



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
P.O. BOX 25201
RALEIGH 27611-5201

JAMES G. MARTIN
GOVERNOR

March 8, 1988

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 Project Engineer *KS*

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

SUBJECT: Traffic Accident Rates by Road Types and System - 1987

The attached tables list various traffic accident rates for rural and municipal (Urban) route systems for 1987 traffic 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.

JML:sks

cc: Mr. J. M. Lynch, P.E., Att.
Mr. C. C. Sessoms, Jr., P.E., Att.
Mr. E. F. Mallard, P.E., Att.
Traffic Engineers, Att.
Division Traffic Engineers, Att.
Traffic Studies Staff, Att.
Mr. J. M. Greenhill, P.E., Att. (10)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING BRANCH
1987 ACCIDENT RATES

ITEMS	RURAL STATE HIGHWAYS					TOTAL RURAL
	INTER	U S	N C	PRI	SR	
TOTAL ACCIDENTS	2954	15980	16035	34969	38008	72977
FATAL ACCIDENTS	52	264	240	556	503	1059
NON-FATAL INJURY ACC	1257	7379	7461	16097	17494	33591
NIGHT ACCIDENTS	945	4462	4952	10359	13865	24224
WET ACCIDENTS	501	3357	3133	6991	6947	13938
% FATAL ACCIDENTS	1.8%	1.7%	1.5%	1.6%	1.3%	1.5%
% NON-FATAL INJ ACC	42.6%	46.2%	46.5%	46.0%	46.0%	46.0%
% NIGHT ACCIDENTS	32.0%	27.9%	30.9%	29.6%	36.5%	33.2%
% WET ACCIDENTS	17.0%	21.0%	19.5%	20.0%	18.3%	19.1%
MILES OF ROAD	687	4332	7021	12040	59313	71353
ADT (1)	22448	5823	2692	4947	500	1250
TRAVEL (100MVM)	56.32	92.08	68.99	217.39	108.24	325.63
TOTAL ACC RATE (2)	52.5	173.5	232.4	160.9	351.1	224.1
FATAL ACC RATE (2)	0.9	2.9	3.5	2.6	4.6	3.3
NON-FAT INJ RATE (2)	22.3	80.1	108.2	74.0	161.6	103.2
NIGHT ACC RATE (2)	16.8	48.5	71.8	47.7	128.1	74.4
WET ACC RATE (2)	8.9	36.5	45.4	32.2	64.2	42.8
SEVERITY INDEX (3)	13.2	14.5	14.4	14.3	14.5	14.4

ITEMS	URBAN STATE HIGHWAYS						TOTAL URBAN
	INTER	U S	N C	PRI	SR (4)	NON-SYS	
TOTAL ACCIDENTS	2436	16774	8562	27772	15643	77692	121107
FATAL ACCIDENTS	21	41	25	87	51	167	305
NON-FATAL INJURY ACC	960	6242	3277	10479	5845	23074	39398
NIGHT ACCIDENTS	678	3546	1789	6013	3332	17872	27217
WET ACCIDENTS	539	3419	1660	5618	2932	13286	21836
% FATAL ACCIDENTS	0.9%	0.2%	0.3%	0.3%	0.3%	0.2%	0.3%
% NON-FATAL INJ ACC	39.4%	37.2%	38.3%	37.7%	37.4%	29.7%	32.5%
% NIGHT ACCIDENTS	27.8%	21.1%	20.9%	21.7%	21.3%	23.0%	22.5%
% WET ACCIDENTS	22.1%	20.4%	19.4%	20.2%	18.7%	17.1%	18.0%
MILES OF ROAD	110	1076	840	2026	1816	13647	17489
ADT (1)	39587	13029	7940	12361	6016	1000	2837
TRAVEL (100MVM) (1)	15.90	51.15	24.35	91.41	39.88	49.81	181.10
TOTAL ACC RATE (2)	153.2	327.9	351.6	303.8	392.3	1559.8	668.7
FATAL ACC RATE (2)	1.3	0.8	1.0	1.0	1.3	3.4	1.7
NON-FAT INJ RATE (2)	60.4	122.0	134.6	114.6	146.6	463.2	217.5
NIGHT ACC RATE (2)	42.6	69.3	73.5	65.8	83.6	358.8	150.3
WET ACC RATE (2)	33.9	66.8	68.2	61.5	73.5	266.7	120.6
SEVERITY INDEX (3)	11.0	10.7	10.8	10.8	10.6	8.5	9.3

(1) ESTIMATED VALUE

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

(3) SEVERITY INDEX = $(64(F+A) + 19.1(B+C) + PDO) / \text{TOTAL ACC.}$

(4) INCLUDED ONLY ROUTE SEGMENTS
WITH COMPUTERIZED TRAFFIC VOLUMES

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1987
 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	687	52.5	0.9	22.3	16.8	8.9
TOTAL	687	52.5	0.9	22.3	16.8	8.9

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	110	153.2	1.3	60.4	42.6	33.9
TOTAL	110	153.2	1.3	60.4	42.6	33.9

NOTE: Includes only route segments with computerized traffic volume

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1987
 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	3202	206.2	4.0	96.4	59.5	44.4
3 LANES UNDIVIDED	44	187.8	4.6	88.1	44.5	36.8
4+ UNDIVIDED NO	145	267.2	2.1	115.4	67.8	60.4
4+ DIVIDED NO	513	149.4	1.8	69.4	38.8	29.5
4+ DIVIDED PARTIAL	140	111.3	1.0	52.7	28.6	19.9
4+ DIVIDED FULL	288	55.5	1.0	22.8	18.5	10.4
TOTAL	4332	173.5	2.9	80.1	48.5	36.5

URBAN UNITED STATES ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	527	303.7	1.1	110.8	54.6	58.7
3 LANES UNDIVIDED*	6	298.5	0.0	91.2	20.7	49.7
4+ UNDIVIDED	295	435.6	0.8	164.5	95.7	87.8
4+ DIVIDED NO	136	347.9	0.7	126.8	76.9	72.0
4+ DIVIDED PARTIAL	57	202.2	0.7	82.7	52.6	46.5
4+ DIVIDED FULL	55	130.6	0.4	46.9	29.6	32.0
TOTAL	1076	327.9	0.8	122.0	69.3	66.8

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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 ACCIDENT RATES
 1987
 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	6865	235.8	3.7	110.4	73.3	46.1
3 LANES UNDIVIDED *	12	392.2	0.0	169.2	123.1	76.9
4+ UNDIVIDED NO	50	315.7	1.8	133.4	75.0	62.6
4+ DIVIDED NO	66	202.1	2.2	87.6	65.0	39.2
4+ DIVIDED PARTIAL *	17	88.9	1.9	39.7	30.3	11.3
4+ DIVIDED FULL *	11	1.1	0.0	1.1	0.0	0.0
TOTAL	7021	232.4	3.5	108.2	71.8	45.4

URBAN NORTH CAROLINA ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	666	312.7	1.6	117.6	62.5	58.7
3 LANES UNDIVIDED *	1	465.1	0.0	103.4	103.4	51.7
4+ UNDIVIDED	130	428.7	0.2	171.1	91.2	84.9
4+ DIVIDED NO	34	473.8	0.4	173.3	110.9	101.2
4+ DIVIDED PARTIAL *	1	236.4	0.0	101.3	67.6	56.3
4+ DIVIDED FULL *	8	97.2	0.0	41.5	23.3	14.3
TOTAL	840	351.6	1.0	134.6	73.5	68.2

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 TRAFFIC ENGINEERING BRANCH
 ACCIDENT RATES
 1987

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	10067	222.9	3.8	104.3	67.3	45.4
3 LANES UNDIVIDED	56	206.3	4.2	95.5	51.6	40.4
4+ UNDIVIDED NO	195	278.1	2.0	119.5	69.4	60.9
4+ DIVIDED NO	579	155.8	1.9	71.6	42.0	30.7
4+ DIVIDED PARTIAL	157	109.6	1.0	51.7	28.7	19.2
4+ DIVIDED FULL	986	52.2	0.9	22.1	16.8	9.0
TOTAL	12040	160.9	2.6	74.0	47.7	32.2

URBAN ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	1193	308.3	1.3	114.3	58.6	58.7
3 LANES UNDIVIDED *	7	310.9	0.0	92.1	26.9	49.9
4+ UNDIVIDED	425	433.6	0.6	166.4	94.4	87.0
4+ DIVIDED NO	171	370.8	0.6	135.3	83.0	77.3
4+ DIVIDED PARTIAL	58	202.8	0.7	83.1	52.8	46.7
4+ DIVIDED FULL	174	145.7	1.0	56.4	38.8	27.0
TOTAL	2026	303.8	1.0	114.6	65.8	61.5

ALL PRIMARY ROUTES

Accident Rates (per 100MVM)

ROAD TYPES	SYSTEM MILES	TOTAL	FATAL	NON-FAT INJURY	NIGHT	WET
2 LANES UNDIVIDED	11260	240.6	3.3	106.4	65.5	48.1
3 LANES UNDIVIDED	62	222.4	3.5	95.0	47.8	41.9
4+ UNDIVIDED	620	395.3	1.0	154.8	88.2	80.6
4+ DIVIDED NO	749	232.9	1.4	94.4	56.7	47.4
4+ DIVIDED PARTIAL	215	147.3	0.9	64.4	38.5	30.3
4+ DIVIDED FULL	1160	75.1	1.0	30.5	22.2	14.8
TOTAL	14066	203.2	2.1	86.1	53.0	40.8

NOTE: Includes only route segments with computerized traffic volume