranks. Still, the highway department vested none of the same energy in expanding opportunities for women it expended on minorities' behalf in this period.

Whatever the progress in advancing social equity in Kansas, highway department staff could rightly say they were in the "people business" in the 1960s and 1970s. Experiences since the Second World War made clear that highway construction was inextricably entwined with the quality of human life and the welfare of communities. Ensuring that highways and people intersected in positive ways took careful planning among any number of agencies and government units. The Federal Aid Highway Act of 1962 gave the highway department some valuable tools for promoting joint efforts by requiring that any highway project scheduled in a city of more than 50,000 population after July 1, 1965, must be part of a comprehensive plan for the city's entire transportation needs. The planning process would have to be continuous, the law said, to accommodate the shifting priorities and conditions cities would naturally experience from one year to the next. For smaller communities, the so-called "701 program" under the National Housing Act allowed the highway department to assist with a similar planning process that local budgets might not otherwise cover.

Objectives were rather modest. Planners were expected to balance land use with transportation, curb the ribbon developments that converted highways to clogged commercial strips, and program highways that would work efficiently at minimum cost. With right of way acquisition soaking up 20 percent of project

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73 Highway Highlights 32 (February, 1971), pp. 6-7.

74 Topeka Journal March 5, 1959 in State Highway Commission Clippings, v. 3, 1956-1963, KSHS; Highway Highlights 32 (August, 1971), pp. 7, 19.

costs in Kansas, predetermining where houses, businesses and roadways should be located was vital because right of way could then be purchased well in advance (before land values mounted) and highways built without uprooting people.[75] The Kansas legislature elaborated the process in 1963 by establishing a State Department of Economic Development. Now, state agencies whose work affected economic development would have to cooperate with and advise each other. When the new department set about preparing a statewide development plan, the highway commission provided staff for the task.[76]

By 1968, so many factors entered highway programming that Congress elected to draw them together. The Federal Aid Highway Act of 1968 provided a roster of factors that must apply to location and design of highways, including employment opportunities, economic development, environmental safety, historic preservation, neighborhood cohesion -- some 23 items in all. Recognizing that people at the grass roots could still be omitted from any planning process, no matter how many bureaucrats participated, Congress upped the requirements for public hearings. The highway department, which held 129 public hearings in the first seven years of interstate construction, would now have to hold two hearings for every federally funded project. In the first of these, the residents of a project corridor would be invited to hear about and comment on the location of project before the highway commission specified a particular alignment. After location was settled, the public would participate in a second hearing on actual design of the road.

The Kansas Highway Commission had already decided on its own move to knit these responsibilities together coherently. With a general department reorganization underway in 1968, the commission instituted a new Location and Design Concepts department "made up of the soils section from Materials, photo interpretation and photogrammetry from Photronics, and from Design -- geology, location survey and a design criteria squad." As the new department's head, Dick Beige commented, "we are composed of familiar faces and old responsibilities but with a new approach to the same problem."[77] Biege later remembered L&DC as a noble attempt to cure the conflicts and duplication of data among the various sections involved in location and design. He recalled that before 1968, "the geology people went out and drilled holes in the ground, and the soils people went and drilled holes in the ground, and never the twain did meet." Though L&DC proved a temporary and "not very successful" means of integrating the work, its early birth gave Kansas advantages in meeting federal "regs." "Here comes the EPA and says, 'You will do this.' Well, we were already ahead of 99 percent of the states because we already had such an outfit in existence," Beige remembered. The L&DC staff "ground out" an environmental impact statement format by trial and error which FHWA later sent to other states as a model.[78]

Kansas was also in advance of the 1968 act in formalizing its hearing process. Peyton had been worried for some time that the existing process did not deal well with public controversy. Glenn Anschutz was made head of the design unit in 1968. "I think the people felt they didn't have a handle on what

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75 C. Frank Virr, "Land Use Controls and Planning in Preserving Highway Objectives," Kansas Government Journal 49 (May, 1963), pp. 202-204.

76 Minutes, v. 37, May 5, 1965.

77 Highway Highlights 30 (May, 1969), p. 4.

78 Interview with Dick Biege, Director of Administration (retired), January 10, 1986.

was going on," Anschutz recalled. More plentiful hearings helped remove the uncertainties that irritated the public. Still, the new willingness to listen to the public introduced problems engineers had not had to handle before. "If there's a group of people interested in seeing that the turtles get from one side of the road to the other side of the road, then that becomes an issue even if there's only a few people interested in those turtles," Anschutz said. "And they all have a right to talk. That's how it should be."[79]

Even with public input and careful planning, new highways were bound to dislodge people whose homes and businesses lay along the route. They received fair market value for their property in right of way settlements, but a replacement home was not always easy to find at that price, and the cost of moving one's household goods or business inventory could work a real hardship. Renters, who received nothing from right of way settlements, must also undergo moving costs. The '68 session of the Kansas legislature permitted the highway commission to pay fixed sums toward moving expenses of those who were displaced by highway construction.[80] Congress had learned, however, that minimal relocation allotments sometimes forced homeowners and renters to move into substandard housing. Displacement by a highway might lower one's living standard. To prevent that, the '68 federal highway act upped the federal and state ante to permit the homeowner or tenant to find a decent, safe and sanitary dwelling, near employment and public services. States must also open relocation advisory programs to help the displaced find suitable housing, businesses or farms.[81]

Kansas found that its provisions for relocation assistance fell short of federal regulations. So long as the highway department could not provide assistance at the federally mandated level, its projects might not be approved for federal aid.[82] Hoping to stave off such a calamity in 1970, the highway commission asked for and received permission to establish "emergency regulations" for paying the stipulated amounts of relocation assistance out of its own pocket. Later the legislature could put the emergency arrangement on a regular footing.[83] Legislators responded in 1971 with passage of a state law guaranteeing that no one could be removed from a dwelling by a federally funded highway project unless a comparable replacement was available. Amounts for relocation were raised, an advisory program was instituted, and the commission was directed to provide housing if none other were available. Since relocation assistance would count as a project cost, a portion of it could be added to the "bill" for federal aid.[84]

Clearly, the relocation program was intended to help the poor -- those whose neighborhoods were more likely to be pierced by an urban highway and whose incomes gave little margin for coping with the disruption. Humane though that might be, however, still the programs ate into state and federal funds for actual construction. Finding the money to build a road was tough enough in Kansas; putting more dollars into relocation assistance, environmental studies,

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79 Interview with Glenn Anschutz, Division of Engineering and Design, January 7, 1986.

80 Minutes, v. 42, March 27, 1968.

81 Minutes, v. 43, January 22, 1969.

82 Central State Construction 21 (November, 1968), p. 37; Topeka Capital January 7, 1969 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

83 Minutes, v. 44, January 7, 1970.

84 Minutes, v. 47, September 29, 1971.

or historic preservation only made it harder. Given the highway department's added social and environmental responsibilities, John D. Montgomery joined other state highway officials in 1970 in advocating an increase in the federal share of the funding ratio to 70:30.[85] Barring an increase, highway officials prayed for predictability in funding.

That was not easy to obtain, for Washington kept changing the rules of the funding game. President Johnson began the process in 1966 when he froze federal expenditures for highway construction to curb inflation.[86] When Congress protested, the president backtracked and released federal money to the states.[87] In 1968, however, Capitol Hill had to reckon with the real source of inflation. Following the Viet Cong's massive Tet Offensive in January, the president's advisors warned that the country could no longer afford both a costly war in Vietnam and his ambitious domestic programs.[88] Reductions in both efforts would be necessary. While Johnson looked for ways to negotiate an end to the war, his administration ordered a $200 million "suspension" in federal highway aid as part of a $6 billion reduction in federal spending.

Calling this anything but a funding cut amounted to deceit, a Central States Construction editorial protested. "The most recent cutback in federal highway funds is just another example of the low level chicanery that has characterized the federal government's administration during the last four years."[89] Americans who had questioned the direction of Great Society policies grew bitter now that federal programs must share a smaller federal pie. Another CSC editorialist wondered, for example, why vital highway construction must suffer at all. "Why not cut the subsidy to mothers of illegitimate children?" he asked. "Why not cut the subsidy granted to those too lazy to work for a living? Why not cut part of the expenditures now being used to get to the moon?"[90] The Federal Aid Highway Act of 1968 helped to salve some wounds by authorizing the addition of 1,500 miles to the nation's interstate system and setting the deadline for completing the system in 1974. The Kansas Highway Commission promptly turned in a request to have 944 miles of its proposed freeway system included in the added interstate mileage -- something of a pipe dream since FHWA expected the states' request against the 1,500 mile addition to total 40,000 miles. But having a working plan ready for early submission might give Kansas an edge in claiming some of those miles.[91]

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85 Highway Highlights 31 (February-March, 1970), p. 12.

86 Topeka Journal December 21, 1966 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS.

87 Riddick, Politics, p. 159.

88 Jim F. Heath, Decade of Disillusionment: The Kennedy-Johnson Years. (Bloomington: Indiana University Press, 1975 [Midland Book, 1976]), pp. 267-270.

89 Central States Construction 21 (October, 1968), p. 11.

90 Central States Construction 21 (June, 1968).

91 Minutes, v. 43, October 24, 1968; Topeka Journal October 25, 1968 in Good Roads Clippings, v. 4, 1957-1979, KSHS. The proposed freeway corridors were: U.S. 69; U.S. 169 from I-35 at Olathe to Oklahoma; U.S. 59 from I-35 at Ottawa to I-70 at Lawrence; U.S. 81 from I-35 at Salina to Nebraska (connecting in Nebraska with I-80); U.S. 54 from Wichita to Liberal (connecting with a route to New Mexico); K-96 and U.S. 160 from Wichita to U.S. 69 at Pittsburg; U.S. 36 from St. Joseph, Missouri to U.S. 81 at Belleville; completion of Wichita's circumferential route.

At nearly the same time, the commission asked to have the KCI expressway given interstate status. Kansas and Missouri had been negotiating since 1960 a plan to build a superhighway linking the Kansas City International Airport to the metropolitan area on both sides of the state line, and the states had toyed with the idea of financing it as a tollway. While persistent failures to hammer out details for two-state cooperation appeared to doom the expressway, federal assistance at 90 percent would guarantee its completion sometime after the KCI Airport opened in 1973. In December, 1968, both states celebrated FHWA's decision to include the KCI route in its approval of 1,500 more miles of interstate, thereby closing the circle I-435 would make of the metropolitan area.[92] Meanwhile, Kansas' other bid for interstate funding of its freeways was in limbo. As optimists liked to remember, however, Congress might not reduce federal highway user taxes once the interstate system was finished in 1974. If so, Congress could elect to spend unused trust funds on still more interstate mileage. Kansas would be prepared with an attractive proposal on record to take a share.[93]

Optimism looked rather out of place in the following months. President Richard Nixon inherited an increasingly unpopular war and an inflation rate fueled by federal military and domestic spending. Like his predecessor, he tried to flatten the inflationary spiral with construction cutbacks. Nixon pressured the states to reduce construction projects voluntarily. Governor Docking responded with a 14 percent cut in Kansas highway expenditures. At the same time, Nixon continued the practice, begun under the Johnson administration in 1968, of withholding about 20 percent of the states' annual highway aid allocations.[94]

As inflation rose state highway departments confronted another threat to their budgets. A quiet debate had simmered for more than a decade over whether too large a portion of federal revenues were dedicated to highways.[95] The debate grew noisier in 1970 when Congress sat down to decide whether to extend the Highway Trust Fund past its 1972 expiration date or fund the interstate system's completion in some other way. With the nation's lingering failure to solve its transportation problems by highways alone, railroad lobbyists and advocates of urban mass transit were casting covetous eyes on the trust fund. Transportation Secretary Volpe and several influential senators urged a comprehensive program of intermodal transportation that would channel highway user revenues into a National Transportation Fund. Volpe also wanted to see a Federal Highway Safety Administration and several other activities financed from highway revenues, in addition to the $900 million now spent annually on social and economic problems related to highway construction.[96] As a Washington Post editorial stated the argument, renewing the Highway Trust Fund could "result in a countryside covered with concrete and smothered in exhaust fumes."[97]

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92 Minutes, v. 43, July 10, 1968; Kansas City Star August 29, 1967 in State Highway Commission Clippings, v. 4, 1963-1969, KSHS; Highway Highlights 29 (December, 1968), p. 2.
93 Central States Construction 21 (January, 1969), p. 8.
94 Central States Construction 22 (November, 1969), pp. 9, 12.
95 Riddick, Politics, p. 85.
96 Central States Construction 23 (August, 1970), p. 12.
97 Quoted in Central States Construction 23 (July, 1970), p. 12.

AASHO countered with its own 22 point proposal to extend the Highway Trust Fund to 1985 and raise the federal aid ratio to 70:30 on primary, secondary and urban routes (the so-called A-B-C systems). Once the interstates were finished as planned in 1974, the excess funds accumulating in the trust fund could be used to upgrade the A-B-C systems, with the creation of a new Urban Federal-Aid System to address the crushing transportation problems of cities. The Kansas Highway Commission, thoroughly alarmed at the course Congressional debate was taking and horrified that money the highways generated might be spent on anything but highways, gave its unanimous backing to AASHO's proposals and suggested that if the AASHO plan failed, federal highway revenues be distributed direct to the state governors to spend on transportation as each saw fit -- somewhat in line with Nixon's ideas on revenue-sharing.[98]

The 1970 Federal Aid Highway Act that emerged from the fracas contained something for everyone. The life of the Highway Trust Fund was extended to October 1, 1977, and the completion date for the interstates set for the end of fiscal year 1976. The federal match rose to 70 percent for A-B-C funds, and provisions were made for programs funded by the trust fund for highway safety research and a National Highway Traffic Administration, highway beautification, bridge replacement, training for highway employees, and construction of highways through forests and public lands. The creation of a new federal aid urban system authorized the use of A-B-C money on arterials outside the existing primary and secondary routes through cities. A requirement that a portion of that money be spent to make bus transit more convenient helped satisfy mass transit advocates' zeal for "luring commuters out of their cars" at rush hour.[99]

Generally favorable to state highway department interests, the 1970 act did contain several negative provisions. To prod the states into wrapping up interstate projects, Congress decided that any segment of the network whose construction was not assured by July, 1973, would be declared "controversial," removed from the system, and the mileage allocated elsewhere. States must submit all final plans and estimates by July, 1975, or find that any section not meeting the deadline would be eliminated. Kansas highway officials worried mightily over projects on four interstate routes in three cities, where law suits and public resistance to alignment were creating plenty of controversy and delay.[100] John McNeal remembered such actions as a sort of Catch-22. Washington set deadlines at the same time that it demanded ever more sophisticated design standards. Lead time stretched to 12 years for large urban jobs, some of whose project plans had to be ripped up and redone.[101] Dick Peyton cited promotion of long range planning in this period as one of the best things federal authorities did, but he too noted that demands for costly design changes frustrated those plans.[102] Considering the proliferation of federal regulations, Dale Dugan thought, "we couldn't get an interstate system built today."[103]

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98 Minutes, v. 45, May 27, 1970.
99 Highway Highlights 32 (January, 1971), p. 2; Highway Highlights 32 (March-April, 1971), pp. 11-13.
100 Central States Construction 23 (September, 1970), p. 11.
101 Interview with John McNeal, Director of Planning and Development (retired), January 7, 1986.
102 Interview with Dick Peyton, Assistant Director of Highways (retired), January 8, 1986.
103 Interview with Dale Dugan, Inspector General, January 8, 1986.

More of the same lay ahead, for inflation refused to dip. In early 1971, President Nixon set aside Davis-Bacon regulations as a warning to labor that it must cut wages voluntarily. When neither the unions nor the inflation rate responded, the president announced a mandatory wage-price freeze in August. Kansas contractors welcomed the move because they believed they were being whipsawed between construction cuts and wage increases. In fact, studies showed that Davis-Bacon kept construction wages about 5 percent to 15 percent above prevailing rates (fueling an average yearly jump in wages of 18 cents in Kansas), and there was growing talk that Davis-Bacon be scrapped altogether.[104]

Good news about potential drops in project costs accompanied growing anger among the states about another inflation-fighting tactic. Not only was the Nixon administration still impounding part of highway aid allocations, but the portion withheld each year now came to a quarter of what Congress appropriated. By mid 1973, a total of some $70 million authorized to Kansas would be sitting idle in the trust fund. Governor Docking approached the highway commission in 1972 about filing suit against the federal government to get future allocations released in full. Missouri had just won a similar suit, then on appeal, charging that federal bureaucrats were exercising unwarranted authority in overriding Congress's power under the Constitution to make appropriations. The Kansas Highway Commission agreed to bring its own suit, which was still being heard by the U.S. District Court at the end of 1974.[105] That year a wrathful Congress reasserted its appropriating powers with a measure requiring House approval for impoundments, but it remained for the courts to restore to Kansas the $94 million already impounded by 1974.

Suing the federal government was only one way Kansas tried to win control of roller coaster funding levels. The possibility still loomed that Congress would parcel more of the trust fund to urban mass transit. Between 1965 and 1970, inflation and higher FHWA standards combined to raise the state's construction costs 35 percent. A growing number of Kansans in and out of the legislature decided that the state must build highways now, before federal aid withered and inflation put projects out of reach. That approach, Governor Docking and State Senator Dave Owens began arguing in 1971, meant issuing bonds.[106] Critics pointed out that bonds represented a mortgaged future, but the road that took a million dollars to build in 1971 would cost at least seven times that amount to build in the year 2001, when the bonds would be retired.[107] Having taken its first step toward an accelerated highway program with a two cent fuels tax increase in 1969, the legislature took a second in 1970 by earmarking a portion of gas tax revenues for a freeway fund. Two years later, legislators agreed that the state would get more productivity from the freeway fund if it were used to back highway revenue bonds.[108] The highway commission

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104 Central States Construction 24 (April, 1971), p. 12; Central States Construction 25 (September, 1972), p. 8; Central States Construction 24 (August, 1971), p. 6.

105 Minutes, v. 48, October 31, 1972; Highway Highlights 35 (November, 1974), pp. 6-7.

106 Minutes, V. 50, July 11 and July 30, 1974.

107 Central States Construction 23 (March, 1971), p. 6; Wichita Eagle June 30, 1972 in Good Roads Clippings, v. 4, 1957-1979, KSHS.

108 Highway Highlights 33 (July, 1972), pp. 4-5.

was authorized in 1972 to issue $320 million in bonds over eight years at a maximum interest of 5.5 percent and to set up an investment program to keep the freeway fund replenished. The first bond issue went on sale in May, 1972.[109]

The Federal Highway Trust Fund dodged another attempt on its life by mass transit advocates in Congressional debate over the 1972 federal highway bill. Proposals would have dissolved the trust fund and given its contents to the states to spend as they chose on transportation. The same session of Congress rejected a White House plan to reorganize the Executive by collapsing the Department of Transportation and parts of four other Cabinet offices into one cabinet-level Department of Community Development.[110] The move would have oriented more transportation programming toward the solution of urban problems. But its first round rejection did not erase the urban dilemma. Traffic still clogged city centers at rush hour; yet, commuters abandoned the central city by night for bedroom communities that lay near freeways and arterial highways. Business enterprises followed the same paths, taking tax dollars and job opportunities with them and leaving urban cores to decay. By facilitating the flight of taxpayers and employers, critics charged, highways contributed heavily to the crisis of the cities, and highway dollars would have to contribute to a solution. That was the message from the Federal Highway Administration to the states following passage of the '72 highway act. Though the act preserved the status quo, intermodal transportation planning was FHWA policy and the states must learn eventually to accept it.[111] President Nixon asserted in his second State of the Union Address in 1974 that transportation reform had high priority for the remainder of his administration.[112] Although Nixon was forced to resign before he realized this goal, Americans already were paying yet another penalty for their dependence on automobiles.

On October 20, 1973, the Arab oil producing states placed an oil embargo on the United States to force withdrawal of support to Israel in the two week old Yom Kippur War.[113] Kansans quickly discovered how events far away could affect their daily routines. Long lines at the gas pumps, rocketing utility rates, and a host of energy saving measures tested their patience and ingenuity. Highway projects developed a sickness called "asphaltemia" -- critical shortage of that petroleum-based material. The highway commission failed to attract bidders for most of its petroleum supply contracts and resorted to buying from local suppliers month to month while the counties took to replacing old blacktop with gravel. Asphalt prices doubled in 1974 alone. Steel producers -- heavy users of scarce fossil fuels -- raised prices by 60 percent.[114]

What hurt the state's highway program most were the measures taken to conserve energy. When legal axle weights for trucks were raised to save fuel in 1974, the effect was to reduce the 20 year design life of pavements by about

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109 Minutes, v. 47, February 23, 1972.
110 Central States Construction 25 (August, 1972), pp. 10-14.
111 Central States Construction 25 (December, 1972).
112 Arthur M. Schlesinger, Jr., ed. The Almanac of American History. (New York: G. P. Putnam's Sons, 1983), p. 598.
113 Ibid., pp. 596-597.
114 Minutes, v. 49, April 27, 1973; Central States Construction 23 (October, 1973), p. 14; Kansas City Times June 8, 1976 in Good Roads Clippings, v. 4, 1957-1979, KSHS. Symptoms of an energy crisis actually appeared before the embargo and persisted long after the embargo was lifted in 1974.

four years.[115] Further, the states were required that year to enact 55 mile per hour speed limits or lose their federal highway aid. Three days after Governor Docking signed the Kansas legislation, the highway department had new speed limit signs posted and drivers began to "slow down and save."[116] Shell-shocked by pump prices nearing a dollar a gallon, motorists also sacrificed gas guzzlers for compact cars equipped with fuel-saving devices. Though increasing numbers of vehicles drove ever more miles in Kansas, they consumed fewer gallons of gas -- a painful situation for the highway commission, whose revenues were pegged to the gallon sold and not its price.

Inflation hurt too. The prime interest rate rose with the cost-price index so that sales of Kansas highway bonds flagged in 1974. Few buyers wanted bonds at the statutory limit of 5 1/2 percent interest when other investments paid richer returns.[117] The 1974 legislature was forced to retrench with a cut of 290 positions from the highway department's staff. While the department's heaviest construction activity was concentrated on the freeway and interstate systems in the eastern section of the state, its remaining personnel were scattered all over the map. Attempts to close underutilized offices in small communities brought howls of protest from locals. Civil service laws prevented forced transfers of personnel; labor regulations made the process of lending staff from one area to another, or enticing voluntary transfers, expensive. The commission expected an enormous problem of staff allocation in the coming year. Curiously, a Federal Energy Administration hearing in Kansas City agreed that the engineer shortage harmed regional highway construction as much as did the energy crisis.[118]

A highway commission spokesman tried to explain to a reporter the experience of building highways under conditions of continuous change. "Its like running a 440-yard hurdle race," he said. "When you're just about finishing the first 440 yards you find out it has been changed to an 880-yard race."[119] Even so, the highway department managed to cross important finish lines in the years between 1970 and 1975. The entire length of I-35W between Wichita and Salina was completed in summer, 1972, for example. State Highway Engineer John McNeal recalled that when U.S. 81 was built in the same corridor in the 1930s, its construction was so advanced that it was considered experimental. "Now we could build U.S. 81 in the median of this highway."[120] In 1973 the commission finally secured long-sought approval from the FHWA to build an interchange at I-435 and the I-70 turnpike in Wyandotte County with 90 percent federal funding. The Kansas Turnpike Authority agreed, in turn, to give motorists a "free ride" on the turnpike east of the new interchange.[121]

With the infusion of bond money, work on the freeway system moved ahead at a fair pace, but studies of the feasibility of building portions of the system as toll roads were inconclusive. While some studies identified segments that

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115 Interview with Dr. Arland Hicks, KDOT Planning and Development, June 26, 1986.
116 Highway Highlights 35 (April, 1974), p. 13.
117 Minutes, v. 50, July 11, 1974.
118 Minutes, v. 50, April 24, 1974 and September 11, 1974.
119 Central States Construction 23 (September, 1970), p. 11.
120 Wichita Eagle July 2, 1971 and June 30, 1972 in Good Roads Clippings, v. 4, 1957-1979, KSHS.
121 Minutes, v. 48, December 20, 1972; Minutes, v. 49, August 1, 1973.

would likely repay their own construction through toll collections, Docking and others feared that the combination of tollway bonds and declining gasoline revenues might deplete operation and maintenance funds.[122] One of the proposed tollways, however, managed to win the legislature's authorization in 1974. The Southeast Kansas Turnpike would stretch southeast from Wichita to Strother Field near Winfield, then bear east to Galena and I-44. The Southeast Kansas Land Owners Association quickly put that project on ice by filing a suit which charged the state with proposing an unlawful use of public money to pay back toll bonds.[123]

The highway department made several moves in mid-decade to smooth its operations. After the landmark federal highway act of 1970 voiced Congressional desire for interagency action plans, the states complied on a project by project basis. A 1973 directive from US DOT made the statewide Action Plan compulsory, and the department went to work that year devising guidelines for interagency cooperation in the long range planning of highway location and design, the conduct of public hearings and the study of environmental impact. The plan's purpose was to ensure that no highway project be built until its social, environmental and economic effects were known and those effects weighed against the benefits of safe and efficient transportation. The highway commission would be obliged to consider all its options, with the advice of experts from the social, physical and natural sciences and the "environmental design arts," before putting a project in motion.[124] Thus, the Action Plan took a big step beyond the provisions of the 1968 act by placing the commission's responsibilities toward society and the environment on a rational footing -- an awesome task but one the department executed with dispatch. Its Action Plan was ready for public review in early 1973 and was one of the first among the states to win FHWA approval the next year.[125]

Federal aid legislation of the 1970s altered highway department operations in other ways by increasing the level of aid to cities. Kansas instituted an urban highways program similar to the older secondary roads program and administered it in much the same way it handled the secondary system. Kansas cities must supply their own long range cooperative planning, project plans, and a 30 percent match of federal dollars while the highway department served as advisor to the cities and agent for their federal funds.[126] By incorporating arterials outside the connecting links into a federally-funded urban highway network, the state finally possessed the means to carry out recommendations made in the Jorgensen Report a decade earlier.

Just as a changing operations chart inducted new faces into the department, the passage of time brought the departure of familiar ones. Dick Peyton retired as assistant director of highways at the close of 1972, having seen the department through a striking evolution and having held course under circumstances that defied stable programming.[127] Six months later John D. Montgomery retired

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122 Highway Highlights 35 (February, 1974), p. 2.
123 Minutes, v. 50, August 28, 1974 and September 11, 1974.
124 Minutes, v. 49, March 29, 1973.
125 Minutes, v. 50, March 27, 1974.
126 Highway Highlights 35 (May, 1974), p. 10.
127 Minutes, v. 48, December 13, 1972. Hubert J. Ulrich, who replaced Peyton, died the following year. Ulrich had formerly been with the Motor Vehicle Department. Docking named his administrative assistant, John Ivan, to

as Director of Highways and was replaced by A. J. (Andy) Gray. In six-plus years at his post, Montgomery helped launch the state's first highway bond program and put 300 miles of freeway construction underway.[128] Like Peyton, he had weathered shifting winds. Both men's successors witnessed a still more dramatic alteration in how Kansas managed its transportation affairs. In 1970 the Kansas Commission on Executive Reorganization, a creation of the legislature, began studying the highway commission to measure the effectiveness of its reorganization two years before.[129] By 1971, the Commission on Executive Reorganization was ready with a report to the legislature -- one that criticized the efficiency of an entire "organizational jungle" in the state's executive branch. To shorten the lines of communication and consolidate services, the report recommended collapsing 200 existing agencies into eight cabinet-level departments, each headed by a secretary who would report to the governor and would be appointed by the governor with Senate confirmation. Included among the eight proposed cabinet offices was a Kansas Department of Transportation.[130]

As with many things, the legislature dallied over the report, but the message from Washington grew increasingly insistent: intermodal transportation policies were inevitable. The nation's transportation problems were too intertwined to treat each mode in isolation. Washington's clear course, coupled with the state's own need to streamline government, gave the original report more credence. As 1974 drew toward a close, the Kansas Highway Commission reported without comment in its minutes that a Special Legislative Committee on Government Reorganization was now in session.[131]

What that session would produce in the following year would have profound implications for the future of Kansas transportation, but it would also cap a fascinating period in the highway department's development. Since 1963, the department had forged new partnerships and adjusted old ones. In its relations with federal highway authorities it had accepted increasing input from Washington, and met those requirements efficiently, while still keeping the interests of Kansans uppermost. Its proliferating social, economic and environmental obligations put the department in harness with many agencies and representatives of the public interest. Now its members would attempt the partnership of intermodal planning. Too agrarian to neglect its rural highways, too urbanized to ignore its cities, Kansas integrated its twin personalities in this period by initiating a freeway system. To fund the freeways, and to introduce some order to the anarchic circumstances of highway finance, the state instituted a highway bond program that broke with a century-old tradition in Kansas of "pay-as-you-go" and demonstrated its capacity to accommodate change. Thus, in 1974, Kansas offered appropriate ground for testing whether a single agency could balance disparate transportation needs in a coherent fashion. Of course balancing acts were old hat in Kansas.

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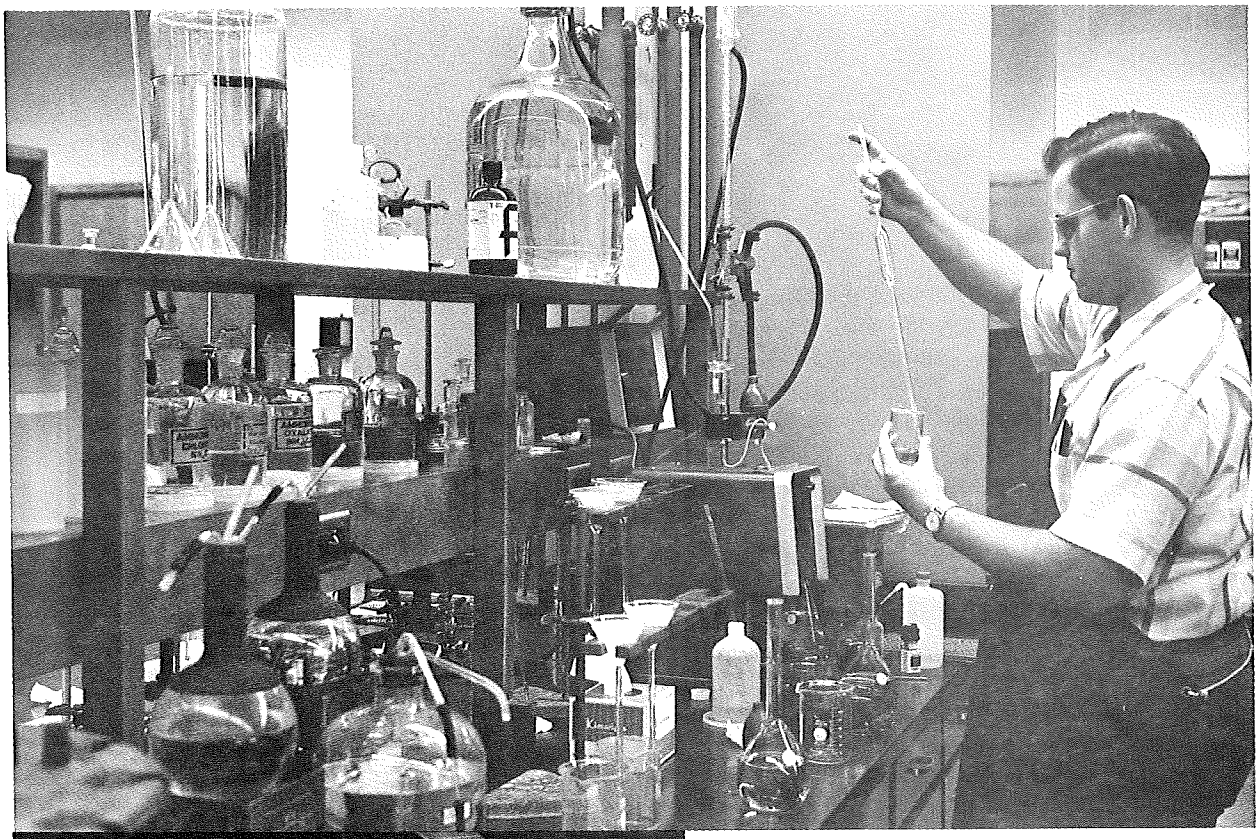
replace Ulrich. Highway Highlights 35 (May, 1974), p. 2.

128 Minutes, v. 49, May 30, 1973.

129 Minutes, v. 45, June 17, 1970.

130 "Reorganizing the Executive Branch of Kansas Government," Kansas Government Journal 57 (1971), pp. 99-100. Note: the Motor Vehicle Department was transferred to the Department of Revenue in 1972. Minutes, v. 47, May 3, 1972.

131 Minutes, v. 50, July 30, 1974.



Above: Preserving a tradition for technical innovation, KDOT remained at the cutting edge of highway technology in the 1970s and 1980s.

Credit: KDOT

Left: From vehicle registration to design testing, the computer became the highway commission's workhorse in the 1960s.

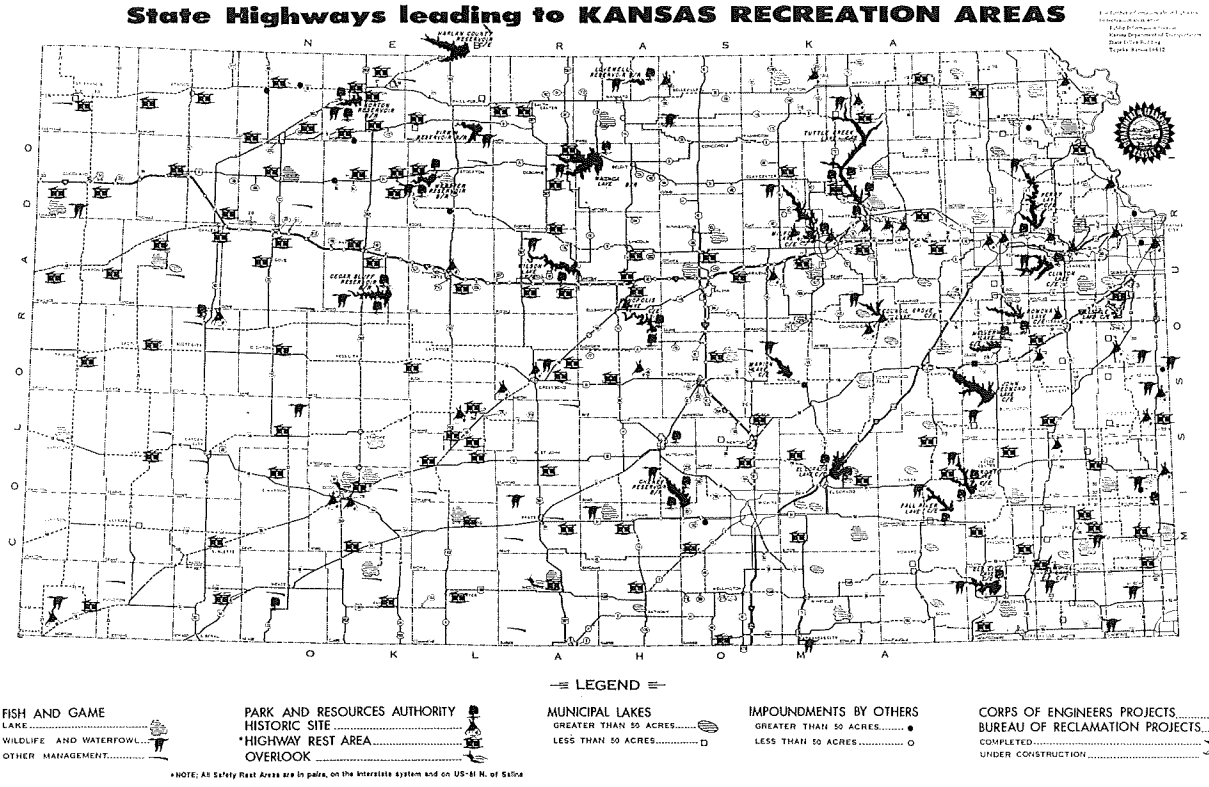
Credit: KDOT

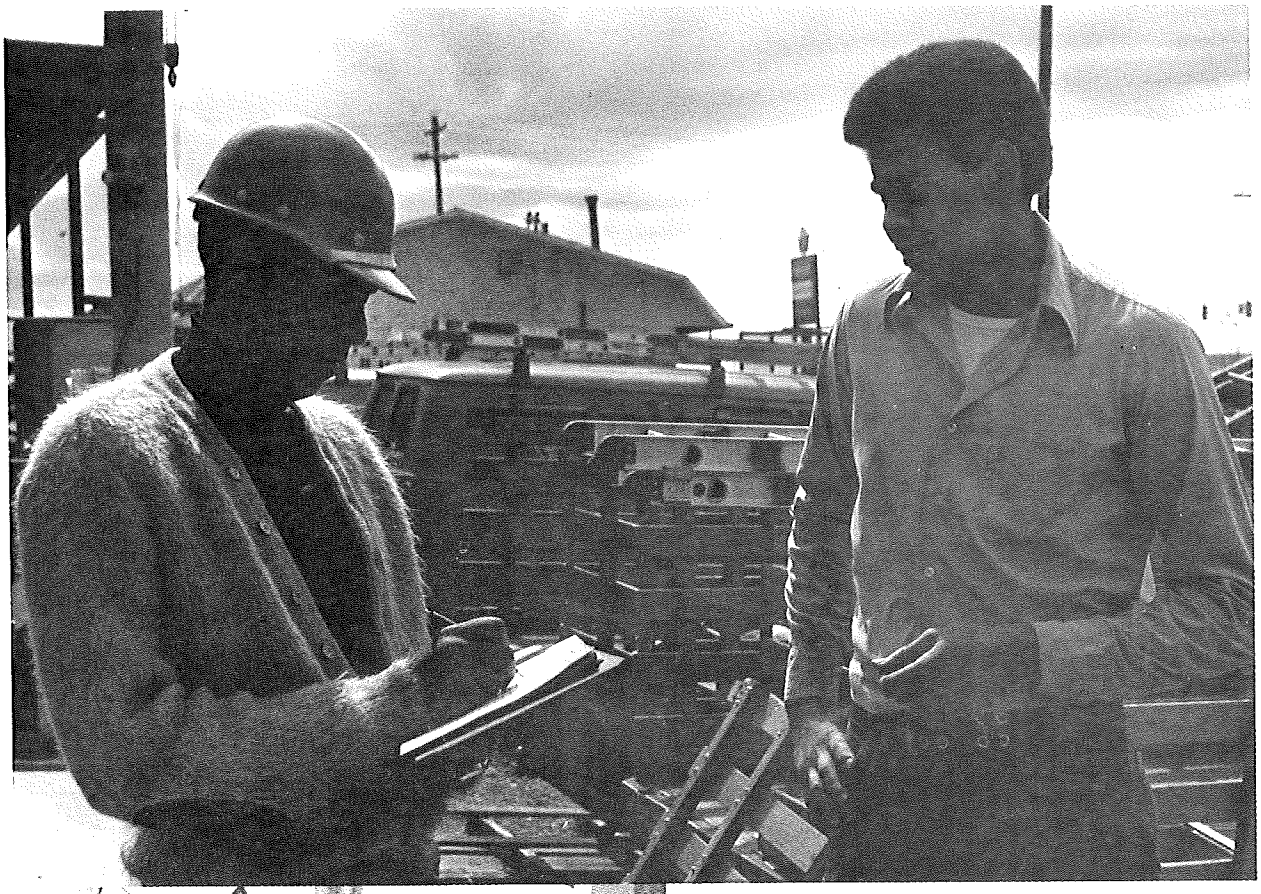
Above: In the 1960s, the State Highway Commission expanded Kansans' recreational opportunities by building roads in state parks.

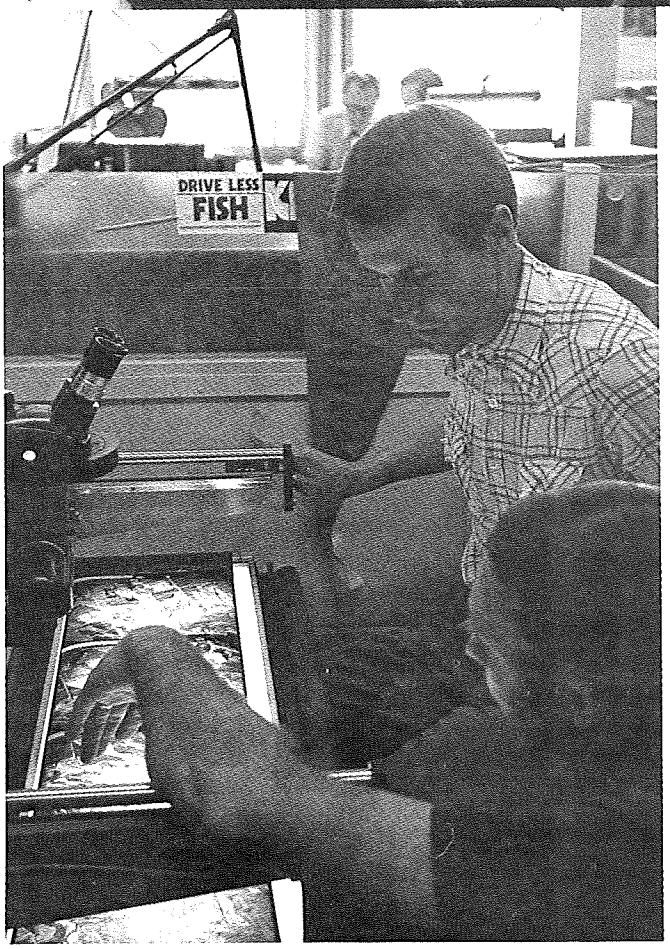
Credit: KDOT

Below: State Highways and Recreation Map printed in the 1970's and 1980's.

Credit: KDOT





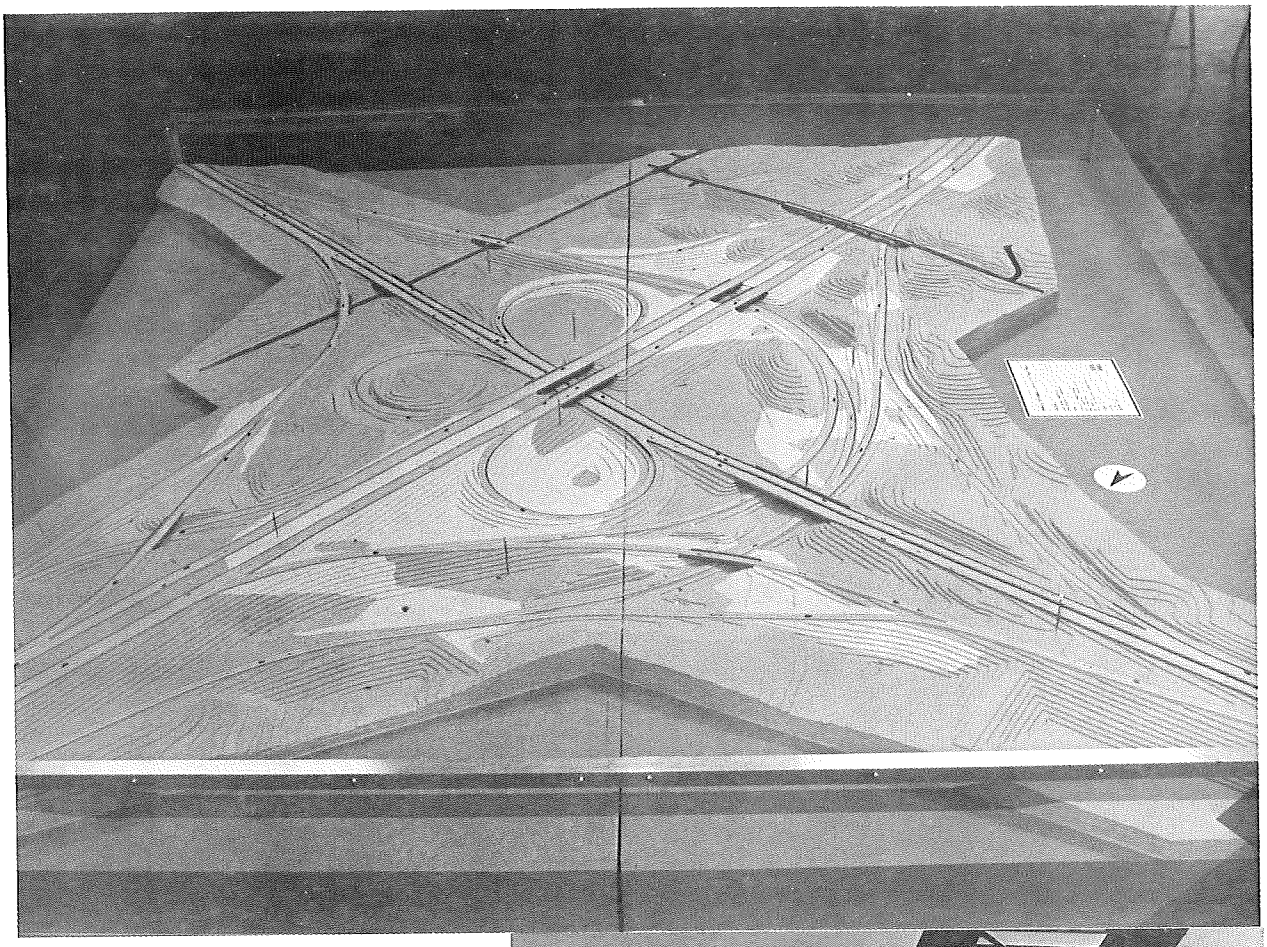


Above: In keeping with the highway commission's mounting concern for the social impact of highway construction, Equal Employment Opportunities Officer Keyton Barker monitors contractor compliance with fair hiring regulations.

Credit: KDOT

Left: Aerial photography became a critical element of highway location and design in the 1960s.

Credit: KDOT

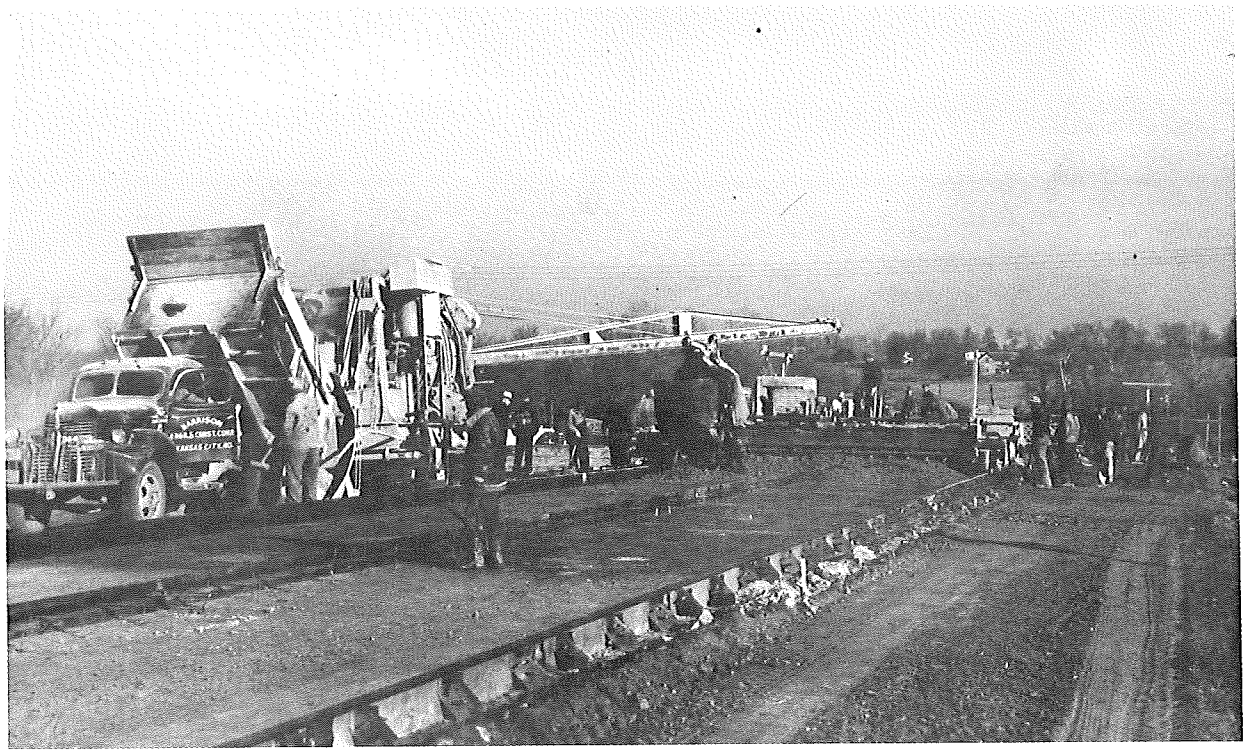


Above: Models like this one helped participants at public hearings visualize the alignment of highways projected for construction in their vicinity.

Credit: KDOT

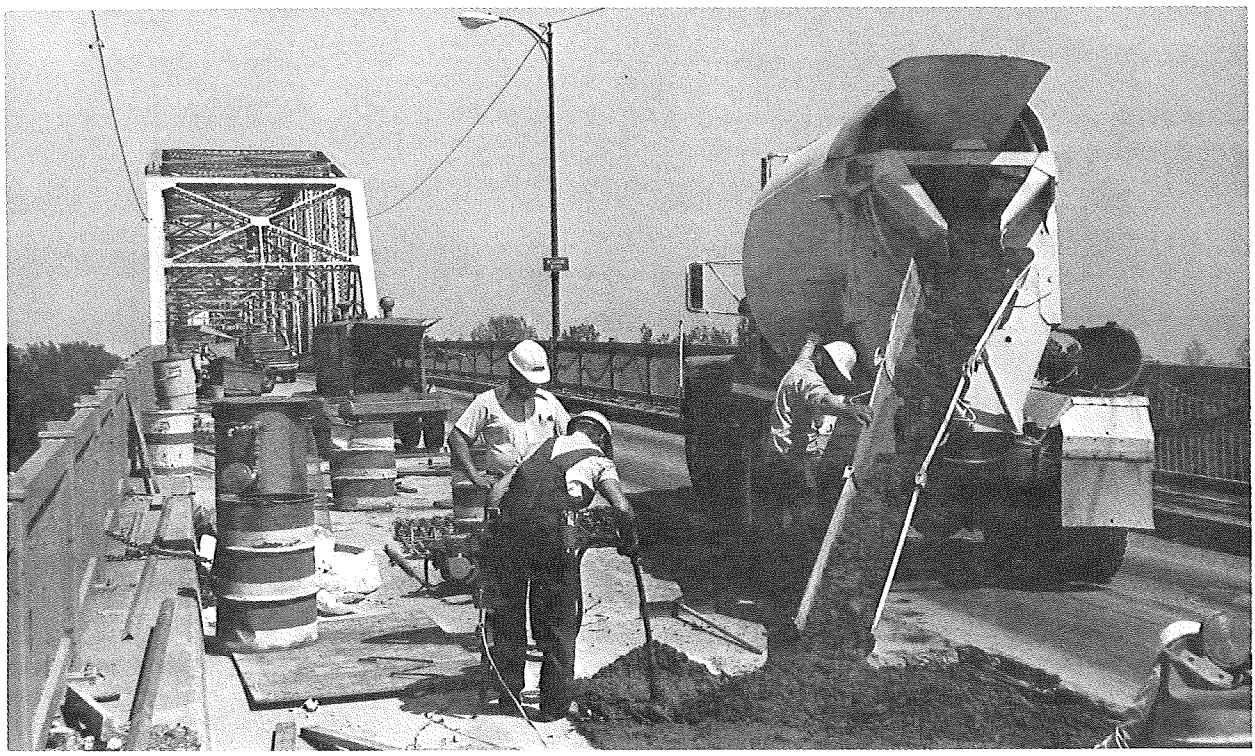
Right: The high design standards for interstate construction brought to the Kansas landscape new structures as beautiful as they were efficient.

Credit: KDOT



Concrete paving required a gang of laborers before the introduction of slipform paving in Kansas.

Credit: KDOT



Reconstruction, rehabilitation and repair became the watchwords as KDOT worked to preserve the state's highway investment in the 1970s and 1980s.

Credit: KDOT

The Lewis and Clark Viaduct linking the two Kansas Citys displays the complexity of design required in the new age of urban highways.

Credit: KDOT

Gov. Robert Docking, above and left, cuts the ribbon to officially mark the completion of Interstate 70 west of Goodland in 1970. Dignitaries present for the ceremony from Docking's right included Henry Schwaller, 3rd District Commissioner, and Robert Morrissey, Kansas Division Administrator for the Federal Highway Administration. From Docking's left is John Montgomery, Secretary of Transportation and John Kemp, Regional Federal Highway Administrator for the FHWA.

Credit: KDOT

CHAPTER 6

"Changing of the Guard: KDOT, Old Problems, and New Circumstances, 1975-1986"

After the shocks of the oil embargo and skyrocketing costs of motor fuels, Kansans in 1975 were driving with less enthusiasm -- and at lower speeds -- than had been the case in the exuberant "good old days" of previous decades. But, still, they and the millions of Americans who transited Kansas enroute to innumerable destinations were piling up mileage records on that remarkable network of highways sown across the state by the highway department. And that system, even the magnificent ribbons of superhighway, the Interstates and the Kansas Turnpike, was eroding under the daily pounding and weather's constant onslaught.

The decade after 1975 would offer continuing challenges to those who carried the responsibility for ensuring that their fellow Kansans had adequate transportation facilities to meet a multitude of economic, social, and other needs. There would be a dramatic reassignment of administrative responsibilities, breaking with a fifty-year tradition. The federal government's relationship to highway funding would undergo significant and traumatic modifications. The focus of concern would shift from construction to reconstruction. And these years would witness a changing of the guard, as the generation that had shepherded the highway department through the glorious decades of interstate building and engineering innovation passed from the stage. It was to be, in brief, a time of transition, uncertainty, adversity, and significant achievement.

Governor Robert Bennett's inaugural address of January, 1975, reaffirmed the mix of perennial problems and changing circumstances which those responsible for the Kansas transportation system would confront during the next decade. A Johnson County attorney and veteran Republican legislator, Bennett made clear his wholehearted approval of the recommendations for the sweeping organizational changes in the state's executive branch that had been first proposed to the legislature in 1971 by the Kansas Commission on Executive Reorganization and strongly endorsed by a Special Legislative Committee on Government Reorganization.[1]

Among the eight cabinet departments that Governor Bennett urged be created was a "Department of Transportation." He criticized previous State Highway Commissions for failing to press ahead with construction of projected freeways. Denying that inflation was the chief obstacle to progress, the Governor cited administrative confusion and "political provincialism" to justify abolition of the system that had served Kansans for nearly fifty years. Unacknowledged but tremendously important as a reason for the change to a Department of Transportation, of course, was the pressure from the federal government for creation of a "multi-modal" transportation body.[2] Apparently, Kansas was the 32nd state to set up a Department of Transportation.

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1 Highway Highlights, 36 (February, 1975), p. 4.
2 Highway Highlights, 36 (July, 1975), p. 2.

The Kansas Legislature, for once, heeded a governor's recommendations about roads and highways. Senate Bill Number 39, introduced early in the 1975 session, called for abolition of the State Highway Commission and its replacement by a Kansas Department of Transportation and a 12-member State Highway Advisory Commission. As finally approved, the law established a Department of Transportation, headed by a "Secretary" who served at the governor's pleasure. The Secretary "will administer, supervise, and manage the internal operations of the department." Appointed by and reporting to the Secretary were to be six unclassified "division heads": a State Transportation Engineer, Director of Transportation Administration, Director of Transportation Operations, Director of Engineering and Design, Director of Planning and Development, and Director of Aviation. The Secretary also was empowered to appoint a Chief Attorney, who would enter the unclassified ranks. And, vitally important, "the Secretary may organize the DOT in the manner he deems most efficient within provisions of law and set rules and regulations governing each of the divisions within the department. He also may appoint staff assistants and employees within his immediate office with powers, duties, and functions that he assigns." KDOT was assigned the responsibility for developing a "multi-modal integrated transportation system," and to that end aviation was shifted from the Department of Economic Development to KDOT. The Secretary of KDOT would possess far greater authority than his predecessors had enjoyed.

To provide public access and ensure a broad expression of opinion about current operations and future plans, the Act created a State Highway Advisory Commission. Its members -- 12 in all with two from each KDOT district -- were to be appointed by the Governor and to serve four-year terms.[3] The advisory commission was authorized to meet on a monthly basis and "to review, propose and recommend . . . improvements to the state highway system." The Secretary was given full power to determine these matters, although the commission might, on a two-thirds majority, overturn a decision with regard to "highway location and the construction and reconstruction of any highway." All other questions, including the hiring and firing of KDOT personnel, was left in the Secretary's hands.[4]

The creation of KDOT represented a victory for the efficiency-minded and for those who believed that responsibility for such technical areas of state government as transportation systems should be assigned to professionals, persons with special knowledge and experience. A major concern was the removal of political pressures. Surprisingly, the reaction of many of these selfsame professionals to the State Highway Commission's demise varied. Longtime Assistant Director of Highways, Dick Peyton, admitted that highway commissioners did bring long lists of projects they wanted and were little interested in the state's overall needs. "Our share is 100 percent," was the attitude with which the professionals had to contend. "If that was politics, then it was politics. I always admired those guys because they were under tremendous pressure to do more than they had the ability to do." But, Peyton argued, the need was so great that none of the proposed projects was unreasonable or unnecessary. "I

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3 To avoid confusion, the highway commission "divisions" were renamed "districts" but their number (six) and geographical boundaries remained the same.

4 Highway Highlights, 36 (May, 1975), p. 3.

never knew any commissioner to spend money unneedfully," Peyton concluded.[5] Dale Dugan, Inspector General, agreed, arguing that a principal reason for abolition of the SHC "was a feeling among some of our legislators that some of the commissioners were playing fast and loose with where they were building the roads." As Ted Roberts remembered, "we had a lot more politics in those decisions under the State Highway Commission than we do now . . . our program wasn't very firm."[6] However, Walter Johnson, retired State Highway Engineer, claimed that in some forty years with the department he was never "bothered" by partisan politics.[7]

John D. McNeal, another former State Highway Engineer, was convinced at the time that creation of a "Department of Transportation" was not really needed but represented Kansas's response to a national trend. He noted that a centralized agency "can be just as political" as a decentralized one. However, McNeal acknowledged that a powerful Secretary of KDOT working with an advisory commission could undertake long range planning largely unaffected by gubernatorial elections and legislative politics. Even so, McNeal was skeptical as to whether the traumatic change embodied in KDOT was needed to deal with the problem.[8] What was certain was that the effort by KDOT to carry out its newly expanded responsibilities would have immediate and important political repercussions. Some things never changed.

The highway department underwent staff changes even while the State Highway Commission's fate was being debated. Andy Gray had retired as Director of Highways in January, 1975. L. W. Newcomer was named Acting Director and John McNeal became Assistant Director of Highways while continuing to serve as State Highway Engineer. Understandably, curiosity mounted over who would be named Secretary of KDOT -- and what larger effects that appointment would bring. The State Highway Commission held its final meeting on July 23, 1975 but took no notice of any of these issues, adjourning without ceremony.

Governor Bennett, perhaps to make a complete break with the past, selected O. D. "Jack" Turner, an Oklahoma management consultant specializing in the transportation area, to be Secretary of the Kansas Department of Transportation. Announcing Turner's appointment, Bennett stressed his breadth of experience (work as a professor of management and business school dean, in addition to extensive consulting) and national reputation in the field (reflected in service as director of the Highway Management Institute and as conference director of the U.S. Highway Management Improvement Program).

Of great importance, stressed Governor Bennett, was the fact that Secretary Turner "is free of political involvement." Bennett said bluntly: "Too often at the state level our highway program has been hindered by political provincialism and by indecision as to which direction to proceed." He was confident that

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5 Interview with Richard Peyton, Assistant Director of Highways (retired), January 8, 1986.

6 Interview with Dale Dugan, Inspector General, January 8, 1986. Interview with Ted Roberts, Bureau of Design, January 7, 1986.

7 Interview with Walter Johnson, State Highway Engineer (retired), January 8, 1986.

8 McNeal claimed that "much of this had been cured from within" by 1975 anyway. Interview with John D. McNeal, Director of Planning and Development (retired), January 7, 1986.

Turner "will put together a Department of Transportation and will move our department forward." Secretary Turner promised, in turn, to do his best but warned that "this country is facing unprecedented problems in transportation" and that no one person was able to solve these problems "alone or overnight." The goal, he said, was a "balanced, efficient transportation system" for all of Kansas.[9]

A dynamic administrator whose inclinations toward scholarship and teaching were expressed in a unique style of management during the three and one-half years he spent at KDOT, Turner dealt with a number of serious challenges, some landing on his desk even before he formally took office on August 14, 1975. He knew very little about the circumstances affecting transportation in Kansas, though the terrain and other features were similar to plains states with which he was familiar.[10] Still, rapid decisions were required.

First came the need to sort out the administrative implications of the changes that had brought KDOT into existence. There was, for example, considerable uncertainty about the powers of the State Highway Advisory Commission, especially its alleged "veto power" over what roads would be built (or reconstructed) and where. Some were fearful that administrative paralysis would ensue. Turner dismissed such anxieties, commenting that "the function of the Advisory Commission is to advise" and that he welcomed information and suggestions from this distinguished and knowledgeable group. But Turner hastened to state that the Secretary did not possess unlimited power. "I am not a dictator. I have no intention of becoming a dictator," he said at the time of his appointment. "I couldn't even if I had the most remote desire, because there are many checks and balances all along the way."[11]

Nonetheless, Secretary Turner possessed strong views about the most appropriate administrative structure for the Kansas Department of Transportation. At the beginning of his term, he campaigned for replacement of the State Highway Advisory Commission by a State Transportation Advisory Committee that would deal with both highway and aviation issues.[12] In actuality, Turner desired that the transportation advisory commission possess jurisdiction over separate advisory boards, one each for railways, aviation, and waterways. His idea was that each board would consist of representatives from the larger advisory group and at least one individual with special knowledge of the relevant "mode" of transportation. However, the State Highway Advisory Commission's first chairman, Donald A. Johnston (who also had served as the last head of the State Highway Commission), opposed this plan, preferring an advisory body that would deal solely with highways and retain the district representation basis for membership. This point of view triumphed, a victory of sorts for the old ways.[13] Separate advisory groups were created for other modes of transportation.

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9 Highway Highlights, 36 (July, 1975), pp. 2, 5.

10 Turner admitted that "while he was not a complete stranger" to Kansas, he could not speak "with any degree of authority." His family had summered several times in Great Bend, and he recently had driven the Kansas Turnpike from beginning to end, Highway Highlights, 36 (July, 1975), p. 5.

11 Ibid., p. 5.

12 Minutes of the Kansas State Highway Commission, v. 52, May 14, 1976.

13 Minutes, v. 52, November 12, 1976.

The State Highway Advisory Commission held its first formal meeting on September 22, 1975, an occasion notable in part for the presence of two women sitting as members. Thereafter, the advisory commission undertook to educate itself about highway programming, financing, and relevant legislation concerning transportation matters in Kansas. Turner and his staff made an effort to provide members with as much information as they could reasonably digest about funding problems and status of programming. The commission obtained, so numerous persons have observed, a better grasp of the chasm between available funding and minimal needs for rehabilitation of the Kansas highway system than did the old State Highway Commission. Turner especially praised the commitment of the commission, "on their own volition," to assess "the needs of the statewide system as a whole and then prioritizing those on the basis of need, rather than some other basis. I think just having that basic concept implanted in a group of our own top management people, and the commission itself is a great step forward."[14] It is notable that Secretary Turner and the KDOT staff provided their advisory group much more information than its predecessor received about funding problems, the status of projects, and other matters. The focus of discussion, significantly, remained that of getting more money from the legislature.

Effectively separated from the policymaking and resource allocation functions performed by its predecessor, the State Highway Commission, SHAC quickly acknowledged that its chief task should be the improvement of public understanding of the state's transportation needs. Having concluded that the public's ignorance of highway problems and widespread misunderstanding regarding how and why decisions were made must be confronted, SHAC urged that a three-point campaign to educate the public be launched: (a) where money for highways is going; (b) what benefits can be expected from these expenditures; and (c) why projects require so much time to complete. Members admitted that a barrage of statistics (such as the information that highway construction costs in Kansas were far below the national average or that Kansas boasted the third best rating anywhere with regard to the ratio of work done to salaries paid) would not impress their fellow Kansans. But the effort had to be made to persuade citizens to exert pressure on their legislators.[15]

For some members, the advisory commission's liaison function eventually proved too limiting. In late 1983 frustration surfaced when several members complained that they were superfluous and that there was no room for meaningful input from the advisory commission in setting priorities. Reflecting the changes in statutory authority, the KDOT staff response essentially acknowledged that KDOT's priority ranking system was complex. Further, the system considered construction and rehabilitation projects from a statewide perspective rather than a regional or local vantage. The staff also pointed out that the amalgamation of powers of the State Highway Commission and the Director of Highways in the person of the Secretary of Transportation was done to eliminate the "district orientation" and to stop the practice of each commissioner picking the projects for his own district.[16] Advisory commission members acknowledged the reality of their limited role in a most practical way. They voted at this meeting to abandon the practice of monthly meetings. They agreed to meet in

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14 KDOT News, 1, (April-May, 1979), p. 9.
15 Minutes, v. 52, October 31, 1975.
16 Minutes, v. 52, December 9, 1983.

Topeka on a quarterly basis and to confer during the intervening months via teleconference. With no authority over allocation of funds, the members decided that more frequent sessions were no longer justifiable.

A second major set of organizational changes occurred simultaneously with the transition. Secretary Turner proceeded to realign the department's top management during the process of determining appointments to the divisional directorships called for by KDOT's establishment. Turner's expertise involved "management improvement projects aimed toward increased productivity and output." What he had in mind for KDOT was a lively topic of conversation in the halls of the State Office Building. Would there be a wholesale replacement of the old hands, those individuals who had risen to positions of authority in Topeka in the 1960s and early 1970s through the traditional path of diverse and lengthy experience in the field? Would the traditional preeminence of engineers as managers be challenged?

The record of the Turner tenure was one, basically, of continuity. While Secretary Turner stated at the press conference to announce his appointment, "We want to put together the best team possible," implying that thoroughgoing administrative changes might take place, his initial selections for top posts in KDOT reflected emphasis on experience.[17] He also maintained the dominant place of engineers. He did not want to disrupt the heavy volume of work then being conducted and, since he knew many of the senior staff from his time as instructor in the highway management schools sponsored by the Bureau of Public Roads and AASHO, he was prepared to look "first inside the department."[18] Turner explained several years later that "key management positions in this department, by its very nature are engineer-oriented." Almost all decisions required an "is it good engineering-wise" background. Too, he accepted an approach to promotion relying heavily on seniority, "the tendency for people with the longest service with the state to move up," because they brought valuable experience and unique knowledge.[19]

Appointments announced in March, 1976, reflected that policy Turner elected to change assignments for John D. McNeal, who had been State Highway Engineer since 1968 and had held the position of Acting State Transportation Engineer since August, 1975. Replacing McNeal was W. H. Ogan, who previously had served as engineer of urban highways, Assistant State Engineer, and Acting Director, Division of Engineering and Design. A nationally-known figure in transportation circles, McNeal was appointed as Director, Planning and Development Division. Turner commented that he desired to utilize McNeal's "expertise and interest in planning to provide overall direction to development and implementation of a comprehensive statewide transportation planning process which includes the multi-modal responsibilities the DOT must assume." The essence of this jaw-breaking statement was, apparently, that someone should be looking ahead past the next mile of asphalt laid and McNeal possessed the qualifications to do so.

The new Director of Administration was R. R. Biege, an engineer who replaced John Gehr, named executive assistant to Secretary Turner. Becoming Director of Engineering and Design was Glen Koontz, who had been engineer of secondary roads since 1971. Remaining as Director of Operations was J. O. Adams

17 Highway Highlights, 36 (July, 1975), p. 5.
18 Highway Highlights, 36 (July, 1975), p. 5.
19 KDOT News, 1, No. 7 (April-May, 1979), p. 9.

and as Director of Aviation was Ray Arvin, who had overseen the shift from Economic Development to KDOT. In sum, all of the top positions (except aviation and KDOT counsel) were filled with engineers and the average length of service with the highway department among the directors was 29 years.

The principal challenge confronting Turner was to reorient these men and the department as a whole to the circumstances of 1976. No longer would it be possible to think primarily of building many roads and only secondarily (if at all) of maintaining road surfaces and bridges. All aspects of the Kansas transportation system had to be plugged into a planning process that featured continuing inadequate state appropriations and decreasing federal funds.[20]

The biggest adjustment, begun during Turner's tenure, came with the completion of much of the interstate program in Kansas and the growing concern for rehabilitation of existing roadways. The DOT Hilites reported in December, 1976, that the "missing link" in I-635, that section between K-131 north across the Kansas River to State Avenue in Kansas City, Kansas, was open to traffic. This stretch bore the designation of the "most elaborate roadway" anywhere in the state because of the three-tiered directional interchanges at I-70 instead of traffic-knotting cloverleafs. The thirteen miles of I-635 between the Wyandotte-Johnson County Line and I-29 to KCI were completed. I-635 had been estimated in 1956 to cost $14 million and likely would cost $102 million on completion.[21]

With the opening of another "missing link," the last ten miles of I-35 east of Emporia, in August, 1977, all rural sections of interstate roadways in Kansas had been constructed.[22] All that remained to be finished were the extensions of I-435 and I-670 in metropolitan Kansas City. However, these stretches were to cost approximately $373,368,000 as compared to the $1,186,957,000 spent on all other components of the interstate system to date in Kansas. Elsewhere, parts of the nation's interstate system probably never would be completed, for some states had failed to meet deadlines imposed in the 1974 Federal Highway Act. Estimated to cost $32 billion in 1956,[23] the national interstate system, according to the most recent projections, would require $120.5 billion to complete.[24]

The end of an era proved wrenching for KDOT's staff, many of whom had learned the trade of highway engineering through grappling with the exciting technical and management challenges of interstate construction. As State Transportation Engineer W. H. Wright recalled, "Everyone wants to build something new," and thus some of the thrill of working for the department departed

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20 One of Turner's goals was the creation of the "Resource Management System," which involved setting up a common data base from a data processing technology standpoint so as to make possible correlations of all these factors. A substantial commitment was made to the upgrading of KDOT's computer capabilities for management purposes. The results, according to interviews and other sources, have been mixed thus far. See KDOT News, 1, (April-May, 1979), pp. 8-9.

21 DOT Hilites, 37 (December, 1976), p. 2; Kansas City Star, November 15, 1976.

22 DOT Hilites, 37 (April, 1977), p. 4; Wichita Eagle-Beacon, July 2, 1977.

23 DOT Hilites, 37 (June, 1977), p. 2.

24 Report to Congress, The 1985 Estimate of the Cost Completing the Interstate System, U.S. Department of Transportation, FHA, January, 1985.

with the big construction contracts. Joe Reid of the Bureau of Traffic Engineering agreed. "It was fun to watch a road grow." But Reid stated that reconstruction work requires greater engineering knowledge and a better grasp of such issues as economic impact, traffic flow, and interagency planning. Ted Roberts supported this opinion, asserting that it is "just as exciting" to rehabilitate a road he helped build as a resident engineer as to do the original work. Another longtime Kansas highway engineer, Dean Testa, observed that everyone knew by 1978 that the days of "ripping through virgin ground" were done.[25] Such sentiments echoed the formal conclusions of the Federal Aid Highway Act of 1976 that authorized a "3R Program" (resurfacing, restoration, rehabilitation) for the interstate highway system.

The Wilbur Smith Report (officially entitled "Kansas Highway Needs and Corridor Analyses") which was submitted to the 1976 legislature provided ammunition for the claims that rehabilitation and maintenance were urgent requirements for the state's highway system. The Smith Report projected $17.4 billion in 1975 dollars in statewide road and highway needs ($6.6 billion for state highways, $7.3 billion for county roads, $3.6 billion for municipal streets, and $193 million for tollways) between 1975 and 1990. Of this staggering sum, the vast majority was ticketed for minor and major improvement of existing roads. The Smith Report estimated that 90 percent of the Kansas highway and road system would require "some type of improvement" by 1990.[26]

A modification of KDOT's field administration structure that reflected the need for trained staff to oversee these rapidly growing maintenance activities took place in 1978 with the appointment of five "area engineers." The position of area engineer combined the responsibilities of construction engineer and maintenance engineer in the field and required dual reporting to the District Construction Engineer and the District Maintenance Engineer. It was created to improve communication between the district office and the field but it had a second important purpose. Young engineers typically obtained experience first in construction and thus had very little training (and less interest) working "on the line" in maintenance. As a result, it was difficult to draft promising staff members for the District Maintenance Engineer slots. Now, however, an area engineer was required to become familiar with maintenance problems and many found this dimension of KDOT's work to be challenging and rewarding.[27]

Roadbuilding did not suddenly stop, of course. Indeed, an unexpected release of impounded federal funds by President Gerald Ford caused the KDOT to launch as many projects as possible. Fiscal year 1975 set a new record for contract volume with $121 million let.[28] The long-awaited Wichita "Canal Route" was continuing and was projected for completion in December, 1979. First proposed in 1946, this project, underway for fifteen years at a cost of $10.6 million per mile and total outlay of $113 million, was acknowledged to be the "most complex and challenging" of all such works in Kansas. The Canal Route incorporated scores of links and interchanges with seven other highways, an

25 Interview with W. H. Wright, State Transportation Engineer, January 6, 1986; Interview with Joe Reid, Bureau of Traffic Engineer, January 6, 1986; Interview with Ted Roberts, Bureau of Design, January 7, 1986; Interview with Dean Testa, Construction and Maintenance, January 10, 1986.

26 DOT Hilites, 37 (February, 1976), pp. 5-6.

27 KDOT News, 1 (October, 1978), p. 2, and KDOT News, 1 (June, 1979), p. 2.

28 Hiway Hilites 36 (June, 1975), p. 4.

elaborate system of dams, diversions, and drainage had to be installed.[29] Freeway construction projects underway in 1979 included U.S. 69 in Miami and Linn counties, U.S. 36 in Doniphan County, U.S. 169 in Allen, U.S. 54 in Sedgwick and Butler, K-96 in Sedgwick, and U.S. 75 in Shawnee County. The U.S. 69 project involved a 17 mile stretch running north and south from Louisburg. Notably, newly elected Governor John Carlin, who presided over the dedication, said: "We don't open highway sections in Kansas very often anymore."[30] In addition, a number of "super twos" -- two lane highways featuring extra width and restricted access -- were under construction or in the planning stages.

But few would dispute that the spotlight in Kansas as in surrounding states had shifted to the less glamorous mission of system renovation and maintenance. Governor Robert Bennett had called in 1976 for a Kansas "3R" program to widen narrow pavements, do overlays, resurfacing, and spot improvements to eliminate sharp curves, cut down hills, and construct passing lanes. But the task was awesome. State Transportation Engineer W. H. Ogan admitted in 1979: "Right now, a lot of roads built when we were in a little better financial position have reached the end of their designed life. And they're growing old about the same time. I'm not sure how to resolve that problem." He reiterated the point: "The major problem we face is the rehabilitation of our present system . . . We need some kind of miracle . . . and I don't know when that miracle's going to happen."[31]

Many Kansans, especially those who lived in communities not served by an interstate or turnpike, proved unwilling to accept the view that the "big highway era" was at an end. Indeed, the late 1970s was a time of revived interest in turnpikes and other creative means of financing major highway projects. The flourishing state of the Kansas Turnpike Authority, which announced in 1976 that better-than-projected revenues would permit the retirement of its bonds in advance of their maturity date of 1994, was a source of encouragement for Kansas towns bypassed by interstates and other major highways. In southeast Kansas, in particular, the perennial campaign for a turnpike was renewed. Elsewhere, towns such as Stockton, forty miles north of Hays on U.S. 24, which had been smashed by the competition of I-70, hoped for a miracle -- or a spur highway -- to bring back the tourists and the truckers.[32]

KDOT had been named a Department of "Transportation" because of the view that a state's requirements for transporting people and goods were interrelated -- that what was done to improve highways impinged on railroads and air transportation capabilities, and waterways. In 1975 Kansas, however, did not possess the dynamic mix of transportation services found in many other states. Over-the-road movement of both people and goods predominated. Railroads continued to be important transporters of goods for certain routes through and to and from Kansas. The potential of commercial air transport barely had been tapped by Kansans. And, of course, waterways played an insignificant role.

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29 KDOT News, 2 (November, 1979), pp. 4-5.
30 Fort Scott Tribune, June 23, 1980 and July 3, 1980.
31 KDOT NEWS, 7 (April-May, 1979), p. 1.
32 DOT Hilites, 37 (November, 1976), pp. 7-9; see the very interesting article on the impact of I-70 on the economic vitality of various western Kansas communities in the Wichita Eagle-Beacon, January 9, 1977.

Further, the constitutional prohibition with regard to use of Kansas taxpayers' money to finance "internal improvements" effectively blocked any active effort looking toward the integration and rationalization of the various forms of transportation in the state. Only highway improvement and development of water resources were permitted. On the other hand, substantial federal funds were available if some way around this ban could be discovered. During Turner's time in office, the activities conducted by KDOT were chiefly investigations of the status of other transportation modes since "planning" was not excluded by the Kansas Constitution. The agency took part, for example, in a 15-state study of the potential for waterway development in 1978.[33] KDOT's Aviation Division launched a state airport development plan almost immediately after its transfer from the Department of Economic Development. This study led to the approval of fourteen federal grants to Kansas communities to improve and develop airports.[34]

Similarly, KDOT's Planning and Development Department staff made use of federal funds (provided by Congress under the "4-R" plan for railroad revitalization and regulatory reform) to carry out the initial phase of a state railway facilities plan. One obvious conclusion from this study was that Kansas was losing rail trackage (simply abandoned when railroads withdrew from unprofitable routes) at an increasing rate. In November, 1978, the Governor's Advisory Committee on Rail Planning approved a second phase of this study. KDOT was charged with undertaking a comprehensive investigation "of the role Kansas state government should play in rail transportation" that was to deal with "the entire system of railroads in Kansas, its relationship to the U.S. systems and other modes of transportation." Thus, truck, bus, barge, and air freight would be examined. "The Phase II study is difficult, because it requires a look at the whole economy. Who's shipping what and how much," said Vic Moser, KDOT's multi-modal planning engineer.[35]

The purpose of the study, clearly, was to place Kansas in a position to claim its share of the largesse flowing from Washington to states whose railroad systems were collapsing, should the state's archaic ban on internal improvements be abolished. The Local Rail Service Assistance Act of 1978 made available federal funds to rail lines that were "subject to abandonment" or that carried less than five million ton-miles per year. Each state was entitled to a yearly allocation under LRSA based on its total rail trackage. Kansas was losing out, a fact made especially painful because of the precarious situation of the Rock Island Railroad (which had declared bankruptcy in 1975 and was maintaining service to numerous Kansas communities only through substantial federal subsidies) and the abandonment of nearly 1,000 miles of track since 1960.[36] Again, the federal government was looked to as short term savior.

Money -- or, rather, the lack of money -- underlay almost all of the problems the newly-formed KDOT faced. Before taking office, Governor Bennett had pledged to reduce state personnel across the board. Subsequent legislative action required KDOT to cut 48 positions in FY 75 and to chop a total of 175

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33 KDOT News, 1 (October, 1978), p. 2.
34 Ibid.
35 KDOT News, 1 (November, 1978), p. 4.
36 Selected Statistics, 1984, pp. 62-63; KDOT News, 2 (February, 1980), p. 1. Between 1960 and 1983 1,192 miles of track were abandoned in Kansas.

staff by the end of FY 76.[37] As of March 1, 1976, KDOT claimed 3,482 employees, the same number as in 1962. There was a desperate shortage of engineers and consequent delays in turning out project plans and implementing approved projects. Noncompetitive salaries were the chief culprit.[38]

According to its own estimate in October, 1975, Kansas was then $4 billion short of being able to meet the state's existing transportation needs and the deficit would reach $5.5 billion in fifteen years.[39] The key problems were the ruinous impact of inflation, declining fuel tax revenues, lagging bond sales, and the deterioration of Kansas's present road system. Presented with the grim calculus of needs and inadequate resources, the department of transportation could offer only "bandaid" solutions. Not surprisingly, they looked first to the federal government, urging that Congress be lobbied to permit a relaxation of standards so that federal funds might be used for less costly types of road reconstruction (such as widening of roads by two feet or less and the application of asphalt overlays.)[40] Other suggestions included substitution of so-called "super twos" for the four-lane highways currently being planned, at a savings of $391 million, and a campaign to get the Kansas Legislature to raise the statutory interest rate ceiling for highway bonds.

Hoping that the Wilbur Smith Report would "energize" Governor Bennett and the legislature to address seriously the state's transportation financing crisis, Secretary Turner made a number of recommendations. He urged the interest rate ceiling on bonds be raised to 7.5 percent. He proposed a two cent increase in the gasoline tax, warning that Kansas stood to lose federal funds already appropriated but not yet matched by state funds. Third, because 57 percent of traffic in Kansas was carried by less than 10 percent of total highway mileage, Turner asked for creation of a system of local financing to enable local government units to take over the underutilized mileage in the state system. Finally, to provide funds for maintenance given the constitutional prohibition of state general funds for highways, Turner recommended a state sales tax on vehicles and auto parts.

Governor Bennett's budget message to the 1976 Kansas Legislature contained a stirring appeal on behalf of increased funding for highways. After reviewing the needs and possible levels of response, Bennett said:

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37 Minutes, v. 51, December 18, 1974; Highway Hilites, 36 (February, 1975), p. 4.

38 In October, 1978, KDOT listed 58 vacancies for civil engineers, and Secretary Turner approved a crash program to attract highly qualified professionals to Kansas transportation work. The effort involved substantial civil service pay increases, a scheme of one-time cash bonuses, and the reestablishment of the rotational training program that previously had been an important lure to ambitious young engineers. KDOT News, 1 (October, 1978), p. 7.

39 Minutes, v. 52, October 31, 1975.

40 Ibid. Under current regulations, these improvements were defined as "maintenance" and thus not eligible for federal funds.

> If we expect the economy of our state to at least remain stable and hopefully to continue to grow, we must, as quickly as possible, provide both agriculture and commerce with the routes of transportation which are essential for their endeavors. . . . In our total highway system we have a great public investment. To allow this investment to deteriorate would be inexcusable neglect. . . . To refrain from a broadened and enriched highway improvement program now would condemn over three-fourths of our state road system to a gradual return to gravel paths of the 1930s at a time when the 21st century is in view.[41]

But Bennett did not offer explicit recommendations as to how a reinvigorated highway program would be funded, except for the suggestion that "a conscientious re-examination of the user charges, fees and taxes which are now prescribed by law" be undertaken. This proposal was defeated by close vote in the Senate. In mid-March a measure that included a one cent gasoline tax increase and higher automobile and truck license fees was introduced and eventually passed. The increases were expected to generate $29.4 million in highway revenues annually. It was a beginning but only that.

As DOT Hilites commented: "There appeared to be little or no opposition against better highways, but there were differences on who should pay and just how much."[42] In this environment the traditional rural/urban conflict about the state highway fund and KDOT priorities came to the fore again. Many Kansas counties were complaining that they were unable to maintain their asphalt-surfaced roads and some were returning to crushed rock. In Marion County, 60 miles of asphalt roads had been torn up and another 150 miles was slated for replacement by crushed rock. "Our people here are for it," said M. P. Thompson of Hillsboro, a Marion County commissioner. "They'd rather have a good rock road than a blacktop full of holes."[43] The counties had charged since the late 1940s that they were unfairly burdened with responsibility for maintenance of an overlarge and growing road system. Each state project to construct a bypass or straighten an alignment usually resulted in the old route being turned over to the county concerned. The issue also became a political hot potato at the state level with Democratic House leader John Carlin (D-Smolan) charging: "We've spent three decades building blacktop roads in rural Kansas. Now, because the 1976 legislature was more concerned with the governor's highway theory than with real existing city and county needs, rural Kansas and agricultural interests have again taken a backseat in the list of priorities of the Bennett administration."[44]

Since 1976 was an election year, tax increases of any kind were viewed with extreme unease by legislators. In fact, the Kansas Legislature was swayed, as were other states, by the siren song of tax lids. That attitude continued to have influence even after the fall elections. Governor Bennett's response in his 1977 budget message was to duck the awkward question of who was to "get stuck" with the bill for transportation improvements by appointing a committee of public-spirited citizens to study the issue. Bennett named 48 persons to

41 DOT Hilites, 37 (February, 1976), p. 4.
42 DOT Hilites, 37 (February, 1976), p. 2.
43 Kansas City Times, June 8, 1976.
44 Ibid.

this Transportation Task Force, and it duly began its work in the spring of 1977 with a deadline for submitting its recommendations by December, 1978. That meant, however, that no gubernatorial initiative with regard to transportation issues would take place prior to the next statewide election.

In the meantime, KDOT did what it could to stem the tide of deteriorating road surfaces and bridges. The Transportation Task Force did produce information, based on a statewide survey, that Kansans considered adequate road surfaces and maintenance to be the state's biggest transportation need. Some 50 percent of those responding preferred that KDOT maintain existing roads without building any new ones and 43 percent wanted upgrading of the system. The great majority desired that revenues to accomplish these aims come from diversion of a part of the state's sales tax or income tax to highways -- thus not by the imposition of any new taxes. Notably, 59 percent of the respondents did not know what was the present fuel tax rate, but almost all opposed increasing fuel taxes (whatever the present level) or raising vehicle registration fees.[45] That information was set alongside a report by Director of Planning John McNeal that inflation had pumped up construction and maintenance costs 38 percent between January and November, 1978; thus, when current rates of inflation were factored in, the construction program planned through 1984 could not possibly be completed.[46]

A new chapter in the history of the Kansas Department of Transportation opened with the election of John Carlin, a youthfully energetic Democrat, as Governor in November, 1978. He was, therefore, the recipient of the report of the Transportation Task Force appointed by his predecessor. Presented in December, 1978, this study noted that Kansas faced "an extraordinary road and street financing problem" because of the great mileage compared to its population. "That Kansas has kept up as well as we have with per capita user revenues well below the national average, I believe, is testimony to the general efficiency of KDOT, and its preceding Kansas Highway Departments over the years." Among the Transportation Task Force's recommendations were a constitutional amendment to make possible creation of a multi-modal transportation system, charging the Kansas Highway Patrol's budget to general funds (thus freeing $10.3 million in highway funds in FY 78), diverting taxes levied against motor carriers from the general fund to the city and county highway fund, a one cent increase in the gasoline tax, and allocation of all or part of the sales tax collected on vehicles to the state highway fund (estimated as generating up to $24 million per year). The Task Force also urged a study of "cost-effectiveness, work and time goals within KDOT," possible changes in civil service rules that might affect KDOT, and "keeping the Highway Advisory Commission informed of planned programs so they may keep their constituents informed about KDOT plans and projects."[47]

Governor Carlin's fiscal year 1980 budget message to the Kansas Legislature embraced the call for a statewide referendum to permit the pass-through of federal funds for rail, airport, and other improvements. He backed a one-time committment of funds for utilization for the so-called "Super 2 Program" during the coming year. However, the total allocation to KDOT was reduced from the figure of $366 million requested to $331.4 recommended by the governor. Too,

45 Minutes, v. 52, February 10, 1978.
46 Minutes, v. 52, November 17, 1978.
47 KDOT News, 1, No. 4 (January, 1979), pp. 1, 3.

Carlin refused to ask for a tax increase to go to the state highway fund. He stated that only when Kansas taxpayers had been convinced that their tax dollars were being used wisely would they consider the possibility of additional revenues. "We have not reached this point in our program," the Governor noted.[48]

When deliberating upon appointments to various cabinet level positions, Governor Carlin naturally was eager to make a clean break with the policies of the Bennett administration and to bring in his own people. Nonetheless, he received numerous messages urging him to reappoint O. D. Turner at KDOT, and Turner was prevailed upon to accept reappointment on an interim basis. However, in April, 1979, Turner resigned to return to his consulting business. Governor Carlin announced in July, 1979, that John B. Kemp, then serving as the Regional Administrator, Federal Highway Administration, headquartered in Kansas City, had agreed to accept the position of Secretary of the Kansas Department of Transportation, effective August 1, 1979.

KDOT's second head was a trained engineer, one who as a youth had spent summers on road crews and who had first hand experience in almost every phase of the transportation field. Kemp had taken a position with the Bureau of Public Roads in 1949 and served in various capacities with BPR/FHWA for some thirty years. He had been deeply involved in planning and oversight of the interstate and other federal-aid highway programs from the federal perspective. He was familiar with the Kansas Department of Transportation staff from his position as Regional Federal Highway Administrator in Kansas City for more than 11 years. He had been exposed to all modes of transportation through collateral duty assignments as Acting Regional Representative of the U.S. Secretary of Transportation during both the Nixon and Carter administrations. He also had acquired knowledge of many different federal agency operations under a presidential appointment as chairman of the Kansas City Federal Regional Council. In sum, Kansas had obtained the services of a respected, experienced administrator to steer KDOT through a difficult and turbulent period.

None of the problems Secretary Kemp faced were new ones but their magnitude seemed to increase on a geometrical basis. In July, 1980, he briefed the State Highway Advisory Commission about the status of highways nationwide. The U.S. interstate system now needed to have replaced 13 percent of its pavement and 8 percent of its bridges. This represented an increase of 50 percent since 1970, and each year another 2,000 miles of the interstate system reached its design age of twenty years. Another way of looking at the problem, Kemp observed, was to note that in 1970 88 percent of Federal Aid Primary funds went for new construction but that in 1980 that figure was 20 percent. Over one-half of the FAI system was more than ten years old.

These statistics, when applied to Kansas, told an even grimmer story. Sections of interstate roadway -- especially on I-70 -- were over twenty years old. A large part of the primary road system in Kansas, especially in the eastern part of the state, was overage and overburdened for its original design capacity. In January, 1979, KDOT initiated an overlay and resurfacing program to deal with the state's rapidly deteriorating asphalt surfaces. This was a

48 KDOT News, 1 (February, 1979), p. 1.

stopgap measure, taken because "3R" type projects took too long and cost too much if implemented across the state. A total collapse of Kansas roads seemed imminent.[49]

But persuading the Kansas Legislature to consider the state of the state's highway system as desperate would prove a tough job. In May, 1979, the legislature approved a $35 million "loan" from the state freeway fund to the highway general fund to be used for twenty urgently needed "3R" projects in fourteen counties across the state. But that was only a start, for Secretary Kemp outlined in December, 1979, a "bare bones" program for the next ten years which required at least $35 million each year in additional funding.[50] He told the State Highway Advisory Commission that at present KDOT had sufficient funds to match its federal aid allocations and to undertake a state-funded "3R" and overlaying program totalling $25 million for 1981. Thereafter, KDOT would only take in enough to match federal aid. Still more worrying was the continuing shift of federal support from highways to mass transit (thus reducing the Kansas share of the federal transportation dollar) and the news of a further drop in highway miles travelled in 1979 (producing a revenue shortfall of $3 million). Kemp argued that one or another new source of revenue for KDOT was essential if it was to meet its minimum obligations.[51]

Governor Carlin's budget message to the 1980 Legislature contained both good and bad news for KDOT. He did make clear that a high priority was the ending of the motor fuels sales tax exemption. This would produce an estimated $50 million annually for streets and highways.[52] But, generally, Carlin urged belt tightening for all state agencies and KDOT was most definitely included. Its hopes for additional funding were made even more problematic by the surfacing of critical audit reports and a consequent legislative study of KDOT.[53]

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49 KDOT News, 1 (September, 1979), p. 2.

50 KDOT News, 2 (December, 1979), pp. 1-2.

51 Minutes, v. 52, November 9, 1979. Kemp pointed out to the advisory commission that an additional $25 million was needed for 1982. Director of Planning McNeal suggested that the legislature had the following options: 1. index the fuels tax to the rate of inflation or make it a percentage of price; 2. increase vehicle registration fees; 3. transfer vehicle sales taxes from the state's general fund to the highway fund; 4. collect the sales tax on gas at the pump or impose a distribution excise. Declining fuel tax revenues also hurt city maintenance programs. The Topeka Director of Public Works testified before the Legislature in February, 1980 that the state's contribution to local maintenance had covered 92 percent of Topeka's street maintenance costs in 1977 but that by 1979 it only covered 73 percent. Since local property taxes could go no higher, Topeka could afford to overlay only 1.5 percent of its asphalt streets each year. At that rate a Topeka street would be resurfaced once every 66 and 2/3 years. Topeka Capital Journal, February 13, 1980, in Good Roads Clippings, v. 5, 1980-1983, Kansas State Historical Society.

52 The revenues thus produced would be split 65 percent for state highways and 35 percent for cities and counties. The measure met Governor Carlin's requirement that highway users pay for roads and there be no attempted "raids" on the general fund. KDOT News, 2 (February, 1980), pp. 1, 7.

53 See "From the Secretary's Desk", KDOT News, 2 (May, 1980), and 2 (August, 1980) for a discussion of the negative audits and the report of the special legislative committee.

Secretary Kemp, terming the Governor's recommendations "realistic," worked to change popular perceptions of waste and mismanagement in KDOT.[54] The real culprits, a Kansas Government Journal editorial argued, were inflation and changing circumstances nationally. "Over the years," this editorial observed, "a tremendous public investment has been made in our highway, road and street system, through the use of state highway user taxes and local property taxes and special assessments. Hardly anyone is now talking about new construction; the concern is simply to adequately maintain a safe system, and to avoid deferring essential rehabilitation and maintenance costs to the future. Perhaps we can survive another year -- the real cost of deferred maintenance usually doesn't become apparent to the public for a few years. But . . . it would seem tragic if the 1980 legislature does not respond in some way to the highway financing needs of Kansas state and local governments."[55] The 1980 legislative session ended with the expenditure of much rhetoric about highways but little action. Four different revenue packages were introduced only to die for lack of the legislature's willingness to confront tax issues. "It may be a rough trip when legislators return to Topeka for their next terms," wryly noted the KDOT News in May, 1980.[56]

Coping with a funding drought challenged the department's ingenuity, as it had so often in the past. Little more than a month after the legislature's adjournment in 1980, KDOT completed demonstration projects for recycling asphalt. Both hot and cold mixing methods now allowed contractors to rip up old asphalt roadbeds for use as aggregate to construct a new surface. Not only would these practices conserve a valuable petroleum product but the technique solved the perennial problem of finding good aggregate deposits in Kansas.[57]

Meanwhile the district engineers were engaging in some hard thinking. They were looking anxiously for a program that would enable them to overlay crumbling blacktop roads with enough asphalt to keep the surfaces from disintegrating. Such a project would far outstrip available maintenance funds. Meeting with then Engineer of Maintenance Wright in 1978, the district engineers agreed to Wright's proposal that they sacrifice maintenance positions at the district level and set aside the salary savings to fund a resurfacing program. Dubbed the "1-R" program, this Kansas innovation had been launched several years earlier and was now speeded up under Secretary Kemp. By 1984, 1-R provided up to 1 1/2 inches of asphalt overlay, much of it recycled, on 1,000 miles of roadway a year and preserved the state's considerable investment in its blacktop highways.[58]

Given KDOT's budgetary constraints, Secretary Kemp found it all the more imperative to pursue Interstate Discretionary Funds aggressively. Congress made these funds available, over and above Interstate Completion Funds, to those states which were diligent about expending their regular allocations. Thus, states in which the interstate system was advancing toward completion in timely fashion would be able to "close the last gaps." With long experience of dealing

54 Minutes, v. 52, January 25, 1980.
55 Kansas Government Journal, LXVI, No. 1 (January, 1980), p. 3.
56 KDOT News, 2 (May, 1980), p. 2.
57 KDOT News, 2 (June, 1980), pp. 1, 7.
58 Interviews with Mike Lackey, Buck Jones, William Ogan and John D. McNeal, October 16, 1986.

with FHWA decision processes and ability to present Kansas' case effectively, Kemp secured the state's first Interstate Discretionary funds in 1980. The federal funding committed reached a total of nearly $100 million obligated by 1986 and made possible acceleration of work on the interstate system in Kansas by nine years.[59]

Governor Carlin's budget message for 1981 called for a balanced budget, zero growth, and an estimated $60 million in additional funds for transportation from a mineral production tax. The legislature balked at this severance tax and proved unwilling to deal with other revenue measures while slashing the administrative budget of KDOT and other state agencies.[60] KDOT's financial crisis was worsening.

Dogged supporters of improved funding for Kansas highways promised to try again, but Secretary Kemp was forced to consider emergency measures to ensure that KDOT accomplished its primary missions.[61] In May, 1981, Kemp announced that he was appointing a task force to study manpower utilization and to shape the strategy for dealing with largescale staffing and construction cutbacks necessitated by the legislature's refusal to consider KDOT's desperate funding needs. The State Highway Advisory Commission was informed that staff cuts through attrition would be necessary and that, if no additional funds were provided by the 1982 session of the Kansas Legislature, actual layoffs would result.[62] This was the first salvo in a campaign to generate public support for transportation -- and, incidentally, to bring about a reorganization of KDOT's administrative structure.

When he announced the Manpower Utilization Study, Secretary Kemp had stated that he believed "by taking a long, hard look at the whole organization, it may be possible with a better utilization of people to effect a savings in personnel in some disciplines and to retrain those people to work where needs are greater."[63] The nine-member committee first met in mid-May, 1981 and was charged with submitting a report by September 15. In July, 1981 Kemp announced the appointment of three new division directors, and in October, having received a report from the manpower utilization task force that urged drastic changes on the basis of KDOT's new missions and reduced workload, he put into effect a sweeping departmental reorganization plan.

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59 KDOT, Kansas Interstate System: Status, Progress and Condition, 1984; Interview with Arland Hicks, October 16, 1986; Memo, Secretary John B. Kemp to authors, October 7, 1986.

60 See KDOT News, 3 (January, 1981) for a full discussion of Governor Carlin's proposed mineral production (severance) tax.

61 Among the complications was the need to find sufficient state matching funds for the federal aid coming to Kansas. The discretionary fund allocation of $56.9 million released in October, 1980 would have been lost if state funds were not obligated within one year. Kemp and Governor Carlin were able to obtain legislative authorization for the transfer of up to $20 million (on a loan basis) from the State Freeway Fund to the State Highway Fund to meet this crisis. KDOT News, 3 (April, 1981), p. 1.

62 Minutes, v. 52, May 8, 1981; Minutes, v. 52, July 10, 1981.

63 KDOT News, 3 (May, 1981), p. 3.

Notable for its grouping of certain previously autonomous divisions into "bureaus" reporting to one of four divisional directors, the scheme was designed to increase productivity and to make possible staff reductions through attrition. Heading the Division of Engineering and Design was William Predmore; going to the Director of Administration was Robert G. Haley, serving as Acting Director of Operations was William H. Wright, and Jim Bush as head of the Division of Planning. Three of the four division directors were professional engineers. Those who did not like the plan claimed that it was also intended to reduce the influence of engineers within KDOT and to limit the authority of powerful individuals and offices. One experienced staff member noted: "Speaking for the engineers, I know that the engineers were pretty much regarded as engineer managers, and they were put under some managers who weren't also engineers. That rankled a lot of engineers."[64] What was being alluded to as an outcome of the reorganization was, of course, not limited to KDOT. Throughout the executive branch of state government, agencies that had attained cabinet-level status in the 1970s were undergoing further, perhaps inevitable reorganizations in the 1980s. In every case, emphasis was being given to management expertise -- and that often meant supplanting technically-qualified staff who possessed lengthy experience in the agency concerned by persons with little or no technical background but with substantial management experience and training.

In December, 1981, Secretary Kemp proceeded with an extensive reshuffling of top management. Fourteen new bureau chiefs and other appointments were made. It is notable that all these appointments involved current KDOT employees. With few exceptions, the division directors were drawn from the World War II generation, and the bureau chiefs, while somewhat younger on average, came from the ranks of engineers. One obvious outcome was the reallocation of certain vital functions to "management specialists" clustered under the Director of the Division of Administration.[65]

While the State Highway Advisory Commission had no statutory responsibility for department management, Secretary Kemp wanted to keep members informed about the steps he was taking. He advised them that the proposed staff reorganization had been necessitated both by the shortage of funds and by KDOT's shift in priorities from construction to maintenance. He believed that the reorganization would be completed by the end of FY 84 and that it would lead to elimination (largely by attrition) of 480 positions. Thus, the savings would be substantial.

On the first front, that of public support for highway programs, progress was gradual at best. By late fall of 1981, twelve meetings of interested citizens (with a total attendance of 570) "to drum up voter support for highway revenue measures" had been held around the state. A new organization with a name familiar to some oldtimers, the Kansas Good Roads Association, was organized in February, 1982 to raise public awareness of the benefits of "sound highways" and to lobby the legislature.[66] However, the 1982 Kansas Legislature

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64 Interview with Walter Johnson, January 8, 1986.
65 KDOT News, 3, No. 9 (October-December, 1981), pp. 1-2.
66 Minutes, v. 52, November 13, 1981; Topeka Capital Journal, February 25, 1982, in Good Roads Clippings, v. 5, 1980-1983, KSHS.

proved immune to all pressure. No additional revenues for transportation were forthcoming, as the stalemate between Cedar Crest and the legislators continued in force.

Secretary Kemp took steps to forestall the "utter deterioration" of the Kansas highway system. Admitting that he was borrowing against the future, Kemp unveiled a plan in May, 1982 to take $10 million from the State Freeway Fund for maintenance and leveraged federal funds to produce about $23 million for "preservation work" on Kansas highways. Federal aid amounting to $10 million also would be diverted to cities and counties on a loan basis to perform essential bridge replacement work. Kemp "readily acknowledged" that this was an "administrative bookkeeping maneuver" and did not make any new money available. The Topeka Capital-Journal concluded: "It represents a near desperation move by the secretary of transportation because the 1982 legislature did not provide any new road revenues and the state highway fund has become so depleted that Kemp had decided to let no new construction projects financed by the state highway fund next fiscal year."[67] What was available would make possible the overlay of about 350 miles of state highways and sealing some 100 miles of roadway.

The summer of 1982, in retrospect, was the low point of the funding saga. As the 1982 elections approached candidates of both parties committed to one or another solution for funding a better transportation system for Kansas. Governor Carlin proposed to transfer the sales tax on automobiles and auto parts to the State Highway Fund and to replace the lost revenue by a mineral severance tax. This would generate an estimated $80-85 million per year for highways. Carlin's opponent, Sam Hardage, advocated an increase in the gasoline tax of four cents (netting $55 million annually) and splitting it 65 percent to the state and 35 percent to local government units.[68] A "needs study" presented by KDOT to the advisory commission just prior to the election concluded that Kansas required $230 million per year to maintain the state highway system and to bring it up to the desired standard.[69]

A victorious John Carlin moved decisively to honor his campaign promises. His message to the Kansas Legislature asked for transfer of auto-related sales tax revenues to the State Highway Fund and the release of freeway funds for statewide use. Carlin's campaign on behalf of highways was received sympathetically by legislators, for they acknowledged that something must be done for the state's battered highway system. Demands for action came from nearly every corner of Kansas. When the Kansas Association of Commerce and Industry held its annual meeting, its 3,000 members named the highway system as the "top priority for state government" in the coming year. Lionel Alford, Boeing president, later commented: "The highways need reworking. I'd like for us to quit blaming each other, whether Republican and Democrat, and say, 'Let's go forth.'"[70] That view found a sympathetic hearing in the legislature.

What the Kansas Government Journal termed "one of the most substantive and controversial issues before the 1983 session" dealt with adequate financing for Kansas highways. Eventually, a complex compromise between the Governor and the Republican-controlled legislature was worked out, breaking a five-year stalemate

67 Minutes, v. 52, May 14, 1982; Topeka Capital-Journal, May 15, 1982.
68 Minutes, v. 52, October 8, 1982.
69 Minutes, v. 52, November 5, 1982.
70 Wichita Eagle-Beacon, February 27, 1983.

over highway funding, and a bold program was approved by both houses and signed by Governor Carlin.[71] The 1983 Kansas Highway Finance Act called for a three cent per gallon increase in the motor fuels tax, indexing of fuel taxes, the transfer of $40 million in FY 84, $20 million in FY 85, and $5 million in FY 86 from the State Freeway Fund to the State Highway Fund, shifting the funding of the State Highway Patrol to the State General Fund, transfer of part of auto-related sales taxes to the State Highway Fund, and several other budgetary changes. One estimate of the revenues to be generated for highway improvements was $549 million over a six year period.[72] A new era for transportation in Kansas was dawning.

On June 10, 1983, Secretary Kemp unveiled a five year, $1 billion highway improvement program at an advisory commission meeting attended by Governor Carlin. Describing the plan as representing a commitment to "halt the downhill skid of Kansas streets and roads," Kemp observed: "We were truly at a cross-roads this past year and I had asked repeatedly, 'Is this the end of serviceable roads, streets and highways in Kansas?' I am very gratified that the answer to that question is that this is not the end of serviceable roads in Kansas; this is the beginning of a new program to preserve and improve our highways."[73] Governor Carlin noted proudly: "The individual components of this plan, when added together, represent one of the best funding packages for highway improvements in the nation."[74] The State Highway Advisory Commission enthusiastically agreed.

What would $1 billion make possible? Secretary Kemp listed the major elements of KDOT's "comprehensive statewide improvement plan": $499.7 million in "firm" projects during the next two fiscal years and $617.9 in "possible" construction, resurfacing, bridge work, and rehabilitation from FY 86 through FY 88. The largest chunk of funds ($163.2 million) would go for preservation of existing surfaces, involving overlaying approximately 1,000 miles per year. Another large chunk was allocated for rehabilitation (projects requiring overlays of more than 1.5 inches thickness) and reconstruction. Finally, $145.1 million was being committed to construction, rehabilitation, and repair of some 286 bridges throughout the state. "We didn't make any attempt to ensure that every county, or every part of the state received any certain amount of the improvement," said Secretary Kemp but the program's impact would be felt statewide.[75]

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71 The principal element in the circumstance was acceptance of the major part of Carlin's proposal regarding transfer of auto-related sales taxes with a Republican-endorsed scheme for increasing and indexing of the gasoline tax. House Bill 2566 provided for a gasoline tax of 10 cents per gallon beginning July 1, 1983, rising to 11 cents per gallon on January 1, 1984. However, the indexation feature stipulated that the gas tax rate would be 10 percent of the average price per gallon as of the previous November, provided that this figure was not less than 11 cents per gallon. A provision regarding gasohol would in future pose difficulties, as the feds sought to encourage acceptable of gasohol. Selected Statistics, 1984, pp. 77, 86.

72 Kansas Government Journal (June, 1983), pp. 168-169.

73 Topeka Capital-Journal, June 11, 1983.

74 Ibid.

75 Topeka Capital-Journal, June 11, 1983.

During the next three years, KDOT worked frantically to repair the ravages of years of fiscal starvation. Temporary roads routed motorists around bridges being repaired or replaced. Detour signs sprouted across the state. The blinking lights atop orange and white striped barrels shepherded autos and trucks along long stretches of Kansas highways receiving broad ribbons of asphalt overlay. Striping crews seemed to be at work everywhere one turned. There was a remarkable growth of activity. A general view of KDOT's achievements under Secretary Kemp is that he was successful in obtaining substantial discretionary funds from the federal government to push ahead with the interstate system and that, under his leadership, KDOT rescued the freeway program from a "quagmire" of political and fiscal complexities and moved it to near completion of scheduled projects. As well, the transition from "building to rebuilding," begun under O. D. Turner, became reality during Secretary Kemp's tenure.[76] Of course, the tremendous task of reconstruction, rehabilitation, and repair of Kansas highways and streets continues today.

At the same time KDOT was struggling to deal with other challenges. Demands for participation in new, socially-oriented modes of transportation, the pressures of a changing relationship with the federal government, and the implications of embracing a set of organizational values, technological innovations, and administrative procedures that differed in significant ways from the customs and attitudes that had dominated in the days of the State Highway Commission swirled through the State Office Building and KDOT facilities in the field.

The Kansas Legislature in 1980 had finally approved a constitutional amendment permitting the state to receive funds for rail rehabilitation, airport construction, mass transit, historic preservation, public housing and reclamation of mined-out land. Despite general indifference on the part of Kansans and determined opposition by groups who believed that the amendment would benefit only special interests and cause the state to compete with private interests, the amendment was approved in the November, 1980 elections. For the first time, Kansas could make use of the variety of federal assistance for "multi-modal transportation."

As usual, however, dining at the federal table had its awkward moments. Funding under the Surface Transportation Assistance Act of 1978 provided increasing help for bridge repair and replacement, and KDOT desperately needed such funds. But their release was linked to proof of compliance with the 55 miles per hour speed limit requirement. STAA stipulated that federal aid would be cut if a designated percentage of drivers (decreasing each year) exceeded the speed limit. KDOT was thus placed in the position of monitoring the driving habits of Kansans -- and found them falling short of the target percentage in compliance. Only a maneuver by U.S. Senator Robert Dole that attached an amendment to the STAA allowing for "speedometer variability" saved Kansas from serious funding cuts.[77] Federal aid was essential for the ambitious highway reconstruction and maintenance program envisioned by KDOT planners.

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76 Interview with W. H. Wright, January 10, 1986.

77 KDOT News, 1 (November, 1978), p. 4; Ibid., 1 (September, 1979), p. 4; Ibid., 1 (March, 1980), pp. 1-2; Ibid., 1 (September, 1981), p. 1.

Federal funds also provided the impetus to convert KDOT into a "true" department of transportation, a process that still is continuing as of 1986. Under the Older Americans Act of 1973 and a subsequent amendment to the Urban Mass Transit Act, federal money could be provided to local communities to "upgrade transit services for the elderly and the handicapped." Beginning in 1975 KDOT reviewed proposals and selected community recipients for federal aid.[78] KDOT also served as "lead agency" for the Kansas Department of Social and Rehabilitation Services' plans, via the Kansas Rural Public Transportation Demonstration Program, to provide transit services for the elderly. The advisory commission recommended that KDOT take on this function for two years, though members dubious about the propriety of competing with private bus and taxi services feared that withdrawal of federal funds might result in a drain on scarce state highway resources.[79]

Although Kansas did not become involved as deeply as many other states with the skyrocketing national interest in provision of transportation services for special populations, local programs to assist the elderly (such as "Bus 62") and the handicapped (via wheelchair vans and other forms of aid) were and are highly visible evidence of KDOT's expanded function. As of 1984 KDOT still participated in two UMTA-supported programs. KDOT selected private, non-profit organizations to receive federal matching funds (at the 80 percent level) for small buses and vans to transport elderly and handicapped persons in locales where existing services were inadequate. Second, KDOT reviewed applications for federal funds to defray public transportation costs in rural areas and towns with populations under 50,000. A number of Kansas counties, cities, and regional transit authorities were, thus, required to deal with KDOT to obtain these funds.[80]

Once freed from the internal improvements ban, Kansas began to take advantage of federal funds for railroad rehabilitation. The Federal Railroad Administration informed KDOT in February, 1981 that $3 million was available for such work. Unfortunately, two days later, President Ronald Reagan rescinded FRA's funding authority, and KDOT could only return to identifying likely projects if rehabilitation funds were restored by Congress. That occurred in September, 1981 and KDOT received soon thereafter its first "passthrough" allocation to reconstruct a portion of the KATY line.[81]

Aviation remained the invisible partner in the road-rail-air triad, for the constitutional changes of 1980 did not permit KDOT to function as a broker of federal funds destined for local airport improvements. Since communities received funds directly from the Federal Aviation Authority, KDOT's activities were limited to educating airport personnel about changing rules and procedures, assisting communities to apply for federal funds, and advising them as to how to improve their facilities. Making use of a federal grant awarded in 1983, KDOT compiled a plan for aviation development in Kansas that projected to the year 2000 the state's aviation resources, level of demand, and the impact of aviation

78 KDOT Hilites, 36 (August, 1975), p. 3.
79 Minutes, v. 52, December 12, 1975.
80 Selected Statistics, 1984, p. 61.
81 KDOT News, 3 (March, 1981), p. 1; Ibid., 3 (September, 1981), p. 1.

on economic development. Director George Boyd has produced a comprehensive directory of aviation information. Under his direction, KDOT is currently organizing a computerized data base.[82]

These developments occurred against a backdrop of personnel changes and, some claim, a drastic break with practices and policies that had well served KDOT's predecessor agency and the people of Kansas. Senior staff express concern about preserving the "mentorship tradition" characteristic of the department. Dean Testa commented about the almost parental manner in which experienced engineers instructed their juniors: "As I used to tell the people that worked for me later on, there's a lot of what we do at KDOT that's handed down from 'father' to 'son', and if you haven't got a 'father', you're in real trouble." Testa claimed that when he began he listened and asked questions of the "old hands" about how to do certain types of projects. "Coffee breaks turned into instruction sessions," he recalled.[83] Old-style mentorship proved difficult to maintain in the circumstances which KDOT confronted in the 1970s and 1980s. However KDOT's leaders were aware of the need for mechanisms to transmit work experience and values and such innovations as the area engineer program greatly helped. In other areas, the longtime financial crisis took its toll on formal opportunities for inhouse training. Continuing restraints, for example, had forced the Division of Design since the 1960s to maintain a staffing pattern that provided only fifty percent of the required work. The rest had to be done by consultants. One KDOT staff member considered this practice a "false economy," for there was a tremendous need for young engineers to be able to learn from the World War II generation now passing from the scene.

Other factors were at work. KDOT at present is able to keep only one-third of its trainees, most of whom choose after three or four years to return to their home states. Despite the demonstrated success of the area engineer scheme, there is concern that the intended payoff of that program -- bringing broadly trained engineers to Topeka to fill high level management positions -- will not, in fact, materialize. The salary scale and the growing incidence of spouses with highpaying jobs in the current location can make a move to Topeka appear unattractive. As a result, some oldtimers fear that KDOT headquarters will exhibit "tunnel vision," lacking leadership from persons with solid field experience.[84] It is certain that the KDOT of ten years hence will be a very different organization. However, most senior staff believe that solutions will be found to these problems as to the various technological and fiscal problems KDOT has confronted. There remains a sense of KDOT as a family, if one made up of quite diverse personalities.

In 1986, the after effects of the reorganization of 1982 were still being experienced among the inhabitants of the 7th, 8th, and 9th floors of the State Office Building across from the Capitol. The Kansas Department of Transportation was an organization in transition. It was undergoing a generational metamorphosis, it was in the process of a managerial realignment of sweeping

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82 Interview with George Boyd, Director of Aviation, January 19, 1986.

83 Interview with Dean Testa, January 9, 1986.

84 Interview with Ted Roberts, January 14, 1986. Similar comments were registered by Arland Hicks and Joe Reid. Interviews with Arland Hicks, Planning and Development, January 6, 1986, and Joe Reid, January 6, 1986.

proportions, and it was confronting the implications of the success of its adherents in convincing the people of Kansas that a multi-modal transportation agency was necessary for the challenges of the 1990s and beyond.

What had not been changed during the tempests that had pounded KDOT in the decade from 1975 to 1985 was the dedication of its staff, beginning with Secretary John Kemp and extending through its several thousand employees, to give their fellow Kansans the best possible transportation which human ingenuity, hard work, and the limited resources made available to them would allow. From the early days of campaigning for good roads, Kansas had been a leader in the field of technological innovation. However, an obsession with local interests and a reluctance to accept the financial obligations of a modern highway system had retarded transportation in Kansas. Now, finally, as the agency that now carried the name of KDOT was being launched into a second half century of service, encouraging evidence was forthcoming that public awareness of the central role of a statewide transportation system in fostering economic development might match the professional expertise of KDOT's staff. Both, certainly, would be needed if Kansas was to perform successfully in the highly competitive economic environment of today and tomorrow.

APPENDIX

STATE HIGHWAY COMMISSIONERS

	SERVED		HOMETOWN
	FROM	TO	
E. R. Moses	4-4-17	6-17-19	Great Bend
R. S. Tiernan	4-4-17	4-20-21	Fort Scott
A. C. Blair	6-17-19	4-3-23	Lyons
Fred Perkins	4-20-21	4-1-25	Oswego
L. F. Davidson	4-3-23	7-1-25	Glasco
John W. Gardner	4-1-25	7-1-25	Marion
C. A. Wilkin	7-1-25	5-2-27	Independence
R. W. Dole	7-1-25	4-30-29	Almena
John V. Abrahams	5-2-27	10-13-30	Topeka
Charles W. Lamer	5-3-27	4-1-29	Salina
James A. Allen	5-2-27	4-1-29	Chanute
Richard M. Gray	5-2-27	7-20-28	Wichita
Claud M. Cave	5-2-27	4-1-31	Sublette
John C. Mack	10-15-28	1-29-30	Newton
R. B. Fegan	4-1-29	6-8-31	Junction City
J. T. Moore	4-1-29	4-1-31	Pittsburg
C. M. Wann	5-1-29	4-1-32	Hays
W. G. Anderson	2-10-30	4-1-32	Winfield
John McCoy	10-13-30	12- -30	Sabetha
James M. Rhodes	1-12-31	4-1-32	Blue Rapids
Carl V. Rice	4-1-31	4-1-33	Parsons
Forrest Luther	4-1-31	4-1-33	Cimarron
Charles W. Helstrom	6-8-31	4-1-33	McPherson
Lynn R. Brodrick	4-1-32	4-1-34	Marysville
L. N. Dreiling	4-1-32	4-1-34	Penokee
George S. Renn	4-1-32	4-1-34	Wellington

STATE HIGHWAY COMMISSIONERS (CONTINUED)

	SERVED		
	FROM	TO	HOMETOWN
E. A. Pinkerton	4-1-33	4-1-35	Glasco
Earle C. Todd	4-1-33	4-1-37	Independence
E. C. Bray	4-1-33	4-1-37	Syracuse
Edward S. Dunn	4-1-34	8-17-34	Holton
Dr. H. J. Morrison	4-1-34	4-1-38	Oberlin
L. S. Seymour	4-1-34	9-7-35	Wichita
Chester W. Davis	8-27-34	4-1-38	Holton
Ed Burge	4-1-35	4-1-37	Concordia
Leigh Abbey	9-25-35	4-1-38	Macksville
Gus Bengtson	4-1-37	4-1-39	Smolan
Chas. Wells	4-1-37	4-1-39	Baxter Springs
Frank McCoy	4-1-37	4-1-39	Sublette
Charles E. Miller	4-1-38	4-1-40	Tonganoxie
Jerry E. Driscoll	4-1-38	4-1-40	Russell
B. H. Salyers	4-1-38	4-1-40	Hutchinson
W. S. Arbuthnot	4-1-39	5-8-45	Bennington
Roy W. Cox	4-1-39	8-27-47	Iola
Willard Mayberry	4-1-39	4-1-43	Elkhart
Harold K. Snider	4-1-40	4-1-56	Lawrence
A. C. Hancock	4-1-40	5-5-44	St. Francis
L. L. Robinson	4-1-40	8-13-45	LaCrosse
Guy Rhea	4-1-43	6-4-46	Jetmore
Charles L. Cushing	5-5-44	4-1-56	Downs
Adrian M. Smith	5-8-45	12-1-54	McPherson
Kirke W. Dale	10-9-45	4-1-56	Arkansas City
J. C. Berryman	6-19-46	1-13-49	Ashland

STATE HIGHWAY COMMISSIONERS (CONTINUED)

	SERVED		
	FROM	TO	HOMETOWN
E. R. Caskey	8-27-47	10-19-54	Pittsburg
Lester R. McDonald	1-13-49	4-1-55	Satanta
Roy W. Cox	10-20-54	4-1-55	Iola
Melvin L. Cowen	12-1-54	4-1-55	Junction City
Elmer F. Anderson	4-1-55	4-1-57	Hope
J. R. Cheney	4-1-55	4-1-57	Ottawa
Wm. H. Addington	4-1-55	4-1-57	Elkhart
Ivan J. Wassberg	4-1-56	4-1-58	Manhattan
Edgar W. Heyl	4-1-56	4-1-58	Sharon Springs
Walter A. Rugan	4-1-56	4-1-58	Ellinwood
John D. Montgomery	4-1-57	4-1-61	Junction City
Jack L. Goodrick	4-1-57	4-1-61	Parsons
Louis Kampschroeder	4-1-57	4-1-61	Garden City
Joseph J. Poizner	4-1-58	4-1-62	Kansas City
Richard M. Driscoll	4-1-58	4-1-62	Russell
G. I. Robinson	4-1-58	4-1-62	Ellinwood
John A. Erickson	4-1-61	3-31-67	Clay Center
Ray Shepherd	4-1-61	3-31-65	Fort Scott
John A. Hineman	4-1-61	3-31-67	Dighton
George W. Gagel	4-1-62	3-31-64	Lenexa
J. Rex Duwe	4-1-62	3-31-68	Lucas
Walter W. Frizell	4-1-62	12-31-64	Larned
Milford Grassberger	5-15-64	3-31-66	Shawnee Mission
Robert G. Langenwalter	1-11-65	3-31-66	Wichita
Robert D. Hartley	4-1-65	3-31-67	Baxter Springs
Harry Timberlake	4-1-66	3-31-68	Leavenworth

STATE HIGHWAY COMMISSIONERS (CONTINUED)

	SERVED		
	FROM	TO	HOMETOWN
E. W. Armstrong	4-1-66	3-31-68	Wichita
Robert A. Kent	4-1-67	3-31-74	Salina
Karl A. Brueck	4-1-67	4-23-75	Paola
Louis Kampschroeder	4-1-67	4-23-75	Garden City
Robert P. Hagen	4-1-68	5-31-73	Lawrence
Henry Schwaller	4-1-68	4-27-73	Hays
Fred W. Burr	4-1-68	5-31-68	El Dorado
Gale Moss	6-14-68	3-31-74	El Dorado
Kenneth J. Phelps	6-1-73	8-14-75	Manhattan
Richard M. Driscoll	6-22-73	8-14-75	Russell
Clarence L. King, Jr.	4-10-74	4-23-75	Salina
Nestor R. Weigand, Jr.	4-1-74	8-14-75	Wichita
Ralph E. Reitz	4-23-75	8-14-75	Salina
Donald A. Johnston	4-23-75	8-14-75	Pittsburg
George R. Henrichs	4-22-75	8-14-75	Dodge City

STATE HIGHWAY ADVISORY COMMISSIONERS

	SERVED		
	FROM	TO	HOMETOWN
Donald A. Johnston	8-18-75	1-31-78	Pittsburg
Delbert L. Roskam	8-16-75	1-31-78	Wichita
James W. Wilfong	8-19-75	11-15-80	Kansas City
James A. Teichgraeber	8-19-75	1-31-80	Emporia
Ralph E. Reitz	8-18-75	1-31-82	Salina
Melissa N. Arbuthnot	8-18-75	1-31-80	Belleville
Gaye Wilson	8-19-75	1-31-81	Shields
Howard D. Benton	8-19-75	1-31-80	Oberlin
Dr. Dwight E. Blackwood	8-18-75	1-31-81	Chanute
Perl S. Schmid	1-31-78	1-31-82	Coffeyville
W. W. Keith	8-16-75	1-31-81	Winfield
Vincent E. Moore	8-31-78	1-31-82	Wichita
George R. Henrichs	8-15-75	1-31-82	Dodge City
Michael P. Dreiling	8-15-75	6-4-84	Liberal
C. E. (Nick) Adams	2-18-80		Lenexa
Glen O. Strnad	2-18-80		Munden
Arnold R. Anderson	2-18-80		WaKeeney
Russ B. Anderson	2-18-81	3-13-85	Emporia
John N. Sears	2-18-81		Gem
Kenneth R. Boggess	2-18-81		Columbia
Edward H. Gilliland	2-18-81		Arkansas City
Albert Schwartz, Sr.	2-18-82		Salina
C. Price Berryman	2-18-82		Coffeyville
Patrick Michaud	2-18-82	1-9-85	Wichita
Lelyn J. Braun	2-18-82	5-15-86	Garden City

STATE HIGHWAY ADVISORY COMMISSIONERS (CONTINUED)

	SERVED		
	FROM	TO	HOMETOWN
Frances Gates	6-5-84		Meade
Norman H. Ellis	3-14-85		Atchison
John W. Trout, Jr.	3-14-85		Haysville
Norman C. Eatinger	5-16-86		Lakin

DIRECTORS

	SERVED FROM	TO	HOMETOWN
Gov. Arthur Capper	2-28-17	1- -19	Topeka
Gov. H. J. Allen	1- -19	1- -23	
Gov. Jonathan M. Davis	1- -23	1- -25	
Gov. Ben S. Paulen	1- -25	7-1-25	
John W. Gardner	7-1-25	5-2-27	Marion
John W. Gardner	5-2-27	5-1-29	Marion
R. W. Dole	5-1-29	4-1-31	Almena
Guy T. Helvering	4-1-31	4-1-33	Salina
Harry Darby	4-1-33	1-18-37	Kansas City
Evan Griffith	1-18-37	4-1-39	Manhattan
D. J. Fair	4-1-39	1- -47	Sterling
Myron George	5-8-45	10-9-45	Altamont
Kirke W. Dale	1-8-47	8-27-47	Arkansas City
Roy W. Cox	8-27-47	4-1-51	Iola
Gale Moss	4-1-51	10-19-54	El Dorado
E. R. Caskey	10-19-54	1-10-55	Pittsburg
Walter A. Rugan	1-12-55	2-1-56	Ellinwood
Frank E. Harwi, Jr.	2-1-56	1-14-57	Topeka
Lynn R. Brodrick	1-14-57	1- -58	Marysville
Maurice Martin	2-3-58	8-27-58	Yates Center
Maurice Martin	8-27-58	1-10-61	Yates Center
Walter Johnson	1-11-61	1-31-61	Topeka
Addison H. Meschke	2-1-61	1-9-67	Hutchinson
John D. Montgomery	1-10-67	5-31-73	Junction City
A. J. Gray	6-1-73	1-13-75	Topeka
L. W. Newcomer	1-13-75	8-14-75	El Dorado

SECRETARY OF TRANSPORTATION

	SERVED		HOMETOWN
	FROM	TO	
O. D. Turner	8-14-75	4-20-79	Topeka
W. H. Ogan (Acting)	4-23-79	7-31-79	Topeka
John B. Kemp	8-1-79		Prairie Village

STATE HIGHWAY ENGINEERS

	SERVED		
	FROM	TO	HOMETOWN
W. S. Gearhart	4-4-17	6-5-18 4-2-19	Manhattan
M. W. Watson	8-7-18	7-1-19	Topeka
M. W. Watson	7-1-19	4-1-23	Topeka
L. R. Tillotson	4-3-23	4-2-25	
W. V. Buck	4-2-25	7-31-34	
H. D. Barnes	8-1-34	4-1-37	
A. B. Nuss	4-1-37	4-15-39	
R. B. Wills	4-15-39	8- -41	
W. S. McDaniel	8-7-41	12-9-41	Topeka
R. C. Keeling	12-9-41	10-15-54	Topeka
W. S. McDaniel	10-15-54	5-25-55	Topeka
Walter Johnson	5-25-55	3-31-68	Topeka
R. L. Peyton	4-1-68	7-14-68	Topeka
R. L. Peyton	7-15-68	12-15-68	Topeka
John D. McNeal	12-15-68	8-14-75	Topeka

STATE TRANSPORTATION ENGINEER

	SERVED		HOMETOWN
	FROM	TO	
John D. McNeal (Acting)	9-22-75	3-17-76	Topeka
W. H. Ogan	3-18-76	7-31-80	Topeka
W. H. Wright (Acting)	8-1-80	5-17-83	Topeka
W. H. Wright	5-18-83		Topeka

Legislative Update

Kansas Department of Transporta

Office of Public Information

The Legislative Special Committee on Transportation endorsed a bill last Thursday, December 8 that would create a comprehensive highway improvement plan costing $2.7 billion over the next 10 years. The committee's endorsement automatically sends the proposal to the 1989 Legislature when it convenes January 9.

A short summary of the bills contents and main points of interest is included below.

Highway Program

* $1.34 billion for accelerated major road reconstruction. Projects will be selected by the Secretary of Transportation using the KDOT priority formula.

* $700 million in discretionary funds for new construction. Projects will be selected using a system enhancement formula of selection developed by KDOT and approved by the Legislature prior to the selection process.

* $301 million increase for substantial maintenance for roads and bridges.

* The bill increases funding to cities and counties; geometric KLINK projects; public transportation and economic development highway projects.

* The bill specifies that the purpose of the projects is to increase highway safety, relieve congestion and improve access.

Funding

Registration Fees

* Passenger vehicles will be divided into two classes - for vehicles less than 4500 pounds fees registration fees will be raised to $25 and for vehicles over 4500 pounds fees will be raised to $35. Pickup truck registrations will be increased an average of 30 percent with fees raised from $25 to $35. Other heavy trucks will also see a fee increase.

(over)

Attach. 2

Motor Fuel Tax

* In the proposal the motor fuel tax, currently at 11 cents, will be going up four cents a gallon beginning June 1, 1989. The tax will increase 2 cents per gallon two years from then 1 cent a gallon the next year, ending with an 18 cent per gallon gasoline tax.

Sales Tax

* The sales tax would be raised 1/2 cent, from 4 to 4.5 cents statewide.

* The proposal calls for an increase in the percentage of money transferred from the state general fund to the highway fund on the sale of new and used vehicles to an average of 10 percent.

Bonds

* Revenues from the State Highway Fund will pay for the bonds issued to undertake the new work.

* Bond sales will not exceed $700 million and the maturity date will be 15 years from the date of issuance.

* The Pooled Money Investment Board interest money will be kept by the highway fund to help pay for projects.

* The interest money from the highway fund collections in the state general fund will be transferred to the highway fund.

* All bonds will result in public sale and the proceeds from the bonds will pay all expenses.

Secretary of Transportation Horace Edwards lauded the legislative committee for a "praiseworthy job." He said he is inclined to think the highway plan that Governor Mike Hayden will present to the Legislature will be similar in its goals and only the magnitude of the financing raises questions.

Kansas Highway Facts

Bridges

• Many of the bridges in Kansas were built in the early 1900s and can't accommodate today's modern traffic.

• Overall, approximately 50 percent of Kansas' bridges are either functionally obsolete (too narrow for modern use) or structurally deficient (deteriorated and weakened).

• Kansas has about 26,000 bridges with approximately 11,000 on the Federal Aid System (FAS) and 15,000 on the off-system. A large majority of the off-system bridges (9,800) are obsolete (not adequate, too narrow, for the road it is on and the traffic it bears) or deficient (closed because of structural inadequacies, is posted for weight limits or is in immediate need of rehabilitation). Most of these off-system bridges are under county jurisdiction.

• KDOT has jurisdiction over 4,700 bridges on, over, or adjacent to the state highway. On the state highway system in Kansas, 386 bridges need to be replaced and 452 need to be widened.

• Hundreds of millions of dollars are needed to bring all the bridges on the state highway system in Kansas to non-deficient status.

• Far less money than needed is coming into Kansas from federal funds for upgrading bridges. In 1987, only $31 million came into Kansas from federal funding for bridge replacement and rehabilitation.

• Due to a lack of funding, only 47 off-system and 27 FAS bridges were replaced in Kansas in 1987. There simply isn't enough funding available to upgrade many bridges in Kansas to non-deficient status.

• Both FAS and off-system bridges can be eligible for federal aid for replacement or rehabilitation.

Funding

• Revenue sources for state and local highway expenditures:

FY 1988	*Projected FY 1988-92*
- Fuel tax (40.1%)	Fuel tax (37.3%)
- Federal funds (30.8%),	Federal funds (32.2%)
- Registration fees (18.3%),	Registration fees (16.4%)
- Sales tax (4.9%)	Sales tax (9.0%)
- Other (5.9%)	Other (5.1%)

• State motor fuel taxes are 11 cents per gallon for gasoline, 13 cents per gallon for diesel and 11 cents per gallon for gasohol (1988 figures).

• Last year Kansas received $124.8 million in federal funding.

• The most recent figures show Kansas tourism created $105 million in federal and $63 million in state taxes.

Highway System

• Kansas, with its extensive system of section line roads, ranks fifth in the nation in total mileage with approximately 132,640 miles of public roads.

• The Kansas Department of Transportation maintains less than 8% of the total mileage in the state, but these roads carry slightly over 52% of the total travel in the state.

• KDOT maintains 9,638.7 miles on the rural system. The remainder of the mileage consists of city connecting links, 481.6 miles maintained by KDOT and 355 miles maintained by the cities.

• The Kansas interstate system contains 870 miles, making up less than 1 percent of all public road miles in the state, yet carrying 19 percent of all traffic in the state.

By far the largest portion of the system is under county and township jurisdiction (i.e. approximately 110,000 miles). Municipalities account for over 12,000 miles or roads and streets (9.1%) and 27% of the total travel.

• A recent study showed that more than 16,300 miles of arterial and collector roads in Kansas were rough and worn from age and needed to be reconstructed or resurfaced. Of the 16,300 miles of deficient main roads, an estimated 3,800 are rated poor in surface condition by American Association of State Highway and Transportation Officials (AASHTO) standards.

• Kansans traveled 29.2 million daily vehicle miles on the state highway system and city connecting links during the year 1987.

Interchanges

• Of the existing interchanges, 18 are in need of improvement for reasons such as inadequate capacity, inadequate geometrics or missing movements.

Pavement

• Deteriorating pavement is a problem throughout the state. Larger loads and recent economic development in southwestern Kansas have accelerated the deterioration process.

• There are approximately 2,300 miles on the state highway system which require reconstruction or heavy rehabilitation and approximately 7,300 miles which will require an overlay within the next 10 years.

• The rate at which a road wears out is influenced by three external factors. They are the base under the pavement, weather and the number and size of loads on the road.

Service

• Level of service is described in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience and safety.

• There are six levels of service from A to F with A being the best and F the worst. Level A is free flowing traffic where users are unaffected by the presence of others in the stream of traffic. Level F is stop and go traffic.

• The capacity of a road in vehicles per day is normally computed assuming a level of service D. While this level of service is not desirable, it is considered to be tolerable. On the rural State Highway System there are 22 miles of roads identified which are operating at 75 percent of their capacity and 175 miles of roads which are operating at 50 percent of their capacity.

Shoulders

• Shoulder widths on the State Highway System generally vary from zero to 10 feet.

• Roads which have shoulders which are at least two feet less than design width have been identified as having shoulder width needs.

• There are 2,075 miles which need shoulder widening on the state highway system.

• There are two broad categories of shoulders types, stabilized and unstabilized. Stabilized shoulders include concrete, asphalt and rock shoulders mixed with calcium chloride or any combination of the above. Unstabilized shoulders are turf.

• There are 160 miles of shoulders which need full width paving and 5,100 miles which need composite shoulders consistent with KDOT's shoulder policy. Composite shoulders consist of approximately 3 feet of paved shoulder adjacent to the lane with the remainder of the shoulder being stabilized rock or unstabilized turf.

AASHTO Standards - The American Association of State Highway and Transportation Officials who publishes the engineering criteria used for the design of roads and bridges throughout the United States. The document which lays out this criteria is also known as the Green Book.

Acceleration Lane - An auxiliary lane primarily for the acceleration of vehicles entering through traffic lanes.

Apportionment - A statutorily prescribed assignment of funds based upon prescribed formulas. States receive a different apportionment for each category of funds. The categories include Interstate Completion, Interstate 4-R, Primary, Secondary, Urban, Bridge, Hazard Elimination and Railroad Crossings. Apportionment is like an account at the bank, but the money cannot be withdrawn without authority to obligation.

Arterial - A general term denoting a highway primarily serving substantial volumes of through traffic over long distances at high speeds, such as interstate, expressways, freeways, and high type two-lanes.

At-grade intersection - An intersection where all roadways join or cross at the same level.

Bituminous Surface - A surface material made by mixing aggregate with an asphalt material.

Bonds - The use of the sale of bonds as a means to fund highway construction. Bonds were used to finance the Turnpike and the Freeway system in Kansas.

Bypass - An arterial highway that permits traffic to avoid part or all of an urban area.

City Connecting Link - That portion of a state highway which is wholly within the city and is termed a city street. The city maintains the connecting link with KDOT reimbursing the city for maintenance based on a lane mile rate established by law. In small cities the Secretary may enter into an agreement to maintain in lieu of payments. By state law, the Secretary must maintain Interstate and Freeway Connecting Links.

Collectors - These roads unite arterials with local roads mostly serving intercounty rather than statewide traffic.

Concrete - A hard, contraction material made by mixing cementing materials, such as portland cement, and aggregate, such as sand and gravel, with sufficient water to cause the cement to set and bind the entire mass.

Congestion - Refers to the inability of a highway to provide a smooth flow of traffic. It is determined by the capacity of a highway and the desired level of service. The capacity of a road is computed based upon the characteristics of the road (width of shoulder, width of lanes, sight distance problems, etc.) Capacity is not a static number. Level of service refers to speed, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The higher the desired level of service, the lower the capacity and the greater the likelihood for congestion.

Corridor - A length of roadway emphasizing the importance of continuity, with a beginning in one community and a terminus in another. Also a broad geographical band that follows a general directional flow between major traffic generators or cities and which may include more than one roadway.

Debottlenecker - Projects at specific locations which decrease bottlenecks or congestion, provide safety improvements and promote economic development.

Deceleration Lane - An auxiliary lane primarily for the deceleration of vehicles leaving the through traffic lanes.

Deferred Maintenance - The difference between the level of maintenance needed and the level of maintenance actually performed. Maintenance is deferred until sufficient financing becomes available.

Economic Development Setaside - A program on a cost-share basis with cities and counties to provide roadway improvements which will enhance economic development.

Expressway - A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at major intersections.

Federal Aid System - A system of roadways consisting of primary (rural arterials), secondary (rural major collector routes), and urban (urban arterial and collector routes) which are designated to receive federal funds.

Federal Aid Primary (FAP) System - The system of roads on the state highway system consisting of rural arterial routes and their extension into urban areas which connect main roads important to interstate, statewide and regional travel.

Federal Aid Secondary (FAS) System - The system of roads consisting of rural major collector routes such as the most important county roads, and some state highways.

Federal Aid Urban (FAU) System - The system of roads in urban areas consisting of high traffic volume arterial and collector routes within urban boundaries which basically serve major centers of activity including access roads to airports and other transportation terminals. Federal aid urban routes usually connect with another federal aid route under the jurisdiction of cities.

Four lane divided road - A highway with two lanes of travel in either direction divided by a median. A four lane road can have partial control of access with grade separations or intersections, called an expressway or full control of access and interchanges, called a freeway.

Freeway - This roadway has the same features as an expressway with multiple lanes, but has full control of access to the roadway with grade separated interchanges.

Frontage road - A local street or auxiliary road located generally parallel to an arterial highway for service to abutting property and adjacent areas and for control of access.

Functionally Obsolete Bridge - An indicator of the geometric properties of a bridge. A bridge is functionally obsolete, for example, if the width of the bridge is less than the standard width.

Geometric improvements - Highway work that is designed to enhance the safety, service and capacity of the existing system by widening pavement, adding or widening shoulders, eliminating steep hills and sharp curves, adding turning, acceleration and deceleration lanes. Bridge improvements are also included as geometric improvement projects.

Grade - The rate of ascent or descent of a roadway, expressed as a percent; the change of roadway elevation of horizontal length.

Grade separation - A crossing of two highways, or a highway and a railroad, at different levels. Grade separations require bridges.

Hazard Elimination Safety Program - A program funded by 90% federal and 10% state money which makes safety improvements at locations on highways and FA Systems. An engineering study is conducted and systematically maintained and states must set priorities to make corrections and implement a schedule of HES projects to make improvements.

Highway Trust Fund - An account established by law to hold receipts which are collected from certain highway user taxes and which are reserved for highway construction and related purposes only.

Infrastructure - A communities physical facilities, including water distribution systems, waste water treatment plants, public utilities and highways and bridges.

Interchange - A system of interconnecting ramps in conjunction with one or more bridges, providing for the movement of traffic between two or more roadways on different levels.

Interstate - The national system of highways, established by the Federal Aid Highway Act of 1956, which normally includes design features such as a minimum four-lane roadway, full control of access, design speed of 70 mph, shoulders at least 10 feet wide, and other safety features. There are 42,000 miles of interstate highway nationally and 870 miles of designated interstate in Kansas.

Interstate 4R - Consists of resurfacing, restoring, rehabilitating and reconstructing in order to preserve and rebuild existing roads on the Interstate system.

Jersey barriers - Also called safety barriers, the large concrete barriers used to divide traffic or as safety devices through construction zones. The barriers were designed and first used in New Jersey.

KLINK Geometric Setaside - A reconstruction/rehabilitation program on a cost-share basis with the cities for city connecting links.

KLINK 1R Setaside - Resurfacing of city connecting links on a cost-share basis with the cities.

Major modifications - Similar to 3R work (resurfacing, restoration, rehabilitation), this work preserves and extends the service life and enhances the safety of the existing highway system.

Median - The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Motor fuel tax - The federal and state taxes consumers pay on gasoline and other fuels. Currently state taxes (1988 figures) are 11 cents per gallon for gasoline, 13 cents per gallon on diesel, 10 cents a gallon on LP gas, and 11 cents a gallon on gasohol. Tax receipts are deposited in the State Highway Fund, State Freeway Fund and the Special City and County Highway Fund and distributed by use of a formula established by law.

Obligation - The amount of money for which the federal government is committed to reimburse the state for the federal share of a project's eligible cost.

Obligation Limitation - This is an action which limits the amount of apportionment that states can spend in a specified time period, usually a year. In other words, it limits a state's authority to obligate the funds which have been apportioned to it. In recent years, Congress has set restrictive obligation limitations to help with their deficit reduction activities. For example, Congress may set an obligation limitation which only allows states to spend 88 percent of their apportionment.

Pavement Management System - The comprehensive program of data gathering which analyzes existing pavements and is used by KDOT to select rehabilitation locations and actions which produce the best statewide pavement surface conditions possible using available funds.

Pay-as-you-go - A term used to describe the method of financing and building highways which was financed by taxes and fees paid into the Highway Trust Fund and then distributed to states on an "as needed" basis to pay for road construction.

Priority Formula - 1) The method used by KDOT to prioritize highway construction projects. 2) The formula is comprised of a series of measurable attributes such as shoulder width, lane width, traffic, commercial traffic, stopping sight distance, narrow structures, etc. 3) The priority formula takes these known deficiencies on the existing state system and arranges them in priority order. 4) Programming is then accomplished in priority order.

Railroad grade crossing - The general area where a highway and a railroad cross at the same level.

Reconstruction - Referred to as 4R or 3R, this work is undertaken wher a highway has reached the end of its useful life and warrants removal and replacement of the driving surface as well as improvements in the structural, functional and operational capacity which is generally accomplished along existing alignment.

Resurfacing - Referred to as 1R work, involves surfacing only; usually a thin overlay with heavy maintenance.

Resurfacing/Restoration/Rehabilitation - Sometimes referred to as 3R, this work is primarily undertaken to preserve and extend the service life and enhance the safety of the existing highway when total replacement is not warranted.

Routine Maintenance - Work done by KDOT's own work forces to maintain facilities, mow right of way, plow snow, erect and repair signs, maintain pavement markings and make minor repairs to roads and bridges.

Shoulder - The portion of the roadway adjacent to the paved surface for accommodation of stopped vehicles for emergency use, and for lateral support of the pavement.

Shoo-fly - A short portion of roadway built to carry traffic to detour or bypass a construction site.

Sight distance - The length of highway visible to the driver.

State Operations - That portion of the budget that represents funding for salaries, routine maintenance, buildings and equipment and general operation of the agency. This represents everything in the KDOT budget except highway construction and substantial maintenance contracts.

Structurally Deficient - An indicator of the structural properties of a bridge. A bridge is structurally deficient when the various bridge elements such as the deck, superstructure, substructure and/or the load capacity are rated 4 or less on a numerical scale of 0-9.

Substantial Maintenance - Also known as contract maintenance which includes such work activities as the 1R resurfacing program, minor Interstate resurfacing, KLINK 1R, minor bridge repair, bridge painting, culvert repair, emergency repair, and small safety projects. Levels of funding for substantial maintenance are defined as:

Current: Existing expenditure level in current year plus reasonable inflation. Over the long run would not maintain the current surface condition. Funding is such that bridge repair is very minimal and bridges

could only be repainted on a 96-year cycle which is not the recommended 20 year cycle.

Adequate: Funding at a rate such that the current surface condition is maintained and slightly improved. Will not allow for a significant increase in bridge repair funds to allow more super structure and deck repair and would put bridge painting on a 20-year cycle.

Appropriate: Also known as enhanced. More funds for surfacing and bridge repair would be provided such that there would be noticeable improvement in surface and bridge condition.

Super-two highway - A highway with two traffic lanes, two ten-foot paved shoulders and passing lanes at specified intervals.

Systems Enhancement - Additions and special projects to the state highway system which substantially improve safety, relieve congestion and improve access.

3R - Resurfacing/ Restoration/ Rehabilitation as defined in the previous section is the work primarily undertaken to preserve and extend the service life and enhance the safety of the existing highway when total replacement is not warranted.

Through traffic - That traffic carried through an intersection, town, construction zone or other delaying factor by means of a highway, bypass or use of traffic signals.

Toll road - A highway open to traffic only upon payment of a direct toll or fee.

Two-lane - A common type of rural highway with two traffic lanes, and adjacent shoulders which may consist of turf, rock, or asphalt, or a combination.

Two-on-four - Two-lane highway constructed on right of way wide enough for a four-lane facility.

User Fees - Those taxes collected which are related to operating a vehicle on the roads, streets and highways. User fees include such things as registration fees, motor fuel taxes, the sales tax paid on the sale of new and used vehicles, and licensing and permit fees and various excise taxes.