



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

NICHOLAS J. TENNYSON
SECRETARY

December 19, 2014
Updated December 4, 2015

MEMORANDUM

TO: North Carolina Crash Rate Users

FROM: Stephen D. Lowry, PE
Highway Safety Improvement Program Engineer

SUBJECT: 2010 – 2012 North Carolina Crash Rates

We have made several changes for the year 2010-2012 edition of *NC Crash Rates*. These changes are described below:

- **Format Improvements:** We have changed the format to make the data easier to read. To help improve readability we removed some of the background data from the tables that follow. Contact us if you need any of the background data that we utilized to calculate the crash rates.
- **Changes in Urban/Rural Designation:** Past editions of *NC Crash Rates* utilized information from the crash reports to determine the urban/rural designation, where the urban areas were defined as crashes reported as inside a municipal limit. The new approach is based on Federal Highway Administration (FHWA) guidelines which classify “urban” areas as places inside urbanized area boundaries where the population is greater than 5,000 persons. As a result of this change, the urban primary road mileage has risen from 2,852 to 3,923 miles, and the rural primary road mileage has dropped from 12,048 to 10,941 miles. Crash rate users are encouraged to examine the roadway characteristics, surrounding population and land uses to determine if a roadway section is “urban”.
- **No Rates for Non-system Roads:** Past editions of *NC Crash Rates* included rates for non-state system routes. These rates have been dropped because NCDOT does not have adequate data for routes outside of the NCDOT roadway system to guarantee the accuracy of these rates.
- **No Rates for Truck Crashes:** Past editions of *NC Crash Rates* included a separate listing of crash rates for crashes involving trucks. After discussion with crash rate users it was decided to drop truck crash rates from the yearly update.
- **Secondary Route Data:** Due to roadway inventory policy changes, the rates for secondary routes are based only on secondary roads that are part of the routine traffic count program. Routes included in the routine program include roads classified as arterial or collector and approximately one-third of local roads. As a result of this change, the amount of secondary road mileage studied for this edition of *NC Crash Rates* is 27,527 miles; this is compared to the previous edition’s number of 65,234 miles.
- **Mileposted Crash Data:** The attached crash data is based on crashes that were successfully located and mileposted by the Traffic Engineering Accident Analysis System.

If you have any questions regarding the 2010 – 2012 *NC Crash Rates*, please contact me at (919) 773-2892 or Brian Mayhew, PE at (919) 773-2886.

Attachments

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North Carolina Department of Transportation
Transportation Mobility and Safety Division
Traffic Safety Unit
2010 ~ 2012 Three Year Crash Rates

ITEMS		TOTAL CRASH RATE (1)	FATAL CRASH RATE (1)	NON-FATAL INJURY CRASH RATE (1)	WET CRASH RATE (1)	NIGHT CRASH RATE (1)	RUN-OFF-ROAD CRASH RATE (1, 3)	SEVERITY INDEX (2)
INTERSTATES	RURAL	59.50	0.48	13.11	12.99	20.24	26.80	3.78
	URBAN	89.93	0.34	22.16	19.94	23.65	22.35	3.45
	STATE-WIDE	80.98	0.38	19.50	17.90	22.65	23.66	3.52
US ROUTES	RURAL	105.73	0.98	30.99	16.67	39.39	32.75	4.81
	URBAN	210.37	0.84	65.36	31.74	44.58	23.84	3.99
	STATE-WIDE	163.46	0.90	49.95	24.99	42.26	27.83	4.23
NC ROUTES	RURAL	160.79	1.59	48.58	21.55	63.97	51.16	4.94
	URBAN	242.62	0.93	77.54	35.75	53.08	27.28	4.06
	STATE-WIDE	197.67	1.29	61.63	27.95	59.06	40.40	4.46
PRIMARY	RURAL	113.93	1.07	32.86	17.50	43.41	37.78	4.75
	URBAN	166.29	0.65	49.68	27.60	37.53	23.94	3.89
	STATE-WIDE	144.18	0.83	42.58	23.33	40.01	29.78	4.18
SECONDARY ROAD	RURAL	238.85	2.38	68.69	32.41	108.43	110.17	4.85
	URBAN	266.29	0.98	84.63	40.02	63.65	45.67	4.06
	STATE-WIDE	255.75	1.52	78.51	37.10	80.85	70.45	4.34
STATEWIDE ALL SYSTEM ROUTES	RURAL	143.54	1.38	41.35	21.03	58.82	54.94	4.79
	URBAN	192.98	0.74	59.00	30.92	44.50	29.74	3.95
	STATE-WIDE	172.58	1.00	51.72	26.84	50.41	40.13	4.24

(1) CRASH RATES ARE IN CRASHES PER 100 MILLION VEHICLE MILES OF TRAVEL

(2) SEVERITY INDEX = (76.8*(F+A) + 8.4*(B+C) + PDO) / TOTAL CRASHES

(3) RUN-OFF ROAD CRASHES INCLUDE: RUN-OFF ROAD (RIGHT, LEFT OR STRAIGHT), FIXED OBJECT, OVERTURN/ROLLOVER, SIDESWIPE OPPOSITE DIRECTION, PARKED VEHICLE, AND HEAD ON CRASH TYPES.

**2010-2012 Three Year Crash Rates
By Road System, Type and Control
Crash Rate per 100 Million Vehicle Miles Traveled**

RURAL INTERSTATE ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED							
2 LANES CONT. LEFT TURN LANE							
3 LANES UNDIVIDED							
4 OR MORE LANES UNDIVIDED							
4+ LANES CONT. LEFT TURN LANE							
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS							
PARTIAL CONTROL ACCESS							
FULL CONTROL ACCESS							
TOTAL	581	59.50	0.48	13.11	12.99	20.24	26.80

URBAN INTERSTATE ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED							
2 LANES CONT. LEFT TURN LANE							
3 LANES UNDIVIDED							
4 OR MORE LANES UNDIVIDED							
4+ LANES CONT. LEFT TURN LANE							
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS							
PARTIAL CONTROL ACCESS							
FULL CONTROL ACCESS							
TOTAL	645	89.93	0.34	22.16	19.94	23.65	22.35

ALL INTERSTATE ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED							
2 LANES CONT. LEFT TURN LANE							
3 LANES UNDIVIDED							
4 OR MORE LANES UNDIVIDED							
4+ LANES CONT. LEFT TURN LANE							
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS							
PARTIAL CONTROL ACCESS							
FULL CONTROL ACCESS							
TOTAL	1,226	80.98	0.38	19.50	17.90	22.65	23.66

NOTE: INCLUDES ONLY ROUTE SEGMENTS WITH COMPUTERIZED TRAFFIC VOLUMES

**2010-2012 Three Year Crash Rates
By Road System, Type and Control
Crash Rate per 100 Million Vehicle Miles Traveled**

RURAL UNITED STATES ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	2,483	145.04	1.41	45.23	20.41	54.24	45.77
2 LANES CONT. LEFT TURN LANE *	32	129.50	1.35	36.89	19.92	34.46	31.77
3 LANES UNDIVIDED *	21	134.42	1.32	42.83	21.74	33.60	30.31
4 OR MORE LANES UNDIVIDED *	49	169.52	0.32	54.29	22.69	37.44	31.28
4+ LANES CONT. LEFT TURN LANE	127	108.68	1.17	32.54	15.81	31.42	18.10
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	421	85.40	0.67	25.02	12.57	33.00	21.18
PARTIAL CONTROL ACCESS	270	67.60	0.77	19.04	10.99	26.57	19.08
FULL CONTROL ACCESS	375	61.48	0.54	12.35	16.15	26.98	31.36
TOTAL	3,778	105.73	0.98	30.99	16.67	39.39	32.75

URBAN UNITED STATES ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	540	225.61	0.92	71.72	30.81	46.50	33.37
2 LANES CONT. LEFT TURN LANE *	38	293.66	1.81	98.44	40.49	55.47	31.11
3 LANES UNDIVIDED *	34	326.49	1.23	101.11	51.25	67.15	20.69
4 OR MORE LANES UNDIVIDED	105	473.07	1.15	152.94	68.22	83.83	37.04
4+ LANES CONT. LEFT TURN LANE	270	266.13	1.13	86.12	39.16	47.64	19.01
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	306	285.40	0.88	87.59	40.39	61.01	21.76
PARTIAL CONTROL ACCESS	182	178.53	0.89	55.37	29.63	44.48	23.30
FULL CONTROL ACCESS	305	63.45	0.42	16.27	13.54	19.06	20.70
TOTAL	1,780	210.37	0.84	65.36	31.74	44.58	23.84

ALL UNITED STATES ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	3,023	170.70	1.25	53.67	23.72	51.77	41.82
2 LANES CONT. LEFT TURN LANE *	70	231.38	1.63	75.08	32.69	47.50	31.36
3 LANES UNDIVIDED *	55	290.03	1.25	90.05	45.65	60.78	22.51
4 OR MORE LANES UNDIVIDED	154	398.91	0.95	128.84	57.09	72.50	35.63
4+ LANES CONT. LEFT TURN LANE	397	228.34	1.14	73.26	33.55	43.75	18.79
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	727	202.44	0.79	61.63	28.85	49.39	21.52
PARTIAL CONTROL ACCESS	452	130.28	0.84	39.56	21.52	36.69	21.47
FULL CONTROL ACCESS	680	62.71	0.46	14.80	14.51	22.02	24.68
TOTAL	5,558	163.46	0.90	49.95	24.99	42.26	27.83

NOTE: INCLUDES ONLY ROUTE SEGMENTS WITH COMPUTERIZED TRAFFIC VOLUMES
* RATES ARE NOT STATISTICALLY SIGNIFICANT

**2010-2012 Three Year Crash Rates
By Road System, Type and Control
Crash Rate per 100 Million Vehicle Miles Traveled**

RURAL NORTH CAROLINA ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	6,271	170.45	1.70	51.58	22.84	68.70	56.31
2 LANES CONT. LEFT TURN LANE *	14	153.36	2.78	53.43	11.80	40.25	24.29
3 LANES UNDIVIDED *	21	222.87	2.42	65.84	38.05	43.49	50.13
4 OR MORE LANES UNDIVIDED *	27	201.37	0.79	61.35	24.78	47.59	22.42
4+ LANES CONT. LEFT TURN LANE *	86	96.64	1.40	27.41	14.82	33.67	19.10
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	131	86.39	0.46	25.62	10.86	36.13	17.49
PARTIAL CONTROL ACCESS*	17	62.75	0.45	18.51	6.32	27.54	16.70
FULL CONTROL ACCESS*	15	16.71	0.00	7.16	2.39	5.97	4.18
TOTAL	6,582	160.79	1.59	48.58	21.55	63.97	51.16

URBAN NORTH CAROLINA ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	901	218.33	1.04	69.60	30.71	51.96	36.11
2 LANES CONT. LEFT TURN LANE *	34	214.12	0.76	71.82	28.77	37.53	19.43
3 LANES UNDIVIDED *	18	436.40	0.34	146.72	57.93	94.27	30.17
4 OR MORE LANES UNDIVIDED	127	410.38	0.90	134.14	59.88	80.32	29.71
4+ LANES CONT. LEFT TURN LANE	147	249.38	1.12	76.86	35.68	47.86	19.89
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	185	250.49	0.82	79.93	39.51	54.08	19.81
PARTIAL CONTROL ACCESS*	51	177.79	0.96	63.25	28.97	46.88	16.95
FULL CONTROL ACCESS*	35	98.77	0.28	22.87	18.31	22.20	22.30
TOTAL	1,498	242.62	0.93	77.54	35.75	53.08	27.28

ALL NORTH CAROLINA ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	7,172	183.58	1.52	56.52	25.00	64.11	50.78
2 LANES CONT. LEFT TURN LANE *	48	201.03	1.20	67.86	25.11	38.11	20.48
3 LANES UNDIVIDED *	39	359.09	1.09	117.44	50.74	75.88	37.40
4 OR MORE LANES UNDIVIDED	154	388.82	0.89	126.63	56.26	76.95	28.96
4+ LANES CONT. LEFT TURN LANE	233	207.38	1.20	63.26	29.95	43.96	19.67
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	316	208.36	0.73	65.98	32.16	49.47	19.21
PARTIAL CONTROL ACCESS*	68	163.51	0.90	57.70	26.16	44.48	16.92
FULL CONTROL ACCESS*	50	87.52	0.25	20.71	16.13	19.98	19.81
TOTAL	8,080	197.67	1.29	61.63	27.95	59.06	40.40

NOTE: INCLUDES ONLY ROUTE SEGMENTS WITH COMPUTERIZED TRAFFIC VOLUMES
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**2010-2012 Three Year Crash Rates
By Road System, Type and Control
Crash Rate per 100 Million Vehicle Miles Traveled**

RURAL PRIMARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	8,754	161.63	1.60	49.37	22.00	63.68	52.65
2 LANES CONT. LEFT TURN LANE *	46	136.17	1.75	41.51	17.65	36.08	29.68
3 LANES UNDIVIDED *	42	180.57	1.89	54.83	30.25	38.76	40.65
4 OR MORE LANES UNDIVIDED *	76	178.82	0.46	56.35	23.30	40.40	28.69
4+ LANES CONT. LEFT TURN LANE	213	104.07	1.26	30.58	15.43	32.28	18.48
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	552	85.62	0.63	25.15	12.20	33.68	20.38
PARTIAL CONTROL ACCESS	287	67.35	0.75	19.01	10.74	26.62	18.96
FULL CONTROL ACCESS	971	59.71	0.49	12.89	13.70	21.81	27.78
TOTAL	10,941	113.93	1.07	32.86	17.50	43.41	37.78

URBAN PRIMARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	1,441	221.22	0.99	70.44	30.75	49.79	35.03
2 LANES CONT. LEFT TURN LANE *	72	256.79	1.32	86.10	35.06	47.15	25.70
3 LANES UNDIVIDED *	52	360.61	0.96	115.27	53.33	75.57	23.63
4 OR MORE LANES UNDIVIDED	232	439.42	1.02	142.85	63.74	81.95	33.11
4+ LANES CONT. LEFT TURN LANE	417	260.43	1.13	82.97	37.97	47.72	19.31
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	491	272.76	0.86	84.81	40.07	58.50	21.05
PARTIAL CONTROL ACCESS	233	178.36	0.91	57.17	29.48	45.03	21.85
FULL CONTROL ACCESS	985	85.22	0.36	21.09	18.73	22.78	22.05
TOTAL	3,923	166.29	0.65	49.68	27.60	37.53	23.94

ALL PRIMARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	10,195	178.92	1.42	55.49	24.54	59.65	47.54
2 LANES CONT. LEFT TURN LANE	118	219.06	1.46	72.15	29.61	43.69	26.94
3 LANES UNDIVIDED *	94	315.16	1.19	100.01	47.50	66.28	27.93
4 OR MORE LANES UNDIVIDED	308	393.93	0.92	127.75	56.68	74.69	32.34
4+ LANES CONT. LEFT TURN LANE	630	220.98	1.16	69.75	32.29	43.82	19.10
4 OR MORE LANES DIVIDED WITH NO CONTROL ACCESS	1,043	204.27	0.77	62.98	29.87	49.42	20.80
PARTIAL CONTROL ACCESS	520	135.62	0.85	42.48	22.27	37.94	20.74
FULL CONTROL ACCESS	1,956	77.37	0.40	18.56	17.18	22.48	23.81
TOTAL	14,864	144.18	0.83	42.58	23.33	40.01	29.78

NOTE: INCLUDES ONLY ROUTE SEGMENTS WITH COMPUTERIZED TRAFFIC VOLUMES
* RATES ARE NOT STATISTICALLY SIGNIFICANT

**2010-2012 Three Year Crash Rates
By Road System, Type and Control
Crash Rate per 100 Million Vehicle Miles Traveled**

RURAL SECONDARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	22,348	239.23	2.40	68.87	32.52	108.99	110.87
2 LANES CONT. LEFT TURN LANE *	3	194.82	0.00	54.79	18.26	66.97	54.79
3 LANES UNDIVIDED *	4	356.74	14.27	57.08	14.27	128.42	142.69
4 OR MORE LANES UNDIVIDED *	5	179.84	0.00	59.01	16.86	28.10	33.72
4+ LANES CONT. LEFT TURN LANE *	6	338.24	0.00	70.06	36.24	77.31	53.15
4 OR MORE LANES DIVIDED WITH							
NO CONTROL ACCESS*	16	159.65	0.83	46.32	19.03	44.67	35.57
PARTIAL CONTROL ACCESS*	1	216.43	0.00	31.67	26.39	73.90	26.39
FULL CONTROL ACCESS*	1	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	22,384	238.85	2.38	68.69	32.41	108.43	110.17

URBAN SECONDARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	5,179	228.95	1.04	73.23	33.94	60.63	54.21
2 LANES CONT. LEFT TURN LANE *	61	285.31	0.74	92.28	41.35	58.78	26.02
3 LANES UNDIVIDED *	28	414.96	0.55	127.45	57.28	74.00	30.97
4 OR MORE LANES UNDIVIDED	228	449.75	1.16	144.22	68.61	87.74	35.94
4+ LANES CONT. LEFT TURN LANE	172	381.85	1.07	120.44	57.56	75.15	29.13
4 OR MORE LANES DIVIDED WITH							
NO CONTROL ACCESS	150	290.85	0.70	88.99	45.89	62.52	22.44
PARTIAL CONTROL ACCESS*	34	169.09	0.23	56.67	29.01	44.43	19.38
FULL CONTROL ACCESS*	24	115.71	0.22	29.37	19.58	32.60	19.80
TOTAL	5,876	266.29	0.98	84.63	40.02	63.65	45.67

ALL SECONDARY ROUTES

ROAD TYPE	SYSTEM MILES	TOTAL	FATAL	NON-FATAL INJURY	WET	NIGHT	RUN OFF ROAD
2 LANES UNDIVIDED	27,527	233.87	1.69	71.15	33.26	83.78	81.33
2 LANES CONT. LEFT TURN LANE *	64	283.52	0.72	91.54	40.90	58.94	26.58
3 LANES UNDIVIDED *	32	413.86	0.81	126.12	56.47	75.03	33.08
4 OR MORE LANES UNDIVIDED	233	447.17	1.15	143.41	68.11	87.17	35.92
4+ LANES CONT. LEFT TURN LANE	178	381.33	1.06	119.84	57.31	75.17	29.42
4 OR MORE LANES DIVIDED WITH							
NO CONTROL ACCESS	166	285.55	0.70	87.27	44.80	61.80	22.97
PARTIAL CONTROL ACCESS*	35	170.09	0.22	56.14	28.96	45.05	19.53
FULL CONTROL ACCESS*	25	114.96	0.22	29.18	19.45	32.39	19.68
TOTAL	28,260	255.75	1.52	78.51	37.10	80.85	70.45

NOTE: INCLUDES ONLY ROUTE SEGMENTS WITH COMPUTERIZED TRAFFIC VOLUMES
* RATES ARE NOT STATISTICALLY SIGNIFICANT