Approved .	June	18,	1987
PF		Do	to

MINUTES OF THE	House COMMITTEE ON		Transportation	
The meeting was called	to order by	Rex	Crowell Chairperson	at
1:30 xxn./p.m. on	February 24	····	, 19 <u>87</u> in room	519-S of the Capitol.

Representative Smith

Committee staff present:

All members were present except:

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

Conferees appearing before the committee:

Representative Rex Crowell

Ms. Claudette Lewis, Congressman Bob Whittaker's office

Mayor Doug Wright, Topeka, Kansas

Mr. Charles D. Belt, Southwest Kansas Highway Association

Mr. Tom Pickford, Topeka, Kansas

Representative Ginger Barr, Topeka, Kansas

Mr. Paul E. Fleener, Kansas Farm Bureau

Mr. Curt Heinz, Topeka Chamber of Commerce

The meeting was called to order by Chairman Rex Crowell and the first order of business was a hearing on HB-2378 concerning the construction, improvement and maintenance of highways and authorizing the sale of revenue bonds.

Chairman Rex Crowell, sponsor of the bill, briefed the Committee on HB-2378. (See Attachments 1, 2 and 3)

Ms. Claudette Lewis, spoke in support of HB-2378 and presented a statement on behalf of Congressman Bob Whittaker. (See Attachment 4)

Mayor Doug Wright, Topeka, Kansas, testified in support of $\underline{\text{HB-2378}}$. (See Attachment 5) He said there is a great need for the $\overline{\text{I-70/I-470}}$ Interchange, due to growth in that part of the city.

Mr. Charles D. Belt, Southwest Kansas Highway Association, gave testimony in favor of HB-2378. (See Attachment 6) He said that improved highways are a key to the economic future for all areas of Kansas. He requested that the bill be amended to include all priority routes outlined in the Howard Needles study for the Southwest, Northwest and Southeast Kansas.

Mr. Tom Pickford, Director of Public Works, Shawnee County, testified in support of HB-2378. He said they support a minimum of 1 cent of the proposed tax increase being returned to local government, and suggested this be increased to 2 cents.

Mr. Pickford distributed an Engineering Study of the I-70 and I-470 Connection for Topeka/Shawnee County, Kansas. (See Attachment 7)

Representative Ginger Barr spoke in support of HB-2378.

CONTINUATION SHEET

MINUTES OF THE _	House (COMMITTEE ON	Transportation	,
room 519-S, Stateho	ouse, at1:30	X_M./p.m. on	February 24	

Mr. Paul E. Fleener, Director of Public Affairs, Kansas Farm Bureau, expressed support for HB-2378. (See Attachment 8) He said farmers and ranchers in Kansas are very supportive of economic development. HB-2378 would enhance the opportunity for economic development by providing highway access to some previously inaccessible or underserved areas of the state.

Mr. Curt Heinz, Shawnee County Highway Coalition and Greater Topeka Chamber of Commerce testified favorably concerning HB-2378. Mr. Heinz said the I-70 Interchange is greatly needed so that current development in the area is not hindered. He also said the improvement of U.S. Highway 75 from Holton southerly to N.W. 62nd Street in Topeka will improve a very heavily traveled roadway that has an extremely high accident rate.

Chairman Crowell announced the hearing on $\frac{HB-2378}{}$ would be continued on February 25, 1987.

The meeting was adjourned at 3:00 p.m.

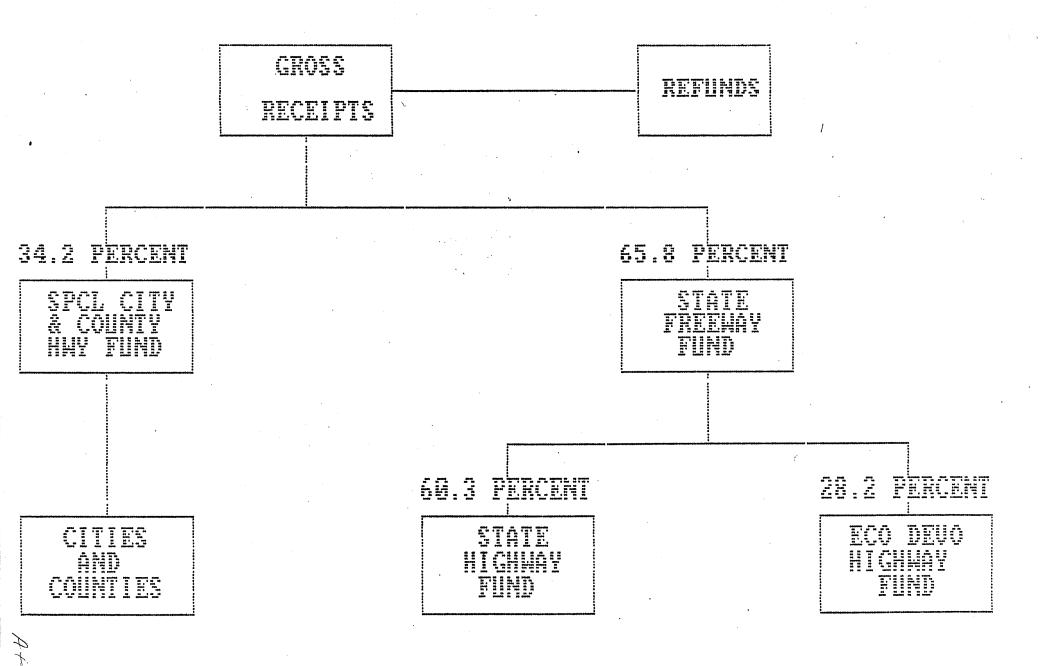
COMMI EE: 2-24-80 Transportation DATE: PLEASE PRINT NAME ADDRESS COMPANY/ORGANIZATION Shelley Stutton Topeka 905 serand alle Wilh Ks Consulting Engin LAUDETTE LEWIS San Rambow CHARLES BELT WICHITA Duane Sanders Arthur J. Collins NW Passage Highway BILL PERDUG TOPEKA Leroy Vones Overland Park B.L.E. HoisingTon T.M. PicKFORD SHAWNEE CO. Tom Whitaker Topeka Chamber Shawer KON Miller t. Heener Kansas Farm Buleau RON CALBERT NEWTON

HB-2378 Use of Bonds Proceeds

S.E. Kansas projects less bypasses	248.0
N.E. Circumferential	65.0
Wichita to Hutchinson (4 lane)	49.8
Wichita to Bucklin less bypasses	41.7
1989-1991 KDOT plans on corridors	13.0
Topeka to Holton (add two lanes)	30.0
Wanamaker interchange	13.0
I-70 to Manhattan improvements	16.0
	476.5

Attach. /

	CURRENT LAW	INCREASE AMOUNTS	NEW TOTALS	
9ross	\$170,600	* 76,344	*246,944	
Refunds	\$6,800	#3,091	\$9 ,891	
Net	*163,800	\$73 ₁ 253	\$237,053	
Pct Local	40.5%	20.0%	34.17%	100.0%
Local	* 66,339	#14,651	\$80 , 990	
Eq & Adj	\$2 , 500	•	\$2,500	
Net	*63,839		\$78,49 0	
Pct State	595%	80.0%	65.83%	
Freeway Fd	\$97 , 461	*58,602	\$156,063	
Pct to SHF	<u> </u>	25.0%	60 . 3%	100.0%
Highway Fd	\$79,528	*14,651	#94,179	
Eco Ďevo Fund	o.oo%	75.00%	28.16%	
Amt.	\$ O	#43 ,952	*43,952	
Fund2	0.00%	Ó.00%	Ó"OO%	
Amt.	\$ O	\$ O	\$ ()	
Rem Freeway Fd	*17,933 .	(\$0)	\$17,933	11.49%



STATEMENT OF CONGRESSMAN BOB WHITTAKER BEFORE THE HOUSE TRANSPORTATION COMMITTEE FEBRUARY 24, 1987

Mr. Chairman:

I want to thank you for this opportunity to testify on behalf of House Bill 2378. Although my own legislative duties prevent me from appearing before you this afternoon. I am most appreciative of your offer to testify in this somewhat unusual fashion.

House bill 2378 implements many of the major highway recommendations made last month by the Kansas Turnpike Authority and you are to be commended, Mr. Chairman, for your quick follow through on the KTA feasibility studies.

The single most important message I bear is that Southeast Kansas supports the KTA recommendations embodied in House Bill 2378.

In previous testimony before your Committee, I have painted a rather bleak picture of the economic conditions in Southeast Kansas, so I will not belabor this point. Instead, I want to reinterate, in the strongest of terms, that we firmly believe that the State of Kansas must make an investment in new highways in order to spur economic growth and expansion in our region.

We need new highways -- we've been promised assistance from Governor Hayden -- and we're willing to help pay for these roads in the manner you have proposed.

In its feasibility report, the KTA proposed construction of a Super Two highway between Wichita and Joplin along the 96 and 160 highway corridors. Identical improvements along the 166 corridor in Cowley and Chautauqua Counties were also proposed, as well as connecting links between the main route and Independence and Coffeyville on Highways 75 and 169.

We believe that these imporvements must be linked for there to be a successful effort to improve the economy of the region and that they MUST be considered as a package. We are pleased that you have accepted the KTA's recommendations and that this package of improvements is included in your Bill. As you know, there has been some discussion over the need for four-lane highways versus Super Two's. If given the choice, I doubt if there's a person in my Congressional District who wouldn't opt for a four-lane over a Super Two. They'd probably take a Cadillac over a Chevy, too. But if that person didn't have a car, I'd be willing to bet that they'd be might proud to own that Chevrolet.

That's essentially where Southeast Kansas is at the moment. We don't have a car, a major east-west highway link, and we desperately need one. We'd be mighty happy with a Super Two and we're willing to wait on our Cadillac until we can afford one.

Mr. Chairman, as you and your Senate counterpart, Chairman Bill Morris, have said, the State of Kansas is faced with a significant window of opportunity. With interest rates on revenue bonds at their lowest level in years, there may never be a better opportunity than the present to begin an aggressive highway construction program across the State.

Southeast Kansas is unified as never before behind a project and we know that our western brothers and sisters have similar needs — as do other regions of the State. We recognize that if these projects are to be built, it must be through a State effort.

It is our belief that these projets must not be delayed by some false hope of assistance from the Federal government or the mistaken belief that tomorrow may bring a brighter day. We believe the window of opportunity is open now and we would urge you to move forward with your initiative and to work closely with Governor Hayden in developing a comprehensive highway package.

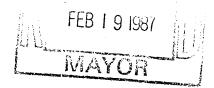
Thank you, Mr. Chairman.

WAL-WART



WAL-MART STORES INC. • MITCHELL BLDG. • 701 SOUTH WALTON BLVD. • HWY. 71 • BENTONVILLE, AR 72716 • 501-273-4000

February 10, 1987



Mayor Douglas S. Wright 3536 Avalon Lane Topeka, KS

RE: Topeka, KS

Honorable Mayor Wright:

Again following up our meeting of last Thursday, this is to reiterate our estimates concerning the Wal-Mart Super Center statistics:

- 1. Size: 213,143 square feet
- 2. Annual Sales \$80,000,000
- 3. Employment:
 - A. Hourly 438 (local)
 - B. Management 12
 - C. Weekly Payroll \$75,000

allow?

- 4. Departments: Wal-Mart basic 35 plus Pharmacy and Auto Center as well as grocery departments including fresh produce, meats, dairy, bakery, delicatessen, dry foods, etc.
- 5. Anticipated Opening: Early Fall 1987
- 6. Sales Tax Rebate to City of 1% based on \$80,000,000 sales would generate \$800,000 of revenue to City.
- 7. Utility consumption, while not pinpointed at this time, would generate additional revenue to the entity providing the services.
- 8. Ad Valorem Taxes would generate further revenues both in upgrading zoning and in value added through structures to be erected.

If I can provide additional information I'll be glad to do so.

Very truly yours,

W. G. Bothwell

Real Estate Manager

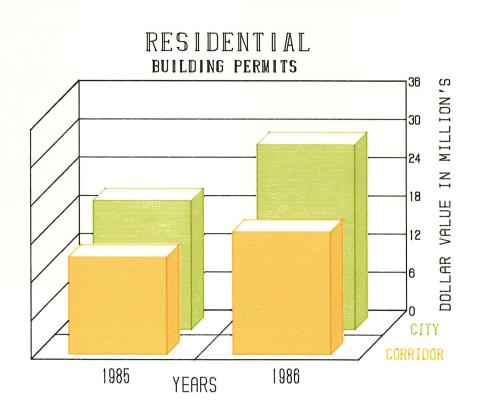
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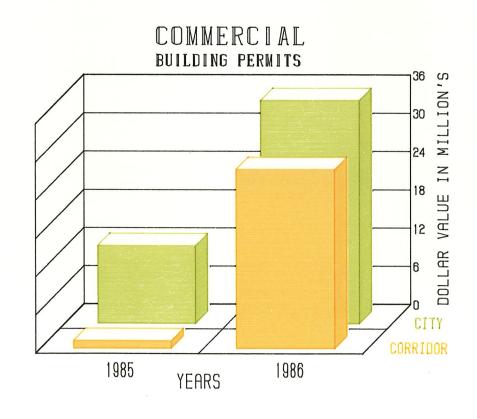
cc: Gerald Goodell 215 E. 8th Ave. Topeka, KS 66603

Attach. 5

CURRENT DEVELOPMENT

TOPEKA I-70 8 I-470 CORRIDOR





Testimony
Transportation Committee
Kansas House of Representatives
Tuesday, February 24, 1987

By Charles D. Belt Southwest Kansas Highway Association

Re: H.B. 2378

Mr. Chairman, members of the committee, I am Charles Belt representing the Southwest Kansas Highway Association.

Our group represents the interests of Liberal, Dodge City, Garden City, Pratt and other smaller communities along the U.S. 54 and U.S. 50 corridor in southwest Kansas.

We believe that improved highways are a key to the economic future for all areas of our state. It is important that in this session the legislature take action on improving our Kansas highways. The timing is excellent for a comprehensive plan, as outlined in the Howard Needles/Turnpike Authority study, and the need increases each day.

Our group has concerns about the scope of designated projects outlined in H.B. 2378. While any highway improvements are welcomed in the southwest corridor, we feel it is imperative to continue the improvements beyond Bucklin through Liberal to the Oklahoma border and through Dodge City and Garden City to the Colorado border as recommended in the Howard Needles study.

The need for highway improvements on U.S. 54 in the Liberal area is evidenced by the fact that 32% of the traffic just west of Meade is heavy trucks and on U.S. 154 and U.S. 50 in the area of Dodge City and Garden City truck traffic comprises from 15% to 20% of the total traffic.

Attach. b

The Southwest Kansas Highway Association respectfully requests that this committee amend H.B. 2378 to incorporate the priority routes outlined in the Howard Needles study for southwest, northwest and southeast Kansas. With such an amendment, this bill would more clearly address the acute need for improved highways in Kansas.

Thank You.

February 24, 1987

House of Representatives Committee on Transportation and Utilities State Capitol Building Room 519-S Topeka, Kansas 66612

RE:

House Bill No. 2378

Mr. Chairman and Committee Members:

Shawnee County appreciates the opportunity to address you on House Bill No. 2378. Shawnee County Public Works Department and Governing Commission conditionally supports this Bill. We are in favor of highway legislation that will provide new funding for highway construction. The funding should be provided by user taxes.

To continue to support this Bill, three provisions of the bill must be retained in the final draft. They are as follows:

- 1) A <u>MIMIMUM</u> of \$0.01 of the proposed gas tax increase must be returned to local government. Ideally, this sum should be increased to \$0.02. We must increase our local funding for maintenance and rebuilding the current road system.
- 2) The I-70, I-470 interchange project as proposed is included in the approved Bill. (See attached Brochure and Report explaining our forgotten incomplete Interstate Interchange)
 - 3) The U.S. Highway 75 Improvement in North Shawnee County.

Our State, Counties and Cities cannot compete for commerce unless their transportation systems are up to modern standards. Without

Attach. 7

a first class road system, our economic welfare will continue to

deteriorate. The longer we wait to user fund our road needs, the

greater the problem will become.

We recommend moving rapidly to fund and construct, or recon-

struct, Kansas' aging road system.

And, certainly we should not forget, that not only are we improv-

ing our transportation system, but we are also stimulating one of

our major industries. These Kansas dollars will be spent in Kan-

sas and will employ large numbers of Kansas Workers.

trail will be long and beneficial to many of our citizens.

"Corny as it may sound", one fact in history cannot be disputed:

The Romans conquered the world only because they constructed the

finest road system known to man." Remember the statement, "All

roads lead to Rome."

Thank you for the privilege to speak in favor of House Bill No.

2378.

T.M. PICKFORD, P.E. DIRECTOR OF PUBLIC WORKS

TMP/dlm

Encl

Engineering Study 1-70 & 1-470 Connection for Topeka/Shawnee County, Kansas





COOK, FLATT AND STROBEL ENGINEERS, P.A.



JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers

ENGINEERING STUDY I-70 AND I-470 CONNECTION TOPEKA/SHAWNEE COUNTY, KANSAS

Prepared for City of Topeka/Shawnee County, Kansas

by
Cook, Flatt & Strobel
Engineers, P.A.
and
Johnson, Brickell, Mulcahy
and Associates, Inc.
Consulting Engineers



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John E. Virr, P.E. Vice President

Richard L. Heisler, P.E. Vice President

Gary N. Shofner, P.E. Vice President

Norman T. Cook, P.E. Consultant

Ms. Edie Snethen Director of Public Works City of Topeka City Hall Topeka, Kansas 66603

and

Mr. Thomas Pickford Director of Public Works Shawnee County Courthouse Topeka, Kansas 66603

Dear Ms. Snethen and Mr. Pickford:

The engineering study covering improvement of the I-70 and I-470 connection has been an extremely interesting project for our firm.

The report provides traffic projections and design concepts for presentation to the Kansas Department of Transportation and Federal Highway Administration for project consideration. We look forward to assisting the City and County in presenting this project to obtain priority consideration.

The splendid cooperation of your staff members provided our firm and the Johnson, Brickell and Mulcahy group with background information for timely completion of our work assignments.

The opportunity of providing this service to Topeka and Shawnee County is most appreciated.

ery truly yours

ACKNOWLEDGMENTS

As part of the study program, significant participation in the data collection and processing of information was provided by the Topeka - Shawnee County Regional Planning Commission, the City of Topeka Traffic Engineering Department, and the Kansas Department of Transportation. Their input and participation ensured a coordinated effort with the continuing transportation program for the Topeka - Shawnee County Metropolitan Area.

The City of Topeka Traffic Engineering Department collected traffic data for the planning area including: accident data, peak hour turning movement traffic counts, and 24-hour machine traffic counts. The Topeka - Shawnee County Metropolitan Planning Agency provided current and projected land use data and potential layout of the future street network within the primary planning area. The Kansas Department of Transportation provided external planning area trip information through the continuing transportation planning process for the Topeka - Shawnee County Metropolitan Area.

The Consultant was responsible for analyzing these statistics and developing the improvement plans and recommendations included in this report. This could not have been possible without the contribution of time and effort provided by the aforementioned City, County and State Departments and their respective staff members.

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3. 4. 5. 6.	EXISTING 2-WAY 24-HOUR VOLUMES

The results of a preliminary engineering study of the completion of the I-70 and I-470 interchange on the west edge of the City of Topeka in Shawnee County, Kansas have been summarized in this report.

The study program was authorized and financed jointly by the City of Topeka and Shawnee County, Kansas.

PURPOSE OF STUDY

The urbanized growth in the western sector of the Topeka - Shawnee County Metropolitan Area has resulted in substantial traffic volume increases primarily along Wanamaker Road and its' interchanges with I-70 and I-470.

In addition, the Interstate to Interstate connection for northbound I-470 to eastbound I-70 and westbound I-70 to southbound I-470 must currently utilize Wanamaker Road.

The purpose of this study was to determine the benefits and traffic service impact of completing an Interstate connection to serve the Interstate traffic movement on Wanamaker Road. The plan layout of the connection would require additional Interstate ramp facilities for I-70 and I-470 north of N.W. 10th Street and west of Wanamaker Road. In addition, the study report addressed potential modification and geometric improvements for the I-70 and Wanamaker Road; I-470 and Wanamaker Road; and I-470 and 21st Street interchanges and the intersections of Huntoon Street and Wanamaker Road and 10th Street and Wanamaker Road.

STUDY AREA

The primary study area included an area bounded by Fairlawn Road on the east, 37th Street on the south, Urish Road on the west, and the Kansas River on the north. A secondary planning area for traffic assignments included the entire metropolitan area as defined in the Topeka - Shawnee County Transportation Study.

DESIGN CRITERIA/PLAN LAYOUT

The location options available to complete the existing I-70 and I-470 interchange are limited. To minimize costs and right-of-way requirements, the plan layout alternates were designed primarily within the existing interchange area.

All aspects of the proposed direct connections between I-70 and I-470 are governed by the current recognized design standards of the American Association of State Highway and Transportation Officials, the Federal Highway Administration, and the Kansas Department of Transportation.

The basic plan layouts for the direct connections of northbound I-70 to eastbound I-470 and westbound I-70 to southbound I-470 are shown in Figure 7.

TRAFFIC POTENTIAL

The traffic volume estimated to be served by the proposed direct connection on the two ramp roadway is 16,400 vehicles in the Year 2005. If the connection existed now, the 1986 estimated daily vehicle traffic would be approximately 6,700 vehicles per day.

COST ESTIMATES

Two alignment alternates were considered for the completion of the direct connection of I-70 and I-470 interchange. The two cost estimates range from \$5,956,700.00 to \$6,154,000.00. Benefits from the completion of the I-70 and I-470 connection were estimated at \$705,000.00 per year based on the Year 2005 traffic projections.

SUMMARY

The completion of this missing link in vehicle service in the western section of Topeka - Shawnee County Metropolitan Area is considered essential to provide safe and efficient traffic movement from westbound I-70 to southbound I-470 and from northbound I-470 to eastbound I-70.

Summarized in this report are the results of a preliminary engineering study of the proposed completion of the I-70 and I-470 interchange on the west edge of Topeka in Shawnee County, Kansas. The study program was authorized and financed jointly by the City of Topeka and Shawnee County, Kansas.

PURPOSE OF STUDY

The purpose of the study was to provide traffic assignment data and plan layout for an interstate to interstate connection between westbound I-70 to southbound I-470 and northbound I-470 to eastbound I-70 using appropriate State and Federal design criteria. The study program also addresses geometric modifications to: I-70 and Wanamaker Road; I-470 and 21st Street interchanges; and the intersections of Huntoon Street and Wanamaker Road; and Wanamaker Road and 10th Street.

The findings of this report will be used by Shawnee County and City of Topeka to facilitate a major design and construction project for the I-70 and I-470 interchange area to provide a missing link in vehicle service in this section of the Interstate System within Topeka - Shawnee County Metropolitan Area.

STUDY AREA

The design study area included: the portions of interstate routes I-70 and I-470 north of Huntoon Street and west of Wanamaker Road; I-70 and Wanamaker Road interchange; I-470 and Wanamaker Road; I-470 and 21st Street interchanges; and the intersections of Huntoon Street and Wanamaker Road; and Wanamaker Road and 10th Street.

The primary planning area included an area bound by Fairlawn on the east, 37th Street on the south, Urish Road on the west, and the Kansas River on the north. The planning area is shown in Figure 1. A secondary planning area for traffic assignments included the entire metropolitan area as defined in the Topeka - Shawnee County Transportation Study.

STUDY ELEMENTS

The primary study effort was directed towards the analysis and development of plan alternates for the completion of the I-70 and I-470 interchange in the western sector of Topeka - Shawnee County, Kansas.

The analysis involved the coordination of detailed land-use projections for the primary study area with current transportation planning programs maintained by the Topeka - Shawnee County Regional Planning Commission and Kansas Department of Transportation. This coordination of effort insured traffic assignments compatable with the Metropolitan Area transportation program but including a refined land-use forecast and traffic assignment for the primary study area.

The existing and forecasted traffic assignments were used to evaluate the impact of the I-70 and I-470 connection in terms of traffic service, impact, and operational benefits for both the interstate system and local arterial streets. This was important in providing a base condition to measure benefits of the connection in terms of traffic service and operating costs.

The geometric alternates for the I-70 and I-470 connection used current interstate design standards of the Kansas Department of Transportation and U.S. Department of Transportation - Federal Highway Administration. The plan layouts enabled preliminary cost estimates for the interstate connection options and determination of right-of-way requirements. At the individual interchange and intersection study areas, geometric improvements were determined; cost estimates developed; and vehicle service levels determined.

The study program provides a comprehensive analysis of the impact of completing the I-70 and I-470 interchange and a plan layout consistent with State and Federal design standards. In this growth area of the Topeka - Shawnee County Metropolitan Area, the completion of the interstate to interstate system linkage provides a necessary service component for both through and local traffic movements.

SUMMARY

The study program involves the joint efforts of many agencies in the determination of the feasibility and practical need for completing the I-70 and I-470 interchange on the west edge of the City of Topeka and Shawnee County. This need becomes more critical as the projected urban growth is introduced into the transportation analysis and forecasted traffic assignments.

Current and anticipated future travel patterns have been evaluated to determine the facility needs in the vicinity of the existing I-70 and I-470 interchange. As the City of Topeka continues to grow and expand the need for the completion of the I-70 and I-470 interchange to relieve the travel demand pressure on Wanamaker Road becomes more essential and economically beneficial.

EXISTING CONDITIONS

Presently northbound traffic on I-470 wishing to go east on I-70 must exit from I-470 at Wanamaker Road, travel north on Wanamaker Road for about three quarters of a mile through two traffic signals and re-enter the interstate system at I-70. A similar inconvenience is encountered by westbound I-70 traffic wishing to go south on I-470. The proposed interchange connection would eliminate this inconvenience and provide continuity between Interstate and Interstate routes.

TRAFFIC VOLUMES... Twenty-four hour machine traffic counts and peak hour manual turning movement counts were obtained by the City staff during the first two quarters of 1986. These counts have been recorded on Figures 1 and 2. Figure 1 shows average weekday 24-hour volumes in the study area. Current two-way traffic volumes on Wanamaker Road between I-70 and I-470 range from 17,700 north of 10th Street to 22,200 south of Huntoon Street. Cross street traffic volumes in this area are 1,100 and 4,500 on Huntoon Street and 3,000 and 3,300 on 10th Street. South of I-470 two-way traffic volumes on Wanamaker Road range from 8,000 to 9,600 vehicles per weekday.

Manual turning movement counts shown on Figure 2 indicate a distinct directional split along Wanamaker Road. In the morning peak hour, heavy volumes are northbound while during the evening the heavier volumes are southbound along Wanamaker Road. The manual counts shown on Figure 2 were utilized to evaluate service levels in accordance with the 1985 Highway Capacity Manual.



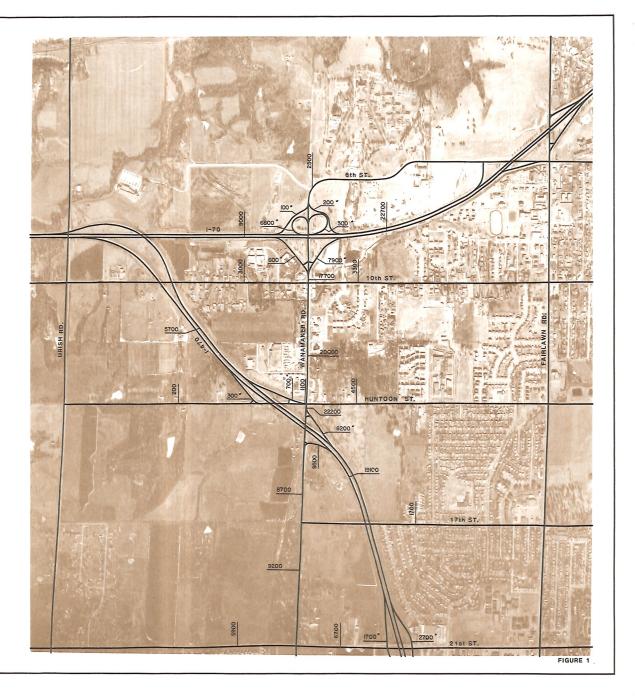
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5400 EXISTING DAILY TRAFFIC VOLUME

* ONE WAY ROAD

EXISTING 2 WAY 24 HOUR
TRAFFIC VOLUMES
I-70 / I-470 CONNECTION STUDY
TOPEKA / SHAWNEE COUNTY, KANSAS
PART 1 OF 2







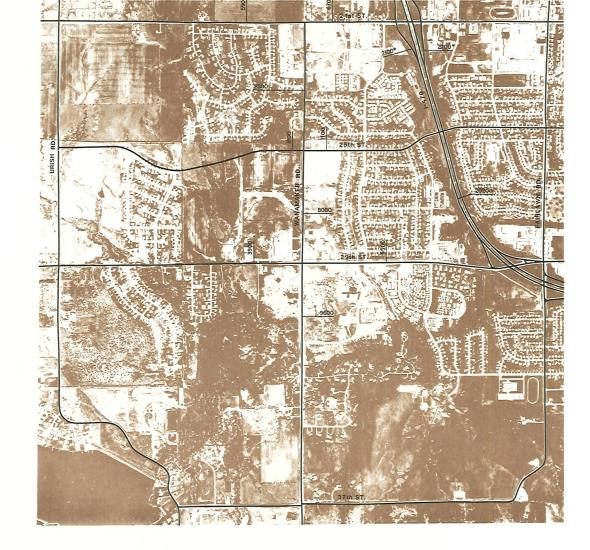
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5400 EXISTING DAILY TRAFFIC VOLUME

* ONE WAY

EXISTING 2 WAY 24 HOUR
TRAFFIC VOLUMES

1-70 / 1-470 CONNECTION STUDY
TOPEKA / SHAWNEE COUNTY, KANSAS
PART 2 OF 2

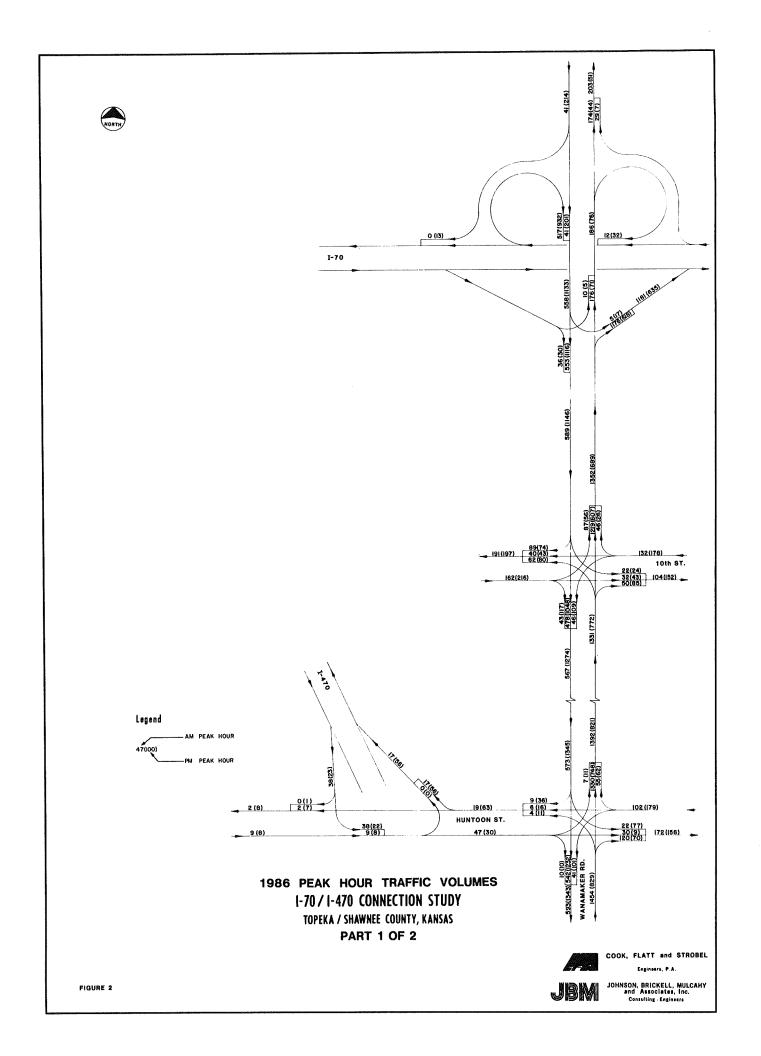


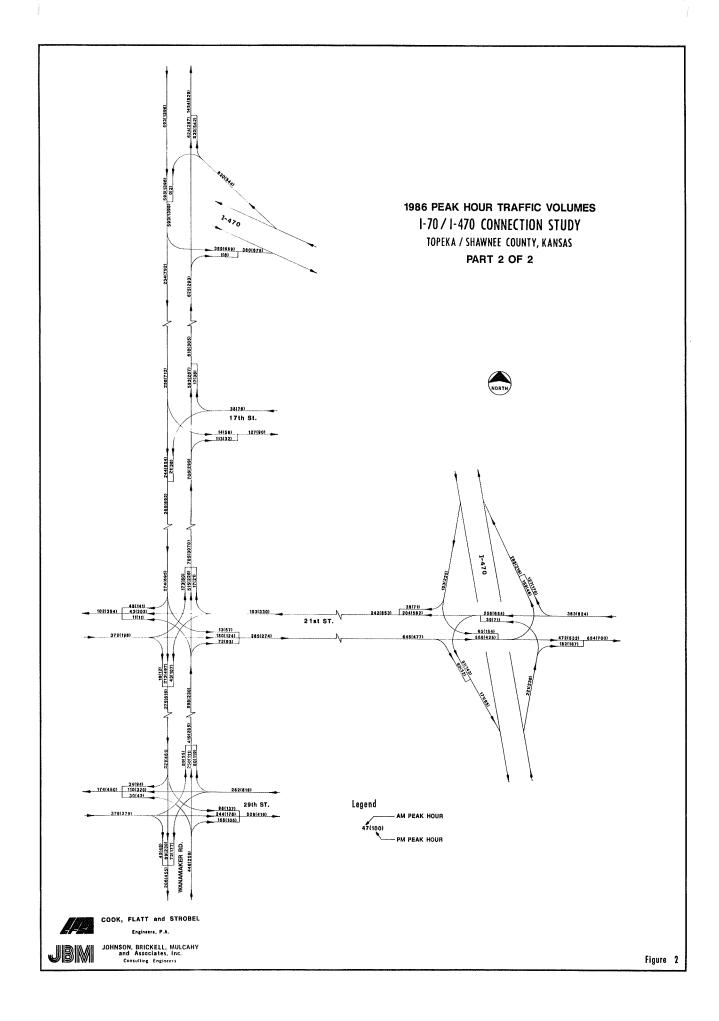


COOK, FLATT and STROBEL

Engineers, P.

JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers





The directional split of vehicular movements along Wanamaker Road does not illustrate the lane utilization as observed in the field. During the morning peak hour period, the northbound curb lane of Wanamaker Road is utilized approximately four times greater than the inside lane. This phenomenon is due to the traffic volume desiring to interchange between I-470 and I-70 and the one lane ramp geometrics at the individual interchange areas. This interstate to interstate movement must also share this lane with locally generated traffic volumes from adjacent residential and business areas. The resulting effect of this lane utilization is long vehicular queues at the signalized intersection and significant delay to specific vehicle movements.

ACCIDENTS... The City of Topeka provided accident statistics on Wanamaker Road, I-70 and I-470 in the study area. From 1984 through 1985, 108 accidents were reported along Wanamaker Road between I-470 and I-70 interchanges. During the same period, 10 accidents were reported on I-70 from Wanamaker Road to Urish Road and 8 accidents were reported on I-470 from Wanamaker Road to Urish Road. A summary of the accidents for 1984 and 1985 is shown in Table 1.

The accident data from Table 1 was incorporated into the benefit analysis to determine impact of removing traffic volumes from Wanamaker Road. Although a total of one hundred eight (108) accidents were recorded on Wanamaker Road in a two (2) year period, the accident number was not larger in terms of accident exposure based upon current traffic volumes, but was substantially higher than the accident rate recorded on the applicable interstate segments.

TABLE 1 STUDY AREA ACCIDENT PATTERN

WANAMAKER ROAD FROM I-70 TO I-470

ACCIDENT TYPE	1984	1985
Property Damage Only	34	41
Injury (non-fatal)	16	17
Fatal	0	0
TOTAL	50	58

I-70 FROM WANAMAKER ROAD TO URISH ROAD

ACCIDENT TYPE	1984	1985
Property Damage Only	3	4
Injury (non-fatal)	1	2
Fatal	0	0
TOTAL	4	6

I-470 FROM WANAMAKER ROAD TO URISH ROAD

ACCIDENT TYPE	1984	1985
Property Damage Only	3	4
Injury (non-fatal)	0	0
Fatal	0	1
TOTAL	3	5

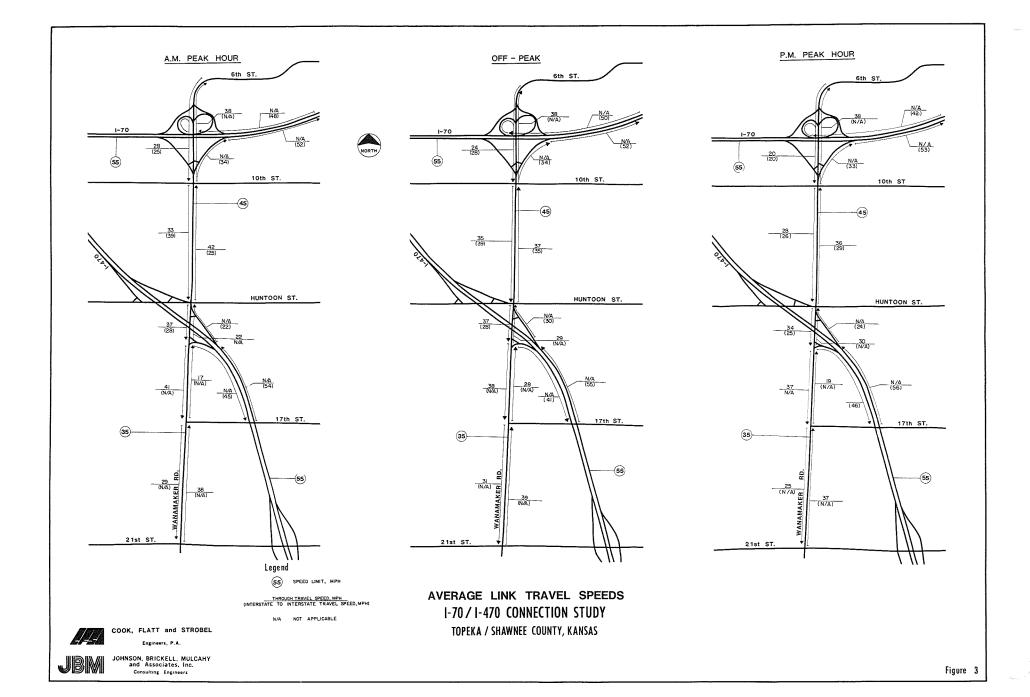
TRAVEL SPEEDS . . . Travel time runs for a typical weekday were made during the morning and evening peak travel periods and during an afternoon off-peak period. Several runs were made in order to obtain a statistically significant sample of travel speeds by direction and route. Along Wanamaker Road between I-70 and I-470, two separate study runs were conducted. One study run measured only the interstate to interstate traffic movement to reflect the lane density and vehicular delay associated with use of Wanamaker Road as an interstate connection link. The second study run was made to measure the normal through travel speeds on Wanamaker Road.

The results of the travel speed studies for the primary study area is illustrated on Figure 3. The specific results of the travel time studies on Wanamaker Road between I-470 and I-70 is summarized in Table 2.

TABLE 2
AVERAGE TRAVEL SPEEDS ON WANAMAKER ROAD
(10th Street to Huntoon Street)

				Interstate
			Through	to Interstate
	Direction	Speed Limit	Travel Speed	Travel Speed
Time Period	of Travel	<u>(MPH)</u>	(MPH)	(MPH)
Off-Peak	Northbound	45	37	35
Off-Peak	Southbound	45	35	39
A.M. Peak Hour	Northbound	45	42	25
A.M. Peak Hour	Southbound	45	33	39
P.M. Peak Hour	Northbound	45	36	29
P.M. Peak Hour	Southbound	45	28	26

During the morning peak hour, heavy traffic movement from interstate to interstate in the curb lane results in an average travel speed of only 25 miles per hour. In the evening this condition is repeated southbound in the inside lane with interstate to interstate average travel speed of 26 miles per hour. This travel speed is considered substantially less than desirable for a major interstate to interstate traffic movement.



VOLUME/CAPACITY ANALYSIS... To measure the impact of traffic volumes on the street system, volume/capacity analyses were completed for the signalized intersections of 10th Street and Wanamaker Road, Huntoon Street and Wanamaker Road, and 21st Street and Wanamaker Road. Volume/capacity analysis was also completed for the unsignalized intersection of 17th Street and Wanamaker Road.

The volume/capacity analysis utilized computer program (SICAP) based on the current 1985 Highway Capacity Manual (Special Report 209) which rates individual intersection service levels. Service levels are based on average vehicle delay encountered by drivers which range from A-F. "A" represents stopped delay of less than five seconds and "F" represents stopped delay of more than sixty seconds.

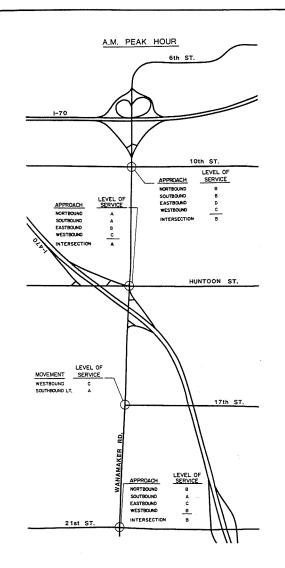
The time periods analysed were the exisiting morning, noon and evening peak hour volumes. Figure 4 shows the level of service for each intersection area.

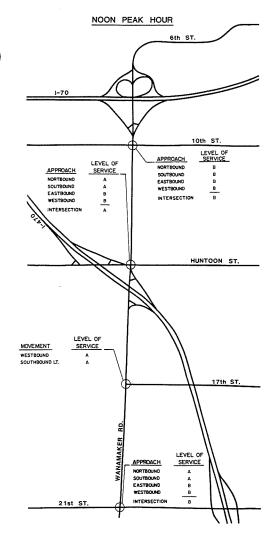
A summary of the intersection service levels is listed in Table 3. Not included in Table 3 is the service level of the unsignalized intersection of 17th Street and Wanamaker Road. This intersection is Level of Service C for the westbound traffic in the morning and evening peak hours. Level of Service A was determined for the westbound traffic in the noon hour, and the southbound left turn operates at Level of Service A for all times of the day.

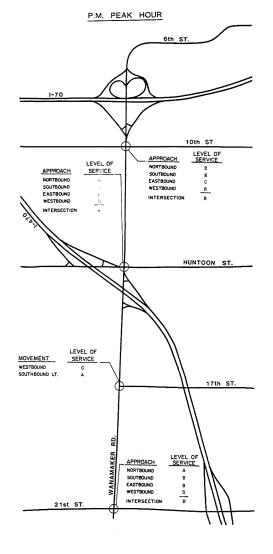
TABLE 3
SIGNALIZED INTERSECTION LEVELS OF SERVICE

	A.M.	Noon	P.M.
Intersection	Peak Hour	Peak Hour	Peak Hour
10th St. and Wanamaker Rd.	В	В	В
Huntoon St. and Wanamaker Rd.	A	Α	A
21st St. and Wanamaker Rd.	В	В	В

The high service levels reflected in Table 3 and illustrated on Figure 4 results from the low traffic volumes presently occurring on the cross-streets to Wanamaker Road. These service levels will be reduced substantially based upon forecasted land use density for the primary study area.







EXISTING INTERSECTION
DELAY LEVEL OF SERVICE
I-70 / I-470 CONNECTION STUDY
TOPEKA / SHAWNEE COUNTY, KANSAS

COOK, FLATT and STROBEL

Engineers, P.A.

JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers LICENSE PLATE SURVEY... During the morning, noon, evening, and off-peak hours a license plate survey was conducted along Wanamaker Road from I-70 to I-470. Video cameras were set up at the two interchanges and vehicles were recorded entering and leaving the Interstate routes. By matching vehicles exiting I-470 northbound then entering I-70 eastbound and exiting I-70 westbound then entering I-470 southbound, the potential volume of traffic which would utilize the proposed connection was determined. Table 4 summarizes the results of this survey.

TABLE 4
ESTIMATED 1986 VEHICLE TRIPS WHICH WOULD UTILIZE
THE PROPOSED I-70/I-470 CONNECTION

TIME	WESTBOUND TO SOUTHBOUND			NORTHBOUND TO EASTBOUND		
PERIOD	*PRIMARY	**LOCAL	TOTAL	*PRIMARY	**LOCAL	TOTAL
AM Peak Hour	270	20	290	560	120	680
Noon Peak Hour	160	10	170	220	0	220
PM Peak Hour	390	110	500	490	20	510
Estimated Average Weekday	2,890	250	3,140	3,370	230	3,600

^{*} PRIMARY - Vehicle trips which would remain on the interstate system through the study area.

The total weekday average trips which would use the northbound to eastbound connection has been estimated at 3,600 vehicles and about 3,140 vehicles would use the westbound to southbound connection. This would produce a two-way reduction in traffic along Wanamaker Road from I-70 to I-470 of about 6,740 vehicles per day.

^{**} LOCAL - Vehicle trips with origin or destination within the study area.

TRAFFIC ASSIGNMENT

The traffic assignment phase of the study program is basic to determining a measure of impact by a potential I-70 and I-470 interstate connection. In this study program, the traffic assignment reflected a micro-analysis of the primary study area coordinated with the transportation trip tables of the Topeka - Shawnee County Transportation Study maintained by the Kansas Department of Transportation.

The micro-analysis of the primary study area included forecasted land use data by planning area; determination of trip generation potential by planning area; and assignment of the trip generation data together with Metropolitan Area data provided by Kansas Department of Transportation.

LAND USE PROJECTIONS... In order to present land use information in an efficient and effective manner, the primary planning area was sub-divided into a series of traffic zones. The traffic zone boundaries established separate areas of land use and street access points. The traffic zone boundaries and access are shown on Figure 5.

From plats and zoning information filed with the City, existing and projected Year 2005 land use within each traffic zone was determined. Several assumptions were made in the land use projections. These assumptions and the land use information by traffic zone is included in the Appendix. A summary of the total land use statistics within the primary study area is shown in Table 5.

TABLE 5
I-70/I-470 CONNECTION STUDY

	EXISTING	PROJECTED	PERCENT
LAND USE	<u> 1986</u>	2005	CHANGE
Single Family Dwelling Units	3,312	5,610	+69%
Multi-Family Dwelling Units	2,386	5,677	+138%
Commercial Square Footage	1,396,639	3,763,348	+169%
Office Square Footage	309,055	1,107,414	+258%
Industrial Square Footage	137,260	104,140	-24%



Legend

EXISTING MAJOR STREETS

----- PROPOSED MAJOR STREETS ()

N TRAFFIC ZONE

----TRAFFIC ZONE BOUNDRY

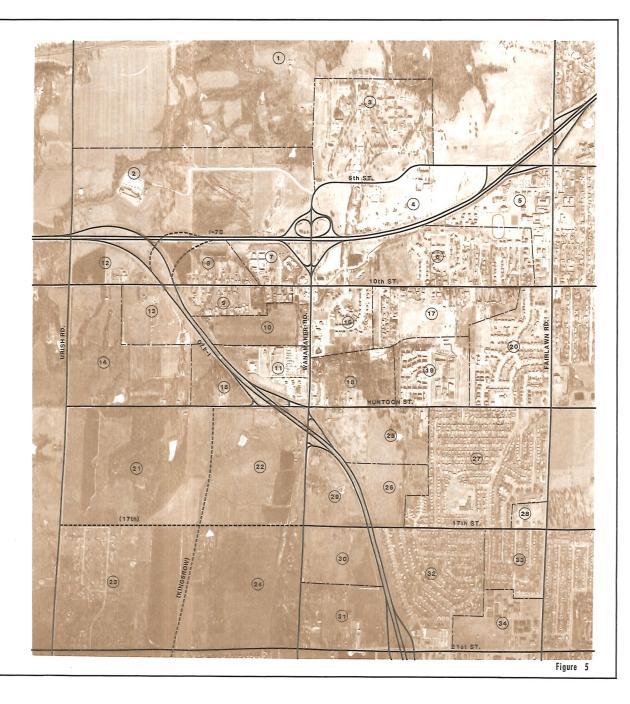
TRAFFIC ZONE MAP I-70 / I-470 CONNECTION STUDY TOPEKA / SHAWNEE COUNTY, KANSAS PART 1 OF 2



COOK, FLATT and STROBEL

Engineers, P.A.

JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers





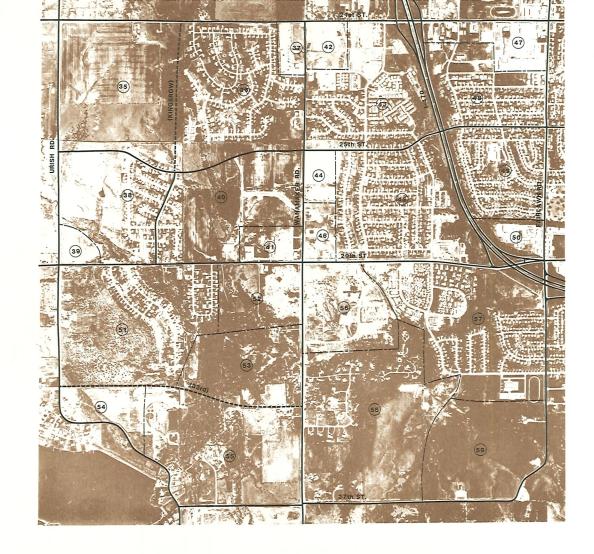
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EXISTING MAJOR STREETS
----- PROPOSED MAJOR STREETS ()

N TRAFFIC ZONE

------- TRAFFIC ZONE BOUNDRY

TRAFFIC ZONE MAP
1-70 / 1-470 CONNECTION STUDY
TOPEKA / SHAWNEE COUNTY, KANSAS
PART 2 OF 2





COOK, FLATT and STROBEL
Engineers, P.A.

JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers Within the primary study area, substantial growth is projected for office, commercial and residential land use. Industrial land use is projected to decline as existing facilities are converted to commercial or office use. The largest increase is in commercial development which is expected to increase almost 2.4 million square feet. A large portion of the commercial increase will be developed with the West Ridge Regional Shopping Mall which is presently under construction. The Mall is located in Zone 24 in the northwest quadrant of 21st Street and Wanamaker Road. The regional shopping mall will tend to promote and encourage new growth with the development of auxiliary commercial and office use in the surrounding area.

PROJECTED TRAFFIC ASSIGNMENTS... Land uses generate different volumes of traffic based on the magnitude and type of development. Trip generation production and attraction rates for various land uses were obtained from the report "Trip Generation", published by the Institute of Transportation Engineers.

The land use data listed in the Appendix by traffic zone was used with the trip generation statistics to develop input into the T-MODEL computer program for processing of the forecasted traffic assignments. The results of the forecasted traffic assignment for the I-70 and I-470 connection is listed in Table 6.

TABLE 6

I-70/I-470 CONNECTION STUDY

AVERAGE DAILY TRAFFIC VOLUMES WANAMAKER ROAD CORRIDOR

		2-Way 24-Hour Traffic Volumes				
Location Wanamaker Road Between:	Existing	Year 2005 with <u>I-70/I-470 Connection</u>	Year 2005 without I-70/I-470 Connection			
21st and 17th	9,200	24,700	25,500			
17th and I-470	8,700	23,500	24,800			
*I-470 and Huntoon	22,200	24,100	30,600			
Huntoon and 10th	20,000	20,100	32,300			
10th and I-70	17,700	13,400	26,300			
I-70/I-470 Connection Ramps	0	16,400	0			

^{*} The Northbound I-470 exit ramp has been relocated in the Year 2005 assignment to connect with Huntoon east of Wanamaker Road.

The traffic assignment with a I-70 and I-470 connection for the northbound to eastbound and westbound to southbound has the potential to serve 16,400 vehicles in the Year 2005.

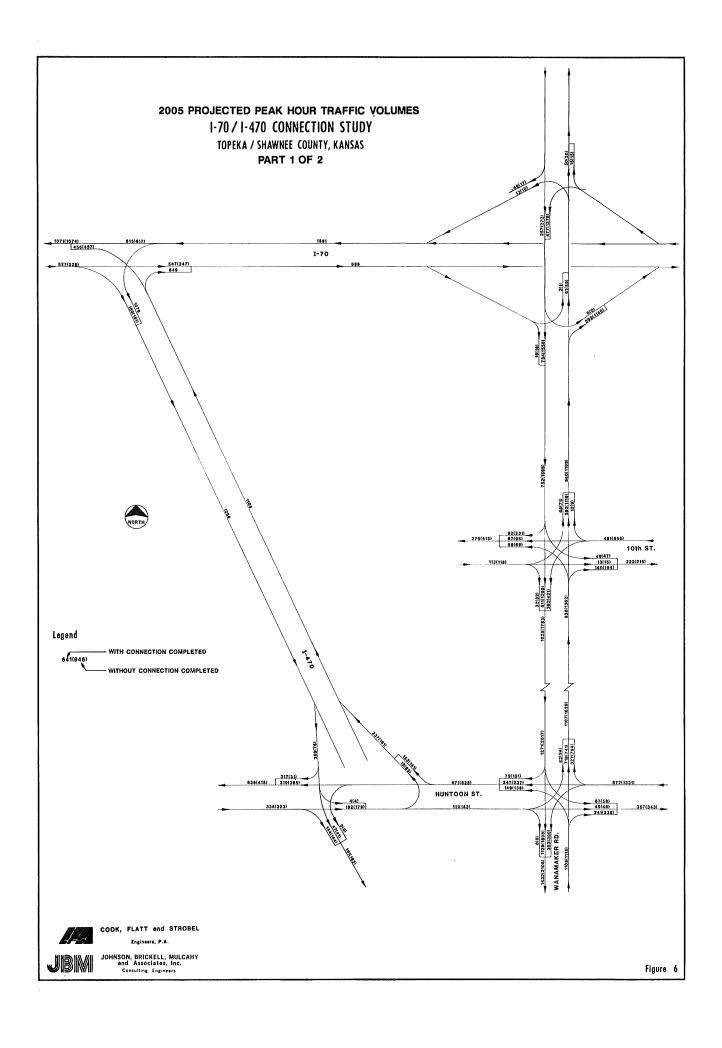
VOLUME/CAPACITY ANALYSIS . . . To measure the impact of the forecasted Year 2005 traffic volumes, volume/capacity analysis were completed at the signalized locations along Wanamaker Road and at the I-470 and 21st Street ramp terminals. The ramp terminals at I-70 and Wanamaker Road were assumed to be non-signalized based upon the forecasted traffic loads.

The analysis utilized the 1985 Highway Capacity Manual procedures and the P.M. peak hour traffic volumes shown on Figure 6. The volume/capacity analysis was completed for two conditions - with the I-70 and I-470 connection and without the I-70 and I-470 connection.

The results of the analysis for the principal intersections in the study corridor is listed in Table 7. The capacity analysis includes the impact of the recommended improvements discussed in Part III of this study report.

The positive impact of having the I-70 and I-470 connection is most apparent at the intersection of Huntoon and Wanamaker and the intersection of relocated I-470 Northbound Exit Ramp and Huntoon.

Without the connection, the estimated service levels would be "F" and "D" respectively even with improved roadway geometrics and lane capacity.



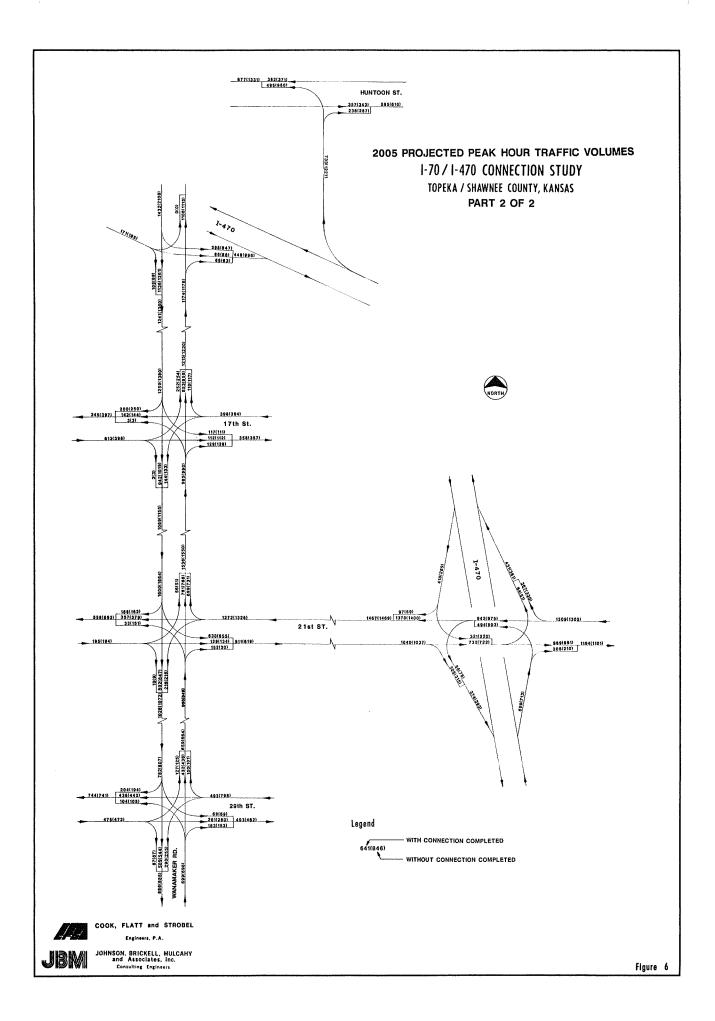


TABLE 7
SIGNALIZED INTERSECTION LEVELS OF SERVICE
P.M. PEAK HOUR

		Future Conditions	Future Conditions
Intersection	Existing	Without Connection	With Connection
10th St. and Wanamaker Rd.	В	C	В
Huntoon St. and Wanamaker Rd.	Α	F	C
Huntoon St. and I-470 N.B. Exit Ramp	(1)	D	В
17th St. and Wanamaker Rd.	(2)	В	В
21st St. and Wanamaker Rd.	В	C	C
S.B. I-470 Ramps and 21st St.	(2)	Α	В
N.B. I-470 Ramps and 21st St.	(2)	В	В

NOTE: The future levels of service assume improved geometrics as recommended in Part III.

- (1) Existing interchange does not include this connection. This improvement part of interchange modifications.
- (2) These intersections presently not signalized. With projected traffic volumes, these locations were assumed to be signalized.

POTENTIAL BENEFITS WITH I-70/I-470 CONNECTION

Several direct and indirect benefits will be gained with the proposed completion of the I-70 and I-470 connection. Accidents will be reduced, travel time and fuel will be saved, and vehicle emissions along Wanamaker Road will be reduced. A measure of these positive benefits is discussed in the following paragraphs.

ACCIDENT SAVINGS... Accident costs were based on current statistics used by the Kansas Department of Transportation in prioritizing high accident locations for the federal-aid hazard elimination safety program. The accident costs are \$1,250 for property damage only accidents, and fatality or personal injury accident cost of \$18,700.

Using the accident costs, the number of accidents and the average number of vehicles on Wanamaker Road from I-70 to I-470 an accident cost per vehicle trip on Wanamaker Road was determined. Interstate volumes and accidents on I-70 and I-470 in the study area were used to determine accident rates per interstate vehicle mile traveled. By

measuring the length of the proposed connection, an accident cost per vehicle trip was determined. The potential accident savings per trip was calculated to be 2.66¢ per vehicle trip. Based on the projected traffic assignment of over 4 million weekday vehicle trips per year using the proposed connection, the road user benefits gained by accident savings is \$113,000 per year based on Year 2005 traffic volumes.

TRAVEL TIME AND FUEL SAVINGS... Several benefits in travel time and fuel savings will be gained with the completion of the I-70 and I-470 connection. The vehicles using the connection will save time and fuel by using the less congested free flow Interstate Connection. Also, with the reduced volumes on Wanamaker Road, congested and delays will be reduced giving an added benefit to local traffic on Wanamaker Road.

Travel time and fuel consumption were based on free flow speeds on the interstate and free flow with signal delays on Wanamaker Road. The signal delay was based on the results of the volume/capacity analysis as calculated by the 1985 Highway Capacity Manual procedures.

The estimated savings to vehicles using the connection was determined to be \$348,000 per year based on Year 2005 weekday trips. The added savings to weekday traffic on Wanamaker Road was estimated to be \$244,000 per year. Additional benefits to cross traffic at 10th Street and Huntoon Street and Fairlawn or other presently used alternate routes will also be noticed.

The total estimated benefits in reduced accident costs and reduced travel time and fuel consumption with the I-70 and I-470 connection was determined to be \$705,000 per year based on Year 2005 traffic projections.

In addition to the estimated benefits to traffic using the proposed completed connection, secondary benefits will be noticed as vehicle usage is reduced on other presently used alternate routes. Vehicle emitted pollutants will also be reduced with the decreased travel times and delays.

SUMMARY

The impact of the I-70 and I-470 Connection is significant in terms of traffic service and accessibility. The potential 1986 weekday traffic volume for the connection is estimated to be 6,700 vehicles per typical weekday. This volume is estimated to be 16,400 vehicles per typical weekday by Year 2005.

The present connection between I-70 and I-470 on Wanamaker Road exposes the Interstate to Interstate traffic movement to a higher accident rate; a substantial reduction in travel speed; and interface with local access traffic and circulation.

The completion of the I-70 and I-470 connection would complete the Interstate to Interstate network in the western sector of the Topeka - Shawnee County Metropolitan Area, provide better service to the non-local traffic and support the economic growth and development presently occurring in this portion of the urban areas.

The location options available to provide for a complete and direct connection between Interstate 70 and Interstate 470 are quite limited. Since half of the four possible direct connection movements are currently provided (northbound I-470 to westbound I-70 and eastbound I-70 to southbound I-470), a new location for a complete direct connection would involve unnecessary duplication of roadways, structures and a considerable amount of urban type right-of-way. The remaining movements necessary for a complete direct connection (westbound I-70 to southbound I-470 and northbound I-470 to eastbound I-70) therefore should be located at or near the present partial connections just east of Urish Road and north of S.W. 10th Street.

DESIGN CRITERIA

All aspects of the proposed direct connection between Interstate 70 and Interstate 470 will be governed by the current recognized design standards of the American Association of State Highway and Transportation Officials, the Federal Highway Administration and the Kansas Department of Transportation. The effects of these standards on this project will be noted where applicable.

ALIGNMENT OPTIONS . . . The alignment options for providing the remaining direct connections between Interstate 70 and Interstate 470 depend almost entirely on the type of service desired and the current recognized design standards for that degree of service. Since the two existing movement connections provide ramps capable of high speed traffic, the new direct connection ramps should be designed with these same desirable characteristics. A 55 MPH design speed requires at least a 6° horizontal curve with a superelevated roadway of 8%. This horizontal control basically establishes the necessary alignment of the roadway ramps within the area.

The basic plan layouts for the direct connections of northbound I-470 to eastbound I-70 and westbound I-70 to southbound I-470 are shown on Figure 7. The ramp roadways shown and designated are described in the following paragraphs.

CONNECTION ALTERNATES (I-470 TO I-70 - ALTERNATES I AND II)

The northbound I-470 to eastbound I-70 ramp as shown on Figure 7 is the simplest possible connection between the two interstate roadways. The horizontal curve of 6°

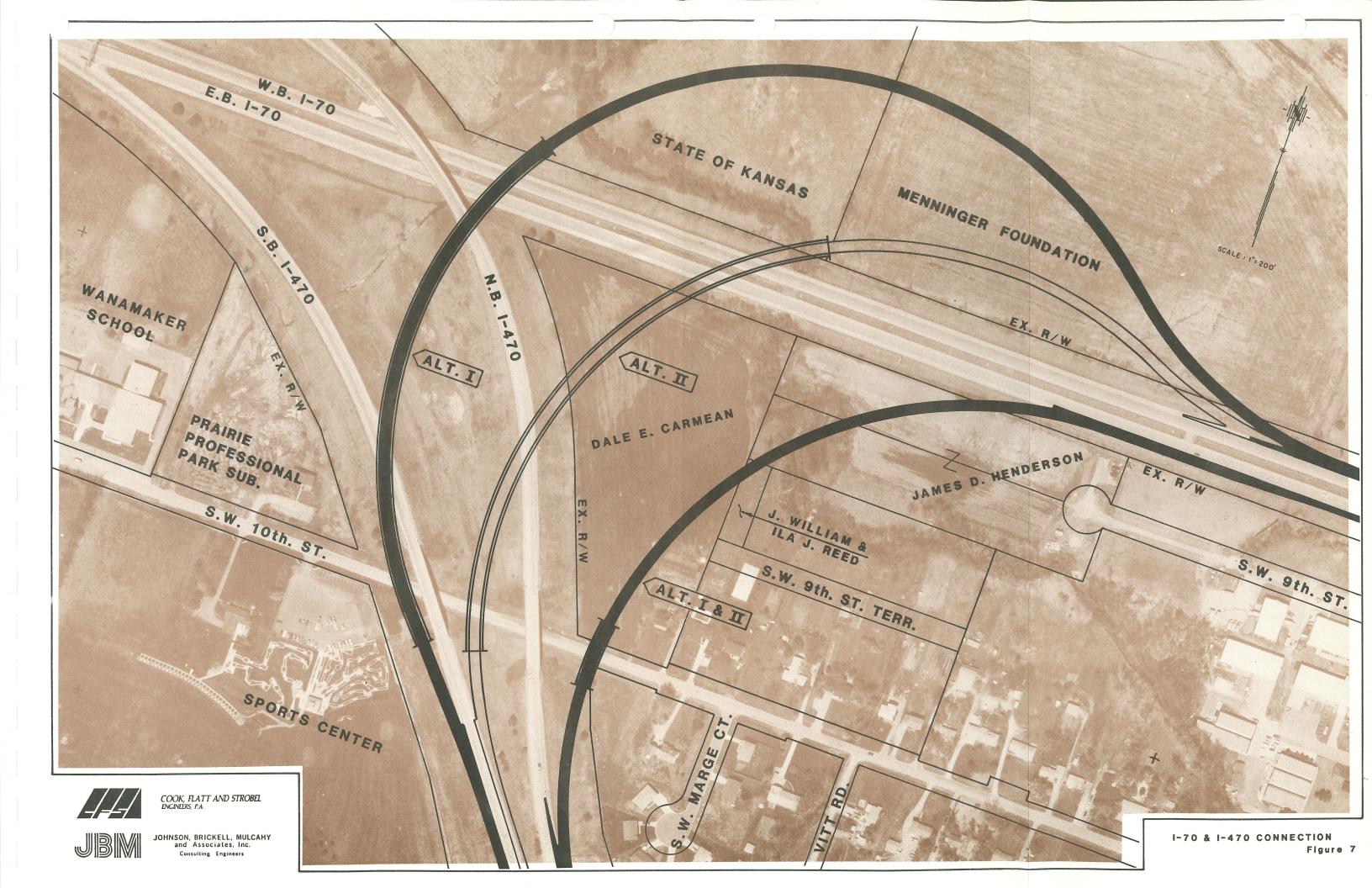
and 8% superelevated roadway will provide for a 55 MPH design speed. This ramp would consist of an 18 foot wide pavement with 6 foot shoulders either side for a total roadway width of 30 feet. A continuous composite horizontally curved steel plate girder ramp bridge with a 30 foot roadway about 180 feet long would carry this traffic over Southwest 10th Street. This ramp would become the companion ramp used with either Alternate I or II in providing complete direct connection between Interstates 70 and 470.

With either alternate the interstate roadways between this direct connection interchange and the Interstate 70 and Wanamaker Road interchange and the Interstate 470 and Huntoon interchange would be increased from 2 to 3 lanes.

ALTERNATE I... Westbound I-70 to Southbound I-470 (Junction on Right). This ramp is shown on a 6° horizontal curve between exit and entrance. Terminating this ramp on the right side of existing southbound I-470 south of 10th Street forces the ramp to extend a considerable distance (600'±) into the field on the north side of Interstate 70. Although this extension results in the disadvantage of a longer ramp (3800') and more right-of-way required, its terminus (on the right side of the existing roadway) is generally more acceptable than on the left side of the existing roadway and also provides a better location for widening the existing roadway from 2 to 3 lanes. The roadway provided by this ramp would consist of an 18 foot wide pavement with 6 foot wide shoulders on either side for a total width of 30 feet. A continuous composite horizontally curved steel plate girder ramp bridge with a 30 foot roadway about 1400'± long would carry this traffic over both lanes of Interstate 70, the northbound I-470 to westbound I-70 ramp. the eastbound I-70 to southbound I-470 ramp and Southwest 10th Street before joining southbound I-470.

ALTERNATE II . . . Westbound I-70 to Southbound I-470 (Junction on left). This ramp is shown on a 6^o horizontal curve between exit and entrance. Terminating this ramp on the left side of existing southbound I-470 south of 10th Street results in a shorter length ramp (2800') compared to Alternate I and less extension (270') into the field on the north. These advantages are offset by the undesirability of a left side termination with southbound I-470 and with the proposed widening of I-470 southbound from 2 to 3 lanes. As with Alternate I, this ramp would consist of an 18 foot pavement with 6 foot shoulders on each side for a total roadway width of 30 feet. A continuous composite horizontally curved steel plate girder ramp bridge with a 30 foot roadway about 1500 feet long would carry this traffic over both lanes of I-70, the northbound I-470 to westbound I-70 ramp and Southwest 10th Street before joining southbound I-470.

A third alternate of course is to do nothing - the no build alternate.



ADDITIONAL IMPROVEMENTS

The main purpose of this report is to provide factual data and cost estimates associated with the completion of the direct connection between Interstate 70 and Interstate 470.

The availability of direct connections between these two interstates will undoubtedly reduce traffic volumes on Wanamaker Road and its intersection with each interstate.

Traffic volumes within the immediate area, however, will be increased considerably in the spring of 1988 when the West Ridge Regional Shopping Mall will open its doors to retail shoppers. Expected strip shopping centers in the vicinity of the mall will also contribute significantly to the increase in traffic within the area.

An additional purpose of this report is to address possible geometric modifications to the following interchanges and intersections.

Interchange improvements at:

I-70 and Wanamaker Road
I-470 - Wanamaker Road - Huntoon Street
I-470 and S.W. 21st Street

Intersection Improvements at:

Wanamaker Road and Huntoon Street Wanamaker Road and 10th Street

INTERSTATE 70 AND WANAMAKER ROAD INTERCHANGE... Traffic projections for the year 2005 indicate a considerable amount of traffic south on Wanamaker Road even with direct access provided between Interstates 70 and 470.

The heavy traffic volumes occur in the east one half of this interchange with northbound to eastbound and westbound to southbound movements.

The existing interchange needs to have significant changes as discussed below. Figure 8 shows the interchange modifications.

Northwest Quadrant: All existing ramps in this quadrant would be removed. The southbound Wanamaker to westbound I-70 volume of traffic is quite small compared to other movements and can be accomplished by an existing loop in the northeast quadrant. To provide adequate entrance to exit distance between this interchange and the new direct connection of westbound I-70 to southbound I-470 ramps, westbound I-70 to southbound Wanamaker Road traffic would also be relocated to the northeast quadrant of the interchange.

Southwest Quadrant: Although the eastbound I-70 to southbound Wanamaker Road traffic volume is small, the existing ramp would be maintained except for its terminus at Wanamaker Road where it would be modified to provide for a connection further north from Southwest 10th Street.

Southeast Quadrant: To improve the heavy traffic movements in this quadrant, the existing northbound Wanamaker Road to eastbound I-70 ramp would be relocated farther north from Southwest 10th Street and be widened to provide two lanes merging into one lane which would be extended to a point about 1/2 mile east of Wanamaker Road where it would merge with normal eastbound I-70 traffic. The much smaller volume of southbound Wanamaker Road to eastbound I-70 traffic would utilize these same ramps.

Northeast Quadrant: This portion of the interchange would be revised to provide for two lanes of traffic carrying westbound I-70 to Wanamaker Road. The two lanes of ramp traffic at Wanamaker Road would provide one lane for left turns and one lane for right turns onto Wanamaker Road. Signalization of this intersection may be necessary based on studies by the Kansas Department of Transportation. The geometrics will be designed to facilitate potential signalization. As mentioned before, southbound Wanamaker Road to westbound I-70 traffic would use an existing loop ramp in this area with modifications at Wanamaker Road.

The existing Wanamaker Road bridge over Interstate 70 is long enough to provide for three lanes of interstate traffic in each direction; however, the vertical clearance is below the current recommended 16'-4" clearance and the roadway is only 28 feet wide. A new bridge carrying Wanamaker Road over Interstate 70 should provide the proper vertical and horizontal clearances for Interstate 70 below with a width of 48 feet to carry 4 lanes of traffic on Wanamaker Road.



INTERSTATE 470 - WANAMAKER ROAD - HUNTOON STREET INTERCHANGE... As shown on Figure 9, the current interchange utilizes both Wanamaker Road and Huntoon Street in providing all four access movements to Interstate 470. Modifications to improve safety and access for all movements at the interchange would include the following geometric changes.

At Interstate 470 and Huntoon Street - This specific portion of the interchange area would not undergo significant change. Both entrance and exit ramps to and from Interstate 470 north of Huntoon would remain the same except that three lanes of pavement would be provided in each direction north on I-470 to the direct connection interchange of Interstates 70 and 470.

It is recommended that a direct connection be provided between the northbound Interstate 470 ramp from Huntoon Street to the Topeka Truck Plaza. This connection would reduce considerably the truck movements on Wanamaker Road trying to gain access to this facility.

Also recommended is a one way ramp from southbound Interstate 470 to Wanamaker Road on the southwest side of Interstate 470. This direct connection would enhance the access availability of the property to the southwest. This connection is not considered an essential element in the Huntoon Street - Wanamaker Road - I-470 Interchange and a free flow right turn lane for eastbound Huntoon Street to southbound on Wanamaker Road will provide adequate service without the aforementioned direct connection. The present roadway west of Wanamaker Road on Huntoon Street would remain basically the same.

At Interstate 470 and Wanamaker Road - The present exit ramp of northbound Interstate 470 to northbound Wanamaker Road terminates at the intersection of Huntoon Street and Wanamaker Road. Traffic volumes on this ramp as part of the indirect connection between the interstates have caused many traffic problems, especially during peak traffic hours. This study proposes eliminating the direct connection of this ramp with Wanamaker Road by providing a new two-lane ramp which will connect to Huntoon Street several hundred feet east of the intersection. Huntoon Street from this ramp west to its intersection with Wanamaker Road would be improved to provide adequate access to all movements. Traffic signals at the ramp terminus at Huntoon, the intersection of Huntoon and Wanamaker Road and the intersection of southbound Wanamaker Road and the ramp to southbound Interstate 470 would be synchronized. A third lane would be provided along northbound Interstate 470 from the existing bridge which carries West 17th Street over I-470 to the new off ramp to Huntoon Street.

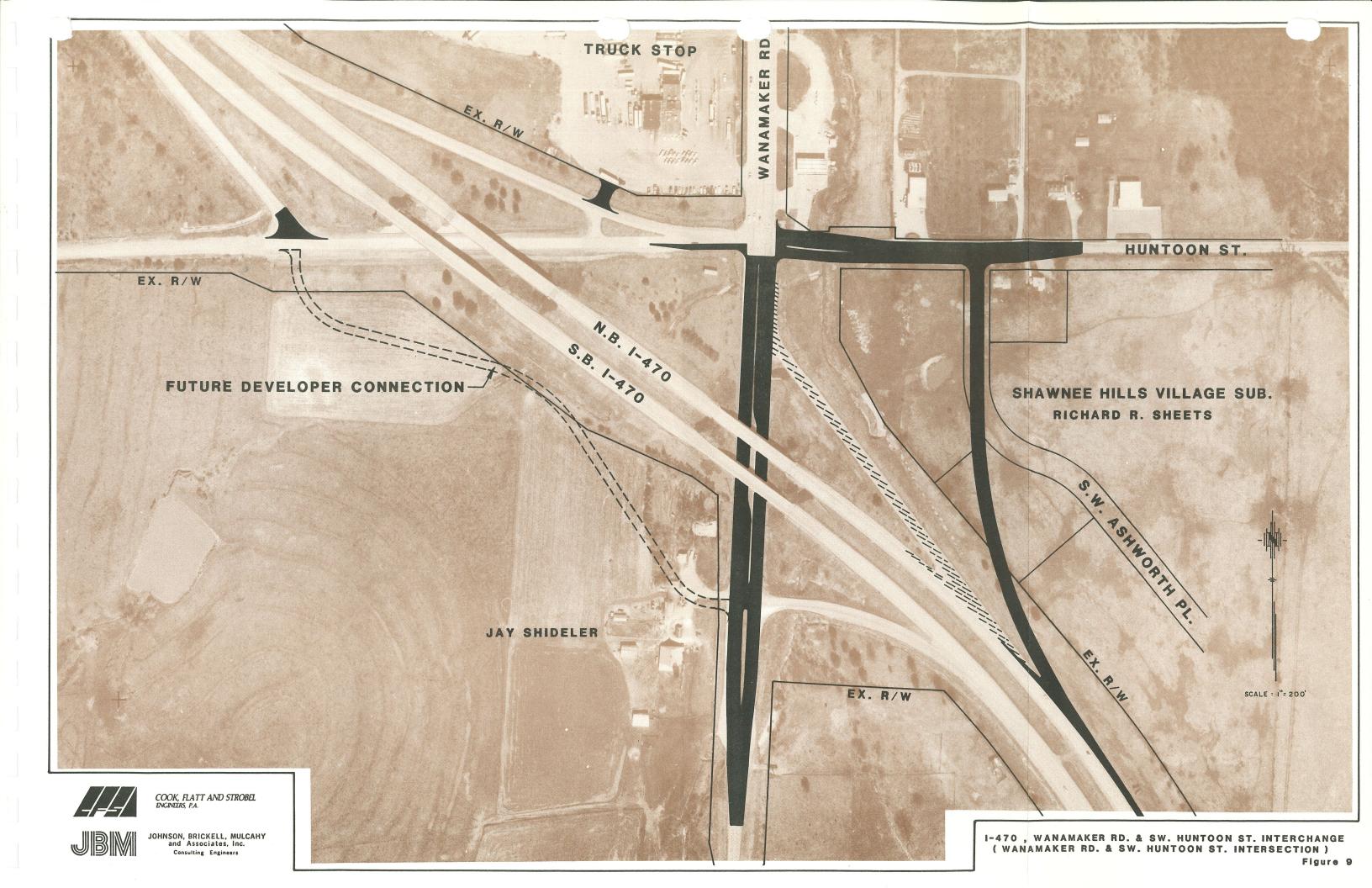
Little change is proposed for the southbound Wanamaker Road to Southbound I-470 traffic other than the improvements of Wanamaker Road from its intersection with Huntoon Street to the entrance ramp to southbound I-470 south of the Interstate 470 bridges over Wanamaker Road. In this stretch of Wanamaker Road the roadway would be improved to provide two lanes in each direction with left turn bays at the Wanamaker Road and Huntoon Street intersection and the Wanamaker Road and southbound I-470 ramp entrance.

The four existing bridges which carry Interstate 470 over Huntoon Street and Wanamaker Road in this area have roadway widths of 30 feet. Since current design criteria would require roadway widths of 40 feet, this study would recommend the future widening of these existing structures or providing new structures with 40 foot roadway widths when the existing structures need replacement.

INTERSTATE 470 AND SOUTHWEST 21ST STREET INTERCHANGE... Although this interchange was mentioned as an area of study, this intersection and Southwest 21st Street to the west beyond Wanamaker Road is being improved by the developers of the West Ridge Mall project. Plans for the improvement of the interchange include widening exit ramps from one lane to two lanes on the southeast and northwest quadrants of the interchange, providing traffic signals to control traffic through the interchange area, providing a multi-lane Southwest 21st Street to the west including a multi-lane intersection at Southwest 21st Street and Wanamaker Road.

The proposed plans for the 21st Street and I-470 interchange would provide the necessary service levels and lane capacity to meet projected traffic volumes as developed in this study program.

WANAMAKER ROAD AND SOUTHWEST HUNTOON STREET INTERSECTION . . . This intersection would need to be improved to provide adequate service between the relocated Interstate 470 ramp exit on Huntoon Street east of the intersection and the revised roadway configuration to the south on Wanamaker Road below the Interstate 470 bridges. Roadways to the north and west from this intersection would remain unchanged. Roadways to the east and south would be designed for two lanes in each direction and left turn bays. As mentioned before, new traffic signals at this intersection would be synchronized with the new off ramp terminus to the east on Huntoon and with the entrance to southbound I-470 to the south on Wanamaker Road.



WANAMAKER ROAD AND SOUTHWEST 10TH STREET INTERSECTION . . . The majority of the suggested changes at this intersection would take place in the northeast quadrant. The current northbound Wanamaker Road to eastbound I-70 ramp would be removed and relocated farther to the north and the westbound West 10th Street to northbound Wanamaker Road right turn ramp and island would be removed. West 10th Street would remain the same each side of Wanamaker Road and Wanamaker Road either side of 10th Street would provide for two lanes in each direction with left turn bays.

COST SUMMARY

Summarized in Tables 8 and 9 are the cost estimates for Alternates I and II. Tables 10 and 11 summarize the cost estimates for the proposed interchange and intersection modifications.

TABLE 8 INTERSTATE 70/470 DIRECT CONNECTION COSTS ALTERNATE I

1.	Construction of ramps for westbound to southbound and northbound to eastbound direct connection and pavement widening east and south	\$1,465,900.00
2.	Construction of 2 new ramp bridges and 1 box bridge	\$3,094,100.00
3.	Right-of-way acquisition	\$ 500,000.00
4.	Administrative	\$ 410,000.00
5.	Contingencies	\$ 684,000.00
	TOTAL	\$6,154,000.00

1.	Construction of ramps for westbound to southbound and northbound to westbound direct connection and pavement widening to east and south	\$1,310,000.00
2.	Construction of 2 new ramp bridges and one box bridge	\$3,274,000.00
3.	Right-of-way acquisition	\$ 281,600.00
4.	Administrative, legal & engineering	\$ 412,500.00
5.	Contingencies	\$ 687,600.00
	TOTAL	\$5,965,700.00

TABLE 10 INTERCHANGE IMPROVEMENT COSTS INTERSTATE 70 AND WANAMAKER ROAD

(Including Improvements to Wanamaker Road and Southwest 10th Street Intersection)

1.	Construction of ramps for all four quadrants with acceleration and deceleration lanes	\$1	,136,360.00
2.	Widen Wanamaker	\$	303,000.00
3.	Construct new bridge on Wanamaker over I-70	\$	580,800.00
4.	Right-of-way acquisition	\$	50,000.00
5.	Contingencies	\$	202,000.00
	TOTAL	\$2	,272,160.00

TABLE 11

INTERCHANGE IMPROVEMENT COSTS

INTERSTATE 470 - WANAMAKER ROAD - HUNTOON STREET

(Including Improvements to Wanamaker Road and Huntoon Street Intersections)

1.	Construction of ramps	\$	390,000.00
2.	Widen 4 existing bridges	\$	948,600.00
3.	Right-of-way acquisition	\$	480,000.00
4.	Traffic signals	\$	225,000.00
5.	Contingencies	\$	156,400.00
	TOTAL	\$2	,200,000.00

RETROSPECT

The present use of Wanamaker Road as the connecting link between Interstates 70 and 470 was not planned but rather evolved due to indecision on route locations during the mid 1950's.

A tentative east-west route for I-70 was developed to replace the Brickyard bridge over the Kansas River that was destroyed in the 1951 flood. This route for I-70 was proposed to cross the Kansas River in the northwest part of Topeka and continue east on the north side of the River.

The 1956 opening of the Kansas Turnpike (which paralleled the proposed Interstate 70 route from Topeka east to Kansas City) resulted in the creation of Interstate 470 to provide an immediate connection between then US 40 (and designated Interstate 70) to the west and the new turnpike. Construction of I-470 provided planning time for location and design considerations for I-70 east through the central part of Topeka. The connection at I-470 and I-70 (US 40) provided for only eastbound I-70 to southeastbound I-470 and northwestbound I-470 to westbound I-70 traffic. The remaining two traffic movements were omitted because of low traffic projections and the final planning of I-70 to the east and a US 75 connection to the north.

With the completion of Interstate 70 on the south side of the Kansas River to the east interchange of the Kansas Turnpike; the growth of the City of Topeka to the south and west; and the designation of the US 75 bypass on Wanamaker Road; traffic volumes increased to a point where the current level of service provided between the two interstates on Wanamaker Road during peak hours is very poor. The traveling public on either interstate is confused to find themselves negotiating a three quarter mile stretch of urban street and several traffic signals to change interstate highways.

Increased traffic from the proposed opening of the West Ridge Regional Shopping Mall in the spring of 1988, along with adjacent strip shopping centers, will drop the degree of service within the Wanamaker Road corridor to undesirable levels.

Kansas Department of Transportation officials have advised that a reconstruction contract on Interstate 470 is scheduled for 1989. It would be desirable and economical to incorporate the improvements covered in this report in planning the I-470 reconstruction project.

If the recommended direct connection for I-70 and I-470 interchange is constructed along with other interchange and intersection improvements suggested in this report, traffic volumes on Wanamaker Road would remain at acceptable levels of service through the Year 2005. The proposed direct connection will play a major role in facilitating the need to move non-local traffic from interstate to interstate without utilizing Wanamaker Road.

The City of Topeka, Shawnee County and State of Kansas should make a concerted effort to reserve the required land for construction of the proposed improvements.

-APPENDIX-

Assumptions for Land Use Projections
Land Use Projections
T-Model Link Node Map

ASSUMPTIONS FOR THE ESTIMATES AND PROJECTIONS FOR WANAMAKER CORRIDOR

General Assumptions:

- 1. The area bounded by Fairlawn Road, Urish Road, the Kansas River, and S.W. 37th Street is a high-growth area and will develop to its full potential by 2025.
- 2. Existing subdivision plats and site plans will remain as they are with all construction completed by 2005.
- 3. Little redevelopment will take place.
- 4. Some vacant land north of 1-70 will see little or no development due to its relative isolation.
- 5. The extension of urban services, water, sewer, major street improvements, fire, police, parks, etc., will be provided to accommodate development.
- The development of the regional shopping center will promote and accelerate the rate of development of this area over the planning period.
- 7. That the general accessibility to the area remains at an acceptable level and additional improvements to the network are continued throughout the planning period.
- That there are no jurisdictional changes within the present local governmental structure and the City of Topeka may continue to expand it's corporate boundaries accordingly.

Housing Assumption:

Seventy-five (75%) per cent of the vacant undeveloped land in the study area will develop as residential. The split between single family and multiple family is anticipated to be 75% - 25%. Single family is anticipated to develop at an average density of four (4) units per acre, while the multi family density is anticipated to develop at an average density of ten (10) units per acre. The remaining twenty-five (25%) per cent of the area is anticipated to develop as non-residential.

Office, Commercial, and Industrial Assumptions:

- 1. Industrial use is expected to remain constant or be converted to office or commercial over the planning period.
- 2. Office and commercial development will occur where appropriate zoning exists.
- Additional office and commercial development will occur in areas where appropriate zoning does not currently exist. This development will tend to occur at major intersections and near the economic center of the regional shopping center.

1986

			1986		
	Single Family	Multi-family	Comm.	Office	Indus.
Traffic	Dwelling	Dwelling	Square	Square	Square
Zone	Units	Units	Pootage	Footage	Footage
Zone		0	1 Ootage	1 OOTAL C	100146
1	0	-	U	0	0
2	0	0	U	0	0
3	0	0	0	0	0
4	0	0	0	0	0
	0	48	210,205	55,080	0
5	-			_	Ö
6	64	105	20,250	0	_
7	0	0	7,875	0	53,850
8	14	0	0	0	0
9	29	0	0	0	0
	5	Õ	2,100	9,700	0
10		-			1
11	0	0	125,925	11,500	0
12	0	0	0	1,500	0
13	0	0	3,600	. 0	0
14	1	0	, O	0	0
	•	Õ	Ö	5,250	0
15	1		•		
16	33	30	8,275	11,000	0
17	36	0	0	0	0
18	5	0	9,040	5,475	0
19	0	200	, O	, O	0
			0	ő	ŏ
20	154	177	•	-	
21	1	0	0	0	0
22	2	0	0	0	0
23	64	0	0	0	0
24	1	Ō	Ō	0	0
	-	-	_	0	
25	2	0	0	U	0
26	1	0	0	0	0
27	431	170	9,505	3,000	0
28	0	0	69,535	. 0	0
29	1	Ō	00,000	Õ	0
	1		0		T.
30	2	0	0	0	0
31	27	0	0	3,575	30,700
3 2	288	20	49,100	6,950	0
33	113	21	3,600	10,640	0
34	0	119	31,900	2,000	0
3 5	18	0	0	0	0
36	261	0	0	0	0
37	0	12	0	12,800	0
38	194	0	0	0	0
39	0	0	0	0	0
40	64	0	0	0	0
41	0	0	67,937	21,300	0
42	0	0	0	0	2,400
43	135	59 9	117,345	0	47,370
44	0	0	0	0	0
	325	63	49,350	ŏ	ő
45				-	_
46	3	2	24,332	20,510	0
47	0	0	364,505	18,435	0
48	139	180	5,850	0	2,940
49	252	0	0	0	0
	0		107,210	ŏ	Ő
50		0			
51	168	0	0	0	0
52	0	0	0	9,150	0
53	3	0	0	0	0
54	0	Ō	9,235	12,680	0
55	67	0	0	0	0
56	16	88	9,965	33,100	0
57	314	546	90,000	55,410	0
58	76	6	. 0	. 0	0
59	2	0	0	0	0
				-	-
Totals	3,312	2,386	1,396,939	309,055	137,260

		Projec	eted Year 2000		
	Single Family	Multi-Family	Comm.	Office	Indus.
Traffic	Dwelling	Dwelling	Square	Square	Square
Zone	Units	Units	Footage	Footage	Footage
1	0	0	U O	0	U
2 3	0 0	0 0	0	0	0
3 A	0	0	0	0	0
5	0	48	220,205	65,080	0
6	72	349	14,300	59,165	ő
7	0	0	12,875	6,000	53,850
8	19	0	0	0	0
9	39	0	0	0	0
10	54	60	2,100	9,700	0
11	0	0	140,925	23,000	0
12	0	55	0	13,500	0
13	0	0	3,600	0	0
14 15	133 0	150 272	0	145 000	0
16	46	102	0 13,275	145,980 11,000	0 0
17	68	36	13,213	11,000	0
18	43	42	9,040	5,475	0
19	Ŏ	200	0,040	0,410	0
20	163	177	Ö	5,000	ŏ
21	213	235	50,000	0	0
2 2	135	147	2,000	0	0
23	158	104	0	0	0
24	1	0	867,898	0	0
25	141	114	0	84,000	0
26 27	46 440	209 170	0 505	2 000	0
28	0	0	9,505 69,535	3,000 0	0
29	Ŏ	44	100,000	5,000	0 0
30	2	Ö	150,000	5,000	0
31	15	60	150,000	6,575	ő
32	288	20	49,100	6,950	0
33	113	21	3,600	10,640	0
34	0	119	31,900	2,000	0
3 5	263	226	0	26,400	0
36	349	0	0	0	0
37 38	0 310	34 0	10,000	12,800	0
3 9	0	62	0 18,700	0 0	0 0
40	277	389	89,715	89,715	0
41	0	0	80,775	80,775	0
42	0	0	100,000	20,000	Ŏ
43	135	680	127,345	9,000	47,350
44	0	0	0	0	. 0
45	327	147	54,350	0	0
46	3	10	37,732	30,410	0
47	0	0	674,505	18,435	0
48 49	139 252	376	5,850	15,000	2,940
50	0	0 0	0 107,210	0 0	0
51	432	0	12,000	0	0
52	0	178	196,000	74,250	0
53	28	0	0	0	0
54	0	0	9,235	37,680	0
5 5	121	0	0	0	0
56	70	88	86,018	60,000	0
57	314	604	68,400	95,884	0
58 50	399	0	0	0	0
59 Totals	2 5,610	404 5,677	96,000	70,000	104 140
iotais	.,010	3,017	3,763,348	1,107,414	104,140



Legend

LINK CONNECTION

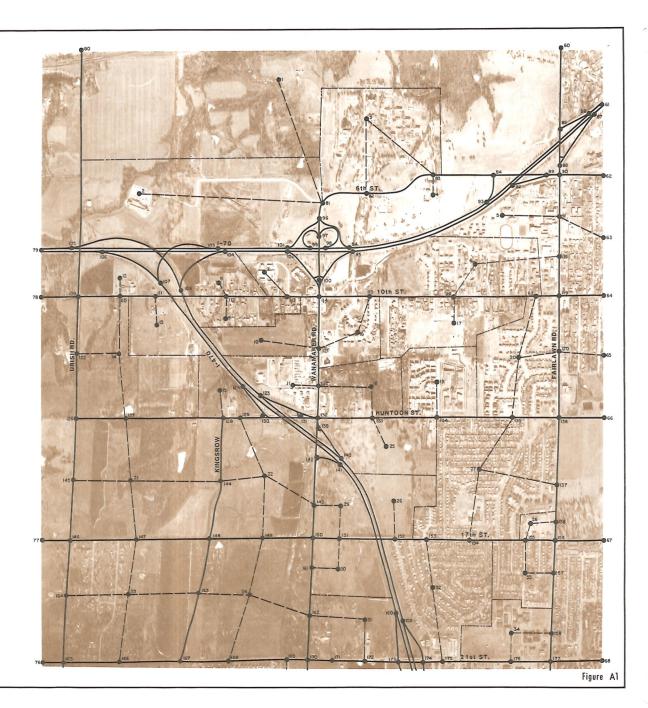
ZONE CONNECTOR ---- TRAFFIC ZONE BOUNDRY

LINK - NODE MAP I-70 / I-470 CONNECTION STUDY TOPEKA / SHAWNEE COUNTY, KANSAS PART 1 OF 2



COOK, FLATT and STROBEL

JOHNSON, BRICKELL, MULCAHY and Associates, Inc. Consulting Engineers





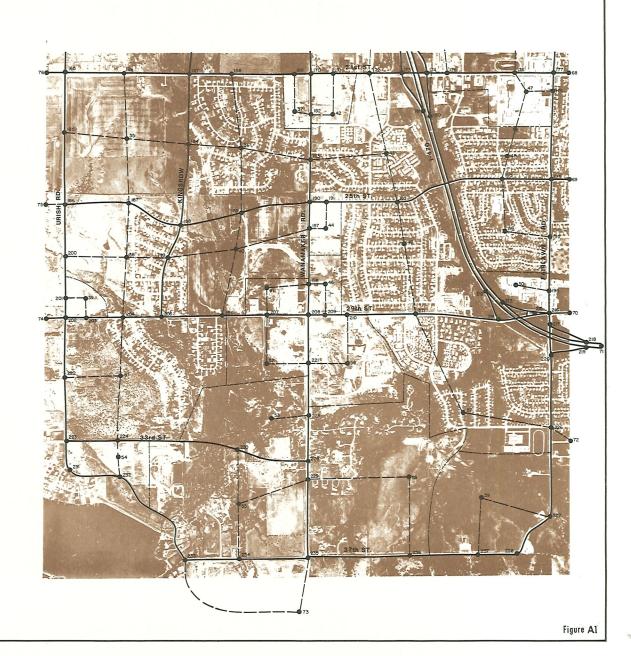
Legend

<u>•</u>

NODE POINT
LINK CONNECTION
ZONE CONNECTOR
TRAFFIC ZONE BOUNDRY

LINK - NODE MAP I-70 / I-470 CONNECTION STUDY TOPEKA / SHAWNEE COUNTY, KANSAS PART 2 OF 2







PUBLIC POLICY STATEMENT

HOUSE COMMITTEE ON TRANSPORTATION

RE: H.B. 2378 - A Bill Authorizing the Construction, Improvement and Maintenance of Highways; Increasing Certain Vehicle Fuel Taxes; and Pertaining to Apportionment Between Local Units and State

> February 24, 1987 Topeka, Kansas

Presented by:
Paul E. Fleener, Director
Public Affairs Division
Kansas Farm Bureau

Mr. Chairman and Members of the Committee:

My name is Paul E. Fleener. I am the Director of Public Affairs for Kansas Farm Bureau. We come before your Committee today -- just as we appeared before the Senate Committee last week -- to express our **general support** for the establishment and construction of "a system of modern super-two highways and expressways, using existing highway right-of-way where possible."

We offered our **general**, though qualified support for S.B. 137. Today we offer our **general** and **qualified support** for H.B. 2378. We urge this Committee and the full Legislature to exercise care that we **maintain our existing highways** while planning for super-two highways in certain corridors of Kansas.

Farmers and ranchers in this state are very supportive of economic development. H.B. 2378 seeks to enhance the opportunity for economic development by providing highway access to some previously inaccessible or underserved areas of the state, in order to facilitate the movement of goods produced or manufactured in this state.

Attach. 8

We want to see a good highway system throughout Kansas. H.B. 2378 helps provide for part of that system. H.B. 2378 seeks to enhance highway development and road and bridge construction. H.B. 2378 would extend to many areas of the state not now served by freeways or expressways a system of highways which will assist in the movement of people, goods and commodities.

Attached to our statement you will find the policy positions adopted by voting delegates at our most recent Annual Meeting. Those statements relate to many of the items expressed in H.B. 2378.

Please understand: Farmers and ranchers in Kansas did not initiate the plea for, and are not clamoring for a five-cent motor fuel tax increase. But understand also that farmers and ranchers do want to be supportive ... are willing to pay a fair share of motor fuel taxes and registration fees for a system of highways that will help our rural communities, will help us move our commodities, will provide for access to locations to be developed by agri-business and industry in Kansas.

Mr. Chairman and Members of the Committee, the Farm Bureau policy position on Highway Development stresses the importance of using existing right-of-way where possible. Fortunately, H.B. 2378 recognizes that need as well. We cannot pave this state over and continue to be the great agricultural state we have been and will continue to be. We do support the concept "of highway users paying, through gallonage taxes and vehicle registration fees, for the construction and maintenance of highways, roads and bridges."

We submit, Mr. Chairman and Members of the Committee, some portions of H.B. 2378 ... which amend existing statutes relating to the use of highway funds ... should have your closest examination, your careful attention, and hopefully, an appropriate Share more of the proceeds from motor fuel amendment or two. taxes \dots including the proposed five-cent increase \dots in a more equitable distribution formula, with local units of government. Specifically, Mr. Chairman and Members of the Committee, we suggest that K.S.A. 79-3425c, the statute which addresses the special city and county highway fund, should be amended to correct some glaring inequities in fund distributions to local units of government. Presently the law provides that after an initial \$5,000 payment to each county, of the balance remaining which is apportioned to local units of government 50 percent is paid out on the basis of the number of motor vehicles registered in a county, and 50 percent is paid out on the basis of average daily vehicle miles traveled in a county. We would support your efforts to amend that formula to give major weight to miles of county federal-aid secondary, rural road and highway travel, plus consideration of miles of road that must be maintained by county highway departments.

In conclusion, in addition to reiterating our **general** support for highway development as proposed by H.B. 2378, and with the urging that you give consideration to revising the allocation percentages, we want you to know of our favorable position on this legislation. One additional recommendation: In both the House

bill and the Senate bill, reliance is placed on an "Independent management team." That Independent management team is defined on page 3 beginning in line 108. Respectfully, Mr. Chairman, we would suggest the addition of two persons to that team, namely representation from the Minority Party in both House and Senate. Presently the Secretary of Transportation, the Chairman of the two Committees on Transportation, and two people appointed by the Governor would make up the management team. You are proposing legislation that will affect all Kansans. It's a laudable piece of legislation. It should have the support of all Kansans. order to reflect that support there should be representation of Majority and Minority, east and west, north and south. Give us a chance to move ahead together as we seek to provide economic development opportunity through an efficient highway system.

Thank you very much for the opportunity to express our views. We would be pleased to respond to any questions.

KANSAS FARM BUREAU

Printed below are policy positions on County Bridge Construction, County Highway Fund Distribution, and Highway Development and Funding which were adopted by the voting delegates from 105 County Farm Bureaus, representing farmers and ranchers in the 105 counties of Kansas, at the November 30, December 1-2, 1986 Annual Meeting of Kansas Farm Bureau.

County Bridge Construction

We believe there should be county, state and federal government cost-sharing and financing so that bridge construction and bridge replacement may proceed without further delay. Specifications and standards for bridges should be determined cooperatively by state and local engineers to meet local needs. Where practicable, we urge the use of prestressed, precast materials, as well as dirt fills in connection with conservation dams, for bridge construction, as opposed to costly "over-designed," over-built bridges. We further believe that in some cases, low-water bridges would be adequate.

County Highway Fund Distribution

The present Kansas law which distributes highway user revenues to counties uses a formula which gives excessive weight to motor vehicle registrations. This results in glaring inequities of fund distributions. We support an amended formula with major weight given to miles of county federal-aid secondary, rural road and highway travel, plus consideration of miles of roads that must be maintained by county highway departments.

Highway Development and Funding

We believe upgrading and improving existing roads and highways is preferable to building additional freeways, limited access highways, toll roads or turnpikes.

We urge that efficiencies be achieved in the operation of the Kansas Department of Transportation and that assurance be provided to protect against misuse of funds through bid-rigging or any other fraud.

We support the concept of highway users paying, through gallonage taxes and vehicle registration fees, for the construction and maintenance of highways, roads and bridges. We believe the federal government should provide for a tax credit equal to the federal motor fuel tax for ethanol used in motor fuel. We also believe there should continue to be a Kansas motor fuel tax exemption for ethanol until a federal tax credit program is in effect.

Toll road and turnpike construction in Kansas should not be contemplated unless a feasibility study on any such project shows the toll road or turnpike will pay its own way.

We are opposed to the use of any highway revenue or State General Fund revenue to guarantee toll road or turnpike bonds.

Highway design and planning should avoid, where feasible, diagonal routing. Diagonal cuts are most disruptive to agricultural operations.