



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
P.O. BOX 25201
RALEIGH 27611

JAMES G. MARTIN
GOVERNOR

May 12, 1987

DIVISION OF HIGHWAYS

JAMES E. HARRINGTON
SECRETARY

GEORGE E. WELLS, P.E.
STATE HIGHWAY ADMINISTRATOR

MEMORANDUM

TO: Area Traffic Engineers and Unit Heads

FROM: S. K. Smith, Accident Studies Engineer *SKS*

THRU: J. M. Lynch, P.E., State Traffic Engineer *JML*

SUBJECT: Traffic Accident Rates by Road Types and System - 1986

The attached tables list various traffic accident rates for rural and municipal (Urban) route systems for 1986 traffic accidents and 1986 truck accidents. These tables are for your information and use in any accident studies.

If you have need for any other types of traffic accident data summaries on a yearly basis, then give us a description of the specific information that you require and we will incorporate it in future summaries.

SKS:bj

Att.

cc: Mr. J. M. Lynch, P.E., Att.
Mr. C. C. Sessions, Jr., P.E., Att.
Mr. W. A. Ward, P.E., Att.
Traffic Engineers, Att.
Division Traffic Engineers, Att.
Accident Studies Staff, Att.
Mr. Charles Adkins, P.E., Att. (10)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING BRANCH
1986 ACCIDENT RATES

ITEMS	RURAL STATE HIGHWAYS					TOTAL RURAL
	INTER	US	NC	PRI	SR	
TOTAL ACCIDENTS	2365	15364	14889	32618	37986	70604
FATAL ACCIDENTS	50	280	254	584	532	1116
NON-FATAL INJURY ACC	998	7256	7062	15316	18014	33330
NIGHT ACCIDENTS	782	4476	4693	9951	14332	24283
WET ACCIDENTS	477	3510	3229	7216	7454	14670
% FATAL ACCIDENTS	2.1%	1.8%	1.7%	1.8%	1.4%	1.6%
% NON-FATAL INJ ACC	42.2%	47.2%	47.4%	47.0%	47.4%	47.2%
% NIGHT ACCIDENTS	33.1%	29.1%	31.5%	30.5%	37.7%	34.4%
% WET ACCIDENTS	20.2%	22.8%	21.7%	22.1%	19.6%	20.8%
MILES OF ROAD	717	4340	7026	12083	59261	71343
ADT (1)	19880	5791	2938	4968	325	1111
TRAVEL (100MVM)	52.03	91.73	75.34	219.11	70.20	289.31
TOTAL ACC RATE (2)	45.5	167.5	197.6	148.9	541.1	244.0
FATAL ACC RATE (2)	1.0	3.1	3.4	2.7	7.6	3.9
NON-FAT INJ RATE (2)	19.2	79.1	93.7	69.9	256.6	115.2
NIGHT ACC RATE (2)	15.0	48.8	62.3	45.4	204.2	83.9
WET ACC RATE (2)	9.2	38.3	42.9	32.9	106.2	50.7
SEVERITY INDEX (3)	14.6	15.4	15.5	15.4	15.4	15.4

ITEMS	URBAN STATE HIGHWAYS					TOTAL	
	INT	US	NC	PRI	SR (4)	NON SYS	URBAN
TOTAL ACCIDENTS	2122	15956	8057	26135	14176	51064	91375
FATAL ACCIDENTS	12	65	34	111	37	156	304
NON-FATAL INJURY ACC	874	6205	3222	10301	5558	20275	36134
NIGHT ACCIDENTS	603	3501	1783	5887	3194	12137	21218
WET ACCIDENTS	565	3629	1691	5885	3196	10916	19997
% FATAL ACCIDENTS	0.6%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%
% NON-FATAL INJ ACC	41.2%	38.9%	40.0%	39.4%	39.2%	39.7%	39.5%
% NIGHT ACCIDENTS	28.4%	21.9%	22.1%	22.5%	22.5%	23.8%	23.2%
% WET ACCIDENTS	26.6%	22.7%	21.0%	22.5%	22.5%	21.4%	21.9%
MILES OF ROAD	109	1053	824	1985	1793	13539	17317
ADT (1)	37110	12838	7968	12144	5861	1000	2781
TRAVEL (100MVM) (1)	14.70	49.34	23.96	88.01	38.37	49.42	175.79
TOTAL ACC RATE (2)	144.4	323.4	336.2	297.0	369.5	1033.4	519.8
FATAL ACC RATE (2)	0.8	1.3	1.4	1.3	1.0	3.2	1.7
NON-FAT INJ RATE (2)	59.5	125.7	134.5	117.0	144.9	410.3	205.6
NIGHT ACC RATE (2)	41.0	71.0	74.4	66.9	83.2	245.6	120.7
WET ACC RATE (2)	38.4	73.5	70.6	66.9	83.3	220.9	113.8
SEVERITY INDEX (3)	11.7	12.0	12.2	12.0	11.9	11.3	11.6

(1) ESTIMATED VALUE

(2) RATE IS FOR 100 MILLION VEHICLE MILES OF TRAVEL.

(3) SEVERITY INDEX = $(64(F+A) + 19.1(B+C) + PDO) / (TOTAL ACC)$

(4) INCLUDES ONLY ROUTE SEGMENTS

WITH COMPUTERIZED TRAFFIC VOLUMES

F=FATAL ACC

A=A INJ ACC

B=B INJ ACC

C=C INJ ACC

PDO=PROPERTY

DAMAGE ONLY

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL INTERSTATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	0	-	-	-	-	-
3 LANES UNDIVIDED	0	-	-	-	-	-
4+ UNDIVIDED NO	0	-	-	-	-	-
4+ DIVIDED NO	0	-	-	-	-	-
4+ DIVIDED PARTIAL	0	-	-	-	-	-
4+ DIVIDED FULL	717	45.5	1.0	19.2	15.0	9.2
TOTAL	717	45.5	1.0	19.2	15.0	9.2

URBAN INTERSTATE ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	0	-	-	-	-	-
3 LANES UNDIVIDED	0	-	-	-	-	-
4+ UNDIVIDED	0	-	-	-	-	-
4+ DIVIDED NO	0	-	-	-	-	-
4+ DIVIDED PARTIAL	0	-	-	-	-	-
4+ DIVIDED FULL	109	144.4	0.8	59.5	41.0	38.4
TOTAL	109	144.4	0.8	59.5	41.0	38.4

NOTE: Includes only route segments with computerized traffic volume

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL UNITED STATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	3232	191.9	4.0	91.7	56.7	44.2
3 LANES UNDIVIDED	44	187.1	4.5	80.3	52.3	29.5
4+ UNDIVIDED NO	139	4.5	3.8	120.7	70.9	59.4
4+ DIVIDED NO	497	80.3	1.9	75.1	45.3	35.4
4+ DIVIDED PARTIAL	138	52.3	1.7	52.6	28.0	23.4
4+ DIVIDED FULL	289	29.5	0.8	21.7	18.7	14.3
TOTAL	4340	45.5	3.1	79.1	48.8	38.3

URBAN UNITED STATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	525	304.0	1.6	111.7	60.0	68.3
3 LANES UNDIVIDED*	6	223.0	0.0	87.6	27.9	47.8
4+ UNDIVIDED	289	416.8	1.3	169.0	93.5	93.0
4+ DIVIDED NO	129	355.6	1.1	134.2	80.0	75.7
4+ DIVIDED PARTIAL	50	203.0	1.3	85.3	55.1	60.0
4+ DIVIDED FULL	55	120.3	1.2	46.3	28.2	34.6
TOTAL	1053	323.4	1.3	125.7	71.0	73.5

NOTE: Includes only route segments with computerized traffic volume
 * Rates are not significant.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL NORTH CAROLINA ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	6882	197.7	3.5	94.5	62.9	42.7
3 LANES UNDIVIDED *	12	245.9	0.0	161.4	76.9	69.2
4+ UNDIVIDED NO	42	305.6	3.0	123.3	66.4	77.5
4+ DIVIDED NO	62	219.9	2.0	93.8	70.4	47.9
4+ DIVIDED PARTIAL *	17	97.9	3.9	47.0	25.5	9.8
4+ DIVIDED FULL *	11	1.2	0.0	0.0	0.0	1.2
TOTAL	7026	197.6	3.4	93.7	62.3	42.9

URBAN NORTH CAROLINA ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	653	292.5	1.8	115.9	62.1	58.7
3 LANES UNDIVIDED *	1	774.2	0.0	273.3	91.1	91.1
4+ UNDIVIDED	127	427.6	1.2	178.3	97.1	90.8
4+ DIVIDED NO	34	455.4	0.4	169.8	109.2	107.9
4+ DIVIDED PARTIAL *	1	158.8	0.0	12.2	48.9	12.2
4+ DIVIDED FULL *	8	94.2	0.0	44.3	30.0	32.8
TOTAL	824	336.2	1.4	134.5	74.4	70.6

NOTE: Includes only route segments with computerized traffic volume
 * Rates are not significant.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING BRANCH
ACCIDENT RATES

1986

BY ROAD TYPES & SYSTEMS

RURAL ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	10113	195.3	3.7	93.3	60.3	43.3
3 LANES UNDIVIDED	56	192.4	4.1	87.6	54.5	33.1
4+ UNDIVIDED NO	182	275.8	3.6	121.2	70.0	63.0
4+ DIVIDED NO	559	165.2	1.9	77.3	48.4	37.0
4+ DIVIDED PARTIAL	156	103.7	1.9	52.1	27.8	22.4
4+ DIVIDED FULL	1017	46.3	0.9	19.4	15.4	9.9
TOTAL	12083	148.9	2.7	69.9	45.4	32.9

URBAN ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	1178	298.2	1.7	113.8	61.1	63.4
3 LANES UNDIVIDED *	7	267.3	0.0	102.5	33.0	51.3
4+ UNDIVIDED	415	419.8	1.3	171.5	94.4	92.4
4+ DIVIDED NO	163	374.8	0.9	141.1	85.6	81.9
4+ DIVIDED PARTIAL	51	202.1	1.3	83.8	55.0	59.0
4+ DIVIDED FULL	172	136.6	0.9	55.6	37.4	37.3
TOTAL	1986	297.0	1.3	117.0	66.9	66.9

ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	11291	215.5	3.3	97.4	60.5	47.3
3 LANES UNDIVIDED	63	204.3	3.5	89.9	51.1	36.0
4+ UNDIVIDED	597	385.5	1.8	159.5	88.6	85.4
4+ DIVIDED NO	722	241.3	1.5	100.5	61.9	53.3
4+ DIVIDED PARTIAL	206	139.8	1.7	63.8	37.8	35.9
4+ DIVIDED FULL	1189	68.4	0.9	28.2	20.8	16.6
TOTAL	14068	191.3	2.3	83.4	51.6	42.7

NOTE: Includes only route segments with computerized traffic volume

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING BRANCH
1986 TRUCK ACCIDENT RATES

ITEMS	RURAL STATE HIGHWAYS			
	INTERSTATE	UNITED STATES	NORTH CAROLINA	PRIMARY
TOTAL ACCIDENTS	595	1031	657	2283
FATAL ACCIDENTS	19	55	31	105
NON-FATAL INJURY ACC	215	457	296	968
NIGHT ACCIDENTS	193	244	162	599
WET ACCIDENTS	85	237	130	452
% FATAL ACCIDENTS	3.2%	5.3%	4.7%	4.6%
% NON-FATAL INJ ACC	36.1%	44.3%	45.1%	42.4%
% NIGHT ACCIDENTS	32.4%	23.7%	24.7%	26.2%
% WET ACCIDENTS	14.3%	23.0%	19.8%	19.8%
MILES OF ROAD	717	4340	7026	12083
ADT (1)	19880	5791	2938	4968
TRAVEL (100MVM)	52.03	91.73	75.34	219.11
TOTAL ACC RATE (2)	11.4	11.2	8.7	10.4
FATAL ACC RATE (2)	0.4	0.6	0.4	0.5
NON-FAT INJ RATE (2)	4.1	5.0	3.9	4.4
NIGHT ACC RATE (2)	3.7	2.7	2.2	2.7
WET ACC RATE (2)	1.6	2.6	1.7	2.1

ITEMS	URBAN STATE HIGHWAYS			
	INTERSTATE	UNITED STATES	NORTH CAROLINA	PRIMARY
TOTAL ACCIDENTS	300	15956	8057	24313
FATAL ACCIDENTS	2	65	34	101
NON-FATAL INJURY ACC	107	6205	3222	9534
NIGHT ACCIDENTS	66	3501	1783	5350
WET ACCIDENTS	60	3629	1691	5380
% FATAL ACCIDENTS	0.7%	0.4%	0.4%	0.4%
% NON-FATAL INJ ACC	35.7%	38.9%	40.0%	39.2%
% NIGHT ACCIDENTS	22.0%	21.9%	22.1%	22.0%
% WET ACCIDENTS	20.0%	22.7%	21.0%	22.1%
MILES OF ROAD	109	1053	824	1985
ADT (1)	37110	12838	7968	12144
TRAVEL (100MVM) (1)	14.70	49.34	23.96	88.01
TOTAL ACC RATE (2)	20.4	323.4	336.2	276.3
FATAL ACC RATE (2)	0.1	1.3	1.4	1.1
NON-FAT INJ RATE (2)	7.3	125.7	134.5	117.0
NIGHT ACC RATE (2)	4.5	71.0	74.4	60.8
WET ACC RATE (2)	4.1	73.5	70.6	61.1

(1) ESTIMATED VALUE

(2) RATE IS FOR 100 MILLION VEHICLE MILES OF TRAVEL.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 TRUCK ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL INTERSTATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	0	-	-	-	-	-
3 LANES UNDIVIDED	0	-	-	-	-	-
4+ UNDIVIDED NO	0	-	-	-	-	-
4+ DIVIDED NO	0	-	-	-	-	-
4+ DIVIDED PARTIAL	0	-	-	-	-	-
4+ DIVIDED FULL	717	11.4	0.4	4.1	3.7	1.6
TOTAL	717	11.4	0.4	4.1	3.7	1.6

URBAN INTERSTATE ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	0	-	-	-	-	-
3 LANES UNDIVIDED	0	-	-	-	-	-
4+ UNDIVIDED	0	-	-	-	-	-
4+ DIVIDED NO	0	-	-	-	-	-
4+ DIVIDED PARTIAL	0	-	-	-	-	-
4+ DIVIDED FULL	109	20.4	0.1	7.3	4.5	4.1
TOTAL	109	20.4	0.1	7.3	4.5	4.1

NOTE: Includes only route segments with computerized traffic volume

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 TRUCK ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL UNITED STATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	3232	13.3	0.9	5.8	3.1	3.1
3 LANES UNDIVIDED	44	2.3	0.0	2.3	0.0	0.0
4+ UNDIVIDED NO	139	15.4	0.2	8.1	3.0	3.6
4+ DIVIDED NO	497	10.6	0.3	4.7	3.0	2.5
4+ DIVIDED PARTIAL	138	6.5	0.3	2.8	1.3	1.6
4+ DIVIDED FULL	289	4.6	0.1	3.3	0.9	0.6
TOTAL	4340	11.2	0.6	5.0	2.7	2.6

URBAN UNITED STATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	525	12.5	0.2	3.5	1.7	2.8
3 LANES UNDIVIDED*	6	0.0	0.0	0.0	0.0	0.0
4+ UNDIVIDED	289	14.7	0.2	3.5	2.0	2.5
4+ DIVIDED NO	129	22.0	0.4	7.7	3.4	3.3
4+ DIVIDED PARTIAL	50	13.1	0.0	3.9	2.8	3.1
4+ DIVIDED FULL	55	9.9	0.0	3.3	1.2	2.1
TOTAL	1053	14.8	0.2	4.3	2.1	2.7

NOTE: Includes only route segments with computerized traffic volume
 * Rates are not significant.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 TRUCK ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL NORTH CAROLINA ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	6882	8.8	0.4	4.0	2.1	1.7
3 LANES UNDIVIDED *	12	7.7	0.0	7.7	0.0	7.7
4+ UNDIVIDED NO	42	10.3	0.0	4.4	5.2	2.2
4+ DIVIDED NO	62	10.3	0.4	4.0	4.0	2.4
4+ DIVIDED PARTIAL *	17	5.9	2.0	2.0	0.0	0.0
4+ DIVIDED FULL *	11	0.0	0.0	0.0	0.0	0.0
TOTAL	7026	8.7	0.4	3.9	2.2	1.7

URBAN NORTH CAROLINA ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	653	11.0	0.1	3.1	1.6	1.6
3 LANES UNDIVIDED *	1	0.0	0.0	0.0	0.0	0.0
4+ UNDIVIDED	127	13.2	0.0	3.1	2.1	2.0
4+ DIVIDED NO	34	9.3	0.0	1.8	1.3	1.8
4+ DIVIDED PARTIAL *	1	48.9	0.0	0.0	24.4	0.0
4+ DIVIDED FULL *	8	7.1	0.0	0.0	1.4	1.4
TOTAL	824	11.4	0.0	2.9	1.8	1.7

NOTE: Includes only route segments with computerized traffic volume
 * Rates are not significant.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 TRUCK ACCIDENT RATES
 1986
 BY ROAD TYPES & SYSTEMS

RURAL ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	10113	10.6	0.6	4.7	2.5	2.3
3 LANES UNDIVIDED	56	2.8	0.0	2.8	0.0	0.7
4+ UNDIVIDED NO	182	14.4	0.1	7.3	3.5	3.3
4+ DIVIDED NO	559	10.5	0.3	4.6	3.1	2.5
4+ DIVIDED PARTIAL	156	6.4	0.4	2.8	1.2	1.5
4+ DIVIDED FULL	1017	10.1	0.3	3.7	3.2	1.4
TOTAL	12083	10.4	0.5	4.4	2.7	2.1

URBAN ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	1178	11.7	0.1	3.3	1.6	2.2
3 LANES UNDIVIDED *	7	0.0	0.0	0.0	0.0	0.0
4+ UNDIVIDED	415	14.3	0.1	3.4	2.1	2.3
4+ DIVIDED NO	163	19.5	0.3	6.5	3.0	3.0
4+ DIVIDED PARTIAL	51	13.9	0.0	3.8	3.3	3.0
4+ DIVIDED FULL	172	17.3	0.1	6.0	3.6	3.5
TOTAL	1986	14.8	0.1	4.4	2.4	2.7

ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	11291	10.9	0.5	4.4	2.3	2.3
3 LANES UNDIVIDED	63	2.3	0.0	2.3	0.0	0.6
4+ UNDIVIDED	597	14.3	0.1	4.3	2.4	2.6
4+ DIVIDED NO	722	13.8	0.3	5.3	3.1	2.7
4+ DIVIDED PARTIAL	206	9.2	0.3	3.2	1.9	2.0
4+ DIVIDED FULL	1189	11.9	0.3	4.2	3.3	1.9
TOTAL	14068	11.7	0.4	4.4	2.7	2.2

NOTE: Includes only route segments with computerized traffic volume