Approved: January 28, 2004
Date

MINUTES OF THE SENATE TRANSPORTATION COMMITTEE

The meeting was called to order by Chairman Les Donovan at 1:30 p.m. on January 14, 2004 in Memorial Hall.

All members were present except:
Senator David Adkins- absent
Senator Edward Pugh- absent

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

Conferees appearing before the committee:
Warren Sick, Asst. Secretary/State Transportation Engineer, KDOT
Mike Crow, Director, Division of Operations, KDOT

Others attending:
See Attached List.

Senate and House Transportation Committees continued their joint meetings on the Kansas Department of Transportation's "Special Legislative Information Presentations, 2004." Chairman Donovan introduced today's two Kansas Department of Transportation (KDOT) presenters; Warren Sick , Assistant Secretary and State Transportation Engineer, and Mike Crow, Director, Division of Operations. Today's presentation included information on how transportation spending fuels the economy; state highways: Kansas' economic lifeline...the I-70 story; and Research and Development (Attachment 1).

Universities in Kansas are doing several studies on the cost effectiveness of various materials/processes for conditions specific to Kansas. Entities outside the state are now using highway materials developed for use here in Kansas.

The meeting adjourned at 2:25 p.m.

The next meeting is scheduled for Thursday, January 15, 2004 at 1:30 p.m. in Memorial Hall.

Unless specifically noted, the individual remarks recorded herein have not been transcribed verbatim. Individual remarks as reported herein have not been submitted to the individuals appearing before the committee for editing or corrections.

JOINT SENATE & HOUSE TRANSPORTATION COMMITTEE
GUEST LIST
DATE: January 14, 2004

NAME	REPRESENTING
KRISTA ROBERTS	KDOT
Mike Crow	KDOT
Warren E Seek	KDOT
Reed W Davis	KDOT
Chris Wilkins	KDOT
Carol Beggs	LEGISLATOR - HT
Stanley Braden	LEG HT
Joe Humerickhouse	Leg. HT
Jerry Kaylor	HT. V
Katie Gabbert	Travel & Tourism
BOB LYON	LEG ST
Ryan Wessel	Intern Leg
Jerry Henry	Leg. HT
Mike Burgess	House HT
John Faber	Leg. HT
James Mills	LEG HT
Dave Hall	Leg HT
Kaelyn Smith	Intern
LARRY D SALMANS	Senate ST
Ozzie Byrne	Sen. Salmans
Trey Allen	Intern Salmans
Terry Heidner	KDOT

JOINT SENATE & HOUSE TRANSPORTATION COMMITTEE
GUEST LIST
DATE: January 14, 2004

NAME	REPRESENTING
Rosie Ingram	KDOT
Lon Ingram	KDOT
Mark Tomb	LKM
Bill Watts	KDOT
Denise Patel	KDOT
Dave Kelly	KDOT
Tom Bruno	Motorola
Scott Heidner	KS Consulting Engineers
Mary Kauffman	St Representative H T
Deann Williams	KMCA
Pat Hubbell	KS Railroads
Deb Miller	KDOT
Mary Galligan	KLRD
Bud Burke	Heavy 69 Assn
Brenda Tasker	Rep H T
Don Myers	rep H T
Jeff JACK	REP H T
Valdenia Winn	Rep H T
Margaret Long	Rep H T
Joann Freeborn	Rep H T
Garett Schmidt	Intern for Rep. Larry Powell
Jim Donnelly	Rep (comm. member) H T

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SENATE TRANSPORTATION COMMITTEE
DATE 01-14-04
ATTACHMENT: 1

KansasCity.com

Posted on Thu, Jan. 08, 2004

Defective roads make big dent in wallets

By JUDY L. THOMAS The Kansas City Star

"You're going to visit your mechanic more often, you're going to visit your car salesman more often, because of the damage that these roads do to your vehicle."

Carolyn Bonifas of The Road Information Program

Driving on substandard roads and bridges is costing Missouri motorists $4.3 billion a year, a national transportation research group said Wednesday.

"It doesn't come as a surprise to many Missouri motorists that the roads and bridges are in bad shape," said Carolyn Bonifas of The Road Information Program. "But what they probably didn't realize is the effect that has on their wallets."

In Kansas City, for example, drivers spend an average of $1,229 a year because of accidents, traffic delays and increased vehicle wear and tear, Bonifas told reporters.

The Washington, D.C.-based nonprofit organization announced the results of its study of Missouri roads at a news conference at Three Trails Community Improvement District Office in Kansas City.

Bonifas, the group's research and communications specialist, said the study found that 17 percent of Missouri's major roads are in poor condition and 30 percent are in mediocre condition.

"You're going to visit your mechanic more often, you're going to visit your car salesman more often, because of the damage that these roads do to your vehicle," she said.

The study also found that 36 percent of Missouri's bridges need to be repaired or replaced. Missouri ranks fourth in the nation for the percentage of structurally deficient bridges, the study said.

Missouri drivers also face increasingly congested roads, the study showed. Thirty-two percent of Missouri's major urban roads are considered congested, Bonifas said, up from 22 percent in 1996.

Several local civic and business leaders attended the news conference, including Kansas City Mayor Kay Barnes.

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"It's obvious from the report ... that what has not been a secret for us in the state of Missouri is certainly not a secret nationally, either," Barnes said. "And that is the very poor condition of our roads and bridges."

She said the city is working with the Heavy Constructors Association, the Greater Kansas City Chamber of

Commerce and other groups to move a major bond issue forward that would help fix local streets and bridges.

She said, however, that a bond issue is only part of the solution.

"The state government has a responsibility to move some sort of state initiative forward," she said.

John Dillingham, president of the Northland Betterment Committee, said it is time for the state to consider toll roads.

"We have to find a way to pay for these problems," he said. "It's not going to do any good to keep complaining about them."

Last summer, a series in *The Kansas City Star* found that Missouri highways were the third-worst in the country, tumbling from ninth-best less than a decade ago.

The new findings, based on recently released 2002 federal road condition statistics, indicate that Missouri's roads have improved over the previous year. According to 2001 figures, 25 percent of Missouri's major roads were in poor condition and 34 percent were in mediocre condition.

Missouri Department of Transportation officials said that roads have gotten a little better, but that some of the improvement could be attributed to better testing.

"We are still nowhere near where we need to be," said department spokesman Jeff Briggs.

To reach Judy L. Thomas, call

(816) 234-4334 or send e-mail to

jthomas@kcstar.com.

First glance

• Driving on substandard roads and bridges costs Missouri motorists $4.3 billion a year in delays, accidents and vehicle wear, a national transportation research group says.

• The study found that 17 percent of Missouri's major roads are in poor condition and 30 percent are in mediocre condition.

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Legislative Information Sessions

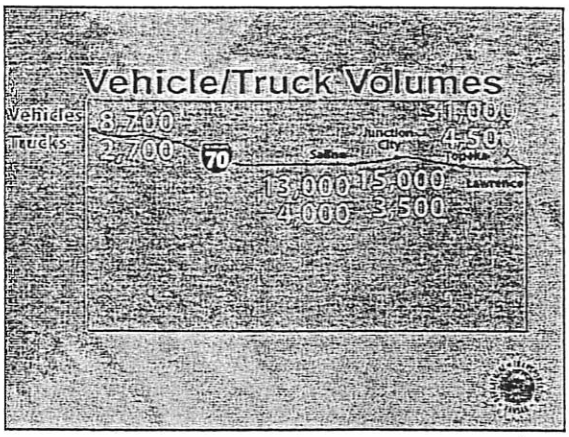
Kansas Department of Transportation
January 2004

KDOT Information Sessions

- Transportation Spending Fuels the Economy
- Highway Construction Background
  - State Highways: Kansas' Economic Lifeline... the I-70 Story
  - Research & Innovation

State Highways: Kansas' Economic Lifeline... the I-70 Story

I-4



"The link between good transportation and economic development has been around almost since the start of the republic. You look back in economic history and it didn't take people very long to figure out that the only way we're going to expand these markets and to get a good economy going is to lower the cost of moving goods."

—Michael Babcock, KSU Researcher

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: Burress, David, et al. Benefits and Costs of the Kansas Comprehensive Highway Program. University of Kansas, 1995.

I-5

"Maintenance of roads is the most important thing in a highway program. It isn't building roads. Most of the money goes to maintenance or preservation or keeping what you have and if you don't keep what you have, you're going to be in a lot of trouble."

–David Burress, KU Researcher

"I guarantee you, bar none, Kansas has the best roads of all we travel on. We're always happy when we get back to Kansas because we know they're going to be smooth. We're going to be able to get to where we want to go without any problems."

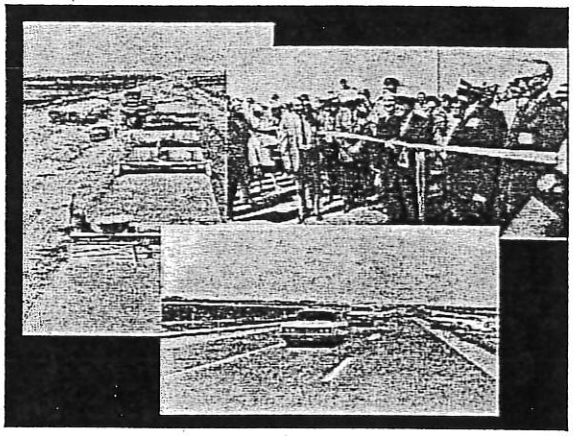
–Norman Nelson, Norton resident

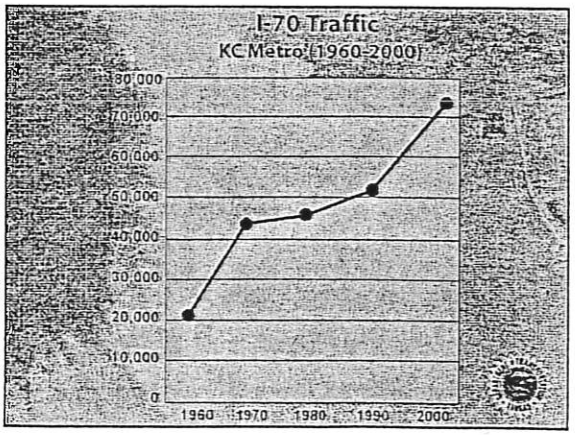
History of I-70

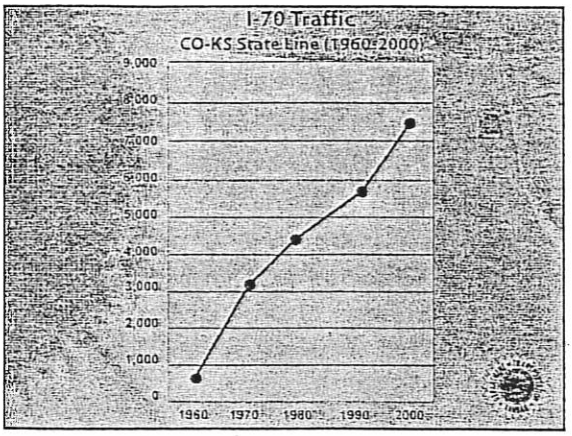
I-70

- Built in 1950s & 1960s
- 424 miles border to border
- KDOT responsible for 370 miles


I-70
THIS IS THE FIRST PROJECT
IN THE UNITED STATES
COMPLETED UNDER PROVISIONS OF THE NEW
FEDERAL AID HIGHWAY ACT OF 1956
EIGHT MILES CONCRETE PAVEMENT ON US-40
INTERSTATE ROUTE NO. 1
STATE HIGHWAY COMMISSION OF KANSAS




I-70 Traffic
KC Metro (1960-2000)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
1960
1970
1980
1990
2000



I-70 Facts

- Aggressive plan
- Rebuild/rehabilitation nearly complete
- Cost: $625 Million

Why Rebuild?

- Cheaper resurfacing would not fix worn-out underlying roadway
- Updated design standards enhance safety
- User cost of poor highways

"If you allow the system to deteriorate, then you start losing all the economic positives we've talked about. So that instead of generating economic benefits, you start generating economic dis-insentives."

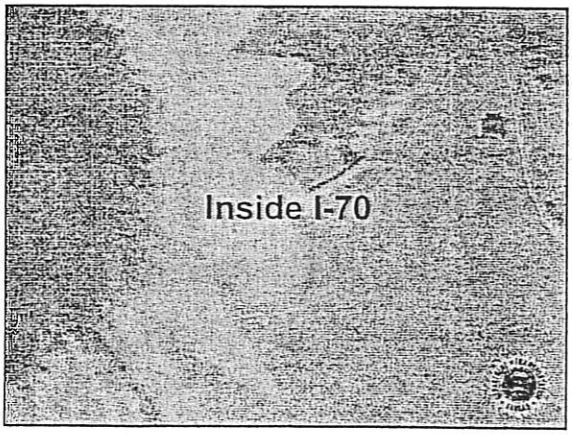
–Michael Babcock, KSU Researcher

"Kansas has good roads and I feel like, if we don't take care of them, we'll get behind and it's hard to catch up when you're behind."

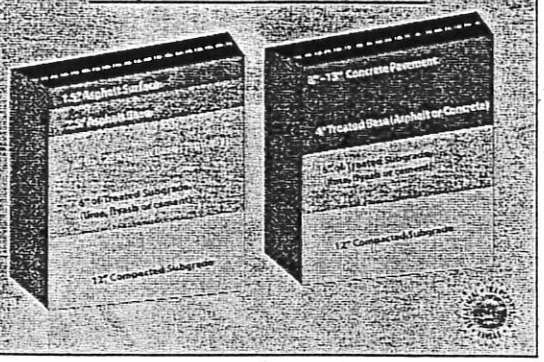
–Tom Wright, Golden Grain Enterprises

"Many times when people say they're coming from KCI to Olathe, they know the second they pass the state line. Not to say anything bad about my Missouri friends, but their investments in their state are not what ours are in our state in regards to transportation infrastructure and it makes a big difference to a business person who's coming to our community to evaluate whether they should locate here or not because it makes an impression upon them about what we value and what governments should invest their money in."

–Michael Copeland, Olathe Mayor



Asphalt & Concrete



Rebuilding

- Overlay one side of Interstate to rebuild the other
  - Side with overlay will carry all traffic
  - Traffic stopped less
  - New surface will require less maintenance under traffic
- This temporary fix looks like a "new road"

Research & Innovation

KDOT Research & Innovation

- Automatic grade line guide
- Use of sound waves to measure strength & durability of concrete
- Glass beads for more reflective pavement markings

"We can take for example, road pavement and test it under a variety of conditions to determine how long it will last. Now there's two ways of doing that, you can put it on the road somewhere and let the trucks and cars drive over it until it fails or you can do it in the laboratory in an accelerated way much, much less expensively."
–Terry King, KSU Dean of Engineering

"Behind me is the Civil Infrastructures Laboratory here at Kansas State University. In this laboratory, we actually look at full scale structures, asphalt pavements and concrete pavements. The intent is to really develop new stronger systems and systems that provide greater longevity."
–Robert Peterman, KSU Structural Engineering Professor

"The research universities in Kansas have an enormous amount of scientific and engineering expertise that's available. And the value of this to the state comes on several levels. First of all, it's really an investment to the state in the sense that we can do things in research and determine if things are going to work out there on the road or bridges or whatever we're doing and implement that in a way that the state does not have to make huge investments to do the tests in real time."
–Terry King, KSU Dean of Engineering

"With the money that you are investing here in conducting this type of research, you get more than 100 times the money back by saving in the construction costs and also saving in the maintenance costs of those pavements."

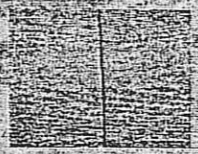
–Stefan Romanoschi, KSU Transportation Engineering Professor

"Our capabilities here are equal to, if not superior to, most schools in the nation."

–Robert Peterman, KSU Structural Engineering Professor

KDOT Research & Innovation

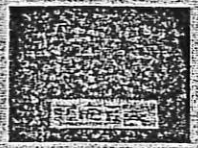
- Neoprene joint seals instead of silicone



KDOT Research & Innovation

- Neoprene joint seals instead of silicone

- Additional screening of limestone aggregate for pavement that lasts longer



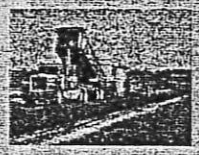
KDOT Research & Innovation

- More accurately measure roughness resulting in smoother pavements

KDOT Research & Innovation

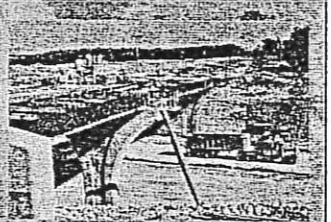
- More accurately measure roughness resulting in smoother pavements

- "SuperPave"



KDOT Research & Innovation

- Bridges – how to extend the life of the structure?



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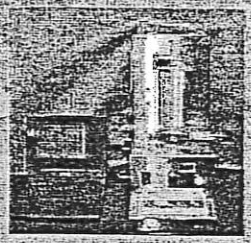
"Structures have a certain life and typically that's been about 30-40 years for a bridge structure. What we're able to do with new materials is go in and take an existing structure that's in need of replacement and we can, if we apply some new materials and new repair methods, we can extend the life of that structure out another 20-25 years. On the new materials side, as we look in the new materials to put in the bridge, we're now talking about making a bridge last, there's talk now going up to 100 years."

–Robert Peterman, KSU Structural Engineering Professor

Air Void Analyzer

- Among first to implement European technology
- Measures uniform air content of concrete before it hardens
- Kansas: lead state in national effort to promote this new technology in U.S.



Taking Care of the State Highway System

- Enhances safety
- Preserves taxpayer investment in the state's infrastructure
- Ensures Kansas' continued economic vitality

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Research and Technology Innovations Used on I-70

1. **Air Void Analyzer:** Use of this device allows real-time evaluation of concrete air void systems necessary to insure that concrete does not fail prematurely from freezing and thawing. Immediately after pavement is placed, a concrete sample is taken for analysis. Testing takes about 30 minutes. Changes in the mix can be made later the same day if necessary. Kansas was the first state to incorporate use of this device into pavement specifications.

2. **Durable (Class I) Concrete Aggregate:** Research showed that evaluation of limestone quarries by individual beds of rock could allow the department to identify sources of freeze-thaw resistant limestone for crushing into concrete aggregate. Implementation of this finding and a concrete freeze-thaw testing program that evaluates aggregates from each of these ledges, has greatly improved the life of concrete pavements produced since 1980.

3. **Optimized Mix Design (Shilstone):** This procedure produces concrete pavement mixes that consolidate much easier than previous cook-book mixes and yield higher strengths for a given amount of cement. Implementation has reduced the amount of cement needed, improved the ease of obtaining good density and air void systems, and yet yielding as strong or stronger pavements. Studies also showed that pavements with higher densities were less prone to faulting.

4. **Bridge Deck Protective Systems:** Several different types of high-performance concrete have been used for bridge deck construction and reconstruction of I-70 or bridges over I-70. These include new bridge deck overlays using silica fume or ground blast furnace slag admixtures. Additionally, rehabilitation of existing bridge decks using Kansas System dense concrete overlays, Iowa System dense concrete overlays and polymer concrete two-coat broom and seat methods have extended the service life of many bridges.

5. **SuperPave with QC/QA testing:** Essentially all bituminous pavements placed on I-70 over the past five years have used this new pavement design system that evolved from national research done by the Strategic Highway Research Program. Kansas was the first state to concurrently implement both the SuperPave binder and mix design specifications and the quality control and quality assurance (QC/QA) testing specification. QC testing is performed by the contractors, and QA testing is performed by KDOT staff or representatives. To support this specification, a Certified Inspector Testing and Training (CIT2) program was developed that is administered by Kansas State University.

6. **Bituminous Recycling:** Several types of recycling of in-place pavements have been utilized on I-70 for reconstruction and to extend the life of existing bituminous pavements. These included both partial and full-depth projects as well as surface, hot, and cold methods depending on pavement conditions.

7. **Utilization of Class C Fly Ash:** Class C Fly Ash is a waste product of the electric power industry. Many tons of this waste product have been utilized in I-70 construction projects. Uses include subgrade stabilization, cold in-place recycling of bituminous pavement, concrete pavement, and slurry injection of wide depressed transverse pavement cracks.

8. **Passive Cathodic Protection of Bridges:** Cathodic protection uses a sacrificial zinc foil layer beneath an overlay to protect steel reinforcement in bridge decks from corrosion due to chloride intrusion.

9. **i-Buttons:** i-Buttons are small electronic devices that are imbedded in concrete at various depths from the surface to investigate temperature changes over time at that specific location. The i-button stores the temperature every few minutes for several days and then is "read" with a special readout device to capture stored information. Findings from a research project on an I-70 bridge west of Topeka last summer showed that temperatures were more severe than expected. Curing specifications were modified so that bridge deck concrete on future bridges will be less stressed during curing and thus should be more durable.

10. **Curing Specifications:** Kansas was the first state to require a full seven-day wet burlap cure in 1994. In 1995, Kansas was the first state to require mandatory fogging of concrete during placement if ambient weather conditions were not acceptable. These specifications have greatly reduced bridge deck cracking on new bridge decks in Kansas. Research at the University of Kansas and at KDOT on ways to reduce cracking in bridge decks has led to KDOT serving as lead state on a $950,000 transportation pooled-fund project supported by the FHWA and a number of other states across the country.

11. **Bridge Repair using Epoxy Injection:** The debonded deck on the I-135 Bridge over I-70 in Salina was recently repaired using epoxy injection technology that was first investigated by KDOT researchers during the 1970s. This method is much cheaper than removal and replacement of the affected areas of the deck. Another use of epoxy injection developed by KDOT researchers involved angle drilling of cracked bridge girders, insertion of extra reinforcing steel, and then epoxy injection of the void and surrounding cracks to strengthen the bridge and extend its life. Several bridges were repaired on I-70 using this technique although some have now been replaced. This technique saved an estimated $25 million dollars statewide in bridge repair costs.

KDOT's K-TRAN Program

The Kansas Department of Transportation (KDOT) is strongly committed to national transportation research and implementation of research findings that can improve the Department's performance. One program that has been highly successful is the Kansas Transportation Research and New Development (K-TRAN) Program. It is an agreement with the University of Kansas and Kansas State University that provides an ongoing cooperative and comprehensive research program. Benefits from this effort include high-quality research targeted to Kansas transportation needs, focused involvement of engineering and other students on KDOT research needs, and an enhanced ability to attract outside research resources to Kansas.

K-TRAN Projects

Project FY	Projects	Triennial Benefits
1991	9	$1,230,000
1992	13	$39,716,048
1993	14	$33,667,420
1994	12	$4,771,000
1995	16	$552,500
1996	18	$9,100,000
1997	15	$3,812,000
1998	16	$35,510,000
1999	14	$89,000
2000	19	$2,670,000
2001	17	$870,280
Totals	**163**	**$131,988,248**