Approved March 15, 1989
Date

MINUTES OF THE House COMMITTEE ON Transportation.

The meeting was called to order by Rex Crowell
Chairperson at

1:30 ~~a.m.~~/p.m. on January 17, 1989 in room 519-S of the Capitol.

All members were present except:

Representatives Dean and Gross

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

Conferees appearing before the committee:
Mr. Mike Lackey, Kansas Deparment of Transportation
Ms. Deb Miller, Kansas Department of Transportation

The meeting was called to order by Chairman Crowell, and it was clarified that the reason the hearings on HB-2014 were delayed is that many persons want to hear what comes from the efforts by the Secretary of Administration, Secretary of Transportation, and the President of the Kansas Development Finance Authority, to find a way to reduce reliance on the sales tax.

Mr. Mike Lackey, Kansas Department of Transportation gave a slide presentation concerning "Substantial Maintenance". (See Attachment 1)

He said substantial maintenance is also known as contract maintenance which includes such work as: 1) 1R program which is a thin overlay; 2) minor interstate resurfacing; 3) Klink 1R which is a local aid program; 4) minor bridge repair; 5) bridge painting; 6) culvert repair; 7) emergency repair; and 8) small safety projects.

Mr. Lackey said that levels of funding for substantial maintenance are defined as: 1) current level which is the existing expenditure level in current year plus reasonable inflation; 2) adequate level which is funding at a rate such that current surface condition is maintained and slightly improved; and appropriate level, which is also known an enhanced, meaning more funds for surfacing and bridge repair would be provided such that there would be a noticeable improvement in surface and bridge conditions.

Ms. Deb Miller, Kansas Department of Transportation, discussed the priority formulas used in determining the priorities of roads and bridges on the State Highway System. (See Attachments 2, 3 and 4)

Committee discussion followed Ms. Miller's remarks.

She said KDOT is in the process of compiling a publication showing the effects on every city and county in Kansas, if HB-2014 passes.

The meeting was adjourned at 2:40 p.m.

Rex Crowell, Chairman

COMMITTEE: Transportation

DATE: 1-17-89

PLEASE PRINT

NAME	ADDRESS	COMPANY/ORGANIZATION
Shelley Sutton	Topeka	KES
Tom Whitaker	Topeka	Ks Motor Carriers Assn
Buck Jones	Topeka	KDOT
Del Miller	Topeka	KDOT
Robert Hale	Topeka	KDOT
Mike Lackey	Topeka	KDOT
Mike Gray	"	KDOT
Bob Burkholder	Buhler, Ks	AARP
Kevin Robertson	Topeka	Ks Consulting Eng
Mary E. Turkington	Topeka	Ks Motor Carriers Assn.
George Goebel	Topeka	AARP
Patrick J. Hurley	Topeka	Heavy Cnst. Assn / Meggie
David Hanson	Topeka	NAII
Pat Wiechman	Topeka	KADRA
Alfonzo A Maxwell	"	KCC

1-17-89

SUBSTANTIAL MAINTENANCE

SUBSTANTIAL MAINTENANCE IS ALSO KNOWN AS CONTRACT MAINTENANCE WHICH INCLUDES SUCH WORK AS:

1. 1R RESURFACING PROGRAM
2. MINOR INTERSTATE RESURFACING
3. KLINK 1R
4. MINOR BRIDGE REPAIR
5. BRIDGE PAINTING
6. CULVERT REPAIR
7. EMERGENCY REPAIR
8. SMALL SAFETY PROJECTS

Attach. 1

SUBSTANTIAL MAINTENANCE

LEVELS OF FUNDING FOR SUBSTANTIAL MAINTENANCE ARE DEFINED AS:

A. CURRENT

B. ADEQUATE

C. APPROPRIATE

CURRENT LEVEL

EXISTING EXPENDITURE LEVEL IN CURRENT YEAR PLUS REASONABLE INFLATION. OVER THE LONG RUN WOULD NOT MAINTAIN THE CURRENT SURFACE CONDITION. FUNDING IS SUCH THAT BRIDGE REPAIR IS VERY MINIMAL AND BRIDGES COULD ONLY BE REPAINTED ON A 96 YEAR CYCLE WHICH IS NOT THE RECOMMENDED 20 YEAR CYCLE.

ADEQUATE LEVEL

FUNDING AT A RATE SUCH THAT CURRENT SURFACE CONDITION IS MAINTAINED AND SLIGHTLY IMPROVED. WILL NOT ALLOW FOR A SIGNIFICANT INCREASE IN BRIDGE REPAIR FUNDS TO ALLOW MORE SUPER STRUCTURE AND DECK REPAIR AND WOULD PUT BRIDGE PAINTING ON A 20 YEAR CYCLE.

APPROPRIATE LEVEL

THIS LEVEL IS ALSO KNOWN AS ENHANCED. MORE FUNDS FOR SURFACING AND BRIDGE REPAIR WOULD BE PROVIDED SUCH THAT THERE WOULD BE A NOTICEABLE IMPROVEMENT IN SURFACE AND BRIDGE CONDITIONS.

ROUTINE MAINTENANCE

WORK DONE BY KDOT'S OWN WORK FORCES TO MAINTAIN FACILITIES, MOW RIGHT OF WAY, PLOW SNOW, ERECT AND REPAIR SIGNS, MAINTAIN PAVEMENT MARKINGS AND MINOR REPAIR TO PAVEMENT AND BRIDGES.

LEVELS OF MAINTENANCE

LEVEL 1

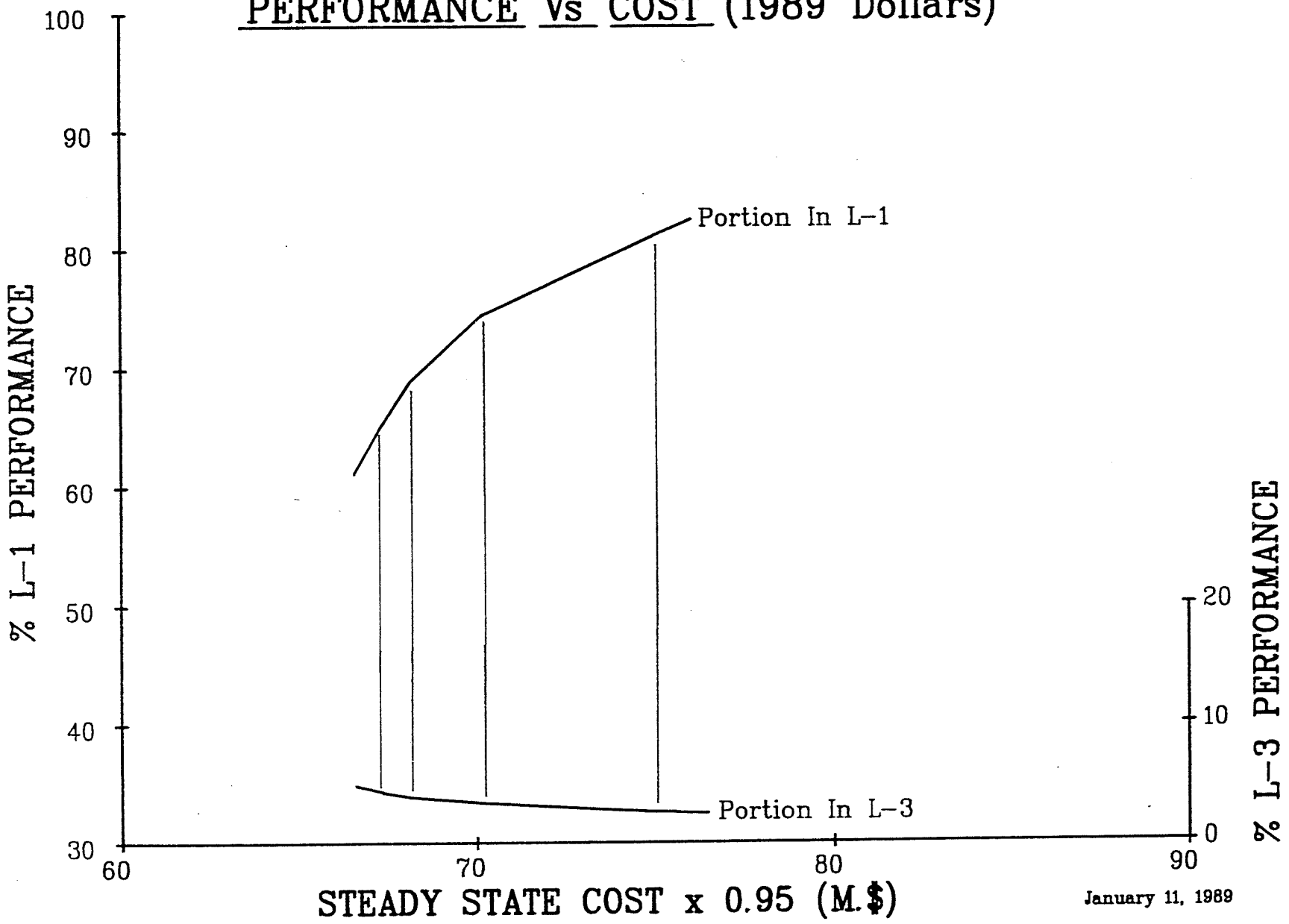
THE TOTAL ROADWAY THAT APPEARS TO REQUIRE NO CORRECTIVE ACTION OR MAINTENANCE AT THE TIME OF THE SURVEY.

LEVEL 2

THE TOTAL ROADWAY THAT APPEARS TO REQUIRE AT LEAST ROUTINE MAINTENANCE AT THE TIME OF THE SURVEY. THIS TYPE OF WORK WOULD INCLUDE JOINT AND CRACK FILLING, MINOR CRACK REPAIR AND OTHER MISCELLANEOUS PAVEMENT WORK.

LEVEL 3

THE TOTAL ROADWAY THAT REQUIRES REHABILITATIVE ACTION BEYOND ROUTINE MAINTENANCE. THESE ACTIONS WOULD BE CATEGORIZED AS SUBSTANTIAL MAINTENANCE OR CONTRACT WORK. THE ITEMS OF WORK WOULD INCLUDE SURFACE OVERLAYS AND SURFACE REHABILITATION.


PERFORMANCE Vs COST (1989 Dollars)
100
90
80
70
60
50
40
30
% L-1 PERFORMANCE
Portion In L-1
Portion In L-3
20
10
0
% L-3 PERFORMANCE
60
70
80
90
STEADY STATE COST x 0.95 (M.$)
January 11, 1989

8-1

MAINTENANCE COSTS FY 1990

EIGHT WORK PROGRAMS

(MILLIONS $)

	WORK PROGRAM	CURRENT MAINTENANCE	ADEQUATE MAINTENANCE	DIFFERENCE
I	PMS-1R PAVEMENT RESURFACING	$ 41.2	$ 50.6	$ 9.4
II	INTERSTATE SET ASIDE RESURFACING	$ 4.7	$ 4.7	$ 0
III	KLINK 1R	$ 1.7	$ 1.7	$ 0
IV	BRIDGE PAINTING	$ 0.4	$ 1.9	$ 1.5
V	BRIDGE REPAIR	$ 0.4	$ 4.1	$ 3.7
VI	CULVERT REPAIR	$ 0.4	$ 0.4	$ 0
VII	EMERGENCY REPAIR	$ 0.5	$ 0.5	$ 0
VIII	SAFETY SET ASIDE	$ 0.3	$ 0.3	$ 0
		$ 49.6	$ 64.2	$ 14.6

March 8, 1988

KANSAS DEPARTMENT OF TRANSPORTATION

WEIGHTS OF ATTRIBUTES AND ADJUSTMENT FACTORS IN THE PRIORITY FORMULA FOR INTERSTATE ROADWAYS

In order to determine the priorities of roads and bridges on the State Highway System, KDOT contracted with Woodward-Clyde Consultants to develop a system to rank roads and bridges by priority of need for improvement. The system developed originally consisted of two formulas, one for roads and one for bridges, that use input from KDOT's planning data base to measure the relative need for improvement of all roads and bridges. In July 1987 the Bridge Formula was modified by KDOT and in January 1988, a separate formula was developed by KDOT for Interstate Roadway Rehabilitation (I4R) projects.

The priority ranking that results from the use of these formulas is used to select projects for further consideration. Programming is accomplished in priority order selecting the project with the highest need rating.

The following is a summary of the attributes and adjustment factors contained in the priority formulas which are used to measure the priority of need for improvement of Interstate roadways.

ATTRIBUTES

1. Attributes which measure the need for rehabilitation of Interstate roads and their associated relative weights are shown below:

Attribute	Relative Weight*
Commercial traffic index	.140
Rideability	.189
Pavement structural evaluation	.447
Observed condition	.224
	1.000

*Assumes no adjustments for type of facility, or shoulder type.

ADJUSTMENT FACTORS

1. Factors which affect all items of the priority formulas for roads.

State Transportation Plan Classification: An adjustment that accounts for the relative importance of a road to the state highway system.

Classification	Weight
A	1.00
B	.90
C	.70
D	.50
E	.30

Attach. 2

Traffic Volume: An adjustment that gives more weight to roads with higher amounts of traffic.

The traffic volume used to determine the traffic adjustment factor will be the total traffic on the roadway adjusted for the number of lanes on the roadway. The "adjusted" traffic will be computed by dividing the actual traffic by the appropriate factor from the following table:

Lane Class	Multilane Traffic Adjustment Factor*
1 - Two-lane undivided	1.00
2 - Four-lane undivided	2.86
3 - Four-lane divided	1.43**
4 - Six-lane undivided	4.28
5 - Six-lane divided	2.14**
6 - Eight-lane and over undivided	5.72
7 - Eight-lane and over divided	2.86**
8 - Three-lane undivided	1.22
9 - Five-lane undivided	3.57
10 - One-lane, one-way	0.50
11 - Two-lane, one-way	1.43
12 - Three-lane, one-way	2.14
13 - Four-lane, one-way	2.86
14 - Two-lane divided	0.50

* This factor was developed on the basis of the capacity relationships between 2-lane facilities and multilane facilities as shown in the highway capacity manual. A 2-lane facility has a basic capacity of 2,800 vph, while a multilane facility has a basic capacity of 2,000 vph per lane. For example for a four-lane undivided facility, the factor is (4-lanes X 2,000 vph per lane)/2,800 vph, which is 2.86.

** Based on one side of divided facility.

The value for the traffic adjustment factor varies from 0.85 for zero traffic to 1.000 for 20,000 adjusted traffic on one side of a divided facility. Examplesof the new traffic adjustment factors are as follows:

Adjusted Traffic	Adjustment Factor
0	0.850
2,000	0.865
4,000	0.880
6,000	0.895
8,000	0.910
10,000	0.925
15,000	0.962
20,000	1.000

2. Factors that affect only parts of the priority formula for roadways.

Type of Facility: This adjustment gives more weight to undivided roads since they were determined to be generally in more need than divided highways. This adjustment only affects the formula for roads. The attribute commercial traffic is adjusted for the type of facility by the following factor:

Attribute	Adjustment Undivided	Adjustment Divided
Commercial traffic	1.000	0.376

Shoulder Type: This adjustment assigns more weight to roads with unstabilized shoulders than those with stabilized shoulders. This adjustment also only affects the formula for priority of roads. The attributes shoulder width and commercial traffic are each adjusted for shoulders type by the following factors:

Attribute	Adjustment Unstabilized Shoulders	Adjustment Stabilized Shoulders
Shoulder width	1.000	0.607
Commercial traffic	1.000	0.519

TABLE SHOWING ATTRIBUTES AND ADJUSTMENTS USED IN THE INTERSTATE ROADWAY PRIORITY FORMULA

Attribute	Rel. Wt.	ADJUSTMENT FACTORS* Facility : Div.	Facility : Undiv.	Shoulders : Stab.	Shoulders : Unstab.
Roads:					
Commercial traffic	.065	.376	1.000	.519	1.000
Rideability	.088				
Pavement structural evaluation	.208				
Observed condition	.104				

*In addition, roadways are adjusted for classification and AADT.

PRIORITY FORMULA FOR INTERSTATE ROADWAYS *

TOTAL ADJUSTED NEED

=

STATE TRANSPORTATION PLAN CLASSIFICATION ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR TRAFFIC (ADJ. FOR NO. OF LANES)

X

DIVIDED OR UNDIVIDED ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR STABILIZED SHOULDERS
X
ATTRIBUTE RELATIVE WEIGHT (Ø.14Ø)
X
COMMERCIAL TRAFFIC INDEX

+

ATTRIBUTE RELATIVE WEIGHT (Ø.189)
X
RIDEABILITY

+

ATTRIBUTE RELATIVE WEIGHT (Ø.447)
X
PAVEMENT STRUCTURAL EVALUATION

+

ATTRIBUTE RELATIVE WEIGHT (Ø.224)
X
OBSERVED CONDITION

* SEPERATE FORMULA DEVELOPED JANUARY 1988

3-8-88

PRIORITY FORMULA FOR INTERSTATE ROADWAYS *

TOTAL ADJUSTED NEED

=

STATE TRANSPORTATION PLAN CLASSIFICATION ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR TRAFFIC (ADJ. FOR NO. OF LANES)

X

DIVIDED OR UNDIVIDED ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR STABILIZED SHOULDERS
X
ATTRIBUTE RELATIVE WEIGHT (0.140)
X
COMMERCIAL TRAFFIC INDEX

+

ATTRIBUTE RELATIVE WEIGHT (0.189)
X
RIDEABILITY

+

ATTRIBUTE RELATIVE WEIGHT (0.447)
X
PAVEMENT STRUCTURAL EVALUATION

+

ATTRIBUTE RELATIVE WEIGHT (0.224)
X
OBSERVED CONDITION

* SEPERATE FORMULA DEVELOPED JANUARY 1988

3-8-88

October 26, 1988

KANSAS DEPARTMENT OF TRANSPORTATION

WEIGHTS OF ATTRIBUTES AND ADJUSTMENT FACTORS IN THE PRIORITY FORMULA FOR REHABILITATION PROJECTS ON NON-INTERSTATE ROADWAYS

In order to determine the priorities of roads and bridges on the State Highway System, KDOT contracted with Woodward-Clyde Consultants to develop a system to rank roads and bridges by priority of need for improvement. The system developed originally consisted of two formulas, one for roads and one for bridges, that use input from KDOT's planning data base to measure the relative need for improvement of all roads and bridges. In July 1987 the Bridge Formula was modified by KDOT and in January 1988, a separate formula was developed by KDOT for Interstate Roadway Rehabilitation (I4R) projects. In September 1988 the Bridge Formula was further modified by KDOT and the Non-Interstate Roadway Formula was modified by KDOT.

The priority ranking that results from the use of these formulas is used to select projects for further consideration. Programming is accomplished in priority order selecting the project with the highest need rating.

The following is a summary of the attributes and adjustment factors contained in the priority formulas which are used to measure the priority of need for rehabilitation projects on non-Interstate roadways.

ATTRIBUTES

1. Attributes which measure the need for rehabilitation of roads and their associated relative weights are shown below:

Attribute	Relative Weight*
Number of narrow structures per mile	.086
Shoulder Width	.089
Number of substandard stopping sight distances (SSSD) per mile	.069
Lane Width	.101
Substandard horizontal curves (SSHC) per mile	.099
Volume/Capacity ratio	.091
Commercial traffic index	.065
Rideability	.088
Pavement structural evaluation	.208
Observed condition	.104
	1.000

*Assumes no adjustments for accident rate, posted speed limit, type of facility, or shoulder type.

Attach. 3

ADJUSTMENT FACTOR

1. Factors which affect all items of the priority formulas for roads.

State Transportation Plan Classification: An adjustment that accounts for the relative importance of a road to the state highway system.

Classification	Weight
A	1.00
B	.90
C	.70
D	.50
E	.30

Traffic Volume: An adjustment that gives more weight to roads with higher amounts of traffic.

The traffic volume used to determine the traffic adjustment factor will be the total traffic on the roadway adjusted for the number of lanes on the roadway. The "adjusted" traffic will be computed by dividing the actual traffic by the appropriate factor from the following table:

Lane Class	Multilane Traffic Adjustment Factor*
1 - Two-lane undivided	1.00
2 - Four-lane undivided	2.86
3 - Four-lane divided	1.43**
4 - Six-lane undivided	4.28
5 - Six-lane divided	2.14**
6 - Eight-lane and over undivided	5.72
7 - Eight-lane and over divided	2.86**
8 - Three-lane undivided	1.22
9 - Five-lane undivided	3.57
10 - One-lane, one-way	0.50
11 - Two-lane, one-way	1.43
12 - Three-lane, one-way	2.14
13 - Four-lane, one-way	2.86
14 - Two-lane divided	0.50

* This factor was developed on the basis of the capacity relationships between 2-lane facilities and multilane facilities as shown in the highway capacity manual. A 2-lane facility has a basic capacity of 2,800 vph, while a multilane facility has a basic capacity of 2,000 vph per lane. For example for a four-lane undivided facility, the factor is (4-lanes X 2,000 vph per lane)/2,800 vph, which is 2.86.
** Based on one side of divided facility.

The value for the traffic adjustment factor varies from 0.85 for zero traffic to 1.000 for 20,000 adjusted traffic on one side of a divided facility. Examples of the new traffic adjustment factors are as follows:

Adjusted Traffic	Adjustment Factor
0	0.850
2,000	0.865
4,000	0.880
6,000	0.895
8,000	0.910
10,000	0.925
15,000	0.962
20,000	1.000

2. Factors that affect only parts of the priority formulas for roads.

Accident Rate: An adjustment that assigns more weight to roads which have a higher observed accident rate. This adjustment only affects those attributes that are determined to measure the safety of a road (narrow structures per mile, shoulder width, substandard stopping sight distances per mile, lane width and substandard horizontal curves per mile).

Accident Rate	Adjustment
High	1.000
Medium	0.858
Low	0.734

Posted Speed Limit: An adjustment that assigns more weight to roads which have a higher posted speed limit. This adjustment affects the same attributes as the adjustment factor for accident rate. This adjustment varies from 0 to 1.00 as the posted speed limit increases from 5 to 55 mph. Examples of some posted speed limit adjustments are:

Posted Speed Limit	Adjustment
20 mph	0.191
30 mph	0.360
40 mph	0.573
55 mph	1.000

Type of Facility: This adjustment gives more weight to undivided roads since they were determined to be generally in more need than divided highways. This adjustment only affects the formula for roads. The attributes shoulder width, lane width, and commercial traffic are each adjusted for the type of facility by the following factors:

Attribute	Adjustment	
	Undivided	Divided
Shoulder width	1.000	0.540
Lane width	1.000	0.500
Commercial traffic	1.000	0.376

Shoulder Type: This adjustment assigns more weight to roads with unstabilized shoulders than those with stabilized shoulders. This adjustment also only affects the formula for priority of roads. The attributes shoulder width and commercial traffic are each adjusted for shoulders type by the following factors:

Attribute	Adjustment	
	Unstabilized Shoulders	Stabilized Shoulders
Shoulder width	1.000	0.607
Commercial traffic	1.000	0.519

TABLE SHOWING ATTRIBUTES AND ADJUSTMENTS USED IN THE NON-INTERSTATE ROADWAY REHABILITATION PRIORITY FORMULA

Attribute	Rel. Wt.	ADJUSTMENT FACTORS*							
		Accident Rate				Facility		Shoulders	
		High	Med.	Low	Posted Speed	Div.	Undiv.	Stab.	Unstab.
Roads:									
No. of narrow structures per mile	.086	1.000	.858	.734	0to1				
Shoulder width	.089	1.000	.858	.734	0to1	.540	1.000	.607	1.000
No. of SSSD per Mi.	.069	1.000	.858	.734	0to1				
Lane width	.101	1.000	.858	.734	0to1	.500	1.000		
No. of SSHC per Mi.	.099	1.000	.858	.734	0to1				
Volume/Capacity ratio	.091								
Commercial traffic	.065					.376	1.000	.519	1.000
Rideability	.088								
Pavement Structural evaluation	.208								
Observed condition	.104								

*In addition, roadways are adjusted for classification and AADT.

PRIORITY FORMULA FOR NON-INTERSTATE ROADWAYS *

TOTAL ADJUSTED NEED

=

STATE TRANSPORTATION PLAN CLASSIFICATION ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR TRAFFIC (ADJ. FOR NO. OF LANES)

X

POSTED SPEED ADJUSTMENT FACTOR
X
ACCIDENT RATE ADJUSTMENT FACTOR

X

ATTRIBUTE RELATIVE WEIGHT (Ø.Ø86)
X
NUMBER OF NARROW STRUCTURES PER MILE

+

DIVIDED OR UNDIVIDED ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR STABILIZED SHOULDERS
X
ATTRIBUTE RELATIVE WEIGHT (Ø.Ø89)
X
SHOULDER WIDTH

+

ATTRIBUTE RELATIVE WEIGHT (Ø.Ø69)
X
NUMBER OF SUBSTANDARD STOPPERS PER MILE

+

DIVIDED OR UNDIVIDED ADJUSTMENT FACTOR
X
ATTRIBUTE RELATIVE WEIGHT (Ø.1Ø1)
X
SURFACE LANE WIDTH

+

ATTRIBUTE RELATIVE WEIGHT (Ø.Ø99)
X
NUMBER OF SUBSTANDARD HORIZONTAL CURVES PER MILE

+

ATTRIBUTE RELATIVE WEIGHT (Ø.Ø91)
X
VOLUME CAPACITY RATIO

+

DIVIDED OR UNDIVIDED ADJUSTMENT FACTOR
X
ADJUSTMENT FACTOR FOR STABILIZED SHOULDERS
X
ATTRIBUTE RELATIVE WEIGHT (Ø.Ø65)
X
COMMERCIAL TRAFFIC INDEX

+

ATTRIBUTE RELATIVE WEIGHT (Ø.Ø88)
X
RIDEABILITY

+

ATTRIBUTE RELATIVE WEIGHT (Ø.2Ø8)
X
PAVEMENT STRUCTURAL EVALUATION

+

ATTRIBUTE RELATIVE WEIGHT (Ø.1Ø4)
X
OBSERVED CONDITION

* FORMULA MODIFIED SEPTEMBER 1988

10-26-88

October 26, 1988

KANSAS DEPARTMENT OF TRANSPORTATION

WEIGHTS OF ATTRIBUTES AND ADJUSTMENT FACTORS IN THE PRIORITY FORMULA FOR BRIDGES

In order to determine the priorities of roads and bridges on the State Highway System, KDOT contracted with Woodward-Clyde Consultants to develop a system to rank roads and bridges by priority of need for improvement. The system developed originally consisted of two formulas, one for roads and one for bridges, that use input from KDOT's planning data base to measure the relative need for improvement of all roads and bridges. In July 1987 the Bridge Formula was modified by KDOT and in January 1988, a separate formula was developed by KDOT for Interstate Roadway Rehabilitation (I4R) projects. In September 1988 the Bridge Formula was further modified by KDOT, and the Non-Interstate Roadway Formula was modified by KDOT.

The priority ranking that results from the use of these formulas is used to select projects for further consideration. Programming is accomplished in priority order selecting the project with the highest rating.

The following is a summary of the attributes and adjustment factors contain in the priority formulas which are used to measure the priority of need for improvement of bridges.

ATTRIBUTES

1. Attributes which measure the need for improvement of bridges and their associated relative weights are shown below:

Attribute	Relative Weight
Width (excl. ramp lanes)	0.222
Deck Condition	0.169
Structural Condition	0.359
Operating Rating	0.250
	1.000

*Assumes no adjustment for accident rate or posted speed limit.

Attach. 4

ADJUSTMENT FACTORS

1. Factors which affect all items of the priority formulas for bridges.

State transportation Plan Classification: An adjustment that accounts for the relative importance of a bridge to the State Highway System.

Classification	Weight
A thru E	1.00

Traffic Volume: An adjustment that gives more weight to bridges with higher amounts of traffic. This factor varies from 0.381 to 1.00 as traffic increases from 0 to 10,000 vpd.

The traffic volume used to determine the traffic adjustment factor will be the total traffic on the bridge adjusted for the number of thru-traffic lanes on the bridge. The "adjusted" traffic will be computed by dividing the actual traffic by the appropriate factor from the following:

Lane Class	Multilane Traffic Adjustment Factor*
1 - Two-lane undivided	1.00
2 - Four-lane undivided	2.86
3 - Four-lane divided	1.43**
4 - Six-lane undivided	4.28
5 - Six-lane divided	2.14**
6 - Eight-lane and over undivided	5.72
7 - Eight-lane and over divided	2.86**
8 - Three-lane undivided	1.22
9 - Five-lane undivided	3.57
10 - One-lane, one-way	0.50
11 - Two-lane, one-way	1.43
12 - Three-lane, one-way	2.14
13 - Four-lane, one-way	2.86
14 - Two-lane divided	0.50

*This factor was developed on the basis of the capacity relationships between 2-lane facilities and multilane facilities

as shown in the highway capacity manual. A 2-lane facility has a basic capacity of 2,800 vph, while a multilane facility has a basic capacity of 2,000 vph per lane. For example for a four-lane undivided facility, the factor is (4-lanes x 2,000 vph per lane)/2,800 vph, which is 2.86.

** Based on one side of divided facility.

The value for the traffic adjustment factor varies from 0.85 for zero traffic to 1.000 for 20,000 adjusted traffic on one side of a divided facility. Examples of the new traffic factors are as follows:

Adjusted Traffic	Adjustment Factor
0	0.850
2,000	0.865
4,000	0.880
6,000	0.895
8,000	0.910
10,000	0.925
15,000	0.962
20,000	1.000

PRIROITY FORMULA FOR BRIDGES *

TOTAL ADJUSTED NEED

=

ADJUSTMENT FACTOR FOR TRAFFIC (ADJ. FOR NO. OF LANES)

X

ATTRIBUTE RELATIVE WEIGHT (0.222)
X
BRIDGE WIDTH (EXCL. RAMP LANES)

+

ATTRIBUTE RELATIVE WEIGHT (0.169)
X
DECK CONDITION

+

ATTRIBUTE RELATIVE WEIGHT (0.359)
X
STRUCTURAL CONDITION

+

ATTRIBUTE RELATIVE WEIGHT (0.250)
X
OPERATING RATING

* FORMULA MODIFIED JULY 1987 & SEPTEMBER 1988

10-26-88