

MINUTES OF THE SENATE TRANSPORTATION COMMITTEE

The meeting was called to order by House Transportation Committee Chairman Gary Hayzlett at 1:30 p.m. on January 13, 2004 in Memorial Hall.

All members were present except:

Senator David Adkins- absent
Senator Edward Pugh- absent
Senator Greta Goodwin (RMM)- excused

Committee staff present:

Hank Avila, Legislative Research Department
Bruce Kinzie, Revisors of Statutes
Marian F. Holeman, Committee Secretary

Conferees appearing before the committee:

Deb Miller, Secretary, KDOT

Others attending:

House Transportation Committee members
Kansas Department of Transportation staff members

The Senate and House Transportation Committees met jointly. Representative Gary Hayzlett, Chairman, House Transportation Committee served as Chairman for today's meeting. Chairman Hayzlett introduced Deb Miller, Secretary, Kansas Department of Transportation who presented a report on the Economic Impacts of the Kansas Comprehensive Highway Program along with a report on the "Benefits and Costs" (Attachment 1).

Her presentation was followed by a question and answer period.

Meeting adjourned at 2:25 p.m.

The next meeting is scheduled for Wednesday, January 14, 2004 at the same time and location.



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David Hage, *U.S. News & World Report*, October 12, 1992

"U.S. Infrastructure in Sorry Shape"
Lou Dobbs, *New York Daily News*, August 24, 2003

"Missouri Roads Inspire Caution in Kansas"
Miriam Pepper, *Kansas City Star*, October 5, 2003

Presentation Slides

"Economic Impacts of the Kansas Comprehensive Highway Program"
(Executive Summary)
Michael Babcock, Bernt Bratsberg, Kansas State University, June 1997

"Benefits and Costs of the Kansas Comprehensive Highway Program"
(Executive Summary)
David Burress, Patricia Oslund, University of Kansas, January 1999

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SENATE TRANSPORTATION COMMITTEE
- DATE 01-13-04 -
ATTACHMENT: 1

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OCTOBER 12, 1992

How Kansas created good jobs without busting the budget

Road work

By David Hage

It's lunchtime in Topeka, Kan., and there's no recession at the Country Boy restaurant. Pickup trucks are swinging in and out of the parking lot, construction workers are wolfing down ham and beans, and the cash register is chiming a steady, prosperous tune.

Anyone who doubts that infrastructure spending can jump-start an economy should visit the Jayhawk State, where a \$2.6 billion highway program has created 3,400 construction jobs since August 1991 and helped trim the unemployment rate to 4 percent, fourth-lowest in the nation. Says Stanley Scudder, who faced joblessness three years ago and now runs a bridge-building firm with 30 workers, "My company wouldn't exist without the highway bill. Period."

Along Interstate 70 in north Topeka, 150 workers in hard hats and festive T-shirts are pouring concrete and hammering up bridge supports on a sunny September morning. All owe their jobs to the state highway program, says Don Clarkson, vice president of Clarkson Construction Co., the project's general contractor. A foreman estimates that Clarkson has \$25 million worth of trucks, graders and pavers on the 10-mile construction site. Were it not for the highway program, Clarkson says, he might be unloading some of that equipment. Instead, he's thinking about buying more.

Ironically, Kansas's highway make-over wasn't sold as medicine for a sick economy. It was passed by the state legislature in 1989, a year before America skidded into recession, and was primarily conceived to fix up the state's 135,000 miles of patched and pitted blacktop. Kansas faced the same glaring infrastructure needs that the rest of the nation now faces: Some 30 percent of its bridges had outlived their 50-year life expectancies, and freeways in major cities such as Wichita were carrying three to four times the traffic loads for which they were designed.

Boosting incomes. Then serendipity struck. As the nation slid into recession during the second half of 1990, highway money began to



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course through the Kansas economy. Road expenditures leapt from \$293 million in 1989 to \$429 million in 1991, sending a torrent of dollars through checkbooks and cash registers. In what economists call the "multiplier effect," construction workers started buying boots and tools, contractors leased new equipment and engineering firms started placing help-wanted ads. As the highway money worked its way through Kansas's economic bloodstream, personal income climbed at 2.4 percent, more than twice the national average last year.

But fiscal stimulus isn't the only lesson from Topeka. In a time of tax revolts and deficit deadlock, Kansas lawmakers figured out how to finance a massive public-works program—and get voters to pay for it. About half the program is financed by user fees, including a 7-cent hike in the gasoline tax. An additional fourth comes from a quarter-cent increase in the state sales tax. Only a fifth involves debt—about \$600 million in bonds to be paid off over the next 20 years. The total tax increase will work out to about \$100 per person during the program's peak years in the mid-1990s. "There was no smoke and mirrors," says Transportation Secretary Michael Johnston, who co-sponsored the bill as a state senator in 1989. "When we laid out the needs and the cost, voters in my district didn't even hiccup."

Can the nation travel down the same road as Kansas? Deb Miller, the chief planner for Kansas's Transportation Department, is wary of claims that infrastructure is an economic cure-all. For one thing, other Americans might not be as passionate about roads as the residents of Kansas, a state of small towns, lonely prairies and the nation's fourth-largest highway network. "When you live in a rural community, it's not uncommon to drive 40 miles for dinner at night," says Miller. "People can get very emotional about roads." But, she adds, a productive asset financed thoughtfully is a sound investment anywhere. "One of the big mistakes we've made in the American economy is we didn't spend enough on long-term investments. We've got to catch up sooner or later."

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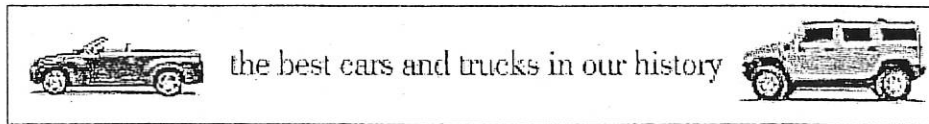
Lou Dobbs

"My column covers economics, politics, the military, science, education and society itself," says Lou Dobbs, "because the news events and the issues of our day have the potential to threaten our quality of life. They're profoundly important to us all and more so today than at any time in recent memory. My objective is to give analysis and perspective to those issues critical to our well being, in the context of American values and traditions. This column is for anyone who's interested in and engaged in the world, and understands the importance of these topics and issues."

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What

U.S. infrastructure in sorry shape

The blackout that paralyzed much of the Northeast and parts of the Midwest brought to light the sad state of America's electrical infrastructure. As the debate rages about power deregulation and reregulation, the rest of our country's deteriorating infrastructure has been all but ignored.

In addition to an antiquated electrical system, most of this country's basic foundation is in desperate need of repair. The American Society of Civil Engineers gives failing grades to the country's roads, water and aviation infrastructures.

We need to spend an additional \$11 billion a year just to upgrade our drinking water systems and an additional \$12 billion each year to improve our wastewater systems, according to the society. And although the federal government has appropriated almost \$400 billion in the past 12 years for our highway and transit systems, much more needs to be done. The Bush administration has a \$300 billion proposal in Congress for new highway and transit spending, but the American Highway Users Alliance calls the amount "entirely insufficient."

Republicans and Democrats alike should insist on vastly more funding on infrastructure. Not only on highways, transit, water systems and wastewater, but also on our dams, railroads, airports and, of course, the national electric power grid.

One has to wonder, in the midst of the so-far jobless recovery, why more policymakers aren't calling for more infrastructure investment. Part of the reason is that supply-side conservatives and libertarians cringe at the mere mention of government jobs creation, arguing that such programs merely shift jobs in the economy, creating in their minds a modern Works Progress Administration project. They forget that many of our bridges and dams that still stand today are monuments to the intelligence and wisdom of that program. It was a different time, but no one can sensibly argue that that investment 70 years ago was anything but sound.

Commitment needed



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COLUMNIST ARCHIVE

The time is right for massive public investment in our infrastructure. As Casey Dinges, a managing director at the American Society of Civil Engineers, said, "One of the benefits of a billion dollars of new capital investment in infrastructure is 40,000 new jobs."

And it is investment and not consumption that will drive economic recovery in the years ahead. James Medoff, a Harvard University economist who has done research on the subject of spending and job creation, told me, "There's no way in hell that consumption gets us out of this mess. If you really want to stimulate the economy, two-thirds of a percentage [increase] in GDP [gross domestic product] is going to come from investment."

And federal investment in our national infrastructure doesn't need to increase the already ballooning deficit. A system of user-based fees could offset the costs. Rep. Don Young (R-Alaska), chairman of the House Transportation and Infrastructure Committee, for instance, has proposed a gas tax increase to fund \$375 billion in new highway and transit spending, \$75 billion above what the administration is requesting.


A Zogby International poll found strong public support for investing in transit and highways. Some 81% polled felt that the nation's highway and transit network is very important to the economy. And user fees to fund such endeavors are effective. Dinges said: "The gas tax works very well for transportation. People drive, fill their gas tanks; they understand that their gas taxes are being used to support the road systems they rely on."


Although creating mechanisms to offset the costs of updating our drinking water and waste systems may be more challenging, it is far from impossible.

The libertarians and supply-siders who consider Keynesian economics a curse word and infrastructure investment an outdated solution to previous generations' problems should remember that it was large-scale spending projects like President Dwight Eisenhower's interstate highway system that laid the foundation for the U.S. today and our entire current economy. Even as we find ourselves in the new digital economy, there isn't an E-commerce purchase that doesn't eventually wind up on a highway, a runway or rail.

We simply cannot afford to ignore our crumbling economic foundation. This is the time to reinvest in America's infrastructure and to put people back to work. It's good economics, it's good politics and the investment will yield high returns for us and future generations of Americans.

Originally published on August 24, 2003

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KansasCity.com

Posted on Sun, Oct. 05, 2003

THE KANSAS CITY STAR

Missouri roads inspire caution in Kansas

MIRIAM PEPPER

Deb Miller, the Kansas secretary of transportation, only has to look east to know how much worse things can be. Despite budget problems, she can remind herself daily of her good fortune.

- 1.) She's not in charge of Missouri's crumbling highways.
- 2.) The heaviest-traveled portion of Interstate 70 in Kansas (between Kansas City and Topeka) is a toll road — with money available for lane widening projects and not her direct responsibility.
- 3.) The Kansas Department of Transportation had its share of unfulfilled promises and bid-rigging convictions — but it was several decades ago. Now its reputation is tops.
- 4.) KDOT has not had to tear up two freshly completed road projects because they were safety hazards. That's Missouri's latest debacle.



Because she does look east, she's cautious. In her travels around Kansas since her appointment in January (becoming the first woman to lead the department), she's offering straight talk on the future. "If the lost funds won't be replaced, we'll have to make hard decisions. I want to be upfront and let people know this. I don't want to overly frighten or threaten people."

Her aim: maintain the department's public credibility.

As she told Kansas legislators earlier this year: "For those of us in positions of public trust, there is nothing more important than keeping the commitments we've made. It is not only an indicator of our character; it is the essence of good government."

Kansas is working on its second 10-year plan of highway improvements, with the project list set through 2010. But the downturn in the economy cost the department a bundle — \$300 million.

Fortunately, the Kansas 10-year plan made no grandiose Missouri-style promises of four-lane roads to every town with at least 5,000 residents. Instead, Kansas promised a smattering of improvements to highways and bridges. And even though Kansas has the fourth largest number of miles of public roads of any state, most roads are locally maintained, not part of the state highway system. KDOT's highways serve 52 percent of the total travelers, but the department is responsible for just 7 percent of public roads.

Even with the more manageable number of miles, it isn't worry-free. Its funding strategy was devised in the high-flying stock-market days of 1999. When the market tanked and the recession arrived, Kansas, like other states, struggled.

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The Legislature borrowed \$95 million from the state highway fund in 2002, initially promising repayment by last June 30. That didn't happen. The highway department also didn't get any of its share of general sales tax revenue.

The good news for Kansans is that the state entered the recession with a more generous highway funding plan than Missouri. The Kansas Legislature not only agreed to modest increases in the motor fuels tax, it also raised the vehicle registration fees and it promised to offer up to 12 percent of state general sales taxes, on top of a quarter-cent sales tax for highways.

But general sales taxes also fund education, health care, prisons and other important social services. When bad times hit, the transfer of funds from the general sales tax stopped.

Miller said if the state cannot afford to spend that much from its general fund on highways, her department will push the idea of more bonds to fund highway work, to be paid back with general sales tax revenue later.

"If we can be helpful to the state today, we should," she says.

Cooperation is a rarely heard concept in Missouri budget debates these days. It's one of the better arguments for a governor-appointed, secretary-led department. Miller, as a Gov. Kathleen Sebelius appointee, is clearly motivated to be more cooperative than an independent highway commission might be.

Kansans tell Miller they want the planned highway projects completed, but she senses reluctance about more tax increases.

"We're at a precipice," Miller says.

So far, she's confident the promised improvements can be completed on time. But if more cuts await her department, something must give, and some projects won't get done. She's properly warning residents about the risks ahead.

As she told lawmakers: "If we fail to keep our promises, we risk destroying the already fragile trust that exists between the people and those of us who are elected or appointed to make decisions on their behalf. We risk further alienating voters. And we risk our ability to provide the citizens of this state with the safe highways they need and demand."

As icing on the argument, she reminds all that highway work provides needed jobs.

Kansans who head east know how bad highways look. It's Miller's job now to keep up her frank talk with legislators and residents, to preserve Kansas' superior road system.

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or send e-mail to

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Legislative Information Sessions

Kansas Department of Transportation
January 2004




KDOT Information Sessions

- Transportation Spending Spurs Economic Growth & Recovery
- State Highways: Kansas' Economic Lifeline
- Building More Than Roads
- Comprehensive Transportation Program



CTP Helps Pave the Way to Economic Growth & Recovery



**Positive Impact of
Transportation Spending**

Long-term:

- Travel time savings
- Accident reduction
- Wear and tear on vehicles
- Synergy

Short-term:

- Actual spending of dollars in communities



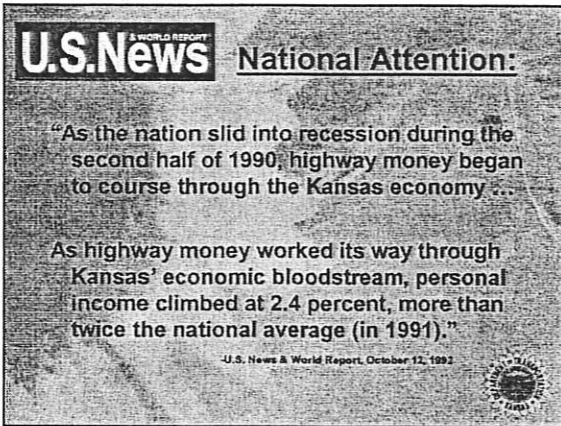
**1999
Comprehensive
Transportation Program
(CTP)**

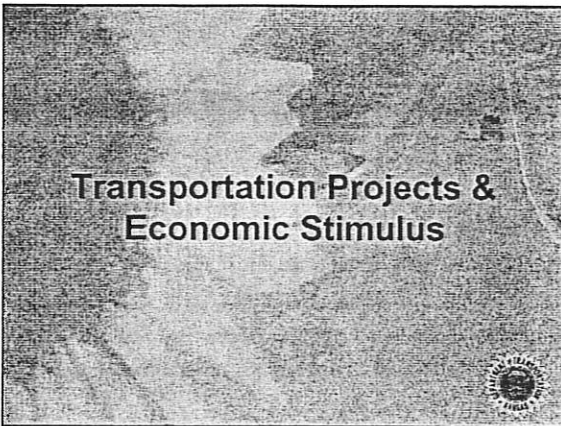


**1989
Comprehensive Highway
Program
(CHP)**






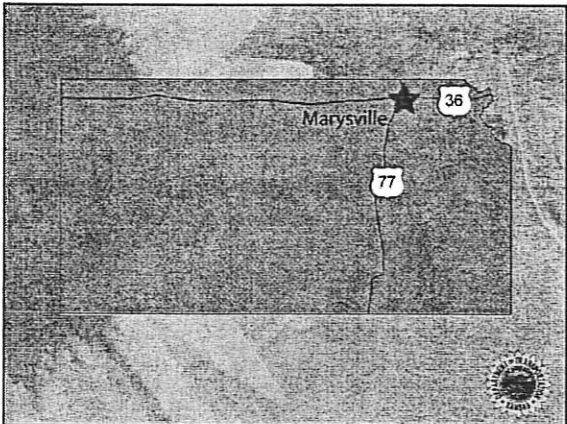




"This has been a long time coming. It will help us tremendously."
-Jim Keller, Marysville Director of Emergency Services

"I have employees who get stopped by a train. Some end up being 15 minutes late to work because they get caught by multiple trains."
-Leonard Wolfe, Gold Bank President






Marysville Rail Project

- KDOT, Union Pacific & Army Corps of Engineers
- \$76 million project
- Overpasses, flood control, railroad relocation




"The grade separation project is a great thing for people in western and southern parts of Marshall county because the hospital is in the eastern part of town. It is for their benefit. They will be relieved because they won't have to fear a train because we get a lot of trains in Marysville."

-Jim Keller, Marysville Director of Emergency Services



Immediate Economic Stimulus

- Examples of employee needs:
 - Food
 - Lodging
 - Gasoline
- Examples of construction needs:
 - Aggregate
 - Cement
 - Kramer Oil: \$600K increase in sales




"We've seen approx. \$600,000 in business. [the project] has been very helpful. A lot of people will maybe think a little bit more about coming to Marysville to shop and visit here and eat because they won't have to worry about waiting for trains."

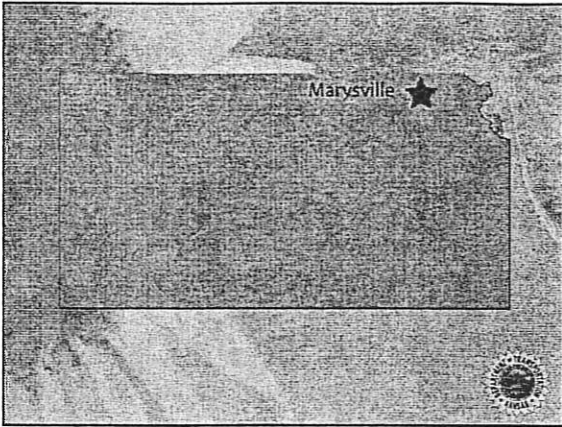
-Don Kramer, Kramer Oil

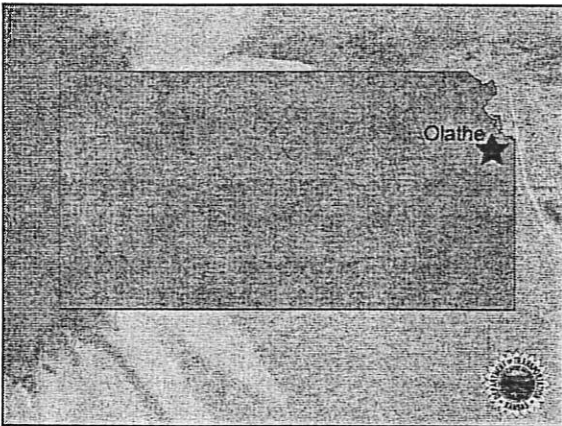
"The project has had a tremendous impact from fast food restaurants to hotels and people buying fuel. I know the people here in Marysville appreciate the opportunity that's been given to us. I know it's a significant investment for the taxpayers of Kansas, and I hope that it's an investment that will be repaid by the increased economic opportunities we will have in this area."

-Leonard Wolf, Gold Bank President



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“Transportation investments in our community will be repaid many times over and the Department of Transportation has partnered with us on other projects: three interchanges in this community, and those projects have resulted in thousands of high paying jobs for Kansans and I can give you the data on that. We have new jobs coming to this community that would otherwise not even be in this area because of the accessibility because of the enhancements we've made to the infrastructure in our area.”

—Michael Copeland, Olathe Mayor



Olathe Rail Projects

- Concept: 8000 feet of elevated track
- Grade separates four streets
 - Santa Fe 30,000 vehicles per day
 - Ridgeview 15,000 vehicles per day
 - Park 5,300 vehicles per day
 - Loula 3,850 vehicles per day



"Olathe's history is tied to the railroads. We have a love-hate relationship with our railroads here in Olathe. The railroads have grown and prospered and so has the city, but it's come to a point now in our history where the railroads have 80 trains a day that are 1 1/2 miles long. Trains stop traffic in downtown Olathe for 2 hours a day every single day. The railroad tracks have caused these intersections to be very dangerous to the traveling public and it is the cooperation of the city of Olathe and the Department of Transportation... both of us coming to the table with millions of dollars that we've been able to improve the safety of the traveling public."

-Michael Copeland, Olathe Mayor



Olathe Rail Projects

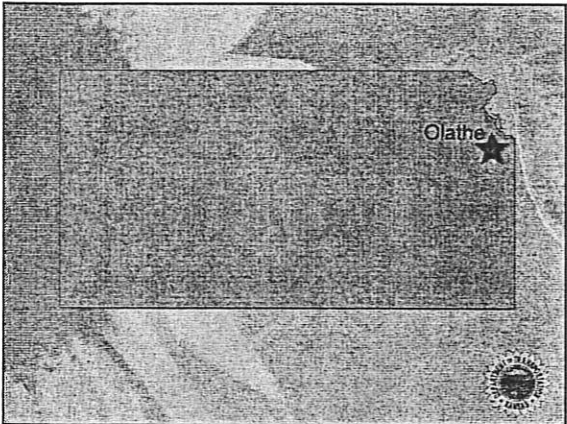
- Partners:
 - KDOT \$16.9 million
 - Olathe \$ 6.0 million
 - BNSF \$ 1.1 million

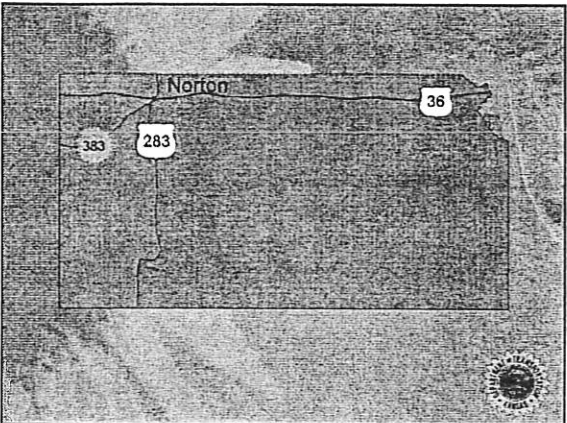
- Scheduled for January 2005 letting



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"Raising the railroad tracks and freeing the traffic will free 3200 cars a day from stopping at 4 intersections and that is a tremendous boost to our economy and to the citizens of our state."
-Michael Copeland, Olathe Mayor





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"We have an excellent highway coming from the north that you've just redone going into Nebraska. We also have 383 that's the cutoff that goes across over to Interstate 70 east of Colby. We have lots and lots of traffic from that. I think it's probably one of the very best investments we have in the state right now. It makes people when they come here think 'well, we got a good highway system'."

—Norman Nelson, Norton resident



Norton County Projects

- Roadway rehabilitation and reconstruction
 - Adding or improving shoulders
 - Rebuilding bridges
- \$73.8 million projects
- Funding: 80% Federal
20% State



Syracuse

Lakin

50



US-50 Projects

- Roadway rehabilitation
 - Paved shoulders
 - Bridge work
 - Intersection improvements
- \$30 million project
- Funding: 80% Federal
20% State



Southwest Business Boom

<u>Companies</u>	<u>Employees</u>
• Tyson	3000
• Excel	2850
• National Beef	1800
• WalMart	400
• Inland Paperboard	100



"If someone's going to build a new factory someplace, one of the first question he asks is 'How am I going to get my goods to market? How good are those highways?' When he's trying to decide where to build, for an awful lot of businesses, he wants to be near a really good road: an interstate road or interstate quality road. And we've got to build those roads and keep them up if we're going to be competitive in that."

-David Burress, KU Researcher

"Truck transportation is the economic key to our whole future out here. We're a farm economy and there's agri-businesses and agri-business is completely dependent on trucking."

-Tom Wright, Golden Grain Enterprises



"We are probably the most direct route from the Wichita/Hutchinson area to Pueblo/Colorado Springs/I-25 corridor. And certainly by having a highway that is safer, it has made the way for more folks to travel that road. And anytime that anyone is driving through they tend to stop at our stores and visit our merchants and certainly that's been an economic development help."

--Ralph Goodnight, Lakin Mayor



Impact of Transportation Spending




Transportation Spending Impact

- **KSU Research**
 - Dr. Michael Babcock
 - Examined short-term economic stimulus generated by 1989 CHP
- **KU Research**
 - Dr. David Burruss
 - Long-term benefits of the 1989 CHP



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"You can look at transportation investments like they were a resource for business. In fact, what they do is lower the cost of doing business, so that business firms in Kansas can lower their prices, increase their sales, increase their profits, expand their markets. A lot of things become possible when you've got a good transportation system."
--Michael Babcock, KSU Researcher




Economic Benefits of Transportation Program

- Every \$1.00 spent returned \$2.60 to state economy
- An increase of nearly 118,000 private sector jobs statewide
- \$1.4 billion increase in statewide income

Source: Babcock, Michael W., et al. *Economic Impacts of the Kansas Comprehensive Highway Program*. Kansas State University, 1997.



"So you look around the world and back through history and the economies that have developed to a high level and provided a good standard of living always had the best transportation systems."
--Michael Babcock, KSU Researcher



Cumulative Economic Benefits

- KU researcher examined overall impact of the Comprehensive Highway Program
- His economic impact analysis figured in immediate & long-term factors including income, production, travel time & accident savings due to roadway improvements
- Concluded there was a 3 to 1 benefit for the state economy in the money spent on the CTP

Source: Burruss, David, et al. Benefits and Costs of the Kansas Comprehensive Highway Program. University of Kansas, 1999.



Cumulative Economic Benefits

"The KCHP has been at least three times as valuable to taxpayers as returning their tax dollars would be. We believe the same would be true of a new highway program..."

Source: Burruss, David, et al. Benefits and Costs of the Kansas Comprehensive Highway Program. University of Kansas, 1999.



Impact of Transportation Spending

- Improves safety of State Highway System
- Yields 3 to 1 return on investment
- Provides good jobs & economic development opportunities
- Protects & preserves investment



Report No. KS-97/2
Final Report

ECONOMIC IMPACTS OF THE KANSAS COMPREHENSIVE HIGHWAY PROGRAM

Michael W. Babcock
Bernt Bratsberg
Kansas State University
Manhattan, Kansas



June 1997

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EXECUTIVE SUMMARY

The final contracts for construction of the Kansas Comprehensive Highway Program (CHP) will be awarded by June 30, 1997. As the executive and legislative branches of the Kansas government consider the next state highway program, it is appropriate to measure the construction economic impacts of the CHP to facilitate an evaluation of the state's investment in highways.

The CHP was established by passage of 1989 House Bill 2014 and the first contracts for construction were awarded in fiscal year 1990. After the final CHP contracts for construction are awarded, approximately \$4 billion will have been spent on CHP projects. After deducting from the \$4 billion the costs for preliminary engineering, utility adjustments, right-of-way acquisition and construction engineering, the remaining \$3.18 billion was devoted to as let construction expenditures. After deducting from the \$3.18 billion the as let costs for construction projects of jurisdictions off the state highway system, the remaining \$2.86 billion was spent on K jurisdiction projects. These are typically those projects on the state highway system outside of cities except for interstate roads, which are classified as K jurisdiction projects regardless of location. This study measures the economic impact of the \$2.86 billion devoted to K jurisdiction construction projects. This is achieved through analysis of a sample of these construction contracts which have a total contract value of \$2 billion.

Given the need for measuring the economic impacts of the Kansas Comprehensive Highway Program, the objectives of the study are as follows:

Objective 1. Measure *direct* output, income, and employment impacts by highway improvement type of the Kansas Comprehensive Highway Program.

Objective 2. Measure *indirect* and *induced* output, income, and employment impacts by highway improvement type of the Kansas Comprehensive Highway Program.

The output impact is the increase in Kansas production as a result of the CHP. The income impact is the increase in Kansas wages and salaries in response to an increase in income of the workers employed on CHP construction projects. The direct impact is CHP induced output, income, and employment within the highway construction industry itself while the indirect impact is the CHP induced output, income, and employment of the industries that supply the construction industry with goods, services, and materials. The induced impact is the additional output, income, and employment in various consumer markets produced by the increased consumer spending of people employed on CHP projects.

In cooperation with personnel from the KDOT Office of Management and Budget and the Division of Planning and Development, the research team selected the following highway improvement types for analysis.

<u>Category</u>	<u>Highway Improvement Type</u>
1	Resurfacing
2	Restoration and Rehabilitation; Reconstruction and Minor Widening
3	New Bridges and Bridge Replacement
4	Major and Minor Bridge Rehabilitation
5	New Construction; Relocation; Major Widening
6	Safety/Traffic Operations/Traffic Systems Management; Environmentally Related; Physical Maintenance; Traffic Services

The objectives of the study are accomplished through the use of a 68 sector, survey-based input-output model (Emerson, 1989) for the state of Kansas developed by the Economics Department at Kansas State University. The objectives are achieved by adapting the model to include six additional sectors corresponding to the six highway improvement types listed above. The input-output data for these six sectors is obtained by surveying highway contractors who obtained CHP (K jurisdiction) highway construction contracts during the period July 1, 1991 to September 30, 1996. We did not attempt to survey all contractors since the larger contracts were obtained by a relatively small number of firms. Thus we surveyed the firms that account for a large percentage of the value of CHP (K jurisdiction) highway construction contracts awarded during the sample period. The surveys include both a personal interview of the owner of the contracting firm and questionnaires containing the firm's purchase and employment data.

The major findings of the study include the following.

1. The economic impact of the Kansas CHP (K jurisdiction) highway construction contracts as measured by output is \$7.4 billion distributed by highway improvement type as follows:

<u>Highway Improvement Type</u>	<u>Value of Highway Contracts (Millions of Dollars)</u>	<u>Output Multiplier</u>	<u>Output Impact (Millions of Dollars)</u>
Category 1	\$647.0	2.671768	\$1728.6
Category 2	1621.6	2.587211	4195.4
Category 3	156.0	2.374471	370.4
Category 4	80.6	2.518010	203.0
Category 5	309.8	2.468194	764.6
Category 6	49.6	2.159928	107.1
Total	\$2864.6		\$7369.1

The output impact for each highway improvement type is obtained by multiplying the value of highway contracts by the output multiplier.

2. The economic impact of the Kansas CHP (K jurisdiction) highway construction contracts as measured by income is \$1.4 billion distributed by highway improvement type as follows:

<u>Highway Improvement Type</u>	<u>Direct Wages and Salaries (Millions of Dollars)</u>	<u>Income Multiplier</u>	<u>Income Impact (Millions of Dollars)</u>
Category 1	\$91.1	2.990495	\$272.4
Category 2	358.9	2.346804	842.3
Category 3	39.1	2.087858	81.6
Category 4	31.2	1.725710	53.8
Category 5	68.2	2.240519	152.8
Category 6	9.3	2.123587	19.7
Total	\$597.8		\$1422.6

The direct wages and salaries are the payments to workers in the construction industry attributable to the CHP. The income impact for each highway improvement type is obtained by multiplying the direct wages and salaries by the income multiplier.

3. The economic impact of the Kansas CHP (K jurisdiction) highway construction contracts as measured by employment is 117,820 full time equivalent (FTE) jobs distributed by highway improvement type as follows:

<u>Highway Improvement Type</u>	<u>Value of Highway Contracts (Millions of Dollars)</u>	<u>Employment Multiplier</u>	<u>Employment Impact (FTE Jobs)</u>
Category 1	\$647.0	37.68	24,379.0
Category 2	1621.6	42.26	68,528.8
Category 3	156.0	41.74	6511.4
Category 4	80.6	54.44	4387.9
Category 5	309.8	39.77	12,320.7
Category 6	49.6	34.12	1692.4
Total	\$2864.6		117,820.2

The employment impact of 117,820 FTE jobs is obtained by multiplying the employment multiplier (employment per million dollars of output) by the value of highway contracts in each highway improvement type and then summing all six categories.

4. The output, income, and employment impacts measured in this study under-estimate the economic impact of the Kansas CHP (K jurisdiction) highway construction contracts since we were unable to obtain input purchase data for highway work that was subcontracted. The effect of this is to omit the economic impact of the inputs that the highway contractors purchased from each other. Thus the economic impacts measured in this study are conservative estimates.

5. An output multiplier measures the increase in Kansas total output (production) in response to an increase in the output of one of the various Kansas highway improvement types. An income multiplier measures the increase in Kansas total income in response to an increase in income of the workers employed in one of the various Kansas highway improvement types. The employment multiplier measures the overall employment impact per million dollars of CHP highway contract

value. The output, income, and employment multipliers for the six highway improvement types are as follows:

<u>Highway Improvement Type</u>	<u>Output Multiplier</u>	<u>Income Multiplier</u>	<u>Employment Multiplier</u>
Category 1	2.671768	2.990495	37.68
Category 2	2.587211	2.346804	42.26
Category 3	2.374471	2.087858	41.74
Category 4	2.518010	1.725710	54.44
Category 5	2.468194	2.240519	39.77
Category 6	2.159928	2.123587	34.12

6. The major supplying industries that are common to most of the six highway improvement types are Nonmetallic Mining, Petroleum and Coal Products, Cement and Concrete, Motor Freight, and Fabricated Metals.

Nonmetallic Mining consists mostly of crushed stone, sand, gravel, and aggregate while Petroleum and Coal Products includes asphalt, paving material, oil and greases, and diesel fuel. Fabricated Metals consists of fabricated structural steel, reinforcing steel, rebar, guard rail, bridge rail, sheet metal, and metal pipe.

7. The significance of imports (purchases from out-of-state suppliers) in the input structure varies by highway improvement type. For Categories 3 and 6, imports account for 30 and 36.7 percent of purchases from supplying industries (total inputs minus final payments except imports). The corresponding percentage for Category 1 is only 6.3 percent. Thus Category 1 has the largest output multiplier since most of the economic impact is internalized within Kansas. Conversely, Category 6 has the smallest output multiplier since it has the largest propensity to import.

Although the economic impacts measured in this study are considerable, it should be noted that highway investment yields many other benefits to highway users that are beyond the scope of this project. For example highway improvements that reduce congestion can result in reductions in vehicle operating costs such as maintenance, fuel, tires, and depreciation. These improvements can also reduce average travel times and result in lower highway accident costs. Further research is needed to quantify these highway user benefits.

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Final Report

BENEFITS AND COSTS OF THE KANSAS COMPREHENSIVE HIGHWAY PROGRAM

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Lawrence, Kansas,



January 1999

K - TRAN

A COOPERATIVE TRANSPORTATION RESEARCH PROGRAM BETWEEN:
KANSAS DEPARTMENT OF TRANSPORTATION
THE KANSAS STATE UNIVERSITY
THE UNIVERSITY OF KANSAS

EXECUTIVE SUMMARY

- This report provides a benefit-cost analysis for the Kansas Comprehensive Highway Program (KCHP). It shows *comprehensive* benefit-cost ratios (BCRs) from the point of view of Kansas—i.e., it ignores national benefits and costs, but takes all known Kansas costs and benefits into account. The measured BCRs were at least 3. In other words, the program returned at least three dollars' worth of value to Kansans for every dollar's worth of cost to Kansans.
- The KCHP was a major program of highway construction and contract maintenance for the state of Kansas which was administered by the Kansas Department of Transportation (KDOT). The program was directed entirely to some 10,400 miles of the Kansas State Highway System, which includes Interstate Highways, U.S. Highways, State 'W'-Highways and their City Connecting Links. It did not include most city, county, and local roads.
- The KCHP was passed by the Legislature in Spring, 1989. Major highway contracting extended from FY1990 through FY1997; some expenditures will continue until roughly 2001. The major revenue sources included portions of motor fuel tax revenues, motor vehicle registration fees, and general sales and compensating use, tax, as well as significant federal highway funds, and smaller amounts from other sources.
- This report focuses on effects of the program on Kansans only, and does not address effects of the program on citizens of the U.S. as a whole. It provides detailed estimates for effects of the KCHP on Kansas through calendar year 1996 (the last year for which complete data were available), and less detailed estimates for effects in subsequent years.
- This report focuses separately on two types of benefits and costs:
 - effects that can be measured with a reasonably high degree of precision (mainly retrospective road-user benefits and tax-related costs). For these items, the report provides detailed modeling and analysis.
 - effects that can be estimated within a broad range (mainly non-user costs and future benefits and costs). For these items, the report estimates conservative or lower-bound effects on the BCRs, using published information sources.

The BCRs are broken out in further detail for each of these general types.

- From the point of view of the Kansas money economy, during the calendar years 1989-1996 (the latest years for which data were available) the most important single effect of the KCHP was to collect around \$3.1 billion in state tax revenues and spend it on highway costs, and also leverage an additional \$1.1 billion in federal highway funds into the state of Kansas. Additional funds were collected in subsequent years. (These totals are in current dollars, i.e., not adjusted for inflation.)

- In comparison with what would have occurred under pre-existing laws, these sums amount to about \$1.6B in *additional* tax revenues and about \$.2B in *additional* federal funds.
- After, accounting for multiplier effects and taking present values, *these additional* financial flows from the KCHP generated about \$.8M in real money income received by Kansans for each \$1 .0M in income lost directly and indirectly because of taxes to support the program. In other words, “Keynesian” or “pump-priming” income benefits of the KCHP by themselves contribute a benefit-cost ratio (BCR) of about .8. Note that these income benefits are in addition to other benefits of the program, especially the use-value of having good highways.
- This report provides detailed modeling for the following types of non-income benefits to users of Kansas highways:
 - time savings and operating cost savings due to improved roads and reduced congestion
 - changes in injuries due to accidents
 - changes in property damage due to accidents
 - changes in fatalities due to accidents
 - changes in riding and driving comfort on Kansas highways
 - the residual value of benefits due to improved highways after 1996 (the last year of complete data in our model).
- These benefits were estimated using computer modeling and statistical analysis over some 45,000 observations of detailed sections of Kansas state and US highways during 1990-1996. Models were constructed that showed conditions both with and without the KCHP.
- It was found that the KCHP led to a very large amount of time saving, and this was the most important type of benefit to road users. By 1996, aggregate time spent traveling on state and federal roads in Kansas had been cut by 15 percent by the KCHP (as compared with what would have happened under the pre-existing highway program). While various types of highway improvements were important, the single most important improvement was the increased quality of the pavement and roadbed (and in particular, avoiding the deterioration that would have occurred *without* the KCHP).
- By 1996 the value of this time saving exceeded \$.5 billion per year. In present value terms, the value of time saving for 1990-1996 was between \$.8 billion and \$1.5 billion, depending on the discount rate. During that period of time, about \$.85 million in travel-time benefits were realized per \$1 million of direct and indirect costs expended on the KCHP - i.e., the contribution to the BCR was around .85. Additional travel time benefits from past KCHP construction will continue to accrue in the future.
- In present value terms, the KCHP was estimated to reduce vehicle operating costs during 1990-1996 by about \$.2 billion.

- In present value terms, the net effect of the KCHP on accidents, injuries, and fatalities during 1990-1996 just about broke even.
- The KCHP was estimated to cause a reduction of about 10,000 accidents and about 2000 injuries during 1989-1996. Fatality accidents decreased at first but then increased, as speeds increased relatively to the counterfactual world.
- The KCHP did in fact create substantially safer driving conditions. However, without the KCHP, roads would have deteriorated significantly, and it is estimated that, as a consequence, traffic would have slowed down substantially. The safer conditions made possible by the KCHP did lead to a reduction in numbers of accidents. But, as a result of the increased speeds at which drivers drove, fatalities were more likely to occur for a given accident. As time wore on, highway users increasingly chose to consume their improved roads largely in the form of higher speeds and reduced non-fatal accidents, leading to reduced travel times, even at the cost of a relative increase in fatalities per accident. (In each case we are comparing actual conditions with an estimate of the conditions that would have existed in the absence of the KCHP.)
- The most important single component of the BCR was the residual value of user benefits, i.e., the value of future benefits for highway users accruing after 1996. This item by itself probably contributes a BCR of 2 or more. The value is large because it includes all of the measured user benefits lumped together and totaled over a very long time span extending after 1996. This value is rather sensitive to the assumed discount rate, and to other assumptions as well, and could be much larger than 2.
- The value of improvements in riding and driving comfort was estimated using a new survey of highway users. It was found to have a positive but rather small effect on the BCR.
- After accounting for financial or “Keynesian” costs and benefits as well as the user benefits listed above, the KCHP was found to have a BCR conservatively estimated to be at least 3.
- However, these figures account for only some of the benefits and costs of the KCHP. This report also provides a much more complete picture by looking at non-user costs and benefits (i.e., externalities or “spillovers” to persons who aren’t using the highways). This is done in a less formal way, based on a review of the literature. In particular, the report examines items such as:
 - effects on air, water, and noise pollution in Kansas
 - effects on urban sprawl and adverse effects on individuals from induced land-use changes
 - effects on costs of delivering other government services
 - effects on productivity in Kansas
 - effects on economic development in Kansas.
- While these additional effects can not be measured with the same precision as user benefits, it is possible to estimate lower bounds for more comprehensive benefit-cost ratios that include all of

these effects. These lower bounds for comprehensive benefit-cost ratios (of approximately 3) turn out to be not much different from the BCRs that omit these externalities.

- The comprehensive BCR is rather sensitive to the assumed discount rate. If a low discount rate is assumed (e.g., well below 5%/year), the BCR could be higher than 6.

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